

QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

QC Batch: 593945 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 GCV HEADSPACE
Associated Lab Samples: 10466793001, 10466793002, 10466793003, 10466793004, 10466793005, 10466793006, 10466793007, 10466793008, 10466793009, 10466793010

METHOD BLANK: 3211287 Matrix: Water
Associated Lab Samples: 10466793001, 10466793002, 10466793003, 10466793004, 10466793005, 10466793006, 10466793007, 10466793008, 10466793009, 10466793010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	03/15/19 08:28	
Ethene	ug/L	<2.9	10.0	2.9	03/15/19 08:28	
Methane	ug/L	<4.9	10.0	4.9	03/15/19 08:28	

LABORATORY CONTROL SAMPLE & LCSD: 3211288 3211289

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	105	107	92	94	85-115	2	20	
Ethene	ug/L	106	97.8	99.5	92	94	85-115	2	20	
Methane	ug/L	60.7	55.9	57.0	92	94	85-115	2	20	

SAMPLE DUPLICATE: 3211290

Parameter	Units	10466410001 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<3.0	<3.0		20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	<4.9	<4.9		20	

SAMPLE DUPLICATE: 3211291

Parameter	Units	10466793008 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<3.0	<3.0		20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	<4.9	<4.9		20	

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10466793

QC Batch: 593900

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470A Mercury Water Dissolved

Associated Lab Samples: 10466793001, 10466793002, 10466793003, 10466793004, 10466793005, 10466793006, 10466793007, 10466793008, 10466793009, 10466793010

METHOD BLANK: 3211057

Matrix: Water

Associated Lab Samples: 10466793001, 10466793002, 10466793003, 10466793004, 10466793005, 10466793006, 10466793007, 10466793008, 10466793009, 10466793010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.078	0.20	0.078	03/19/19 12:53	

LABORATORY CONTROL SAMPLE: 3211058

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.3	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3211059 3211060

Parameter	Units	10466793002 Result	MS Spike Conc.	MSD Spike Conc.	3211059		3211060		% Rec Limits	Max RPD	Qual
					MS Result	MSD Result	MS % Rec	MSD % Rec			
Mercury, Dissolved	ug/L	<0.078	5	5	5.3	5.0	106	100	80-120	6	20

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

QC Batch: 593890 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10466793001, 10466793002, 10466793003, 10466793004, 10466793005, 10466793006, 10466793007, 10466793008, 10466793009, 10466793010

METHOD BLANK: 3211017 Matrix: Water
Associated Lab Samples: 10466793001, 10466793002, 10466793003, 10466793004, 10466793005, 10466793006, 10466793007, 10466793008, 10466793009, 10466793010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<15.5	200	15.5	03/21/19 11:18	
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	03/21/19 11:18	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	03/21/19 11:18	
Barium, Dissolved	ug/L	<0.18	10.0	0.18	03/21/19 11:18	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	03/21/19 11:18	
Cadmium, Dissolved	ug/L	<0.26	3.0	0.26	03/21/19 11:18	
Calcium, Dissolved	ug/L	<13.9	500	13.9	03/21/19 11:18	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	03/21/19 11:18	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	03/21/19 11:18	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	03/21/19 11:18	
Iron, Dissolved	ug/L	4.4J	50.0	4.3	03/21/19 11:18	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	03/21/19 11:18	
Magnesium, Dissolved	ug/L	<9.8	500	9.8	03/21/19 11:18	
Manganese, Dissolved	ug/L	<0.22	5.0	0.22	03/21/19 11:18	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	03/21/19 11:18	
Potassium, Dissolved	ug/L	<310	2500	310	03/21/19 11:18	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	03/21/19 11:18	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	03/21/19 11:18	
Sodium, Dissolved	ug/L	50.9J	1000	21.5	03/21/19 11:18	
Thallium, Dissolved	ug/L	4.9J	20.0	4.3	03/21/19 11:18	
Vanadium, Dissolved	ug/L	<0.29	15.0	0.29	03/21/19 11:18	
Zinc, Dissolved	ug/L	<2.5	20.0	2.5	03/21/19 11:18	

LABORATORY CONTROL SAMPLE: 3211018

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	20800	104	80-120	
Antimony, Dissolved	ug/L	1000	986	99	80-120	
Arsenic, Dissolved	ug/L	1000	947	95	80-120	
Barium, Dissolved	ug/L	1000	990	99	80-120	
Beryllium, Dissolved	ug/L	1000	981	98	80-120	
Cadmium, Dissolved	ug/L	1000	985	99	80-120	
Calcium, Dissolved	ug/L	20000	19300	97	80-120	
Chromium, Dissolved	ug/L	1000	977	98	80-120	
Cobalt, Dissolved	ug/L	1000	991	99	80-120	
Copper, Dissolved	ug/L	1000	947	95	80-120	
Iron, Dissolved	ug/L	20000	19600	98	80-120	
Lead, Dissolved	ug/L	1000	997	100	80-120	

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10466793

LABORATORY CONTROL SAMPLE: 3211018

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Magnesium, Dissolved	ug/L	20000	19000	95	80-120	
Manganese, Dissolved	ug/L	1000	992	99	80-120	
Nickel, Dissolved	ug/L	1000	987	99	80-120	
Potassium, Dissolved	ug/L	20000	19000	95	80-120	
Selenium, Dissolved	ug/L	1000	1040	104	80-120	
Silver, Dissolved	ug/L	500	486	97	80-120	
Sodium, Dissolved	ug/L	20000	19200	96	80-120	
Thallium, Dissolved	ug/L	1000	971	97	80-120	
Vanadium, Dissolved	ug/L	1000	981	98	80-120	
Zinc, Dissolved	ug/L	1000	1010	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3211019 3211020

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10466793001 Result	Spike Conc.	Spike Conc.	MS Result						
Aluminum, Dissolved	ug/L	43.5J	20000	20000	20400	20600	102	103	75-125	1	20
Antimony, Dissolved	ug/L	<7.0	1000	1000	966	978	97	98	75-125	1	20
Arsenic, Dissolved	ug/L	<3.8	1000	1000	940	949	94	95	75-125	1	20
Barium, Dissolved	ug/L	43.9	1000	1000	1020	1030	98	98	75-125	0	20
Beryllium, Dissolved	ug/L	0.18J	1000	1000	966	987	97	99	75-125	2	20
Cadmium, Dissolved	ug/L	<0.26	1000	1000	965	980	96	98	75-125	2	20
Calcium, Dissolved	ug/L	46100	20000	20000	66300	67000	101	105	75-125	1	20
Chromium, Dissolved	ug/L	<0.49	1000	1000	954	970	95	97	75-125	2	20
Cobalt, Dissolved	ug/L	0.72J	1000	1000	954	968	95	97	75-125	1	20
Copper, Dissolved	ug/L	<1.2	1000	1000	936	955	94	95	75-125	2	20
Iron, Dissolved	ug/L	66.2	20000	20000	19200	19400	96	97	75-125	1	20
Lead, Dissolved	ug/L	<2.0	1000	1000	966	981	97	98	75-125	1	20
Magnesium, Dissolved	ug/L	12600	20000	20000	32300	32800	98	101	75-125	2	20
Manganese, Dissolved	ug/L	8.0	1000	1000	964	972	96	96	75-125	1	20
Nickel, Dissolved	ug/L	<1.1	1000	1000	948	964	95	96	75-125	2	20
Potassium, Dissolved	ug/L	620J	20000	20000	19900	20200	96	98	75-125	2	20
Selenium, Dissolved	ug/L	<5.8	1000	1000	1010	1020	101	102	75-125	1	20
Silver, Dissolved	ug/L	<0.38	500	500	479	488	96	98	75-125	2	20
Sodium, Dissolved	ug/L	18500	20000	20000	37600	38000	96	97	75-125	1	20
Thallium, Dissolved	ug/L	7.1J	1000	1000	952	967	95	96	75-125	2	20
Vanadium, Dissolved	ug/L	6.5J	1000	1000	968	985	96	98	75-125	2	20
Zinc, Dissolved	ug/L	10.3J	1000	1000	979	990	97	98	75-125	1	20

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10466793

QC Batch: 593946 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10466793001, 10466793002, 10466793003, 10466793004, 10466793005, 10466793006, 10466793007, 10466793008, 10466793009, 10466793010, 10466793011

METHOD BLANK: 3211294 Matrix: Water
Associated Lab Samples: 10466793001, 10466793002, 10466793003, 10466793004, 10466793005, 10466793006, 10466793007, 10466793008, 10466793009, 10466793010, 10466793011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	03/15/19 10:23	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	03/15/19 10:23	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	03/15/19 10:23	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	03/15/19 10:23	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	03/15/19 10:23	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	03/15/19 10:23	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	03/15/19 10:23	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	03/15/19 10:23	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	03/15/19 10:23	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	03/15/19 10:23	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	03/15/19 10:23	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	03/15/19 10:23	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	03/15/19 10:23	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	03/15/19 10:23	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	03/15/19 10:23	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	03/15/19 10:23	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	03/15/19 10:23	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	03/15/19 10:23	
1,3,5-Trimethylbenzene	ug/L	<0.12	1.0	0.12	03/15/19 10:23	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/15/19 10:23	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	03/15/19 10:23	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	03/15/19 10:23	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	03/15/19 10:23	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	03/15/19 10:23	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	03/15/19 10:23	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	03/15/19 10:23	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	03/15/19 10:23	
2-Hexanone	ug/L	<0.88	20.0	0.88	03/15/19 10:23	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/15/19 10:23	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	03/15/19 10:23	
Acetone	ug/L	<9.2	20.0	9.2	03/15/19 10:23	
Acrolein	ug/L	<1.2	10.0	1.2	03/15/19 10:23	
Acrylonitrile	ug/L	<0.91	10.0	0.91	03/15/19 10:23	
Benzene	ug/L	<0.10	0.50	0.10	03/15/19 10:23	
Bromobenzene	ug/L	<0.21	0.50	0.21	03/15/19 10:23	
Bromochloromethane	ug/L	<0.27	1.0	0.27	03/15/19 10:23	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	03/15/19 10:23	
Bromoform	ug/L	<0.80	4.0	0.80	03/15/19 10:23	
Bromomethane	ug/L	<1.8	4.0	1.8	03/15/19 10:23	
Carbon disulfide	ug/L	<0.078	1.0	0.078	03/15/19 10:23	

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10466793

METHOD BLANK: 3211294

Matrix: Water

Associated Lab Samples: 10466793001, 10466793002, 10466793003, 10466793004, 10466793005, 10466793006, 10466793007, 10466793008, 10466793009, 10466793010, 10466793011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	03/15/19 10:23	
Chlorobenzene	ug/L	<0.17	0.50	0.17	03/15/19 10:23	
Chloroethane	ug/L	<0.49	1.0	0.49	03/15/19 10:23	
Chloroform	ug/L	<0.45	4.0	0.45	03/15/19 10:23	
Chloromethane	ug/L	<0.16	4.0	0.16	03/15/19 10:23	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	03/15/19 10:23	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	03/15/19 10:23	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	03/15/19 10:23	
Dibromomethane	ug/L	<0.16	1.0	0.16	03/15/19 10:23	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	03/15/19 10:23	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	03/15/19 10:23	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	03/15/19 10:23	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	03/15/19 10:23	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/15/19 10:23	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	03/15/19 10:23	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	03/15/19 10:23	
m&p-Xylene	ug/L	<0.31	1.0	0.31	03/15/19 10:23	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	03/15/19 10:23	
Methylene Chloride	ug/L	<0.98	4.0	0.98	03/15/19 10:23	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	03/15/19 10:23	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	03/15/19 10:23	
Naphthalene	ug/L	<0.48	1.0	0.48	03/15/19 10:23	
o-Xylene	ug/L	<0.16	0.50	0.16	03/15/19 10:23	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	03/15/19 10:23	
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	03/15/19 10:23	
Styrene	ug/L	<0.19	1.0	0.19	03/15/19 10:23	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	03/15/19 10:23	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	03/15/19 10:23	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	03/15/19 10:23	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	03/15/19 10:23	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	03/15/19 10:23	
Toluene	ug/L	<0.083	0.50	0.083	03/15/19 10:23	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	03/15/19 10:23	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	03/15/19 10:23	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	03/15/19 10:23	
Trichloroethene	ug/L	<0.15	0.40	0.15	03/15/19 10:23	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	03/15/19 10:23	
Vinyl acetate	ug/L	<1.1	10.0	1.1	03/15/19 10:23	
Vinyl chloride	ug/L	<0.092	0.20	0.092	03/15/19 10:23	
Xylene (Total)	ug/L	<0.31	1.5	0.31	03/15/19 10:23	
1,2-Dichloroethane-d4 (S)	%	99	75-136		03/15/19 10:23	
4-Bromofluorobenzene (S)	%	101	75-125		03/15/19 10:23	
Toluene-d8 (S)	%	98	75-125		03/15/19 10:23	

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10466793

LABORATORY CONTROL SAMPLE: 3211295

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	22.4	112	68-141	
1,1,1-Trichloroethane	ug/L	20	21.4	107	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	19.7	98	73-125	
1,1,2-Trichloroethane	ug/L	20	20.9	105	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	24.2	121	69-132	
1,1-Dichloroethane	ug/L	20	23.6	118	73-125	
1,1-Dichloroethene	ug/L	20	23.6	118	71-126	
1,1-Dichloropropene	ug/L	20	23.0	115	73-126	
1,2,3-Trichlorobenzene	ug/L	20	19.8	99	72-126	
1,2,3-Trichloropropane	ug/L	20	19.5	98	75-126	
1,2,4-Trichlorobenzene	ug/L	20	19.1	96	71-134	
1,2,4-Trimethylbenzene	ug/L	20	20.0	100	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	45.3	91	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	21.0	105	75-129	
1,2-Dichlorobenzene	ug/L	20	20.4	102	75-129	
1,2-Dichloroethane	ug/L	20	20.6	103	75-125	
1,2-Dichloroethene (Total)	ug/L	40	47.2	118	74-125	N2
1,2-Dichloropropane	ug/L	20	22.7	113	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.0	100	75-127	
1,3-Dichlorobenzene	ug/L	20	20.0	100	75-126	
1,3-Dichloropropane	ug/L	20	21.6	108	75-125	
1,4-Dichlorobenzene	ug/L	20	20.5	102	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	402	100	72-129	
2,2,4-Trimethylpentane	ug/L	20	19.7	99	72-128	N2
2,2-Dichloropropane	ug/L	20	24.2	121	65-138	
2-Butanone (MEK)	ug/L	100	97.7	98	59-144	
2-Chlorotoluene	ug/L	20	21.2	106	75-127	
2-Hexanone	ug/L	100	95.3	95	73-134	
4-Chlorotoluene	ug/L	20	21.6	108	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	110	110	62-141	
Acetone	ug/L	100	122	122	60-137	
Acrolein	ug/L	200	224	112	60-141	
Acrylonitrile	ug/L	200	217	109	75-129	
Benzene	ug/L	20	20.3	101	73-125	
Bromobenzene	ug/L	20	20.0	100	73-125	
Bromochloromethane	ug/L	20	22.6	113	75-135	
Bromodichloromethane	ug/L	20	24.7	124	75-125	
Bromoform	ug/L	20	21.9	110	67-136	
Bromomethane	ug/L	20	20.4	102	30-150	
Carbon disulfide	ug/L	20	31.0	155	47-137	CH,L3
Carbon tetrachloride	ug/L	20	24.2	121	75-125	
Chlorobenzene	ug/L	20	21.0	105	75-125	
Chloroethane	ug/L	20	26.3	131	63-136	
Chloroform	ug/L	20	21.9	110	73-128	
Chloromethane	ug/L	20	20.9	104	55-130	
cis-1,2-Dichloroethene	ug/L	20	22.5	112	75-125	
cis-1,3-Dichloropropene	ug/L	20	22.6	113	74-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10466793

LABORATORY CONTROL SAMPLE: 3211295

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	23.2	116	75-125	
Dibromomethane	ug/L	20	22.6	113	75-125	
Dichlorodifluoromethane	ug/L	20	25.1	126	63-132	
Dichlorofluoromethane	ug/L	20	23.0	115	68-127	N2
Diisopropyl ether	ug/L	20	21.6	108	71-131	
Ethyl-tert-butyl ether	ug/L	20	22.4	112	75-125	
Ethylbenzene	ug/L	20	21.7	109	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.5	102	72-134	
Isopropylbenzene (Cumene)	ug/L	20	20.2	101	75-125	
m&p-Xylene	ug/L	40	43.3	108	75-126	
Methyl-tert-butyl ether	ug/L	20	22.4	112	75-125	
Methylene Chloride	ug/L	20	22.1	111	70-125	
n-Butylbenzene	ug/L	20	21.2	106	75-126	
n-Propylbenzene	ug/L	20	21.4	107	73-127	
Naphthalene	ug/L	20	17.9	90	63-128	
o-Xylene	ug/L	20	21.5	108	75-128	
p-Isopropyltoluene	ug/L	20	21.3	107	75-125	
sec-Butylbenzene	ug/L	20	19.7	99	75-126	
Styrene	ug/L	20	19.5	97	75-125	
tert-Amylmethyl ether	ug/L	20	19.8	99	75-125	
tert-Butyl Alcohol	ug/L	200	222	111	75-130	
tert-Butylbenzene	ug/L	20	21.5	107	75-131	
Tetrachloroethene	ug/L	20	21.6	108	74-125	
Tetrahydrofuran	ug/L	200	182	91	64-138	
Toluene	ug/L	20	21.5	107	74-125	
trans-1,2-Dichloroethene	ug/L	20	24.7	124	68-128	
trans-1,3-Dichloropropene	ug/L	20	23.2	116	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	43.0	86	60-127	
Trichloroethene	ug/L	20	23.8	119	75-127	
Trichlorofluoromethane	ug/L	20	24.0	120	72-133	
Vinyl acetate	ug/L	20	20.8	104	61-129	
Vinyl chloride	ug/L	20	23.0	115	75-128	
Xylene (Total)	ug/L	60	64.9	108	75-125	
1,2-Dichloroethane-d4 (S)	%			97	75-136	
4-Bromofluorobenzene (S)	%			98	75-125	
Toluene-d8 (S)	%			97	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3211296 3211297

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		10466781001 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	22.4	23.4	112	117	75-140	4	30	
1,1,1-Trichloroethane	ug/L	ND	20	20	25.8	26.0	129	130	74-136	1	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	20.2	22.2	101	111	66-134	10	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	20.5	20.8	103	104	75-126	1	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10466793

Parameter	Units	10466781001		3211296		3211297		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
1,1,2-Trichlorotrifluoroethane	ug/L	ND	20	20	29.1	28.9	146	145	65-146	1	30		
1,1-Dichloroethane	ug/L	ND	20	20	26.5	25.6	133	128	68-132	3	30	M1	
1,1-Dichloroethene	ug/L	ND	20	20	28.4	27.1	142	135	66-139	5	30	M1	
1,1-Dichloropropene	ug/L	ND	20	20	27.7	28.2	139	141	67-134	2	30	M1	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	23.5	24.3	118	122	67-129	3	30		
1,2,3-Trichloropropane	ug/L	ND	20	20	19.9	21.5	100	108	69-128	8	30		
1,2,4-Trichlorobenzene	ug/L	ND	20	20	22.8	23.8	114	119	65-140	4	30		
1,2,4-Trimethylbenzene	ug/L	ND	20	20	21.4	23.2	107	116	71-133	8	30		
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	46.4	53.1	93	106	54-138	14	30		
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	20.9	21.3	105	106	68-125	2	30		
1,2-Dichlorobenzene	ug/L	ND	20	20	21.5	23.8	107	119	74-136	10	30		
1,2-Dichloroethane	ug/L	ND	20	20	21.6	22.5	108	113	68-125	4	30		
1,2-Dichloroethene (Total)	ug/L	ND	40	40	52.4	51.2	131	128	71-126	2	30	N2	
1,2-Dichloropropane	ug/L	ND	20	20	22.9	22.5	115	113	67-125	2	30		
1,3,5-Trimethylbenzene	ug/L	ND	20	20	21.7	23.6	108	118	68-137	9	30		
1,3-Dichlorobenzene	ug/L	ND	20	20	21.6	22.9	108	114	75-131	6	30		
1,3-Dichloropropane	ug/L	ND	20	20	21.4	21.0	107	105	71-125	2	30		
1,4-Dichlorobenzene	ug/L	ND	20	20	21.4	22.6	107	113	74-126	5	30		
1,4-Dioxane (p-Dioxane)	ug/L	ND	400	400	426	411	106	103	68-125	3	30		
2,2,4-Trimethylpentane	ug/L	ND	20	20	28.9	26.5	145	133	54-129	9	30	M1,N2	
2,2-Dichloropropane	ug/L	ND	20	20	27.1	27.5	135	138	69-139	2	30		
2-Butanone (MEK)	ug/L	ND	100	100	98.7	118	99	118	54-144	18	30		
2-Chlorotoluene	ug/L	ND	20	20	22.2	24.2	111	121	75-134	9	30		
2-Hexanone	ug/L	ND	100	100	86.6	98.1	87	98	58-137	12	30		
4-Chlorotoluene	ug/L	ND	20	20	22.1	24.1	110	121	72-133	9	30		
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	105	117	105	117	60-129	11	30		
Acetone	ug/L	ND	100	100	101	103	101	103	62-132	1	30		
Acrolein	ug/L	ND	200	200	397	411	198	206	30-150	4	30	M1	
Acrylonitrile	ug/L	ND	200	200	222	232	111	116	68-125	4	30		
Benzene	ug/L	ND	20	20	23.5	24.3	117	121	68-125	3	30		
Bromobenzene	ug/L	ND	20	20	20.3	21.3	101	106	73-126	5	30		
Bromochloromethane	ug/L	ND	20	20	23.4	23.5	117	118	66-143	0	30		
Bromodichloromethane	ug/L	ND	20	20	24.8	24.4	124	122	74-125	2	30		
Bromoform	ug/L	ND	20	20	22.1	23.0	110	115	64-134	4	30		
Bromomethane	ug/L	ND	20	20	23.9	21.6	120	108	30-150	10	30		
Carbon disulfide	ug/L	ND	20	20	38.8	34.0	194	170	43-147	13	30	CH,M0	
Carbon tetrachloride	ug/L	ND	20	20	26.8	28.2	134	141	71-143	5	30		
Chlorobenzene	ug/L	ND	20	20	21.8	22.4	109	112	75-125	3	30		
Chloroethane	ug/L	ND	20	20	28.3	29.5	141	148	75-129	4	30	M1	
Chloroform	ug/L	ND	20	20	22.3	23.0	111	115	66-132	3	30		
Chloromethane	ug/L	ND	20	20	20.8	22.3	104	111	53-137	7	30		
cis-1,2-Dichloroethene	ug/L	ND	20	20	24.1	23.9	121	119	67-133	1	30		
cis-1,3-Dichloropropene	ug/L	ND	20	20	23.0	21.1	115	105	66-125	9	30		
Dibromochloromethane	ug/L	ND	20	20	23.2	23.6	116	118	62-132	2	30		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10466793

Parameter	Units	10466781001		3211296		3211297		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Dibromomethane	ug/L	ND	20	20	22.9	21.8	114	109	67-125	5	30		
Dichlorodifluoromethane	ug/L	ND	20	20	26.7	28.5	134	142	71-142	6	30		
Dichlorofluoromethane	ug/L	ND	20	20	22.3	24.3	111	121	70-131	9	30	N2	
Diisopropyl ether	ug/L	ND	20	20	23.8	24.1	119	120	63-131	1	30		
Ethyl-tert-butyl ether	ug/L	ND	20	20	23.0	24.2	115	121	66-128	5	30		
Ethylbenzene	ug/L	ND	20	20	22.5	23.9	113	119	74-126	6	30		
Hexachloro-1,3-butadiene	ug/L	ND	20	20	26.6	23.4	133	117	68-143	13	30		
Isopropylbenzene (Cumene)	ug/L	ND	20	20	21.7	23.0	108	115	74-130	6	30		
m&p-Xylene	ug/L	ND	40	40	44.9	47.9	112	120	69-132	7	30		
Methyl-tert-butyl ether	ug/L	ND	20	20	23.8	24.6	119	123	65-131	3	30		
Methylene Chloride	ug/L	ND	20	20	25.4	24.6	127	123	57-125	3	30	M1	
n-Butylbenzene	ug/L	ND	20	20	24.3	24.3	121	121	71-131	0	30		
n-Propylbenzene	ug/L	ND	20	20	22.8	24.6	114	123	67-138	8	30		
Naphthalene	ug/L	ND	20	20	20.1	23.1	100	115	60-130	14	30		
o-Xylene	ug/L	ND	20	20	22.0	23.4	110	117	69-131	6	30		
p-Isopropyltoluene	ug/L	ND	20	20	23.9	24.3	120	122	72-133	2	30		
sec-Butylbenzene	ug/L	ND	20	20	22.2	22.5	107	109	73-134	1	30		
Styrene	ug/L	ND	20	20	20.0	21.0	100	105	72-125	5	30		
tert-Amylmethyl ether	ug/L	ND	20	20	22.0	24.1	110	121	67-125	9	30		
tert-Butyl Alcohol	ug/L	ND	200	200	221	238	111	119	64-137	7	30		
tert-Butylbenzene	ug/L	ND	20	20	23.1	24.7	115	124	70-143	7	30		
Tetrachloroethene	ug/L	ND	20	20	23.7	25.1	118	126	72-129	6	30		
Tetrahydrofuran	ug/L	ND	200	200	190	201	95	101	66-128	6	30		
Toluene	ug/L	ND	20	20	22.3	22.0	112	110	73-125	1	30		
trans-1,2-Dichloroethene	ug/L	ND	20	20	28.3	27.3	142	137	62-137	4	30	M1	
trans-1,3-Dichloropropene	ug/L	ND	20	20	22.8	22.8	114	114	61-136	0	30		
trans-1,4-Dichloro-2-butene	ug/L	ND	50	50	40.2	45.1	80	90	45-128	12	30		
Trichloroethene	ug/L	ND	20	20	25.6	24.9	128	125	74-132	2	30		
Trichlorofluoromethane	ug/L	ND	20	20	23.8	25.7	119	129	75-139	8	30		
Vinyl acetate	ug/L	ND	20	20	21.5	22.6	108	113	51-135	5	30		
Vinyl chloride	ug/L	ND	20	20	24.0	24.6	120	123	68-146	3	30		
Xylene (Total)	ug/L	ND	60	60	66.8	71.3	111	119	67-137	6	30		
1,2-Dichloroethane-d4 (S)	%						99	104	75-136				
4-Bromofluorobenzene (S)	%						97	100	75-125				
Toluene-d8 (S)	%						95	94	75-125				

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10466793

QC Batch:	595406	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
Associated Lab Samples:	10466793001, 10466793002, 10466793003, 10466793004, 10466793005, 10466793006, 10466793007, 10466793008, 10466793009, 10466793010		

METHOD BLANK:	3219282	Matrix:	Water
Associated Lab Samples:	10466793001, 10466793002, 10466793003, 10466793004, 10466793005, 10466793006, 10466793007, 10466793008, 10466793009, 10466793010		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.0	5.0	1.0	03/26/19 11:38	

LABORATORY CONTROL SAMPLE & LCSD:		3219283	3219284								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers	
Alkalinity, Total as CaCO3	mg/L	40	42.7	43.1	107	108	90-110	1	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3219285	3219286									
Parameter	Units	10467460002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	34.0	40	40	75.0	75.7	102	104	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3219287	3219288									
Parameter	Units	10466793001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	213	40	40	257	254	110	102	80-120	1	20	

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10466793

QC Batch: 594526

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 10466793001, 10466793002

METHOD BLANK: 3213982

Matrix: Water

Associated Lab Samples: 10466793001, 10466793002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	03/19/19 16:55	

LABORATORY CONTROL SAMPLE: 3213983

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1030	103	80-120	

SAMPLE DUPLICATE: 3213984

Parameter	Units	10466650001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1770	1690	5	5	

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10466793

QC Batch: 594667

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 10466793003, 10466793004, 10466793005, 10466793006, 10466793007, 10466793008, 10466793009, 10466793010

METHOD BLANK: 3214880

Matrix: Water

Associated Lab Samples: 10466793003, 10466793004, 10466793005, 10466793006, 10466793007, 10466793008, 10466793009, 10466793010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	03/20/19 13:45	

LABORATORY CONTROL SAMPLE: 3214881

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	982	98	80-120	

SAMPLE DUPLICATE: 3214882

Parameter	Units	10466793003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2060	1930	7	5	D6

SAMPLE DUPLICATE: 3214883

Parameter	Units	10466793004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	844	792	6	5	D6

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10466793

QC Batch: 136633

Analysis Method: SM 4500-S-2 D

QC Batch Method: SM 4500-S-2 D

Analysis Description: 4500S2D Sulfide, Total

Associated Lab Samples: 10466793001, 10466793002, 10466793003, 10466793004, 10466793005, 10466793006, 10466793007, 10466793008, 10466793009, 10466793010

METHOD BLANK: 594434

Matrix: Water

Associated Lab Samples: 10466793001, 10466793002, 10466793003, 10466793004, 10466793005, 10466793006, 10466793007, 10466793008, 10466793009, 10466793010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	03/19/19 10:21	

LABORATORY CONTROL SAMPLE: 594435

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.2	0.19	95	90-110	

MATRIX SPIKE SAMPLE: 594437

Parameter	Units	10466793001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.011J	0.2	0.0082J	-1	75-125 M1	

SAMPLE DUPLICATE: 594436

Parameter	Units	10466793001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.011J	0.011J		20	

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10466793

QC Batch:	593845	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
Associated Lab Samples:	10466793001, 10466793002, 10466793003, 10466793004, 10466793005, 10466793006, 10466793007, 10466793008, 10466793009, 10466793010		

METHOD BLANK:	3210650	Matrix:	Water
Associated Lab Samples:	10466793001, 10466793002, 10466793003, 10466793004, 10466793005, 10466793006, 10466793007, 10466793008, 10466793009, 10466793010		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.28	1.2	0.28	03/14/19 15:29	
Nitrate as N	mg/L	<0.015	0.10	0.015	03/14/19 15:29	
Sulfate	mg/L	<0.19	1.2	0.19	03/14/19 15:29	

LABORATORY CONTROL SAMPLE: 3210651

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.1	97	90-110	
Nitrate as N	mg/L	1	0.93	93	90-110	
Sulfate	mg/L	12.5	12.0	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3210652 3210653

Parameter	Units	10466793001		3210653		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Chloride	mg/L	1.6	12.5	12.5	12.6	88	88	90-110	0	20	M1
Nitrate as N	mg/L	<0.015	1	1	0.87	87	87	90-110	0	20	M1
Sulfate	mg/L	4.2	12.5	12.5	15.1	87	86	90-110	0	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3210654 3210655

Parameter	Units	10466793002		3210655		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Chloride	mg/L	328	125	125	423	76	77	90-110	0	20	M6
Nitrate as N	mg/L	11.2	5	5	15.4	83	82	90-110	0	20	M1
Sulfate	mg/L	59.5	62.5	62.5	116	91	91	90-110	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

QC Batch: 594120 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10466793001, 10466793002, 10466793003, 10466793004, 10466793005, 10466793006, 10466793007, 10466793008, 10466793009

METHOD BLANK: 3212228 Matrix: Water
Associated Lab Samples: 10466793001, 10466793002, 10466793003, 10466793004, 10466793005, 10466793006, 10466793007, 10466793008, 10466793009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	03/16/19 12:04	FS

LABORATORY CONTROL SAMPLE: 3212229

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	1.0	102	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3212230 3212231

Parameter	Units	10466585001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.55	1	1	1.6	1.6	103	103	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3212232 3212233

Parameter	Units	10466793001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.028J	1	1	1.1	1.1	103	104	90-110	1	20	

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci
Pace Project No.: 10466793

QC Batch: 594121 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10466793010

METHOD BLANK: 3212234 Matrix: Water
Associated Lab Samples: 10466793010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	03/16/19 12:24	FS

LABORATORY CONTROL SAMPLE: 3212235

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3212236 3212237

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10466924004 Result	Spike Conc.	Spike Conc.	Result						
Nitrogen, NO2 plus NO3	mg/L	0.62	1	1	1.6	1.7	100	104	90-110	2	20

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10466793

QC Batch:	594657	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	10466793001, 10466793002, 10466793003, 10466793004, 10466793005, 10466793006, 10466793007, 10466793008, 10466793009, 10466793010		

METHOD BLANK:	3214818	Matrix:	Water
Associated Lab Samples:	10466793001, 10466793002, 10466793003, 10466793004, 10466793005, 10466793006, 10466793007, 10466793008, 10466793009, 10466793010		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	03/20/19 14:23	

LABORATORY CONTROL SAMPLE: 3214819						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	302	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3214820												3214821	
Parameter	Units	10466793001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Chemical Oxygen Demand	mg/L	<17.0	250	250	256	261	101	103	90-110	2	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3214822												3214823	
Parameter	Units	10466793002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Chemical Oxygen Demand	mg/L	22.7J	250	250	272	279	100	103	90-110	3	20		

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QUALITY CONTROL DATA

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10466793

QC Batch:	162801	Analysis Method:	SM 5310C
QC Batch Method:	SM 5310C	Analysis Description:	5310C TOC
Associated Lab Samples:	10466793001, 10466793002, 10466793003, 10466793004, 10466793005, 10466793006, 10466793007, 10466793008, 10466793009, 10466793010		

METHOD BLANK:	641741	Matrix:	Water
Associated Lab Samples:	10466793001, 10466793002, 10466793003, 10466793004, 10466793005, 10466793006, 10466793007, 10466793008, 10466793009, 10466793010		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	0.20J	1.0	0.20	03/18/19 14:05	

LABORATORY CONTROL SAMPLE: 641742						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.4	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 641743												641744	
Parameter	Units	10466799001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Total Organic Carbon	mg/L	ND	25	25	26.7	26.4	104	103	80-120	1	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 641745												641746	
Parameter	Units	10466379001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Total Organic Carbon	mg/L	0.21J	25	25	26.4	26.4	105	105	80-120	0	20		

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QUALIFIERS

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10466793

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

PASI-N Pace Analytical Services - New Orleans

PASI-V Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

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

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

FS The sample was filtered in the laboratory prior to analysis.

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

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

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

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10466793

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

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10466793

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10466793001	MW11S-GW-031319	RSK 175	593945		
10466793002	MW9S-GW-031319	RSK 175	593945		
10466793003	MW25S-GW-031319	RSK 175	593945		
10466793004	MW24S-GW-031319	RSK 175	593945		
10466793005	MW8S-GW-031319	RSK 175	593945		
10466793006	MW7S-GW-031319	RSK 175	593945		
10466793007	MW1S-GW-031319	RSK 175	593945		
10466793008	MW10S-GW-031319	RSK 175	593945		
10466793009	MW6S-GW-031319	RSK 175	593945		
10466793010	MW12S-GW-031319	RSK 175	593945		
10466793001	MW11S-GW-031319	EPA 3010	593890	EPA 6010D	594222
10466793002	MW9S-GW-031319	EPA 3010	593890	EPA 6010D	594222
10466793003	MW25S-GW-031319	EPA 3010	593890	EPA 6010D	594222
10466793004	MW24S-GW-031319	EPA 3010	593890	EPA 6010D	594222
10466793005	MW8S-GW-031319	EPA 3010	593890	EPA 6010D	594222
10466793006	MW7S-GW-031319	EPA 3010	593890	EPA 6010D	594222
10466793007	MW1S-GW-031319	EPA 3010	593890	EPA 6010D	594222
10466793008	MW10S-GW-031319	EPA 3010	593890	EPA 6010D	594222
10466793009	MW6S-GW-031319	EPA 3010	593890	EPA 6010D	594222
10466793010	MW12S-GW-031319	EPA 3010	593890	EPA 6010D	594222
10466793001	MW11S-GW-031319	EPA 7470A	593900	EPA 7470A	594250
10466793002	MW9S-GW-031319	EPA 7470A	593900	EPA 7470A	594250
10466793003	MW25S-GW-031319	EPA 7470A	593900	EPA 7470A	594250
10466793004	MW24S-GW-031319	EPA 7470A	593900	EPA 7470A	594250
10466793005	MW8S-GW-031319	EPA 7470A	593900	EPA 7470A	594250
10466793006	MW7S-GW-031319	EPA 7470A	593900	EPA 7470A	594250
10466793007	MW1S-GW-031319	EPA 7470A	593900	EPA 7470A	594250
10466793008	MW10S-GW-031319	EPA 7470A	593900	EPA 7470A	594250
10466793009	MW6S-GW-031319	EPA 7470A	593900	EPA 7470A	594250
10466793010	MW12S-GW-031319	EPA 7470A	593900	EPA 7470A	594250
10466793001	MW11S-GW-031319	EPA 8260B	593946		
10466793002	MW9S-GW-031319	EPA 8260B	593946		
10466793003	MW25S-GW-031319	EPA 8260B	593946		
10466793004	MW24S-GW-031319	EPA 8260B	593946		
10466793005	MW8S-GW-031319	EPA 8260B	593946		
10466793006	MW7S-GW-031319	EPA 8260B	593946		
10466793007	MW1S-GW-031319	EPA 8260B	593946		
10466793008	MW10S-GW-031319	EPA 8260B	593946		
10466793009	MW6S-GW-031319	EPA 8260B	593946		
10466793010	MW12S-GW-031319	EPA 8260B	593946		
10466793011	TB-031319	EPA 8260B	593946		
10466793001	MW11S-GW-031319	SM 2320B	595406		
10466793002	MW9S-GW-031319	SM 2320B	595406		
10466793003	MW25S-GW-031319	SM 2320B	595406		
10466793004	MW24S-GW-031319	SM 2320B	595406		
10466793005	MW8S-GW-031319	SM 2320B	595406		
10466793006	MW7S-GW-031319	SM 2320B	595406		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10466793

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10466793007	MW1S-GW-031319	SM 2320B	595406		
10466793008	MW10S-GW-031319	SM 2320B	595406		
10466793009	MW6S-GW-031319	SM 2320B	595406		
10466793010	MW12S-GW-031319	SM 2320B	595406		
10466793001	MW11S-GW-031319	SM 2540C	594526		
10466793002	MW9S-GW-031319	SM 2540C	594526		
10466793003	MW25S-GW-031319	SM 2540C	594667		
10466793004	MW24S-GW-031319	SM 2540C	594667		
10466793005	MW8S-GW-031319	SM 2540C	594667		
10466793006	MW7S-GW-031319	SM 2540C	594667		
10466793007	MW1S-GW-031319	SM 2540C	594667		
10466793008	MW10S-GW-031319	SM 2540C	594667		
10466793009	MW6S-GW-031319	SM 2540C	594667		
10466793010	MW12S-GW-031319	SM 2540C	594667		
10466793001	MW11S-GW-031319	SM 4500-S-2 D	136633		
10466793002	MW9S-GW-031319	SM 4500-S-2 D	136633		
10466793003	MW25S-GW-031319	SM 4500-S-2 D	136633		
10466793004	MW24S-GW-031319	SM 4500-S-2 D	136633		
10466793005	MW8S-GW-031319	SM 4500-S-2 D	136633		
10466793006	MW7S-GW-031319	SM 4500-S-2 D	136633		
10466793007	MW1S-GW-031319	SM 4500-S-2 D	136633		
10466793008	MW10S-GW-031319	SM 4500-S-2 D	136633		
10466793009	MW6S-GW-031319	SM 4500-S-2 D	136633		
10466793010	MW12S-GW-031319	SM 4500-S-2 D	136633		
10466793001	MW11S-GW-031319	EPA 300.0	593845		
10466793002	MW9S-GW-031319	EPA 300.0	593845		
10466793003	MW25S-GW-031319	EPA 300.0	593845		
10466793004	MW24S-GW-031319	EPA 300.0	593845		
10466793005	MW8S-GW-031319	EPA 300.0	593845		
10466793006	MW7S-GW-031319	EPA 300.0	593845		
10466793007	MW1S-GW-031319	EPA 300.0	593845		
10466793008	MW10S-GW-031319	EPA 300.0	593845		
10466793009	MW6S-GW-031319	EPA 300.0	593845		
10466793010	MW12S-GW-031319	EPA 300.0	593845		
10466793001	MW11S-GW-031319	EPA 353.2	594120		
10466793002	MW9S-GW-031319	EPA 353.2	594120		
10466793003	MW25S-GW-031319	EPA 353.2	594120		
10466793004	MW24S-GW-031319	EPA 353.2	594120		
10466793005	MW8S-GW-031319	EPA 353.2	594120		
10466793006	MW7S-GW-031319	EPA 353.2	594120		
10466793007	MW1S-GW-031319	EPA 353.2	594120		
10466793008	MW10S-GW-031319	EPA 353.2	594120		
10466793009	MW6S-GW-031319	EPA 353.2	594120		
10466793010	MW12S-GW-031319	EPA 353.2	594120		
10466793001	MW11S-GW-031319	EPA 410.4	594657	EPA 410.4	594816

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Freeman WA-Grain Handling Faci

Pace Project No.: 10466793

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10466793002	MW9S-GW-031319	EPA 410.4	594657	EPA 410.4	594816
10466793003	MW25S-GW-031319	EPA 410.4	594657	EPA 410.4	594816
10466793004	MW24S-GW-031319	EPA 410.4	594657	EPA 410.4	594816
10466793005	MW8S-GW-031319	EPA 410.4	594657	EPA 410.4	594816
10466793006	MW7S-GW-031319	EPA 410.4	594657	EPA 410.4	594816
10466793007	MW1S-GW-031319	EPA 410.4	594657	EPA 410.4	594816
10466793008	MW10S-GW-031319	EPA 410.4	594657	EPA 410.4	594816
10466793009	MW6S-GW-031319	EPA 410.4	594657	EPA 410.4	594816
10466793010	MW12S-GW-031319	EPA 410.4	594657	EPA 410.4	594816
10466793001	MW11S-GW-031319	SM 5310C	162801		
10466793002	MW9S-GW-031319	SM 5310C	162801		
10466793003	MW25S-GW-031319	SM 5310C	162801		
10466793004	MW24S-GW-031319	SM 5310C	162801		
10466793005	MW8S-GW-031319	SM 5310C	162801		
10466793006	MW7S-GW-031319	SM 5310C	162801		
10466793007	MW1S-GW-031319	SM 5310C	162801		
10466793008	MW10S-GW-031319	SM 5310C	162801		
10466793009	MW6S-GW-031319	SM 5310C	162801		
10466793010	MW12S-GW-031319	SM 5310C	162801		

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CHAIN-OF-CUSTODY / Analytical Request Document

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

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

WO#: 10466793



ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 /, -,) Sample IDs must be unique	MATRIX Drinking Water: DW Water: WT Waste Water: WW Product: SL Oil: OL Wipe: WF Air: AB Other: OT Tissue: TS	CODE	MATRIX CODE: (see valid codes to left)	SAMPLE TYPE: (G-GRAB C-COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives					Analyses Test	Request		MS/MSD Requested	
						DATE	TIME			Unpreserved	H2SO4	HNO3	HCl	NH4OH + Zn Acetate		Other	Y/N		Y
1	MW11S-GW-031319				WTG	3/13	1030	-	13	X	X	X	X	X	X	X	X	X	001
2	MW9S-GW-031319						1100												002
3	MW25S-GW-031319						1130												003
4	MW24S-GW-031319						1200												004
5	MW8S-GW-031319						1230												005
6	MW7S-GW-031319						1300												006
7	MW1S-GW-031319						1330												007
8	MW10S-GW-031319						1400												008
9	MW6S-GW-031319						1430												009
10	MW12S-GW-031319						1500												010
11	TB-031319						800		2				X						011

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in bold	<i>J. Li / Jacobs</i>	3/13/19	1600	<i>J. Li / Pace</i>	3/14/19	1150	0.8	Y	Y	Y
*Field filtered by client							2.0			
							1.3			

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on	Custody	Sealed	Cooler	Samples intact
PRINT Name of SAMPLER: <i>Jonathan Espinoza</i>							
SIGNATURE of SAMPLER: <i>J. Li</i>							

Sample Condition Upon Receipt

Client Name: CH2M Project #: WO# : 10466793

WO# : 10466793
PM: JMG Due Date: 03/28/19
CLIENT: UPRR_CH2M

Courier: Fed Ex UPS USPS Client
 Pace SpeeDee Commercial See Exception

Tracking Number: 4486 7792 69461696816957

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

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

Thermometer: G87A9155100842 G87A9170600254 Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: _____ °C	Average Corrected Temp (no temp blank only): <u>0.82013</u> °C
Correction Factor: <u>10.1</u>	Cooler Temp Corrected w/temp blank: _____ °C	See Exceptions <input checked="" type="checkbox"/>

USDA Regulated Soil: (N/A, water sample/Other: _____) Date/Initials of Person Examining Contents: JJ-3/14/19

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

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

	COMMENTS:
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input checked="" type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: _____ See Exception <input type="checkbox"/>
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	
All containers needing acid/base preservation have been checked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ <input checked="" type="checkbox"/> H ₂ SO ₄ <input checked="" type="checkbox"/> Zinc Acetate <u>1-10: 1/1</u> <u>1/1</u> <u>1/1</u>
Exceptions (VOA) Coliform, (DOC) DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No See Exception <input type="checkbox"/> Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. See Exception <input type="checkbox"/>
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. Pace Trip Blank Lot # (if purchased): <u>199048</u>
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

CLIENT NOTIFICATION/RESOLUTION


Person Contacted: Mark Ochsner Date/Time: 06/27/18 Field Data Required? Yes No

Comments/Resolution: Certs not required for 8260 2,2,4-TMP, dichlorofluoromethane, RSK-175 and sulfide.

Project Manager Review: JENNI GROSS Date: 03/14/19

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

Labeled by: MD

	Document Name: SCUR Exception Form – Coolers Above 6°C	Document Revised: 04Feb2019 Page 1 of 1
	Document No.: F-MN-C-298-Rev.01	Issuing Authority: Pace Minnesota Quality Office

During sample triage, this form is to be placed in each cooler that arrives above 6.0 degrees Celsius

SCUR Exceptions:

Workorder #: 10466793

Out of Temp Sample IDs	Container Type	# of Containers	PM Notified? <input type="checkbox"/> Yes <input type="checkbox"/> No
			If yes, indicate who was contacted/date/time. If no, indicate reason why.
			Multiple Cooler Project? <input type="checkbox"/> Yes <input type="checkbox"/> No
			If you answered yes, fill out information to the left.

No Temp Blank		
Read Temp	Corrected Temp	Average Temp
1.6	1.7	0.8
0.6	0.7	
0.5	0.6	
0.2	0.3	


Other Issues

Issue Type:	Container Type	# of Containers
Sample ID	Type	Containers

Tracking Number

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition?	initials
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	

	Document Name: SCUR Exception Form – Coolers Above 6°C	Document Revised: 04Feb2019 Page 1 of 1
	Document No.: F-MN-C-298-Rev.01	Issuing Authority: Pace Minnesota Quality Office

During sample triage, this form is to be placed in each cooler that arrives above 6.0 degrees Celsius

SCUR Exceptions:

Workorder #: 10466793

Out of Temp Sample IDs	Container Type	# of Containers	PM Notified? <input type="checkbox"/> Yes <input type="checkbox"/> No																		
			If yes, indicate who was contacted/date/time. If no, indicate reason why.																		
			Multiple Cooler Project? <input type="checkbox"/> Yes <input type="checkbox"/> No If you answered yes, fill out information to the left.																		
			<table border="1"> <thead> <tr> <th colspan="3">No Temp Blank</th> </tr> <tr> <th>Read Temp</th> <th>Corrected Temp</th> <th>Average Temp</th> </tr> </thead> <tbody> <tr> <td>1.0</td> <td>1.1</td> <td>1.3</td> </tr> <tr> <td>2.8</td> <td>2.9</td> <td></td> </tr> <tr> <td>0.1</td> <td>0.2</td> <td></td> </tr> <tr> <td>0.7</td> <td>0.8</td> <td></td> </tr> </tbody> </table>	No Temp Blank			Read Temp	Corrected Temp	Average Temp	1.0	1.1	1.3	2.8	2.9		0.1	0.2		0.7	0.8	
No Temp Blank																					
Read Temp	Corrected Temp	Average Temp																			
1.0	1.1	1.3																			
2.8	2.9																				
0.1	0.2																				
0.7	0.8																				

Other Issues

Issue Type:	Container Type	# of Containers
Sample ID		

Tracking Number	

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition? <input type="checkbox"/> Yes <input type="checkbox"/> No	Initials
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	



Document Name:
SCUR Exception Form – Coolers Above 6°C

Document Revised: 04Feb2019
 Page 1 of 1

Document No.:
F-MN-C-298-Rev.01

Issuing Authority:
 Pace Minnesota Quality Office

During sample triage, this form is to be placed in each cooler that arrives above 6.0 degrees Celsius

SCUR Exceptions:

Workorder #: 10466793

Out of Temp Sample IDs	Container Type	# of Containers	PM Notified? <input type="checkbox"/> Yes <input type="checkbox"/> No																								
			If yes, indicate who was contacted/date/time. If no, indicate reason why.																								
			Multiple Cooler Project? <input type="checkbox"/> Yes <input type="checkbox"/> No If you answered yes, fill out information to the left.																								
			<table border="1"> <thead> <tr> <th colspan="3">No Temp Blank</th> </tr> <tr> <th>Read Temp</th> <th>Corrected Temp</th> <th>Average Temp</th> </tr> </thead> <tbody> <tr> <td>1.1</td> <td>1.2</td> <td>2.0</td> </tr> <tr> <td>4.1</td> <td>4.2</td> <td></td> </tr> <tr> <td>1.3</td> <td>1.4</td> <td></td> </tr> <tr> <td>1.1</td> <td>1.2</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	No Temp Blank			Read Temp	Corrected Temp	Average Temp	1.1	1.2	2.0	4.1	4.2		1.3	1.4		1.1	1.2							
No Temp Blank																											
Read Temp	Corrected Temp	Average Temp																									
1.1	1.2	2.0																									
4.1	4.2																										
1.3	1.4																										
1.1	1.2																										

Other Issues

Issue Type:	Container Type	# of Containers
Sample ID		

Tracking Number

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition?	Initials
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	

Chain of Custody

WO#: 2098714



alytical
v.pacelabs.com

Samples were sent directly to the Subcontracting Laboratory.

State Of Origin:

Cert. Needed:

Owner Received Date:

3/14/2019

Results Requested By:

3/28/2019

Workorder: 10466793

Workorder Name: Freeman WA-Grain Handling Faci

Report To	Subcontract To	Requested Analysis											
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Jennifer Gross
Pace Analytical Seattle
596 Industry Drive,
Suite 602
Tukwila, WA 98188
Phone (206)957-2426

Pace Analytical New Orleans
1000 Riverbend Blvd
Suite F
St. Rose, LA 70087
Phone (504)469-0333

5636267 / 4500 Sulfide

Preserved Containers

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers										LAB USE ONLY						
						Other	B	P	Z													
1	MW11S-GW-031319	PS	3/13/2019 10:30	10466793001	Water	1															X	
2	MW9S-GW-031319	PS	3/13/2019 11:00	10466793002	Water	1															X	
3	MW25S-GW-031319	PS	3/13/2019 11:30	10466793003	Water	1															X	
4	MW24S-GW-031319	PS	3/13/2019 12:00	10466793004	Water	1															X	
5	MW8S-GW-031319	PS	3/13/2019 12:30	10466793005	Water	1															X	
6	MW7S-GW-031319	PS	3/13/2019 13:00	10466793006	Water	1															X	
7	MW1S-GW-031319	PS	3/13/2019 13:30	10466793007	Water	1															X	
8	MW10S-GW-031319	PS	3/13/2019 14:00	10466793008	Water	1															X	
9	MW6S-GW-031319	PS	3/13/2019 14:30	10466793009	Water	1															X	
10	MW12S-GW-031319	PS	3/13/2019 15:00	10466793010	Water	1															X	

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	<i>[Signature]</i>	3/15/19 15:10	<i>[Signature]</i>		SHORT HOLD
2	<i>[Signature]</i>		<i>[Signature]</i>	3/16/19 11:00	
3					

Cooler Temperature on Receipt 4.6°C Custody Seal or N Received on Ice or N Samples Intact or N

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



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

Sample Condition Upon Re

Proje

WO#: 2098714

PM: CMM

Due Date: 03/28/19

CLIENT: PASI-MINN

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

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

Custody Seals intact: Yes No

Thermometer
Used:

- Therm Fisher IR 5
- Therm Fisher IR 6
- Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining
contents: 03-16-19 *AS*

Temp must be measured from Temperature blank when present

Comments:

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

Client Notification/ Resolution:

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Chain of Custody

WO#: 12122489

Page 99 of 100

PM: CLJ

Due Date: 03/22/19

CLIENT: PACE MPLS

Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Cert. Needed: Yes No

Workorder: 10466793 Workorder Name: Freeman WA-Grain Handling Faci

Owner Received Date: 3/14/2019 Results Requested By: 3/28/2019

Report To						Subcontract To						Requested Analysis														
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426						Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042																				
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers					X															LAB USE ONLY
						H2SO4 DGS																				
1	MW11S-GW-031319	PS	3/13/2019 10:30	10466793001	Water	2					X															
2	MW9S-GW-031319	PS	3/13/2019 11:00	10466793002	Water	2					X															
3	MW25S-GW-031319	PS	3/13/2019 11:30	10466793003	Water	2					X															
4	MW24S-GW-031319	PS	3/13/2019 12:00	10466793004	Water	2					X															
5	MW8S-GW-031319	PS	3/13/2019 12:30	10466793005	Water	2					X															
6	MW7S-GW-031319	PS	3/13/2019 13:00	10466793006	Water	2					X															
7	MW1S-GW-031319	PS	3/13/2019 13:30	10466793007	Water	2					X															
8	MW10S-GW-031319	PS	3/13/2019 14:00	10466793008	Water	2					X															
9	MW6S-GW-031319	PS	3/13/2019 14:30	10466793009	Water	2					X															
10	MW12S-GW-031319	PS	3/13/2019 15:00	10466793010	Water	2					X															
												Comments														
Transfers	Released By	Date/Time	Received By	Date/Time																						
1	[Signature]	3/13/19 1545	[Signature]	3/15/19 1900																						
2	[Signature]	3/15/19 2300	[Signature]	3/18/19 07:30																						
3																										
Cooler Temperature on Receipt <u>0.4</u> °C			Custody Seal <input checked="" type="checkbox"/> or N				Received on Ice <input checked="" type="checkbox"/> or N				Samples Intact <input checked="" type="checkbox"/> or N															

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

Sample Condition Upon Receipt

Client Name: Pace WA Project #: _____

WO# : 12122489



Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

Tracking Number: _____

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Optional: Proj. Due Date: _____ Proj. Name: _____

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

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

Cooler Temp Read °C: 0.5 Cooler Temp Corrected °C: 0.8 Biological Tissue Frozen? Yes No NA
 Temp should be above freezing to 6°C Correction Factor: 0.3 Date and Initials of Person Examining Contents: 3/15/19 DC

Comments: RH 3/18/19

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

CLIENT NOTIFICATION/RESOLUTION Field Data Required? Yes No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

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

Project Manager Review: Katie Richards Date: 3/18/2019

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

March 26, 2019

David Hodson
Jacobs
2020 SW 4th Ave
#300
Portland, OR 97201

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10466924

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 15, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Steve Demus, CH2M Hill
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Montana Certificate #CERT0103
Alaska Certification UST-107
Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203
Wisconsin DNR Certification #: 998027470
WA Department of Ecology Lab ID# C1007

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC):
E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC):
T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10466924001	MW15D-GW-031419	Water	03/14/19 11:00	03/15/19 10:00
10466924002	MW21D-GW-031419	Water	03/14/19 13:00	03/15/19 10:00
10466924003	MW6U-GW-031419	Water	03/14/19 14:45	03/15/19 10:00
10466924004	MW6D-GW-031419	Water	03/14/19 16:00	03/15/19 10:00
10466924005	TB-031419	Water	03/14/19 08:00	03/15/19 10:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10466924001	MW15D-GW-031419	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	KWS	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10466924002	MW21D-GW-031419	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	KWS	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10466924003	MW6U-GW-031419	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	AEZ	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	KWS	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10466924004	MW6D-GW-031419	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	AEZ	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	KWS	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10466924005	TB-031419	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
10466924001	MW15D-GW-031419					
EPA 6010D	Barium, Dissolved	10.6	ug/L	10.0	03/21/19 13:48	
EPA 6010D	Calcium, Dissolved	37800	ug/L	500	03/21/19 13:48	
EPA 6010D	Cobalt, Dissolved	0.67J	ug/L	10.0	03/21/19 13:48	
EPA 6010D	Iron, Dissolved	10.4J	ug/L	50.0	03/21/19 13:48	
EPA 6010D	Magnesium, Dissolved	13600	ug/L	500	03/21/19 13:48	
EPA 6010D	Manganese, Dissolved	1.6J	ug/L	5.0	03/21/19 13:48	
EPA 6010D	Potassium, Dissolved	2530	ug/L	2500	03/21/19 13:48	
EPA 6010D	Sodium, Dissolved	14900	ug/L	1000	03/21/19 13:48	
EPA 6010D	Thallium, Dissolved	5.9J	ug/L	20.0	03/21/19 13:48	B
EPA 6010D	Vanadium, Dissolved	10.3J	ug/L	15.0	03/21/19 13:48	
EPA 6010D	Zinc, Dissolved	3.4J	ug/L	20.0	03/21/19 13:48	
EPA 8260B	Carbon tetrachloride	10.7	ug/L	0.50	03/18/19 20:15	
EPA 8260B	Chloroform	0.55J	ug/L	4.0	03/18/19 20:15	
SM 2320B	Alkalinity, Total as CaCO3	178	mg/L	5.0	03/26/19 13:40	
SM 2540C	Total Dissolved Solids	255	mg/L	10.0	03/20/19 16:21	
EPA 300.0	Chloride	3.0	mg/L	1.2	03/16/19 00:15	M1
EPA 300.0	Nitrate as N	2.0	mg/L	0.10	03/16/19 00:15	M1
EPA 300.0	Sulfate	13.9	mg/L	1.2	03/16/19 00:15	M1
EPA 353.2	Nitrogen, NO2 plus NO3	2.1	mg/L	0.20	03/20/19 15:47	
SM 5310C	Total Organic Carbon	0.69J	mg/L	1.0	03/18/19 19:45	B
10466924002	MW21D-GW-031419					
EPA 6010D	Barium, Dissolved	63.1	ug/L	10.0	03/21/19 14:02	
EPA 6010D	Beryllium, Dissolved	0.14J	ug/L	5.0	03/21/19 14:02	
EPA 6010D	Calcium, Dissolved	20800	ug/L	500	03/21/19 14:02	
EPA 6010D	Cobalt, Dissolved	0.85J	ug/L	10.0	03/21/19 14:02	
EPA 6010D	Iron, Dissolved	156	ug/L	50.0	03/21/19 14:02	
EPA 6010D	Magnesium, Dissolved	18100	ug/L	500	03/21/19 14:02	
EPA 6010D	Manganese, Dissolved	73.0	ug/L	5.0	03/21/19 14:02	
EPA 6010D	Potassium, Dissolved	3830	ug/L	2500	03/21/19 14:02	
EPA 6010D	Silver, Dissolved	0.46J	ug/L	10.0	03/21/19 14:02	
EPA 6010D	Sodium, Dissolved	20300	ug/L	1000	03/21/19 14:02	
EPA 6010D	Thallium, Dissolved	4.7J	ug/L	20.0	03/21/19 14:02	B
EPA 6010D	Vanadium, Dissolved	0.37J	ug/L	15.0	03/21/19 14:02	
EPA 6010D	Zinc, Dissolved	5.2J	ug/L	20.0	03/21/19 14:02	
SM 2320B	Alkalinity, Total as CaCO3	177	mg/L	5.0	03/26/19 13:44	
SM 2540C	Total Dissolved Solids	216	mg/L	10.0	03/20/19 16:21	
EPA 300.0	Chloride	2.4	mg/L	1.2	03/15/19 21:55	
EPA 300.0	Sulfate	9.2	mg/L	1.2	03/15/19 21:55	
SM 5310C	Total Organic Carbon	0.71J	mg/L	1.0	03/18/19 19:58	B
10466924003	MW6U-GW-031419					
EPA 6010D	Aluminum, Dissolved	1560	ug/L	200	03/21/19 14:03	
EPA 6010D	Barium, Dissolved	46.9	ug/L	10.0	03/21/19 14:03	
EPA 6010D	Calcium, Dissolved	33100	ug/L	500	03/21/19 14:03	
EPA 6010D	Chromium, Dissolved	1.4J	ug/L	10.0	03/21/19 14:03	
EPA 6010D	Cobalt, Dissolved	1.4J	ug/L	10.0	03/21/19 14:03	
EPA 6010D	Copper, Dissolved	1.8J	ug/L	10.0	03/21/19 14:03	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10466924003	MW6U-GW-031419					
EPA 6010D	Iron, Dissolved	1470	ug/L	50.0	03/21/19 14:03	
EPA 6010D	Magnesium, Dissolved	8410	ug/L	500	03/21/19 14:03	
EPA 6010D	Manganese, Dissolved	18.7	ug/L	5.0	03/21/19 14:03	
EPA 6010D	Potassium, Dissolved	4600	ug/L	2500	03/21/19 14:03	
EPA 6010D	Sodium, Dissolved	20700	ug/L	1000	03/21/19 14:03	
EPA 6010D	Thallium, Dissolved	7.2J	ug/L	20.0	03/21/19 14:03	B
EPA 6010D	Vanadium, Dissolved	6.0J	ug/L	15.0	03/21/19 14:03	
EPA 6010D	Zinc, Dissolved	9.1J	ug/L	20.0	03/21/19 14:03	
EPA 7470A	Mercury, Dissolved	0.13J	ug/L	0.20	03/19/19 15:29	
EPA 8260B	Carbon tetrachloride	26.6	ug/L	0.50	03/15/19 21:09	
EPA 8260B	Chloroform	1.2	ug/L	1.0	03/15/19 21:09	
SM 2320B	Alkalinity, Total as CaCO3	122	mg/L	5.0	03/26/19 13:49	
SM 2540C	Total Dissolved Solids	236	mg/L	10.0	03/20/19 16:21	
EPA 300.0	Chloride	32.7	mg/L	1.2	03/15/19 22:10	
EPA 300.0	Nitrate as N	0.65	mg/L	0.10	03/15/19 22:10	
EPA 300.0	Sulfate	3.9	mg/L	1.2	03/15/19 22:10	
EPA 353.2	Nitrogen, NO2 plus NO3	0.72	mg/L	0.10	03/16/19 12:18	FS
EPA 410.4	Chemical Oxygen Demand	35.9J	mg/L	50.0	03/20/19 14:29	
SM 5310C	Total Organic Carbon	5.1	mg/L	1.0	03/18/19 20:12	
10466924004	MW6D-GW-031419					
EPA 6010D	Barium, Dissolved	16.9	ug/L	10.0	03/21/19 14:05	
EPA 6010D	Calcium, Dissolved	33600	ug/L	500	03/21/19 14:05	
EPA 6010D	Cobalt, Dissolved	0.83J	ug/L	10.0	03/21/19 14:05	
EPA 6010D	Iron, Dissolved	5.0J	ug/L	50.0	03/21/19 14:05	
EPA 6010D	Magnesium, Dissolved	14600	ug/L	500	03/21/19 14:05	
EPA 6010D	Manganese, Dissolved	11.4	ug/L	5.0	03/21/19 14:05	
EPA 6010D	Potassium, Dissolved	6930	ug/L	2500	03/21/19 14:05	
EPA 6010D	Sodium, Dissolved	17800	ug/L	1000	03/21/19 14:05	
EPA 6010D	Thallium, Dissolved	6.6J	ug/L	20.0	03/21/19 14:05	B
EPA 6010D	Vanadium, Dissolved	14.4J	ug/L	15.0	03/21/19 14:05	
EPA 8260B	Carbon tetrachloride	3.4	ug/L	0.50	03/15/19 21:24	
SM 2320B	Alkalinity, Total as CaCO3	197	mg/L	5.0	03/26/19 07:59	
SM 2540C	Total Dissolved Solids	255	mg/L	10.0	03/20/19 16:21	
EPA 300.0	Chloride	3.3	mg/L	1.2	03/15/19 22:26	
EPA 300.0	Nitrate as N	0.55	mg/L	0.10	03/15/19 22:26	
EPA 300.0	Sulfate	5.3	mg/L	1.2	03/15/19 22:26	
EPA 353.2	Nitrogen, NO2 plus NO3	0.62	mg/L	0.10	03/16/19 12:19	
SM 5310C	Total Organic Carbon	0.68J	mg/L	1.0	03/18/19 20:25	B

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Method: RSK 175

Description: RSK 175 GCV Headspace

Client: UPRR_CH2M/Jacobs

Date: March 26, 2019

General Information:

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

Hold Time:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Surrogates:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Duplicate Sample:

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

QC Batch: 594205

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 3212642)
 - Ethane
 - Methane

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Method: EPA 6010D

Description: 6010D MET ICP, Dissolved

Client: UPRR_CH2M/Jacobs

Date: March 26, 2019

General Information:

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

Hold Time:

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

Sample Preparation:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Method Blank:

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

QC Batch: 594092

B: Analyte was detected in the associated method blank.

- BLANK for HBN 594092 [MPRP/907 (Lab ID: 3212029)]
- Thallium, Dissolved

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Method: EPA 7470A

Description: 7470A Mercury, Dissolved

Client: UPRR_CH2M/Jacobs

Date: March 26, 2019

General Information:

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

Hold Time:

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

Sample Preparation:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 26, 2019

General Information:

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

Hold Time:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Internal Standards:

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

Surrogates:

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

Method Blank:

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

QC Batch: 594083

P8: Analyte was detected in the method blank. All associated samples had concentrations of at least ten times greater than the blank or were below the reporting limit.

- BLANK (Lab ID: 3211936)
- 1,2,3-Trichlorobenzene

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 594083

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10467105001

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

- MSD (Lab ID: 3212808)
- Acetone

QC Batch: 594231

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10467107001

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

- MS (Lab ID: 3212820)
- Acrolein

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 26, 2019

QC Batch: 594231

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10467107001

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

- MSD (Lab ID: 3212821)
 - Acrolein

Additional Comments:

Analyte Comments:

QC Batch: 594083

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3211936)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3211937)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3212807)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3212808)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MW6D-GW-031419 (Lab ID: 10466924004)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MW6U-GW-031419 (Lab ID: 10466924003)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

P8: Analyte was detected in the method blank. All associated samples had concentrations of at least ten times greater than the blank or were below the reporting limit.

- BLANK (Lab ID: 3211936)
 - 1,2,3-Trichlorobenzene

QC Batch: 594231

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3212730)
 - 1,2-Dichloroethene (Total)

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 26, 2019

Analyte Comments:

QC Batch: 594231

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3212730)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3212731)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3212820)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3212821)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MW15D-GW-031419 (Lab ID: 10466924001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MW21D-GW-031419 (Lab ID: 10466924002)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- TB-031419 (Lab ID: 10466924005)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Method: SM 2320B

Description: 2320B Alkalinity

Client: UPRR_CH2M/Jacobs

Date: March 26, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Method: SM 2540C

Description: 2540C Total Dissolved Solids

Client: UPRR_CH2M/Jacobs

Date: March 26, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Duplicate Sample:

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

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Method: SM 4500-S-2 D

Description: 4500S2D Sulfide, Total

Client: UPRR_CH2M/Jacobs

Date: March 26, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 136633

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10466793001

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

- MS (Lab ID: 594437)
- Sulfide, Total

Duplicate Sample:

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

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Method: EPA 300.0

Description: 300.0 IC Anions

Client: UPRR_CH2M/Jacobs

Date: March 26, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 594042

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10466799001,10466924001

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

- MS (Lab ID: 3211755)
 - Chloride
 - Nitrate as N
 - Sulfate
- MS (Lab ID: 3211757)
 - Chloride
 - Nitrate as N
- MSD (Lab ID: 3211756)
 - Chloride
 - Nitrate as N
 - Sulfate
- MSD (Lab ID: 3211758)
 - Chloride
 - Nitrate as N
 - Sulfate

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Method: EPA 353.2

Description: 353.2 Nitrate + Nitrite

Client: UPRR_CH2M/Jacobs

Date: March 26, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

Analyte Comments:

QC Batch: 594791

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 3215473)
 - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 3215474)
 - Nitrogen, NO2 plus NO3

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Method: EPA 410.4

Description: 410.4 COD

Client: UPRR_CH2M/Jacobs

Date: March 26, 2019

General Information:

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

Hold Time:

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

Sample Preparation:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Method: SM 5310C

Description: 5310C TOC

Client: UPRR_CH2M/Jacobs

Date: March 26, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

QC Batch: 162801

B: Analyte was detected in the associated method blank.

- BLANK for HBN 162801 [WETA/265 (Lab ID: 641741)]
 - Total Organic Carbon

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10466924

Sample: **MW15D-GW-031419** Lab ID: **10466924001** Collected: 03/14/19 11:00 Received: 03/15/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		03/18/19 11:20	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/18/19 11:20	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/18/19 11:20	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Aluminum, Dissolved	<15.5	ug/L	200	15.5	1	03/18/19 08:57	03/21/19 13:48	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/18/19 08:57	03/21/19 13:48	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/18/19 08:57	03/21/19 13:48	7440-38-2	
Barium, Dissolved	10.6	ug/L	10.0	0.18	1	03/18/19 08:57	03/21/19 13:48	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/18/19 08:57	03/21/19 13:48	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	03/18/19 08:57	03/21/19 13:48	7440-43-9	
Calcium, Dissolved	37800	ug/L	500	13.9	1	03/18/19 08:57	03/21/19 13:48	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/18/19 08:57	03/21/19 13:48	7440-47-3	
Cobalt, Dissolved	0.67J	ug/L	10.0	0.50	1	03/18/19 08:57	03/21/19 13:48	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/18/19 08:57	03/21/19 13:48	7440-50-8	
Iron, Dissolved	10.4J	ug/L	50.0	4.3	1	03/18/19 08:57	03/21/19 13:48	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/18/19 08:57	03/21/19 13:48	7439-92-1	
Magnesium, Dissolved	13600	ug/L	500	9.8	1	03/18/19 08:57	03/21/19 13:48	7439-95-4	
Manganese, Dissolved	1.6J	ug/L	5.0	0.22	1	03/18/19 08:57	03/21/19 13:48	7439-96-5	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	03/18/19 08:57	03/21/19 13:48	7440-02-0	
Potassium, Dissolved	2530	ug/L	2500	310	1	03/18/19 08:57	03/21/19 13:48	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/18/19 08:57	03/21/19 13:48	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/18/19 08:57	03/21/19 13:48	7440-22-4	
Sodium, Dissolved	14900	ug/L	1000	21.5	1	03/18/19 08:57	03/21/19 13:48	7440-23-5	
Thallium, Dissolved	5.9J	ug/L	20.0	4.3	1	03/18/19 08:57	03/21/19 13:48	7440-28-0	B
Vanadium, Dissolved	10.3J	ug/L	15.0	0.29	1	03/18/19 08:57	03/21/19 13:48	7440-62-2	
Zinc, Dissolved	3.4J	ug/L	20.0	2.5	1	03/18/19 08:57	03/21/19 13:48	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/18/19 12:16	03/19/19 15:21	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/18/19 20:15	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/18/19 20:15	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/18/19 20:15	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/18/19 20:15	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/18/19 20:15	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/18/19 20:15	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/18/19 20:15	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/18/19 20:15	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/18/19 20:15	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/18/19 20:15	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/18/19 20:15	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/18/19 20:15	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/18/19 20:15	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/18/19 20:15	106-93-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Sample: MW15D-GW-031419 Lab ID: 10466924001 Collected: 03/14/19 11:00 Received: 03/15/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/18/19 20:15	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/18/19 20:15	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/18/19 20:15	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/18/19 20:15	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	1.0	0.12	1		03/18/19 20:15	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/18/19 20:15	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/18/19 20:15	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/18/19 20:15	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/18/19 20:15	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/18/19 20:15	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/18/19 20:15	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/18/19 20:15	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/18/19 20:15	95-49-8	
2-Hexanone	<0.88	ug/L	20.0	0.88	1		03/18/19 20:15	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/18/19 20:15	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/18/19 20:15	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/18/19 20:15	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/18/19 20:15	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/18/19 20:15	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/18/19 20:15	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/18/19 20:15	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/18/19 20:15	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/18/19 20:15	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/18/19 20:15	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/18/19 20:15	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/18/19 20:15	75-15-0	
Carbon tetrachloride	10.7	ug/L	0.50	0.19	1		03/18/19 20:15	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/18/19 20:15	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/18/19 20:15	75-00-3	
Chloroform	0.55J	ug/L	4.0	0.45	1		03/18/19 20:15	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/18/19 20:15	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/18/19 20:15	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/18/19 20:15	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/18/19 20:15	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/18/19 20:15	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/18/19 20:15	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/18/19 20:15	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/18/19 20:15	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/18/19 20:15	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		03/18/19 20:15	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/18/19 20:15	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/18/19 20:15	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/18/19 20:15	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/18/19 20:15	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/18/19 20:15	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/18/19 20:15	109-99-9	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Sample: MW15D-GW-031419 **Lab ID: 10466924001** Collected: 03/14/19 11:00 Received: 03/15/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level Analytical Method: EPA 8260B									
Toluene	<0.083	ug/L	0.50	0.083	1		03/18/19 20:15	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/18/19 20:15	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/18/19 20:15	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/18/19 20:15	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/18/19 20:15	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/18/19 20:15	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/18/19 20:15	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/18/19 20:15	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/18/19 20:15	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/18/19 20:15	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/18/19 20:15	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/18/19 20:15	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/18/19 20:15	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/18/19 20:15	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/18/19 20:15	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/18/19 20:15	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/18/19 20:15	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/18/19 20:15	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		03/18/19 20:15	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/18/19 20:15	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	112	%	75-136		1		03/18/19 20:15	17060-07-0	
Toluene-d8 (S)	98	%	75-125		1		03/18/19 20:15	2037-26-5	
4-Bromofluorobenzene (S)	100	%	75-125		1		03/18/19 20:15	460-00-4	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	178	mg/L	5.0	1.0	1		03/26/19 13:40		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	255	mg/L	10.0	5.0	1		03/20/19 16:21		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/19/19 11:12	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	3.0	mg/L	1.2	0.28	1		03/16/19 00:15	16887-00-6	M1
Nitrate as N	2.0	mg/L	0.10	0.015	1		03/16/19 00:15	14797-55-8	M1
Sulfate	13.9	mg/L	1.2	0.19	1		03/16/19 00:15	14808-79-8	M1
353.2 Nitrate + Nitrite Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	2.1	mg/L	0.20	0.035	2		03/20/19 15:47		
410.4 COD Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	03/20/19 10:51	03/20/19 14:29		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Sample: MW15D-GW-031419 **Lab ID: 10466924001** Collected: 03/14/19 11:00 Received: 03/15/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	0.69J	mg/L	1.0	0.20	1		03/18/19 19:45	7440-44-0	B

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10466924

Sample: MW21D-GW-031419 **Lab ID:** 10466924002 Collected: 03/14/19 13:00 Received: 03/15/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		03/18/19 11:27	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/18/19 11:27	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/18/19 11:27	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Aluminum, Dissolved	<15.5	ug/L	200	15.5	1	03/18/19 08:57	03/21/19 14:02	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/18/19 08:57	03/21/19 14:02	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/18/19 08:57	03/21/19 14:02	7440-38-2	
Barium, Dissolved	63.1	ug/L	10.0	0.18	1	03/18/19 08:57	03/21/19 14:02	7440-39-3	
Beryllium, Dissolved	0.14J	ug/L	5.0	0.12	1	03/18/19 08:57	03/21/19 14:02	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	03/18/19 08:57	03/21/19 14:02	7440-43-9	
Calcium, Dissolved	20800	ug/L	500	13.9	1	03/18/19 08:57	03/21/19 14:02	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/18/19 08:57	03/21/19 14:02	7440-47-3	
Cobalt, Dissolved	0.85J	ug/L	10.0	0.50	1	03/18/19 08:57	03/21/19 14:02	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/18/19 08:57	03/21/19 14:02	7440-50-8	
Iron, Dissolved	156	ug/L	50.0	4.3	1	03/18/19 08:57	03/21/19 14:02	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/18/19 08:57	03/21/19 14:02	7439-92-1	
Magnesium, Dissolved	18100	ug/L	500	9.8	1	03/18/19 08:57	03/21/19 14:02	7439-95-4	
Manganese, Dissolved	73.0	ug/L	5.0	0.22	1	03/18/19 08:57	03/21/19 14:02	7439-96-5	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	03/18/19 08:57	03/21/19 14:02	7440-02-0	
Potassium, Dissolved	3830	ug/L	2500	310	1	03/18/19 08:57	03/21/19 14:02	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/18/19 08:57	03/21/19 14:02	7782-49-2	
Silver, Dissolved	0.46J	ug/L	10.0	0.38	1	03/18/19 08:57	03/21/19 14:02	7440-22-4	
Sodium, Dissolved	20300	ug/L	1000	21.5	1	03/18/19 08:57	03/21/19 14:02	7440-23-5	
Thallium, Dissolved	4.7J	ug/L	20.0	4.3	1	03/18/19 08:57	03/21/19 14:02	7440-28-0	B
Vanadium, Dissolved	0.37J	ug/L	15.0	0.29	1	03/18/19 08:57	03/21/19 14:02	7440-62-2	
Zinc, Dissolved	5.2J	ug/L	20.0	2.5	1	03/18/19 08:57	03/21/19 14:02	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/18/19 12:16	03/19/19 15:23	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/18/19 20:39	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/18/19 20:39	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/18/19 20:39	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/18/19 20:39	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/18/19 20:39	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/18/19 20:39	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/18/19 20:39	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/18/19 20:39	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/18/19 20:39	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/18/19 20:39	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/18/19 20:39	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/18/19 20:39	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/18/19 20:39	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/18/19 20:39	106-93-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Sample: MW21D-GW-031419 Lab ID: 10466924002 Collected: 03/14/19 13:00 Received: 03/15/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/18/19 20:39	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/18/19 20:39	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/18/19 20:39	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/18/19 20:39	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	1.0	0.12	1		03/18/19 20:39	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/18/19 20:39	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/18/19 20:39	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/18/19 20:39	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/18/19 20:39	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/18/19 20:39	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/18/19 20:39	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/18/19 20:39	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/18/19 20:39	95-49-8	
2-Hexanone	<0.88	ug/L	20.0	0.88	1		03/18/19 20:39	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/18/19 20:39	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/18/19 20:39	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/18/19 20:39	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/18/19 20:39	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/18/19 20:39	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/18/19 20:39	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/18/19 20:39	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/18/19 20:39	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/18/19 20:39	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/18/19 20:39	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/18/19 20:39	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/18/19 20:39	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/18/19 20:39	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/18/19 20:39	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/18/19 20:39	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/18/19 20:39	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/18/19 20:39	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/18/19 20:39	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/18/19 20:39	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/18/19 20:39	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/18/19 20:39	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/18/19 20:39	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/18/19 20:39	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/18/19 20:39	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/18/19 20:39	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		03/18/19 20:39	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/18/19 20:39	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/18/19 20:39	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/18/19 20:39	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/18/19 20:39	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/18/19 20:39	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/18/19 20:39	109-99-9	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Sample: MW21D-GW-031419 **Lab ID: 10466924002** Collected: 03/14/19 13:00 Received: 03/15/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level Analytical Method: EPA 8260B									
Toluene	<0.083	ug/L	0.50	0.083	1		03/18/19 20:39	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/18/19 20:39	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/18/19 20:39	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/18/19 20:39	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/18/19 20:39	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/18/19 20:39	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/18/19 20:39	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/18/19 20:39	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/18/19 20:39	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/18/19 20:39	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/18/19 20:39	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/18/19 20:39	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/18/19 20:39	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/18/19 20:39	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/18/19 20:39	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/18/19 20:39	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/18/19 20:39	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/18/19 20:39	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		03/18/19 20:39	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/18/19 20:39	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%	75-136		1		03/18/19 20:39	17060-07-0	
Toluene-d8 (S)	98	%	75-125		1		03/18/19 20:39	2037-26-5	
4-Bromofluorobenzene (S)	98	%	75-125		1		03/18/19 20:39	460-00-4	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	177	mg/L	5.0	1.0	1		03/26/19 13:44		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	216	mg/L	10.0	5.0	1		03/20/19 16:21		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/19/19 11:13	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	2.4	mg/L	1.2	0.28	1		03/15/19 21:55	16887-00-6	
Nitrate as N	<0.015	mg/L	0.10	0.015	1		03/15/19 21:55	14797-55-8	
Sulfate	9.2	mg/L	1.2	0.19	1		03/15/19 21:55	14808-79-8	
353.2 Nitrate + Nitrite Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	<0.018	mg/L	0.10	0.018	1		03/16/19 12:17		
410.4 COD Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	03/20/19 10:51	03/20/19 14:29		

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Sample: MW21D-GW-031419 **Lab ID: 10466924002** Collected: 03/14/19 13:00 Received: 03/15/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC		Analytical Method: SM 5310C							
Total Organic Carbon	0.71J	mg/L	1.0	0.20	1		03/18/19 19:58	7440-44-0	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10466924

Sample: MW6U-GW-031419 **Lab ID: 10466924003** Collected: 03/14/19 14:45 Received: 03/15/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		03/18/19 11:34	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/18/19 11:34	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/18/19 11:34	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Aluminum, Dissolved	1560	ug/L	200	15.5	1	03/18/19 08:57	03/21/19 14:03	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/18/19 08:57	03/21/19 14:03	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/18/19 08:57	03/21/19 14:03	7440-38-2	
Barium, Dissolved	46.9	ug/L	10.0	0.18	1	03/18/19 08:57	03/21/19 14:03	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/18/19 08:57	03/21/19 14:03	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	03/18/19 08:57	03/21/19 14:03	7440-43-9	
Calcium, Dissolved	33100	ug/L	500	13.9	1	03/18/19 08:57	03/21/19 14:03	7440-70-2	
Chromium, Dissolved	1.4J	ug/L	10.0	0.49	1	03/18/19 08:57	03/21/19 14:03	7440-47-3	
Cobalt, Dissolved	1.4J	ug/L	10.0	0.50	1	03/18/19 08:57	03/21/19 14:03	7440-48-4	
Copper, Dissolved	1.8J	ug/L	10.0	1.2	1	03/18/19 08:57	03/21/19 14:03	7440-50-8	
Iron, Dissolved	1470	ug/L	50.0	4.3	1	03/18/19 08:57	03/21/19 14:03	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/18/19 08:57	03/21/19 14:03	7439-92-1	
Magnesium, Dissolved	8410	ug/L	500	9.8	1	03/18/19 08:57	03/21/19 14:03	7439-95-4	
Manganese, Dissolved	18.7	ug/L	5.0	0.22	1	03/18/19 08:57	03/21/19 14:03	7439-96-5	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	03/18/19 08:57	03/21/19 14:03	7440-02-0	
Potassium, Dissolved	4600	ug/L	2500	310	1	03/18/19 08:57	03/21/19 14:03	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/18/19 08:57	03/21/19 14:03	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/18/19 08:57	03/21/19 14:03	7440-22-4	
Sodium, Dissolved	20700	ug/L	1000	21.5	1	03/18/19 08:57	03/21/19 14:03	7440-23-5	
Thallium, Dissolved	7.2J	ug/L	20.0	4.3	1	03/18/19 08:57	03/21/19 14:03	7440-28-0	B
Vanadium, Dissolved	6.0J	ug/L	15.0	0.29	1	03/18/19 08:57	03/21/19 14:03	7440-62-2	
Zinc, Dissolved	9.1J	ug/L	20.0	2.5	1	03/18/19 08:57	03/21/19 14:03	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	0.13J	ug/L	0.20	0.078	1	03/18/19 12:16	03/19/19 15:29	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	1.0	0.20	1		03/15/19 21:09	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/15/19 21:09	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/15/19 21:09	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/15/19 21:09	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/15/19 21:09	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/15/19 21:09	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/15/19 21:09	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/15/19 21:09	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	1.0	0.21	1		03/15/19 21:09	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/15/19 21:09	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	1.0	0.20	1		03/15/19 21:09	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		03/15/19 21:09	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/15/19 21:09	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	1.0	0.24	1		03/15/19 21:09	106-93-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Project No.: 10466924

Sample: MW6U-GW-031419 Lab ID: 10466924003 Collected: 03/14/19 14:45 Received: 03/15/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/15/19 21:09	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/15/19 21:09	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/15/19 21:09	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/15/19 21:09	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		03/15/19 21:09	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/15/19 21:09	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/15/19 21:09	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/15/19 21:09	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/15/19 21:09	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/15/19 21:09	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/15/19 21:09	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/15/19 21:09	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/15/19 21:09	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		03/15/19 21:09	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/15/19 21:09	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/15/19 21:09	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/15/19 21:09	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/15/19 21:09	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/15/19 21:09	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/15/19 21:09	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/15/19 21:09	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/15/19 21:09	74-97-5	
Bromodichloromethane	<0.22	ug/L	1.0	0.22	1		03/15/19 21:09	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/15/19 21:09	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/15/19 21:09	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/15/19 21:09	75-15-0	
Carbon tetrachloride	26.6	ug/L	0.50	0.19	1		03/15/19 21:09	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/15/19 21:09	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/15/19 21:09	75-00-3	
Chloroform	1.2	ug/L	1.0	0.45	1		03/15/19 21:09	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/15/19 21:09	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		03/15/19 21:09	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/15/19 21:09	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/15/19 21:09	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/15/19 21:09	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/15/19 21:09	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/15/19 21:09	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/15/19 21:09	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/15/19 21:09	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		03/15/19 21:09	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/15/19 21:09	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/15/19 21:09	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/15/19 21:09	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		03/15/19 21:09	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/15/19 21:09	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/15/19 21:09	109-99-9	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Sample: MW6U-GW-031419 **Lab ID: 10466924003** Collected: 03/14/19 14:45 Received: 03/15/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level Analytical Method: EPA 8260B									
Toluene	<0.083	ug/L	0.50	0.083	1		03/15/19 21:09	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/15/19 21:09	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/15/19 21:09	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/15/19 21:09	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/15/19 21:09	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/15/19 21:09	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/15/19 21:09	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	1.0	0.20	1		03/15/19 21:09	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/15/19 21:09	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		03/15/19 21:09	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/15/19 21:09	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/15/19 21:09	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		03/15/19 21:09	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/15/19 21:09	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/15/19 21:09	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/15/19 21:09	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/15/19 21:09	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/15/19 21:09	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		03/15/19 21:09	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/15/19 21:09	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	97	%	75-136		1		03/15/19 21:09	17060-07-0	
Toluene-d8 (S)	98	%	75-125		1		03/15/19 21:09	2037-26-5	
4-Bromofluorobenzene (S)	101	%	75-125		1		03/15/19 21:09	460-00-4	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	122	mg/L	5.0	1.0	1		03/26/19 13:49		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	236	mg/L	10.0	5.0	1		03/20/19 16:21		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/19/19 11:13	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	32.7	mg/L	1.2	0.28	1		03/15/19 22:10	16887-00-6	
Nitrate as N	0.65	mg/L	0.10	0.015	1		03/15/19 22:10	14797-55-8	
Sulfate	3.9	mg/L	1.2	0.19	1		03/15/19 22:10	14808-79-8	
353.2 Nitrate + Nitrite Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	0.72	mg/L	0.10	0.018	1		03/16/19 12:18		FS
410.4 COD Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	35.9J	mg/L	50.0	17.0	1	03/20/19 10:51	03/20/19 14:29		

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Sample: MW6U-GW-031419 **Lab ID: 10466924003** Collected: 03/14/19 14:45 Received: 03/15/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	5.1	mg/L	1.0	0.20	1		03/18/19 20:12	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10466924

Sample: MW6D-GW-031419 **Lab ID: 10466924004** Collected: 03/14/19 16:00 Received: 03/15/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		03/18/19 11:41	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/18/19 11:41	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/18/19 11:41	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Aluminum, Dissolved	<15.5	ug/L	200	15.5	1	03/18/19 08:57	03/21/19 14:05	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/18/19 08:57	03/21/19 14:05	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/18/19 08:57	03/21/19 14:05	7440-38-2	
Barium, Dissolved	16.9	ug/L	10.0	0.18	1	03/18/19 08:57	03/21/19 14:05	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/18/19 08:57	03/21/19 14:05	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	03/18/19 08:57	03/21/19 14:05	7440-43-9	
Calcium, Dissolved	33600	ug/L	500	13.9	1	03/18/19 08:57	03/21/19 14:05	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/18/19 08:57	03/21/19 14:05	7440-47-3	
Cobalt, Dissolved	0.83J	ug/L	10.0	0.50	1	03/18/19 08:57	03/21/19 14:05	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/18/19 08:57	03/21/19 14:05	7440-50-8	
Iron, Dissolved	5.0J	ug/L	50.0	4.3	1	03/18/19 08:57	03/21/19 14:05	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/18/19 08:57	03/21/19 14:05	7439-92-1	
Magnesium, Dissolved	14600	ug/L	500	9.8	1	03/18/19 08:57	03/21/19 14:05	7439-95-4	
Manganese, Dissolved	11.4	ug/L	5.0	0.22	1	03/18/19 08:57	03/21/19 14:05	7439-96-5	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	03/18/19 08:57	03/21/19 14:05	7440-02-0	
Potassium, Dissolved	6930	ug/L	2500	310	1	03/18/19 08:57	03/21/19 14:05	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/18/19 08:57	03/21/19 14:05	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/18/19 08:57	03/21/19 14:05	7440-22-4	
Sodium, Dissolved	17800	ug/L	1000	21.5	1	03/18/19 08:57	03/21/19 14:05	7440-23-5	
Thallium, Dissolved	6.6J	ug/L	20.0	4.3	1	03/18/19 08:57	03/21/19 14:05	7440-28-0	B
Vanadium, Dissolved	14.4J	ug/L	15.0	0.29	1	03/18/19 08:57	03/21/19 14:05	7440-62-2	
Zinc, Dissolved	<2.5	ug/L	20.0	2.5	1	03/18/19 08:57	03/21/19 14:05	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/18/19 12:16	03/19/19 15:31	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	1.0	0.20	1		03/15/19 21:24	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/15/19 21:24	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/15/19 21:24	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/15/19 21:24	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/15/19 21:24	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/15/19 21:24	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/15/19 21:24	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/15/19 21:24	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	1.0	0.21	1		03/15/19 21:24	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/15/19 21:24	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	1.0	0.20	1		03/15/19 21:24	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		03/15/19 21:24	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/15/19 21:24	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	1.0	0.24	1		03/15/19 21:24	106-93-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Project No.: 10466924

Sample: MW6D-GW-031419 Lab ID: 10466924004 Collected: 03/14/19 16:00 Received: 03/15/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/15/19 21:24	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/15/19 21:24	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/15/19 21:24	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/15/19 21:24	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		03/15/19 21:24	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/15/19 21:24	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/15/19 21:24	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/15/19 21:24	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/15/19 21:24	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/15/19 21:24	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/15/19 21:24	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/15/19 21:24	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/15/19 21:24	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		03/15/19 21:24	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/15/19 21:24	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/15/19 21:24	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/15/19 21:24	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/15/19 21:24	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/15/19 21:24	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/15/19 21:24	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/15/19 21:24	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/15/19 21:24	74-97-5	
Bromodichloromethane	<0.22	ug/L	1.0	0.22	1		03/15/19 21:24	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/15/19 21:24	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/15/19 21:24	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/15/19 21:24	75-15-0	
Carbon tetrachloride	3.4	ug/L	0.50	0.19	1		03/15/19 21:24	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/15/19 21:24	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/15/19 21:24	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		03/15/19 21:24	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/15/19 21:24	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		03/15/19 21:24	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/15/19 21:24	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/15/19 21:24	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/15/19 21:24	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/15/19 21:24	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/15/19 21:24	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/15/19 21:24	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/15/19 21:24	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		03/15/19 21:24	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/15/19 21:24	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/15/19 21:24	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/15/19 21:24	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		03/15/19 21:24	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/15/19 21:24	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/15/19 21:24	109-99-9	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Project No.: 10466924

Sample: MW6D-GW-031419 Lab ID: 10466924004 Collected: 03/14/19 16:00 Received: 03/15/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level									
Analytical Method: EPA 8260B									
Toluene	<0.083	ug/L	0.50	0.083	1		03/15/19 21:24	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/15/19 21:24	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/15/19 21:24	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/15/19 21:24	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/15/19 21:24	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/15/19 21:24	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/15/19 21:24	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	1.0	0.20	1		03/15/19 21:24	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/15/19 21:24	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		03/15/19 21:24	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/15/19 21:24	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/15/19 21:24	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		03/15/19 21:24	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/15/19 21:24	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/15/19 21:24	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/15/19 21:24	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/15/19 21:24	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/15/19 21:24	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		03/15/19 21:24	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/15/19 21:24	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%	75-136		1		03/15/19 21:24	17060-07-0	
Toluene-d8 (S)	98	%	75-125		1		03/15/19 21:24	2037-26-5	
4-Bromofluorobenzene (S)	101	%	75-125		1		03/15/19 21:24	460-00-4	
2320B Alkalinity									
Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	197	mg/L	5.0	1.0	1		03/26/19 07:59		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Total Dissolved Solids	255	mg/L	10.0	5.0	1		03/20/19 16:21		
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/19/19 11:13	18496-25-8	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	3.3	mg/L	1.2	0.28	1		03/15/19 22:26	16887-00-6	
Nitrate as N	0.55	mg/L	0.10	0.015	1		03/15/19 22:26	14797-55-8	
Sulfate	5.3	mg/L	1.2	0.19	1		03/15/19 22:26	14808-79-8	
353.2 Nitrate + Nitrite									
Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	0.62	mg/L	0.10	0.018	1		03/16/19 12:19		
410.4 COD									
Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	03/20/19 10:51	03/20/19 14:29		

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10466924

Sample: MW6D-GW-031419 **Lab ID: 10466924004** Collected: 03/14/19 16:00 Received: 03/15/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	0.68J	mg/L	1.0	0.20	1		03/18/19 20:25	7440-44-0	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10466924

Sample: TB-031419 **Lab ID: 10466924005** Collected: 03/14/19 08:00 Received: 03/15/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/18/19 15:51	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/18/19 15:51	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/18/19 15:51	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/18/19 15:51	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/18/19 15:51	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/18/19 15:51	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/18/19 15:51	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/18/19 15:51	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/18/19 15:51	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/18/19 15:51	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/18/19 15:51	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/18/19 15:51	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/18/19 15:51	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/18/19 15:51	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/18/19 15:51	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/18/19 15:51	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/18/19 15:51	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/18/19 15:51	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	1.0	0.12	1		03/18/19 15:51	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/18/19 15:51	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/18/19 15:51	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/18/19 15:51	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/18/19 15:51	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/18/19 15:51	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/18/19 15:51	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/18/19 15:51	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/18/19 15:51	95-49-8	
2-Hexanone	<0.88	ug/L	20.0	0.88	1		03/18/19 15:51	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/18/19 15:51	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/18/19 15:51	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/18/19 15:51	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/18/19 15:51	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/18/19 15:51	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/18/19 15:51	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/18/19 15:51	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/18/19 15:51	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/18/19 15:51	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/18/19 15:51	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/18/19 15:51	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/18/19 15:51	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/18/19 15:51	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/18/19 15:51	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/18/19 15:51	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/18/19 15:51	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/18/19 15:51	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/18/19 15:51	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Sample: TB-031419 **Lab ID: 10466924005** Collected: 03/14/19 08:00 Received: 03/15/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level									
Analytical Method: EPA 8260B									
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/18/19 15:51	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/18/19 15:51	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/18/19 15:51	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/18/19 15:51	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/18/19 15:51	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/18/19 15:51	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/18/19 15:51	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		03/18/19 15:51	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/18/19 15:51	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/18/19 15:51	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/18/19 15:51	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/18/19 15:51	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/18/19 15:51	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/18/19 15:51	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		03/18/19 15:51	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/18/19 15:51	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/18/19 15:51	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/18/19 15:51	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/18/19 15:51	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/18/19 15:51	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/18/19 15:51	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/18/19 15:51	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/18/19 15:51	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/18/19 15:51	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/18/19 15:51	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/18/19 15:51	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/18/19 15:51	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/18/19 15:51	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/18/19 15:51	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/18/19 15:51	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/18/19 15:51	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/18/19 15:51	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		03/18/19 15:51	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/18/19 15:51	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%	75-136		1		03/18/19 15:51	17060-07-0	
Toluene-d8 (S)	98	%	75-125		1		03/18/19 15:51	2037-26-5	
4-Bromofluorobenzene (S)	99	%	75-125		1		03/18/19 15:51	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Project No.: 10466924

QC Batch: 594205 Analysis Method: RSK 175
 QC Batch Method: RSK 175 Analysis Description: RSK 175 GCV HEADSPACE
 Associated Lab Samples: 10466924001, 10466924002, 10466924003, 10466924004

METHOD BLANK: 3212639 Matrix: Water
 Associated Lab Samples: 10466924001, 10466924002, 10466924003, 10466924004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	03/18/19 08:51	
Ethene	ug/L	<2.9	10.0	2.9	03/18/19 08:51	
Methane	ug/L	<4.9	10.0	4.9	03/18/19 08:51	

LABORATORY CONTROL SAMPLE & LCSD: 3212640 3212641

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	106	109	93	96	85-115	2	20	
Ethene	ug/L	106	99.3	101	94	96	85-115	2	20	
Methane	ug/L	60.7	56.4	57.6	93	95	85-115	2	20	

SAMPLE DUPLICATE: 3212642

Parameter	Units	10467068001 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	21.6	16.0	30	20	D6
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	15700	12100	26	20	D6

SAMPLE DUPLICATE: 3212643

Parameter	Units	10467061006 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<3.0	<3.0		20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	<4.9	<4.9		20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

QC Batch: 594098 Analysis Method: EPA 7470A
 QC Batch Method: EPA 7470A Analysis Description: 7470A Mercury Water Dissolved
 Associated Lab Samples: 10466924001, 10466924002, 10466924003, 10466924004

METHOD BLANK: 3212056 Matrix: Water
 Associated Lab Samples: 10466924001, 10466924002, 10466924003, 10466924004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.078	0.20	0.078	03/19/19 15:17	

LABORATORY CONTROL SAMPLE: 3212057

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.2	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3212058 3212059

Parameter	Units	3212058		3212059		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.							
Mercury, Dissolved	ug/L	<0.078	5	5	5.7	6.0	114	119	80-120	5	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

QC Batch: 594092 Analysis Method: EPA 6010D
 QC Batch Method: EPA 3010 Analysis Description: 6010D Water Dissolved
 Associated Lab Samples: 10466924001, 10466924002, 10466924003, 10466924004

METHOD BLANK: 3212029 Matrix: Water
 Associated Lab Samples: 10466924001, 10466924002, 10466924003, 10466924004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<15.5	200	15.5	03/21/19 13:44	
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	03/21/19 13:44	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	03/21/19 13:44	
Barium, Dissolved	ug/L	<0.18	10.0	0.18	03/21/19 13:44	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	03/21/19 13:44	
Cadmium, Dissolved	ug/L	<0.26	3.0	0.26	03/21/19 13:44	
Calcium, Dissolved	ug/L	<13.9	500	13.9	03/21/19 13:44	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	03/21/19 13:44	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	03/21/19 13:44	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	03/21/19 13:44	
Iron, Dissolved	ug/L	<4.3	50.0	4.3	03/21/19 13:44	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	03/21/19 13:44	
Magnesium, Dissolved	ug/L	<9.8	500	9.8	03/21/19 13:44	
Manganese, Dissolved	ug/L	<0.22	5.0	0.22	03/21/19 13:44	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	03/21/19 13:44	
Potassium, Dissolved	ug/L	<310	2500	310	03/21/19 13:44	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	03/21/19 13:44	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	03/21/19 13:44	
Sodium, Dissolved	ug/L	72.8J	1000	21.5	03/21/19 13:44	
Thallium, Dissolved	ug/L	6.3J	20.0	4.3	03/21/19 13:44	
Vanadium, Dissolved	ug/L	<0.29	15.0	0.29	03/21/19 13:44	
Zinc, Dissolved	ug/L	<2.5	20.0	2.5	03/21/19 13:44	

LABORATORY CONTROL SAMPLE: 3212030

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	20200	101	80-120	
Antimony, Dissolved	ug/L	1000	971	97	80-120	
Arsenic, Dissolved	ug/L	1000	922	92	80-120	
Barium, Dissolved	ug/L	1000	965	97	80-120	
Beryllium, Dissolved	ug/L	1000	961	96	80-120	
Cadmium, Dissolved	ug/L	1000	961	96	80-120	
Calcium, Dissolved	ug/L	20000	18900	94	80-120	
Chromium, Dissolved	ug/L	1000	955	96	80-120	
Cobalt, Dissolved	ug/L	1000	966	97	80-120	
Copper, Dissolved	ug/L	1000	923	92	80-120	
Iron, Dissolved	ug/L	20000	19000	95	80-120	
Lead, Dissolved	ug/L	1000	970	97	80-120	
Magnesium, Dissolved	ug/L	20000	18600	93	80-120	
Manganese, Dissolved	ug/L	1000	964	96	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

LABORATORY CONTROL SAMPLE: 3212030

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nickel, Dissolved	ug/L	1000	963	96	80-120	
Potassium, Dissolved	ug/L	20000	18400	92	80-120	
Selenium, Dissolved	ug/L	1000	1010	101	80-120	
Silver, Dissolved	ug/L	500	474	95	80-120	
Sodium, Dissolved	ug/L	20000	18500	92	80-120	
Thallium, Dissolved	ug/L	1000	950	95	80-120	
Vanadium, Dissolved	ug/L	1000	956	96	80-120	
Zinc, Dissolved	ug/L	1000	982	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3212031 3212032

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		10466924001 Result	Spike Conc.	Spike Conc.	MSD Result							
Aluminum, Dissolved	ug/L	<15.5	20000	20000	20900	20900	104	105	75-125	0	20	
Antimony, Dissolved	ug/L	<7.0	1000	1000	1000	1000	100	100	75-125	0	20	
Arsenic, Dissolved	ug/L	<3.8	1000	1000	952	964	95	96	75-125	1	20	
Barium, Dissolved	ug/L	10.6	1000	1000	993	1010	98	100	75-125	2	20	
Beryllium, Dissolved	ug/L	<0.12	1000	1000	992	1000	99	100	75-125	1	20	
Cadmium, Dissolved	ug/L	<0.26	1000	1000	990	996	99	100	75-125	1	20	
Calcium, Dissolved	ug/L	37800	20000	20000	58600	58300	104	103	75-125	0	20	
Chromium, Dissolved	ug/L	<0.49	1000	1000	977	985	98	98	75-125	1	20	
Cobalt, Dissolved	ug/L	0.67J	1000	1000	973	980	97	98	75-125	1	20	
Copper, Dissolved	ug/L	<1.2	1000	1000	966	962	97	96	75-125	0	20	
Iron, Dissolved	ug/L	10.4J	20000	20000	19500	19400	97	97	75-125	1	20	
Lead, Dissolved	ug/L	<2.0	1000	1000	983	989	98	99	75-125	1	20	
Magnesium, Dissolved	ug/L	13600	20000	20000	34200	34100	103	102	75-125	1	20	
Manganese, Dissolved	ug/L	1.6J	1000	1000	994	997	99	100	75-125	0	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	966	973	97	97	75-125	1	20	
Potassium, Dissolved	ug/L	2530	20000	20000	21900	22300	97	99	75-125	2	20	
Selenium, Dissolved	ug/L	<5.8	1000	1000	1030	1020	103	102	75-125	0	20	
Silver, Dissolved	ug/L	<0.38	500	500	494	497	99	99	75-125	0	20	
Sodium, Dissolved	ug/L	14900	20000	20000	34800	35200	99	101	75-125	1	20	
Thallium, Dissolved	ug/L	5.9J	1000	1000	972	982	97	98	75-125	1	20	
Vanadium, Dissolved	ug/L	10.3J	1000	1000	996	1000	99	99	75-125	0	20	
Zinc, Dissolved	ug/L	3.4J	1000	1000	984	988	98	99	75-125	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

QC Batch: 594083 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10466924003, 10466924004

METHOD BLANK: 3211936 Matrix: Water

Associated Lab Samples: 10466924003, 10466924004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	1.0	0.20	03/15/19 17:27	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	03/15/19 17:27	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	03/15/19 17:27	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	03/15/19 17:27	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	03/15/19 17:27	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	03/15/19 17:27	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	03/15/19 17:27	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	03/15/19 17:27	
1,2,3-Trichlorobenzene	ug/L	1.0	1.0	0.21	03/15/19 17:27	P8
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	03/15/19 17:27	
1,2,4-Trichlorobenzene	ug/L	<0.20	1.0	0.20	03/15/19 17:27	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	03/15/19 17:27	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	03/15/19 17:27	
1,2-Dibromoethane (EDB)	ug/L	<0.24	1.0	0.24	03/15/19 17:27	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	03/15/19 17:27	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	03/15/19 17:27	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	03/15/19 17:27	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	03/15/19 17:27	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	03/15/19 17:27	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/15/19 17:27	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	03/15/19 17:27	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	03/15/19 17:27	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	03/15/19 17:27	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	03/15/19 17:27	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	03/15/19 17:27	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	03/15/19 17:27	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	03/15/19 17:27	
2-Hexanone	ug/L	<0.88	5.0	0.88	03/15/19 17:27	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/15/19 17:27	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	03/15/19 17:27	
Acetone	ug/L	<9.2	20.0	9.2	03/15/19 17:27	
Acrolein	ug/L	<1.2	10.0	1.2	03/15/19 17:27	
Acrylonitrile	ug/L	<0.91	10.0	0.91	03/15/19 17:27	
Benzene	ug/L	<0.10	0.50	0.10	03/15/19 17:27	
Bromobenzene	ug/L	<0.21	0.50	0.21	03/15/19 17:27	
Bromochloromethane	ug/L	<0.27	1.0	0.27	03/15/19 17:27	
Bromodichloromethane	ug/L	<0.22	1.0	0.22	03/15/19 17:27	
Bromoform	ug/L	<0.80	4.0	0.80	03/15/19 17:27	
Bromomethane	ug/L	<1.8	4.0	1.8	03/15/19 17:27	
Carbon disulfide	ug/L	<0.078	1.0	0.078	03/15/19 17:27	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	03/15/19 17:27	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

METHOD BLANK: 3211936

Matrix: Water

Associated Lab Samples: 10466924003, 10466924004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	03/15/19 17:27	
Chloroethane	ug/L	<0.49	1.0	0.49	03/15/19 17:27	
Chloroform	ug/L	<0.45	1.0	0.45	03/15/19 17:27	
Chloromethane	ug/L	<0.16	4.0	0.16	03/15/19 17:27	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	03/15/19 17:27	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	03/15/19 17:27	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	03/15/19 17:27	
Dibromomethane	ug/L	<0.16	1.0	0.16	03/15/19 17:27	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	03/15/19 17:27	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	03/15/19 17:27	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	03/15/19 17:27	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	03/15/19 17:27	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/15/19 17:27	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	03/15/19 17:27	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	03/15/19 17:27	
m&p-Xylene	ug/L	<0.31	1.0	0.31	03/15/19 17:27	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	03/15/19 17:27	
Methylene Chloride	ug/L	<0.98	4.0	0.98	03/15/19 17:27	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	03/15/19 17:27	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	03/15/19 17:27	
Naphthalene	ug/L	0.97J	1.0	0.48	03/15/19 17:27	
o-Xylene	ug/L	<0.16	0.50	0.16	03/15/19 17:27	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	03/15/19 17:27	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	03/15/19 17:27	
Styrene	ug/L	<0.19	0.50	0.19	03/15/19 17:27	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	03/15/19 17:27	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	03/15/19 17:27	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	03/15/19 17:27	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	03/15/19 17:27	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	03/15/19 17:27	
Toluene	ug/L	<0.083	0.50	0.083	03/15/19 17:27	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	03/15/19 17:27	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	03/15/19 17:27	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	03/15/19 17:27	
Trichloroethene	ug/L	<0.15	0.40	0.15	03/15/19 17:27	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	03/15/19 17:27	
Vinyl acetate	ug/L	<1.1	10.0	1.1	03/15/19 17:27	
Vinyl chloride	ug/L	<0.092	0.20	0.092	03/15/19 17:27	
Xylene (Total)	ug/L	<0.31	1.5	0.31	03/15/19 17:27	
1,2-Dichloroethane-d4 (S)	%	98	75-136		03/15/19 17:27	
4-Bromofluorobenzene (S)	%	100	75-125		03/15/19 17:27	
Toluene-d8 (S)	%	98	75-125		03/15/19 17:27	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

LABORATORY CONTROL SAMPLE: 3211937

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	18.4	92	68-141	
1,1,1-Trichloroethane	ug/L	20	18.1	90	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	19.9	100	73-125	
1,1,2-Trichloroethane	ug/L	20	20.3	102	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	18.0	90	69-132	
1,1-Dichloroethane	ug/L	20	20.0	100	73-125	
1,1-Dichloroethene	ug/L	20	19.7	98	71-126	
1,1-Dichloropropene	ug/L	20	18.8	94	73-126	
1,2,3-Trichlorobenzene	ug/L	20	17.8	89	72-126	
1,2,3-Trichloropropane	ug/L	20	20.2	101	75-126	
1,2,4-Trichlorobenzene	ug/L	20	18.2	91	71-134	
1,2,4-Trimethylbenzene	ug/L	20	18.8	94	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	48.5	97	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	17.9	90	75-129	
1,2-Dichlorobenzene	ug/L	20	18.9	95	75-129	
1,2-Dichloroethane	ug/L	20	18.4	92	75-125	
1,2-Dichloroethene (Total)	ug/L	40	39.7	99	74-125	N2
1,2-Dichloropropane	ug/L	20	19.9	99	75-125	
1,3,5-Trimethylbenzene	ug/L	20	18.8	94	75-127	
1,3-Dichlorobenzene	ug/L	20	18.7	94	75-126	
1,3-Dichloropropane	ug/L	20	19.6	98	75-125	
1,4-Dichlorobenzene	ug/L	20	18.5	92	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	322	81	72-129	
2,2,4-Trimethylpentane	ug/L	20	20.1	101	72-128	N2
2,2-Dichloropropane	ug/L	20	16.8	84	65-138	
2-Butanone (MEK)	ug/L	100	97.5	97	59-144	
2-Chlorotoluene	ug/L	20	19.4	97	75-127	
2-Hexanone	ug/L	100	105	105	73-134	
4-Chlorotoluene	ug/L	20	19.5	97	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	101	101	62-141	
Acetone	ug/L	100	93.3	93	60-137	
Acrolein	ug/L	200	173	86	60-141	
Acrylonitrile	ug/L	200	196	98	75-129	
Benzene	ug/L	20	18.5	93	73-125	
Bromobenzene	ug/L	20	19.5	98	73-125	
Bromochloromethane	ug/L	20	17.5	88	75-135	
Bromodichloromethane	ug/L	20	18.2	91	75-125	
Bromoform	ug/L	20	17.6	88	67-136	
Bromomethane	ug/L	20	23.5	117	30-150	
Carbon disulfide	ug/L	20	18.4	92	47-137	
Carbon tetrachloride	ug/L	20	18.6	93	75-125	
Chlorobenzene	ug/L	20	19.2	96	75-125	
Chloroethane	ug/L	20	20.6	103	63-136	
Chloroform	ug/L	20	18.2	91	73-128	
Chloromethane	ug/L	20	19.6	98	55-130	
cis-1,2-Dichloroethene	ug/L	20	20.0	100	75-125	
cis-1,3-Dichloropropene	ug/L	20	17.8	89	74-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

LABORATORY CONTROL SAMPLE: 3211937

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	18.0	90	75-125	
Dibromomethane	ug/L	20	18.0	90	75-125	
Dichlorodifluoromethane	ug/L	20	20.4	102	63-132	
Dichlorofluoromethane	ug/L	20	20.5	102	68-127	N2
Diisopropyl ether	ug/L	20	19.0	95	71-131	
Ethyl-tert-butyl ether	ug/L	20	19.5	98	75-125	
Ethylbenzene	ug/L	20	18.7	94	75-125	
Hexachloro-1,3-butadiene	ug/L	20	18.2	91	72-134	
Isopropylbenzene (Cumene)	ug/L	20	19.8	99	75-125	
m&p-Xylene	ug/L	40	39.8	99	75-126	
Methyl-tert-butyl ether	ug/L	20	19.7	98	75-125	
Methylene Chloride	ug/L	20	18.9	94	70-125	
n-Butylbenzene	ug/L	20	18.4	92	75-126	
n-Propylbenzene	ug/L	20	19.2	96	73-127	
Naphthalene	ug/L	20	18.8	94	63-128	
o-Xylene	ug/L	20	19.1	95	75-128	
p-Isopropyltoluene	ug/L	20	19.7	98	75-125	
sec-Butylbenzene	ug/L	20	19.4	97	75-126	
Styrene	ug/L	20	19.8	99	75-125	
tert-Amylmethyl ether	ug/L	20	19.2	96	75-125	
tert-Butyl Alcohol	ug/L	200	189	95	75-130	
tert-Butylbenzene	ug/L	20	19.0	95	75-131	
Tetrachloroethene	ug/L	20	18.9	95	74-125	
Tetrahydrofuran	ug/L	200	190	95	64-138	
Toluene	ug/L	20	18.8	94	74-125	
trans-1,2-Dichloroethene	ug/L	20	19.7	98	68-128	
trans-1,3-Dichloropropene	ug/L	20	18.4	92	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	42.5	85	60-127	
Trichloroethene	ug/L	20	19.9	100	75-127	
Trichlorofluoromethane	ug/L	20	21.2	106	72-133	
Vinyl acetate	ug/L	20	18.3	91	61-129	
Vinyl chloride	ug/L	20	20.6	103	75-128	
Xylene (Total)	ug/L	60	58.8	98	75-125	
1,2-Dichloroethane-d4 (S)	%			101	75-136	
4-Bromofluorobenzene (S)	%			101	75-125	
Toluene-d8 (S)	%			101	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3212807 3212808

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		10467105001 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20.6	18.5	103	92	75-140	11	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	19.4	17.6	97	88	74-136	10	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	22.0	20.0	110	100	66-134	9	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	22.9	20.0	115	100	75-126	14	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Parameter	Units	10467105001		MS		MSD		MS		MSD		% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec							
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	19.2	17.2	96	86	65-146	11	30					
1,1-Dichloroethane	ug/L	<0.17	20	20	21.4	19.8	107	99	68-132	8	30					
1,1-Dichloroethene	ug/L	<0.16	20	20	20.8	18.9	104	94	66-139	10	30					
1,1-Dichloropropene	ug/L	<0.20	20	20	19.8	18.1	99	91	67-134	9	30					
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	23.7	18.1	119	90	67-129	27	30					
1,2,3-Trichloropropane	ug/L	<0.26	20	20	23.2	19.8	116	99	69-128	15	30					
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	22.8	17.9	114	90	65-140	24	30					
1,2,4-Trimethylbenzene	ug/L	1.1	20	20	21.9	19.7	104	93	71-133	11	30					
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	57.6	49.6	115	99	54-138	15	30					
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	20.6	18.3	103	91	68-125	12	30					
1,2-Dichlorobenzene	ug/L	<0.14	20	20	21.5	18.7	108	94	74-136	14	30					
1,2-Dichloroethane	ug/L	<0.22	20	20	20.6	18.0	103	90	68-125	13	30					
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	42.5	38.2	106	96	71-126	11	30	N2				
1,2-Dichloropropane	ug/L	<0.16	20	20	22.0	19.9	110	100	67-125	10	30					
1,3,5-Trimethylbenzene	ug/L	0.31J	20	20	20.7	19.1	102	94	68-137	8	30					
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.2	18.5	106	92	75-131	14	30					
1,3-Dichloropropane	ug/L	<0.070	20	20	22.4	19.4	112	97	71-125	14	30					
1,4-Dichlorobenzene	ug/L	<0.17	20	20	21.0	18.4	105	92	74-126	13	30					
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	398	321	100	80	68-125	21	30					
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	21.1	24.5	105	122	54-129	15	30	N2				
2,2-Dichloropropane	ug/L	<0.17	20	20	19.4	17.6	97	88	69-139	10	30					
2-Butanone (MEK)	ug/L	<0.99	100	100	103	88.0	103	88	54-144	16	30					
2-Chlorotoluene	ug/L	<0.16	20	20	20.9	19.4	105	97	75-134	7	30					
2-Hexanone	ug/L	<0.88	100	100	117	101	117	101	58-137	14	30					
4-Chlorotoluene	ug/L	<0.13	20	20	21.3	19.4	106	97	72-133	9	30					
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	117	101	117	101	60-129	15	30					
Acetone	ug/L	458	100	100	520	439	62	-20	62-132	17	30	M1				
Acrolein	ug/L	<1.2	200	200	227	211	114	106	30-150	7	30					
Acrylonitrile	ug/L	<0.91	200	200	221	197	110	98	68-125	12	30					
Benzene	ug/L	0.80	20	20	20.7	18.8	99	90	68-125	10	30					
Bromobenzene	ug/L	<0.21	20	20	21.5	19.4	108	97	73-126	10	30					
Bromochloromethane	ug/L	<0.27	20	20	19.5	17.3	98	86	66-143	12	30					
Bromodichloromethane	ug/L	<0.22	20	20	20.7	18.2	104	91	74-125	13	30					
Bromoform	ug/L	<0.80	20	20	20.4	18.0	102	90	64-134	13	30					
Bromomethane	ug/L	<1.8	20	20	21.4	19.3	107	96	30-150	10	30					
Carbon disulfide	ug/L	<0.078	20	20	19.5	17.7	97	88	43-147	10	30					
Carbon tetrachloride	ug/L	<0.19	20	20	19.8	18.1	99	91	71-143	9	30					
Chlorobenzene	ug/L	<0.17	20	20	21.5	19.1	107	95	75-125	12	30					
Chloroethane	ug/L	<0.49	20	20	20.7	19.1	103	95	75-129	8	30					
Chloroform	ug/L	<0.45	20	20	19.6	17.8	96	87	66-132	10	30					
Chloromethane	ug/L	<0.16	20	20	19.4	17.7	97	88	53-137	9	30					
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	21.5	19.1	108	96	67-133	12	30					
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	20.1	17.9	101	90	66-125	12	30					
Dibromochloromethane	ug/L	<0.12	20	20	20.3	18.1	101	90	62-132	11	30					

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Parameter	Units	10467105001		3212807		3212808		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Dibromomethane	ug/L	<0.16	20	20	20.8	18.1	104	91	67-125	13	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	18.4	16.5	92	83	71-142	11	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	20.7	19.1	103	95	70-131	8	30	N2	
Diisopropyl ether	ug/L	<0.13	20	20	21.4	18.8	107	94	63-131	13	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	22.1	19.4	111	97	66-128	13	30		
Ethylbenzene	ug/L	1.1	20	20	21.6	19.8	102	94	74-126	8	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	21.4	16.8	107	84	68-143	24	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	21.5	19.6	108	98	74-130	9	30		
m&p-Xylene	ug/L	5.1	40	40	47.7	43.3	107	96	69-132	10	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	22.5	19.3	113	96	65-131	15	30		
Methylene Chloride	ug/L	<0.98	20	20	21.0	19.0	101	90	57-125	10	30		
n-Butylbenzene	ug/L	<0.24	20	20	20.6	17.4	103	87	71-131	17	30		
n-Propylbenzene	ug/L	0.10J	20	20	20.8	19.2	103	96	67-138	8	30		
Naphthalene	ug/L	<0.48	20	20	25.8	21.3	129	107	60-130	19	30		
o-Xylene	ug/L	2.8	20	20	23.9	21.9	105	96	69-131	9	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	21.8	19.0	109	95	72-133	14	30		
sec-Butylbenzene	ug/L	<0.15	20	20	21.1	18.5	105	92	73-134	13	30		
Styrene	ug/L	0.40J	20	20	22.6	20.1	111	99	72-125	12	30		
tert-Amylmethyl ether	ug/L	<0.11	20	20	22.8	19.4	114	97	67-125	16	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	221	191	111	95	64-137	15	30		
tert-Butylbenzene	ug/L	<0.15	20	20	20.5	18.5	102	92	70-143	10	30		
Tetrachloroethene	ug/L	<0.17	20	20	20.6	19.0	103	95	72-129	8	30		
Tetrahydrofuran	ug/L	<2.2	200	200	228	194	114	97	66-128	16	30		
Toluene	ug/L	6.8	20	20	27.7	25.1	104	91	73-125	10	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	21.0	19.1	105	96	62-137	9	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	21.2	18.7	106	94	61-136	13	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	48.5	43.9	97	88	45-128	10	30		
Trichloroethene	ug/L	0.40J	20	20	21.7	20.3	107	99	74-132	7	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	20.2	18.2	101	91	75-139	10	30		
Vinyl acetate	ug/L	<1.1	20	20	21.4	18.6	107	93	51-135	14	30		
Vinyl chloride	ug/L	<0.092	20	20	19.5	18.0	97	90	68-146	8	30		
Xylene (Total)	ug/L	7.8	60	60	71.5	65.1	106	96	67-137	9	30		
1,2-Dichloroethane-d4 (S)	%						100	100	75-136				
4-Bromofluorobenzene (S)	%						98	101	75-125				
Toluene-d8 (S)	%						101	101	75-125				

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

QC Batch: 594231 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10466924001, 10466924002, 10466924005

METHOD BLANK: 3212730 Matrix: Water

Associated Lab Samples: 10466924001, 10466924002, 10466924005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	03/18/19 11:43	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	03/18/19 11:43	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	03/18/19 11:43	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	03/18/19 11:43	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	03/18/19 11:43	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	03/18/19 11:43	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	03/18/19 11:43	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	03/18/19 11:43	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	03/18/19 11:43	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	03/18/19 11:43	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	03/18/19 11:43	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	03/18/19 11:43	MN
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	03/18/19 11:43	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	03/18/19 11:43	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	03/18/19 11:43	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	03/18/19 11:43	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	03/18/19 11:43	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	03/18/19 11:43	
1,3,5-Trimethylbenzene	ug/L	<0.12	1.0	0.12	03/18/19 11:43	MN
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/18/19 11:43	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	03/18/19 11:43	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	03/18/19 11:43	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	03/18/19 11:43	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	03/18/19 11:43	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	03/18/19 11:43	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	03/18/19 11:43	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	03/18/19 11:43	
2-Hexanone	ug/L	<0.88	20.0	0.88	03/18/19 11:43	MN
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/18/19 11:43	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	03/18/19 11:43	
Acetone	ug/L	<9.2	20.0	9.2	03/18/19 11:43	
Acrolein	ug/L	<1.2	10.0	1.2	03/18/19 11:43	
Acrylonitrile	ug/L	<0.91	10.0	0.91	03/18/19 11:43	
Benzene	ug/L	<0.10	0.50	0.10	03/18/19 11:43	
Bromobenzene	ug/L	<0.21	0.50	0.21	03/18/19 11:43	
Bromochloromethane	ug/L	<0.27	1.0	0.27	03/18/19 11:43	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	03/18/19 11:43	
Bromoform	ug/L	<0.80	4.0	0.80	03/18/19 11:43	
Bromomethane	ug/L	<1.8	4.0	1.8	03/18/19 11:43	
Carbon disulfide	ug/L	<0.078	1.0	0.078	03/18/19 11:43	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	03/18/19 11:43	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

METHOD BLANK: 3212730

Matrix: Water

Associated Lab Samples: 10466924001, 10466924002, 10466924005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	03/18/19 11:43	
Chloroethane	ug/L	<0.49	1.0	0.49	03/18/19 11:43	
Chloroform	ug/L	<0.45	4.0	0.45	03/18/19 11:43	MN
Chloromethane	ug/L	<0.16	4.0	0.16	03/18/19 11:43	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	03/18/19 11:43	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	03/18/19 11:43	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	03/18/19 11:43	
Dibromomethane	ug/L	<0.16	1.0	0.16	03/18/19 11:43	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	03/18/19 11:43	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	03/18/19 11:43	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	03/18/19 11:43	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	03/18/19 11:43	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/18/19 11:43	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	03/18/19 11:43	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	03/18/19 11:43	MN
m&p-Xylene	ug/L	<0.31	1.0	0.31	03/18/19 11:43	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	03/18/19 11:43	
Methylene Chloride	ug/L	<0.98	4.0	0.98	03/18/19 11:43	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	03/18/19 11:43	MN
n-Propylbenzene	ug/L	<0.10	0.50	0.10	03/18/19 11:43	
Naphthalene	ug/L	<0.48	1.0	0.48	03/18/19 11:43	
o-Xylene	ug/L	<0.16	0.50	0.16	03/18/19 11:43	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	03/18/19 11:43	MN
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	03/18/19 11:43	MN
Styrene	ug/L	<0.19	1.0	0.19	03/18/19 11:43	MN
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	03/18/19 11:43	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	03/18/19 11:43	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	03/18/19 11:43	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	03/18/19 11:43	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	03/18/19 11:43	
Toluene	ug/L	<0.083	0.50	0.083	03/18/19 11:43	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	03/18/19 11:43	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	03/18/19 11:43	MN
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	03/18/19 11:43	
Trichloroethene	ug/L	<0.15	0.40	0.15	03/18/19 11:43	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	03/18/19 11:43	
Vinyl acetate	ug/L	<1.1	10.0	1.1	03/18/19 11:43	
Vinyl chloride	ug/L	<0.092	0.20	0.092	03/18/19 11:43	
Xylene (Total)	ug/L	<0.31	1.5	0.31	03/18/19 11:43	
1,2-Dichloroethane-d4 (S)	%	91	75-136		03/18/19 11:43	
4-Bromofluorobenzene (S)	%	98	75-125		03/18/19 11:43	
Toluene-d8 (S)	%	97	75-125		03/18/19 11:43	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

LABORATORY CONTROL SAMPLE: 3212731

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.6	98	68-141	
1,1,1-Trichloroethane	ug/L	20	19.4	97	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	19.8	99	73-125	
1,1,2-Trichloroethane	ug/L	20	19.2	96	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	19.9	100	69-132	
1,1-Dichloroethane	ug/L	20	20.5	102	73-125	
1,1-Dichloroethene	ug/L	20	19.5	98	71-126	
1,1-Dichloropropene	ug/L	20	21.0	105	73-126	
1,2,3-Trichlorobenzene	ug/L	20	19.1	96	72-126	
1,2,3-Trichloropropane	ug/L	20	20.4	102	75-126	
1,2,4-Trichlorobenzene	ug/L	20	18.2	91	71-134	
1,2,4-Trimethylbenzene	ug/L	20	17.8	89	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	45.8	92	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	19.4	97	75-129	
1,2-Dichlorobenzene	ug/L	20	19.1	95	75-129	
1,2-Dichloroethane	ug/L	20	19.2	96	75-125	
1,2-Dichloroethene (Total)	ug/L	40	40.6	102	74-125	N2
1,2-Dichloropropane	ug/L	20	19.8	99	75-125	
1,3,5-Trimethylbenzene	ug/L	20	17.7	89	75-127	
1,3-Dichlorobenzene	ug/L	20	18.0	90	75-126	
1,3-Dichloropropane	ug/L	20	19.1	95	75-125	
1,4-Dichlorobenzene	ug/L	20	18.2	91	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	374	94	72-129	
2,2,4-Trimethylpentane	ug/L	20	19.5	98	72-128	N2
2,2-Dichloropropane	ug/L	20	21.4	107	65-138	
2-Butanone (MEK)	ug/L	100	114	114	59-144	
2-Chlorotoluene	ug/L	20	18.8	94	75-127	
2-Hexanone	ug/L	100	98.8	99	73-134	
4-Chlorotoluene	ug/L	20	18.7	94	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	109	109	62-141	
Acetone	ug/L	100	119	119	60-137	
Acrolein	ug/L	200	212	106	60-141	
Acrylonitrile	ug/L	200	199	100	75-129	
Benzene	ug/L	20	19.1	95	73-125	
Bromobenzene	ug/L	20	18.3	92	73-125	
Bromochloromethane	ug/L	20	19.9	100	75-135	
Bromodichloromethane	ug/L	20	21.3	106	75-125	
Bromoform	ug/L	20	20.8	104	67-136	
Bromomethane	ug/L	20	18.4	92	30-150	
Carbon disulfide	ug/L	20	23.4	117	47-137	
Carbon tetrachloride	ug/L	20	20.2	101	75-125	
Chlorobenzene	ug/L	20	18.3	92	75-125	
Chloroethane	ug/L	20	24.6	123	63-136	
Chloroform	ug/L	20	19.2	96	73-128	
Chloromethane	ug/L	20	19.4	97	55-130	
cis-1,2-Dichloroethene	ug/L	20	19.5	98	75-125	
cis-1,3-Dichloropropene	ug/L	20	20.2	101	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

LABORATORY CONTROL SAMPLE: 3212731

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	20.9	105	75-125	
Dibromomethane	ug/L	20	19.5	98	75-125	
Dichlorodifluoromethane	ug/L	20	24.4	122	63-132	
Dichlorofluoromethane	ug/L	20	21.3	106	68-127	N2
Diisopropyl ether	ug/L	20	20.1	100	71-131	
Ethyl-tert-butyl ether	ug/L	20	21.1	105	75-125	
Ethylbenzene	ug/L	20	18.8	94	75-125	
Hexachloro-1,3-butadiene	ug/L	20	17.7	89	72-134	
Isopropylbenzene (Cumene)	ug/L	20	17.6	88	75-125	
m&p-Xylene	ug/L	40	37.7	94	75-126	
Methyl-tert-butyl ether	ug/L	20	21.5	108	75-125	
Methylene Chloride	ug/L	20	20.0	100	70-125	
n-Butylbenzene	ug/L	20	18.5	93	75-126	
n-Propylbenzene	ug/L	20	18.4	92	73-127	
Naphthalene	ug/L	20	19.5	97	63-128	
o-Xylene	ug/L	20	18.9	95	75-128	
p-Isopropyltoluene	ug/L	20	18.4	92	75-125	
sec-Butylbenzene	ug/L	20	17.1	85	75-126	
Styrene	ug/L	20	17.6	88	75-125	
tert-Amylmethyl ether	ug/L	20	21.0	105	75-125	
tert-Butyl Alcohol	ug/L	200	205	103	75-130	
tert-Butylbenzene	ug/L	20	18.7	93	75-131	
Tetrachloroethene	ug/L	20	18.4	92	74-125	
Tetrahydrofuran	ug/L	200	195	97	64-138	
Toluene	ug/L	20	17.9	90	74-125	
trans-1,2-Dichloroethene	ug/L	20	21.1	106	68-128	
trans-1,3-Dichloropropene	ug/L	20	21.2	106	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	43.6	87	60-127	
Trichloroethene	ug/L	20	20.1	101	75-127	
Trichlorofluoromethane	ug/L	20	21.6	108	72-133	
Vinyl acetate	ug/L	20	19.4	97	61-129	
Vinyl chloride	ug/L	20	21.4	107	75-128	
Xylene (Total)	ug/L	60	56.7	94	75-125	
1,2-Dichloroethane-d4 (S)	%			99	75-136	
4-Bromofluorobenzene (S)	%			101	75-125	
Toluene-d8 (S)	%			93	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3212820 3212821

Parameter	Units	10467107001		MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result						
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20	19.2	19.9	96	99	75-140	4	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20	20.8	21.6	104	108	74-136	4	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20	16.3	18.1	82	91	66-134	11	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20	17.3	18.4	87	92	75-126	6	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Parameter	Units	10467107001		3212820		3212821		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	23.5	24.2	117	121	65-146	3	30		
1,1-Dichloroethane	ug/L	<0.17	20	20	21.5	22.0	108	110	68-132	2	30		
1,1-Dichloroethene	ug/L	<0.16	20	20	22.6	21.7	113	108	66-139	4	30		
1,1-Dichloropropene	ug/L	<0.20	20	20	22.2	23.6	111	118	67-134	6	30		
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	18.1	18.7	90	94	67-129	4	30		
1,2,3-Trichloropropane	ug/L	<0.26	20	20	15.8	18.1	79	90	69-128	13	30		
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	18.4	18.3	92	91	65-140	1	30		
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	17.7	18.7	88	93	71-133	5	30		
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	38.1	45.0	76	90	54-138	17	30		
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	17.0	18.3	85	91	68-125	7	30		
1,2-Dichlorobenzene	ug/L	<0.14	20	20	17.9	19.3	90	97	74-136	8	30		
1,2-Dichloroethane	ug/L	<0.22	20	20	17.3	18.4	86	92	68-125	6	30		
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	43.5	42.5	109	106	71-126	2	30	N2	
1,2-Dichloropropane	ug/L	<0.16	20	20	19.3	19.8	97	99	67-125	3	30		
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	17.7	18.7	89	94	68-137	6	30		
1,3-Dichlorobenzene	ug/L	<0.16	20	20	18.1	18.8	91	94	75-131	4	30		
1,3-Dichloropropane	ug/L	<0.070	20	20	17.4	18.8	87	94	71-125	7	30		
1,4-Dichlorobenzene	ug/L	<0.17	20	20	18.1	19.1	91	95	74-126	5	30		
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	350	374	88	94	68-125	7	30		
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	22.0	21.0	110	105	54-129	4	30	N2	
2,2-Dichloropropane	ug/L	<0.17	20	20	22.8	23.0	114	115	69-139	1	30		
2-Butanone (MEK)	ug/L	<0.99	100	100	76.9	92.5	77	93	54-144	19	30		
2-Chlorotoluene	ug/L	<0.16	20	20	18.5	19.8	93	99	75-134	7	30		
2-Hexanone	ug/L	<0.88	100	100	71.3	86.2	71	86	58-137	19	30		
4-Chlorotoluene	ug/L	<0.13	20	20	18.6	19.5	93	97	72-133	5	30		
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	82.2	99.7	82	100	60-129	19	30		
Acetone	ug/L	<9.2	100	100	87.7	91.3	88	91	62-132	4	30		
Acrolein	ug/L	<1.2	200	200	307	335	153	167	30-150	9	30	M1	
Acrylonitrile	ug/L	<0.91	200	200	174	199	87	99	68-125	13	30		
Benzene	ug/L	<0.10	20	20	18.9	19.4	94	97	68-125	3	30		
Bromobenzene	ug/L	<0.21	20	20	17.6	17.9	88	89	73-126	1	30		
Bromochloromethane	ug/L	<0.27	20	20	19.9	20.3	99	102	66-143	2	30		
Bromodichloromethane	ug/L	<0.22	20	20	20.2	21.3	101	106	74-125	5	30		
Bromoform	ug/L	<0.80	20	20	18.3	19.9	91	100	64-134	9	30		
Bromomethane	ug/L	<1.8	20	20	19.2	19.2	96	96	30-150	0	30		
Carbon disulfide	ug/L	<0.078	20	20	28.6	25.1	143	125	43-147	13	30		
Carbon tetrachloride	ug/L	<0.19	20	20	22.1	23.1	111	115	71-143	4	30		
Chlorobenzene	ug/L	<0.17	20	20	17.9	18.8	89	94	75-125	5	30		
Chloroethane	ug/L	<0.49	20	20	24.5	23.3	122	117	75-129	5	30		
Chloroform	ug/L	<0.45	20	20	18.1	19.0	90	95	66-132	5	30		
Chloromethane	ug/L	<0.16	20	20	19.9	19.3	100	96	53-137	3	30		
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	19.8	20.3	99	101	67-133	3	30		
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	19.0	19.0	95	95	66-125	0	30		
Dibromochloromethane	ug/L	<0.12	20	20	19.4	20.7	97	104	62-132	7	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Parameter	Units	10467107001		3212820		3212821		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Dibromomethane	ug/L	<0.16	20	20	18.1	19.2	91	96	67-125	6	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	27.3	25.0	137	125	71-142	9	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	22.4	21.8	112	109	70-131	2	30	N2	
Diisopropyl ether	ug/L	<0.13	20	20	18.8	19.9	94	100	63-131	6	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	19.4	21.3	97	106	66-128	9	30		
Ethylbenzene	ug/L	<0.14	20	20	18.7	19.7	93	98	74-126	5	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	21.3	17.8	106	89	68-143	18	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	18.2	19.6	91	98	74-130	8	30		
m&p-Xylene	ug/L	<0.31	40	40	37.8	40.4	95	101	69-132	7	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.5	21.5	98	108	65-131	10	30		
Methylene Chloride	ug/L	<0.98	20	20	20.3	20.8	102	104	57-125	2	30		
n-Butylbenzene	ug/L	<0.24	20	20	19.8	19.3	99	96	71-131	3	30		
n-Propylbenzene	ug/L	<0.10	20	20	19.2	20.0	96	100	67-138	4	30		
Naphthalene	ug/L	<0.48	20	20	16.2	18.5	81	93	60-130	13	30		
o-Xylene	ug/L	<0.16	20	20	18.7	19.6	93	98	69-131	5	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	19.7	19.7	99	98	72-133	0	30		
sec-Butylbenzene	ug/L	<0.15	20	20	18.7	18.3	94	92	73-134	2	30		
Styrene	ug/L	<0.19	20	20	16.9	18.1	84	90	72-125	7	30		
tert-Amylmethyl ether	ug/L	<0.11	20	20	17.7	20.0	88	100	67-125	13	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	178	214	89	107	64-137	18	30		
tert-Butylbenzene	ug/L	<0.15	20	20	19.9	20.3	99	102	70-143	2	30		
Tetrachloroethene	ug/L	<0.17	20	20	19.7	20.4	99	102	72-129	4	30		
Tetrahydrofuran	ug/L	<2.2	200	200	169	186	84	93	66-128	10	30		
Toluene	ug/L	<0.083	20	20	18.3	18.6	92	93	73-125	2	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	23.7	22.2	118	111	62-137	6	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	19.6	19.9	98	99	61-136	1	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	36.3	40.5	73	81	45-128	11	30		
Trichloroethene	ug/L	<0.15	20	20	21.1	20.9	106	104	74-132	1	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	23.9	23.5	120	117	75-139	2	30		
Vinyl acetate	ug/L	<1.1	20	20	16.9	19.0	85	95	51-135	12	30		
Vinyl chloride	ug/L	<0.092	20	20	24.8	21.6	124	108	68-146	14	30		
Xylene (Total)	ug/L	<0.31	60	60	56.5	60.0	94	100	67-137	6	30		
1,2-Dichloroethane-d4 (S)	%						94	100	75-136				
4-Bromofluorobenzene (S)	%						101	99	75-125				
Toluene-d8 (S)	%						96	95	75-125				

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

QC Batch: 595406 Analysis Method: SM 2320B
 QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
 Associated Lab Samples: 10466924001, 10466924002, 10466924003

METHOD BLANK: 3219282 Matrix: Water

Associated Lab Samples: 10466924001, 10466924002, 10466924003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.0	5.0	1.0	03/26/19 11:38	

LABORATORY CONTROL SAMPLE & LCSD: 3219283 3219284

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.7	43.1	107	108	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3219285 3219286

Parameter	Units	10467460002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	34.0	40	40	75.0	75.7	102	104	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3219287 3219288

Parameter	Units	10466793001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	213	40	40	257	254	110	102	80-120	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

QC Batch: 595667 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10466924004

METHOD BLANK: 3220308 Matrix: Water
Associated Lab Samples: 10466924004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<1.0	5.0	1.0	03/26/19 07:41	

LABORATORY CONTROL SAMPLE & LCSD: 3220309 3220310

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	43.1	43.3	108	108	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3220311 3220312

Parameter	Units	10466924004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	197	40	40	237	244	100	117	80-120	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3220313 3220314

Parameter	Units	10467212004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	113	40	40	156	160	108	118	80-120	2	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

QC Batch: 594765

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 10466924001, 10466924002, 10466924003, 10466924004

METHOD BLANK: 3215317

Matrix: Water

Associated Lab Samples: 10466924001, 10466924002, 10466924003, 10466924004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	03/20/19 16:21	

LABORATORY CONTROL SAMPLE: 3215318

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	980	98	80-120	

SAMPLE DUPLICATE: 3215319

Parameter	Units	10466736001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	3430	3470	1	5	

SAMPLE DUPLICATE: 3215320

Parameter	Units	10466769001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	265	269	1	5	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

QC Batch: 136633

Analysis Method: SM 4500-S-2 D

QC Batch Method: SM 4500-S-2 D

Analysis Description: 4500S2D Sulfide, Total

Associated Lab Samples: 10466924001, 10466924002, 10466924003, 10466924004

METHOD BLANK: 594434

Matrix: Water

Associated Lab Samples: 10466924001, 10466924002, 10466924003, 10466924004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	03/19/19 10:21	

LABORATORY CONTROL SAMPLE: 594435

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.2	0.19	95	90-110	

MATRIX SPIKE SAMPLE: 594437

Parameter	Units	10466793001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.011J	0.2	0.0082J	-1	75-125	M1

SAMPLE DUPLICATE: 594436

Parameter	Units	10466793001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.011J	0.011J		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10466924

QC Batch: 594042 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10466924001, 10466924002, 10466924003, 10466924004

METHOD BLANK: 3211753 Matrix: Water
Associated Lab Samples: 10466924001, 10466924002, 10466924003, 10466924004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.28	1.2	0.28	03/15/19 14:57	
Nitrate as N	mg/L	<0.015	0.10	0.015	03/15/19 14:57	
Sulfate	mg/L	<0.19	1.2	0.19	03/15/19 14:57	

LABORATORY CONTROL SAMPLE: 3211754

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.5	100	90-110	
Nitrate as N	mg/L	1	0.94	94	90-110	
Sulfate	mg/L	12.5	12.2	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3211755 3211756

Parameter	Units	10466799001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Chloride	mg/L	ND	12.5	12.5	12.1	12.2	88	89	90-110	0	20	M1
Nitrate as N	mg/L	1.3	1	1	1.9	1.9	64	64	90-110	0	20	M1
Sulfate	mg/L	9.3	12.5	12.5	19.0	19.1	77	78	90-110	1	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3211757 3211758

Parameter	Units	10466924001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Chloride	mg/L	3.0	12.5	12.5	14.0	14.0	88	88	90-110	0	20	M1
Nitrate as N	mg/L	2.0	1	1	2.6	2.6	57	58	90-110	1	20	M1
Sulfate	mg/L	13.9	12.5	12.5	26.0	23.4	96	76	90-110	10	20	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

QC Batch: 594121 Analysis Method: EPA 353.2
 QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
 Associated Lab Samples: 10466924002, 10466924003, 10466924004

METHOD BLANK: 3212234 Matrix: Water
 Associated Lab Samples: 10466924002, 10466924003, 10466924004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	03/16/19 12:24	FS

LABORATORY CONTROL SAMPLE: 3212235

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3212236 3212237

Parameter	Units	10466924004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.62	1	1	1.6	1.7	100	104	90-110	2	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10466924

QC Batch: 594791 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10466924001

METHOD BLANK: 3215469 Matrix: Water
Associated Lab Samples: 10466924001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	03/20/19 16:12	FS

LABORATORY CONTROL SAMPLE: 3215470

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3215471 3215472

Parameter	Units	10467197001		3215471		3215472		% Rec Limits	RPD	Max RPD	Qual		
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Nitrogen, NO2 plus NO3	mg/L	0.49	1	1	1	1.5	1.5	103	101	90-110	1	20	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3215473 3215474

Parameter	Units	10466924001		3215473		3215474		% Rec Limits	RPD	Max RPD	Qual		
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Nitrogen, NO2 plus NO3	mg/L	2.1	2	2	2	4.2	4.2	104	105	90-110	0	20	E

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10466924

QC Batch: 594657 Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
Associated Lab Samples: 10466924001, 10466924002, 10466924003, 10466924004

METHOD BLANK: 3214818 Matrix: Water
Associated Lab Samples: 10466924001, 10466924002, 10466924003, 10466924004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	03/20/19 14:23	

LABORATORY CONTROL SAMPLE: 3214819

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	302	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3214820 3214821

Parameter	Units	10466793001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Chemical Oxygen Demand	mg/L	<17.0	250	250	256	261	101	103	90-110	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3214822 3214823

Parameter	Units	10466793002 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Chemical Oxygen Demand	mg/L	22.7J	250	272	279	279	100	103	90-110	3	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10466924

QC Batch: 162801 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C TOC
Associated Lab Samples: 10466924001, 10466924002, 10466924003, 10466924004

METHOD BLANK: 641741 Matrix: Water
Associated Lab Samples: 10466924001, 10466924002, 10466924003, 10466924004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	0.20J	1.0	0.20	03/18/19 14:05	

LABORATORY CONTROL SAMPLE: 641742

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.4	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 641743 641744

Parameter	Units	10466799001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Total Organic Carbon	mg/L	ND	25	26.7	25	26.4	104	103	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 641745 641746

Parameter	Units	10466379001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Total Organic Carbon	mg/L	0.21J	25	26.4	25	26.4	105	105	80-120	0	20	

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

PASI-N Pace Analytical Services - New Orleans

PASI-V Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

FS The sample was filtered in the laboratory prior to analysis.

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

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

P8 Analyte was detected in the method blank. All associated samples had concentrations of at least ten times greater than the blank or were below the reporting limit.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10466924001	MW15D-GW-031419	RSK 175	594205		
10466924002	MW21D-GW-031419	RSK 175	594205		
10466924003	MW6U-GW-031419	RSK 175	594205		
10466924004	MW6D-GW-031419	RSK 175	594205		
10466924001	MW15D-GW-031419	EPA 3010	594092	EPA 6010D	594325
10466924002	MW21D-GW-031419	EPA 3010	594092	EPA 6010D	594325
10466924003	MW6U-GW-031419	EPA 3010	594092	EPA 6010D	594325
10466924004	MW6D-GW-031419	EPA 3010	594092	EPA 6010D	594325
10466924001	MW15D-GW-031419	EPA 7470A	594098	EPA 7470A	594300
10466924002	MW21D-GW-031419	EPA 7470A	594098	EPA 7470A	594300
10466924003	MW6U-GW-031419	EPA 7470A	594098	EPA 7470A	594300
10466924004	MW6D-GW-031419	EPA 7470A	594098	EPA 7470A	594300
10466924001	MW15D-GW-031419	EPA 8260B	594231		
10466924002	MW21D-GW-031419	EPA 8260B	594231		
10466924003	MW6U-GW-031419	EPA 8260B	594083		
10466924004	MW6D-GW-031419	EPA 8260B	594083		
10466924005	TB-031419	EPA 8260B	594231		
10466924001	MW15D-GW-031419	SM 2320B	595406		
10466924002	MW21D-GW-031419	SM 2320B	595406		
10466924003	MW6U-GW-031419	SM 2320B	595406		
10466924004	MW6D-GW-031419	SM 2320B	595667		
10466924001	MW15D-GW-031419	SM 2540C	594765		
10466924002	MW21D-GW-031419	SM 2540C	594765		
10466924003	MW6U-GW-031419	SM 2540C	594765		
10466924004	MW6D-GW-031419	SM 2540C	594765		
10466924001	MW15D-GW-031419	SM 4500-S-2 D	136633		
10466924002	MW21D-GW-031419	SM 4500-S-2 D	136633		
10466924003	MW6U-GW-031419	SM 4500-S-2 D	136633		
10466924004	MW6D-GW-031419	SM 4500-S-2 D	136633		
10466924001	MW15D-GW-031419	EPA 300.0	594042		
10466924002	MW21D-GW-031419	EPA 300.0	594042		
10466924003	MW6U-GW-031419	EPA 300.0	594042		
10466924004	MW6D-GW-031419	EPA 300.0	594042		
10466924001	MW15D-GW-031419	EPA 353.2	594791		
10466924002	MW21D-GW-031419	EPA 353.2	594121		
10466924003	MW6U-GW-031419	EPA 353.2	594121		
10466924004	MW6D-GW-031419	EPA 353.2	594121		
10466924001	MW15D-GW-031419	EPA 410.4	594657	EPA 410.4	594816
10466924002	MW21D-GW-031419	EPA 410.4	594657	EPA 410.4	594816
10466924003	MW6U-GW-031419	EPA 410.4	594657	EPA 410.4	594816
10466924004	MW6D-GW-031419	EPA 410.4	594657	EPA 410.4	594816
10466924001	MW15D-GW-031419	SM 5310C	162801		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10466924

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10466924002	MW21D-GW-031419	SM 5310C	162801		
10466924003	MW6U-GW-031419	SM 5310C	162801		
10466924004	MW6D-GW-031419	SM 5310C	162801		

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CHAIN-OF-CUSTODY / Analytical Request Dc

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

WO#: 10466924



Section C
Invoice Information:
Attention: **Annie Walsh**
Company: **UPRR**
Address: **1400 W. 52nd Ave, Denver, CO 80221**
Pace Quote: **Contract# 758938**

Section B
Required Project Information:
Report To: **Mark Ochsner, Brad Ostapowicz**
Copy To: **Sieve Demus, Jonathan Espinoza**
Copy To: **David Hodson, UPRR-Sysdat@ghd.com**
Purchase Order #: **PEDD# 1497**
Project Name: **Freeman WA-Grain Handling Facility**
Pace Project Manager: **Jennifer Gross**
Project #: **1497**

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

ITEM #	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G-GRAB G-COMP)	COLLECTED		DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES		ANALYSES TEST	Y	Requested Analysis Filtered (Y/N)	MS/MSD Requested	Received on	Temp in C	Samples	Sealed	Cooler	(Y/N)	(Y/N)			
			DATE	TIME					Unpreserved	H2SO4												HNO3	HCl	NaOH + Zn Acetate
1	MW150-GW-031419	WTG	2019	3/14	1100	-13		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	001	
2	MW210-GW-031419	WTG			1300																		002	
3	MW04-GW-031419	WTG			1445																		003	
4	MW00-GW-031419	WTG			1600																		004	
5	TB-031419	WTG			800	2		X															005	
6																								
7																								
8																								
9																								
10																								
11																								
12																								
ADDITIONAL COMMENTS: Short hold analyses are in bold *Field filtered by client																								
RELINQUISHED BY / AFFILIATION: J Li / Jacobs DATE: 3/14/19 TIME: 1600 ACCEPTED BY / AFFILIATION: J Li / Jacobs DATE: 3-15-19 TIME: 1050																								
SAMPLER NAME AND SIGNATURE: Jonathan Espinoza DATE Signed: 3/14/19 PRINT Name of SAMPLER: SIGNATURE of SAMPLER:																								

Sample Condition Upon Receipt **Client Name:** CH2M Hill **Project #:** **WO# : 10466924**

Courier: Fed Ex UPS USPS Client
 Pace SpeedDee Commercial See Exception

Tracking Number: 4486 7792 0525

Custody Seal on Cooler/Box Present? Yes No **Seals Intact?** Yes No **Biological Tissue Frozen?** Yes No N/A

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

Thermometer: G87A9155100842 G87A9170600254 **Type of Ice:** Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: <u>4.5</u> °C	Average Corrected Temp (no temp blank only): _____ °C	See Exceptions <input type="checkbox"/>
Correction Factor: <u>+0.1</u>	Cooler Temp Corrected w/temp blank: <u>4.6</u> °C		

USDA Regulated Soil: (N/A, water sample/Other: _____) **Date/Initials of Person Examining Contents:** JJ 3/15/19

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

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

		COMMENTS:
Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input checked="" type="checkbox"/> Turbidity <input checked="" type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Field Filtered Volume Received for Dissolved Tests?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other		
All containers needing acid/base preservation have been checked?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ <input checked="" type="checkbox"/> H ₂ SO ₄ <input checked="" type="checkbox"/> Zinc Acetate <u>1-4%</u> <u>1-4%</u> <u>1-4%</u>
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No See Exception
Chlorine?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> See Exception
Headspace in VOA Vials (greater than 6mm)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. <input checked="" type="checkbox"/> See Exception
Trip Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14.
Trip Blank Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): <u>199048</u>

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

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: [Signature] **Date:** 03/15/2019

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



Document Name:
Headspace Exception

Document Revised: 17Dec2018
Page 1 of 1

Document No.:
F-MN-C-276-Rev.01

Issuing Authority:
Pace Minnesota Quality Office

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
MW21D-GW-031419	1	1	1	3	N
Trip Blank	0	1	0	2	N

Chain of Custody

WO#: 2098713



Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA
 Cert. Needed: Yes
 Owner Received Date: 3/15/2019 Results Requested By: 3/29/2019

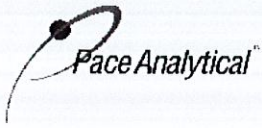
Workorder: 10466924 Workorder Name: 1497 Freeman WA-Grain Handling

Report To		Subcontract To					Requested Analysis																								
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426		Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333					<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">5636267 / 4500 Sulfide</div> <div style="border: 1px solid black; width: 100%; height: 100%;"></div> </div>																								
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers											LAB USE ONLY														
						Other BP27																									
1	MW15D-GW-031419	PS	3/14/2019 11:00	10466924001	Water	1																									
2	MW21D-GW-031419	PS	3/14/2019 13:00	10466924002	Water	1																									
3	MW6U-GW-031419	PS	3/14/2019 14:45	10466924003	Water	1																									
4	MW6D-GW-031419	PS	3/14/2019 16:00	10466924004	Water	1																									
5																															

Transfers					Comments				
Released By	Date/Time	Received By	Date/Time						
<i>[Signature]</i>	3/15/19 15:10	<i>[Signature]</i>	3/16/19 11:11		SHORT HOLD!				
<i>[Signature]</i>	3/16/19 11:11	<i>[Signature]</i>	3/16/19 11:11						

Cooler Temperature on Receipt 4 °C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

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



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

Sample Condition Upon F

Proj

WO#: 2098713

PM: CMM Due Date: 03/29/19
CLIENT: PASI-MINN

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

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

Custody Seals intact: Yes No

Thermometer Used:
 Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Date and Initials of person examining contents: 03-16-19 *AW*

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Temp must be measured from Temperature blank when present

Comments:

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

Client Notification/ Resolution:

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

Sample Condition Upon Receipt

Client Name: Pace WA

Project #:

WO# : 12122491

 12122491

Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

Tracking Number: _____

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No
 Optional: Proj. Due Date: _____ Proj. Name: _____

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

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

Cooler Temp Read °C: 0.5 Cooler Temp Corrected °C: 0.8 Biological Tissue Frozen? Yes No NA
 Temp should be above freezing to 6°C Correction Factor: 0.3 Date and Initials of Person Examining Contents: 3/15/19 DC

Comments: 2H 3/18/19

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

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? Yes No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

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

Project Manager Review: Katie Richards Date: 3/18/2019

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

March 26, 2019

David Hodson
Jacobs
2020 SW 4th Ave
#300
Portland, OR 97201

RE: Project: 1497 Freeman WA-Grain Handling-Revised Report
Pace Project No.: 10467061

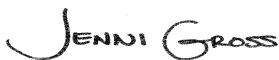
Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 16, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This report was revised on March 26, 2019 to update the ID for sample 10467061006.

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

Sincerely,



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

Enclosures

cc: Steve Demus, CH2M Hill
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792

Montana Certificate #CERT0103

Alaska Certification UST-107

Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203

Wisconsin DNR Certification #: 998027470

WA Department of Ecology Lab ID# C1007

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA

Florida Department of Health (NELAC): E87595

Illinois Environmental Protection Agency: 0025721

Kansas Department of Health and Environment (NELAC):
E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):
T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-
00119

Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10467061001	MW9U-GW-031519	Water	03/15/19 09:00	03/16/19 09:00
10467061002	MW9D-GW-031519	Water	03/15/19 10:15	03/16/19 09:00
10467061003	MW3D-GW-031519	Water	03/15/19 11:15	03/16/19 09:00
10467061004	FD1-GW-031519	Water	03/15/19 09:05	03/16/19 09:00
10467061005	FD2-GW-031519	Water	03/15/19 10:20	03/16/19 09:00
10467061006	MW20D-GW-031519	Water	03/15/19 13:00	03/16/19 09:00
10467061007	FD3-GW-031519	Water	03/15/19 11:20	03/16/19 09:00
10467061008	TB-031519	Water	03/15/19 08:00	03/16/19 09:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10467061001	MW9U-GW-031519	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10467061002	MW9D-GW-031519	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10467061003	MW3D-GW-031519	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10467061004	FD1-GW-031519	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10467061005	FD2-GW-031519	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10467061006	MW20D-GW-031519	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10467061007	FD3-GW-031519	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10467061008	TB-031519	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
10467061001	MW9U-GW-031519					
EPA 6010D	Aluminum, Dissolved	71.2J	ug/L	200	03/21/19 14:12	
EPA 6010D	Barium, Dissolved	44.2	ug/L	10.0	03/21/19 14:12	
EPA 6010D	Calcium, Dissolved	67300	ug/L	500	03/21/19 14:12	
EPA 6010D	Chromium, Dissolved	1.1J	ug/L	10.0	03/21/19 14:12	
EPA 6010D	Cobalt, Dissolved	0.81J	ug/L	10.0	03/21/19 14:12	
EPA 6010D	Iron, Dissolved	336	ug/L	50.0	03/21/19 14:12	
EPA 6010D	Lead, Dissolved	3.4J	ug/L	10.0	03/21/19 14:12	
EPA 6010D	Magnesium, Dissolved	17500	ug/L	500	03/21/19 14:12	
EPA 6010D	Manganese, Dissolved	14.7	ug/L	5.0	03/21/19 14:12	
EPA 6010D	Nickel, Dissolved	6.1J	ug/L	20.0	03/21/19 14:12	
EPA 6010D	Potassium, Dissolved	3020	ug/L	2500	03/21/19 14:12	
EPA 6010D	Silver, Dissolved	0.41J	ug/L	10.0	03/21/19 14:12	
EPA 6010D	Sodium, Dissolved	85500	ug/L	1000	03/21/19 14:12	P6
EPA 6010D	Thallium, Dissolved	6.3J	ug/L	20.0	03/21/19 14:12	B
EPA 6010D	Vanadium, Dissolved	6.7J	ug/L	15.0	03/21/19 14:12	
EPA 6010D	Zinc, Dissolved	7.9J	ug/L	20.0	03/21/19 14:12	
EPA 8260B	Carbon tetrachloride	810	ug/L	2.5	03/19/19 11:51	
EPA 8260B	Chloroform	21.8	ug/L	4.0	03/18/19 17:27	
SM 2320B	Alkalinity, Total as CaCO3	155	mg/L	5.0	03/18/19 08:43	
SM 2540C	Total Dissolved Solids	595	mg/L	10.0	03/20/19 16:21	
EPA 300.0	Chloride	161	mg/L	6.0	03/16/19 17:02	M1
EPA 300.0	Nitrate as N	5.7	mg/L	0.10	03/16/19 12:59	M1
EPA 300.0	Sulfate	32.5	mg/L	1.2	03/16/19 12:59	M1
EPA 353.2	Nitrogen, NO2 plus NO3	5.6	mg/L	0.50	03/20/19 16:49	
SM 5310C	Total Organic Carbon	2.8J	mg/L	5.0	03/21/19 16:58	B
10467061002	MW9D-GW-031519					
EPA 6010D	Barium, Dissolved	27.2	ug/L	10.0	03/21/19 14:26	
EPA 6010D	Beryllium, Dissolved	0.14J	ug/L	5.0	03/21/19 14:26	
EPA 6010D	Calcium, Dissolved	53500	ug/L	500	03/21/19 14:26	
EPA 6010D	Cobalt, Dissolved	0.53J	ug/L	10.0	03/21/19 14:26	
EPA 6010D	Lead, Dissolved	2.8J	ug/L	10.0	03/21/19 14:26	
EPA 6010D	Magnesium, Dissolved	15200	ug/L	500	03/21/19 14:26	
EPA 6010D	Manganese, Dissolved	1.1J	ug/L	5.0	03/21/19 14:26	
EPA 6010D	Potassium, Dissolved	2260J	ug/L	2500	03/21/19 14:26	
EPA 6010D	Sodium, Dissolved	13200	ug/L	1000	03/21/19 14:26	
EPA 6010D	Thallium, Dissolved	5.2J	ug/L	20.0	03/21/19 14:26	B
EPA 6010D	Vanadium, Dissolved	8.3J	ug/L	15.0	03/21/19 14:26	
EPA 8260B	Carbon tetrachloride	124	ug/L	0.50	03/18/19 17:51	
EPA 8260B	Chloroform	4.5	ug/L	4.0	03/18/19 17:51	
SM 2320B	Alkalinity, Total as CaCO3	171	mg/L	5.0	03/18/19 08:54	
SM 2540C	Total Dissolved Solids	315	mg/L	10.0	03/20/19 16:21	
EPA 300.0	Chloride	12.3	mg/L	1.2	03/16/19 14:28	
EPA 300.0	Nitrate as N	4.3	mg/L	0.10	03/16/19 14:28	
EPA 300.0	Sulfate	33.6	mg/L	1.2	03/16/19 14:28	
EPA 353.2	Nitrogen, NO2 plus NO3	4.3	mg/L	0.50	03/20/19 16:50	
SM 5310C	Total Organic Carbon	0.92J	mg/L	1.0	03/21/19 17:50	B

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
10467061003	MW3D-GW-031519					
EPA 6010D	Barium, Dissolved	38.3	ug/L	10.0	03/21/19 14:28	
EPA 6010D	Beryllium, Dissolved	0.17J	ug/L	5.0	03/21/19 14:28	
EPA 6010D	Calcium, Dissolved	28700	ug/L	500	03/21/19 14:28	
EPA 6010D	Cobalt, Dissolved	0.89J	ug/L	10.0	03/21/19 14:28	
EPA 6010D	Iron, Dissolved	9.3J	ug/L	50.0	03/21/19 14:28	
EPA 6010D	Lead, Dissolved	2.4J	ug/L	10.0	03/21/19 14:28	
EPA 6010D	Magnesium, Dissolved	8270	ug/L	500	03/21/19 14:28	
EPA 6010D	Manganese, Dissolved	4.8J	ug/L	5.0	03/21/19 14:28	
EPA 6010D	Potassium, Dissolved	985J	ug/L	2500	03/21/19 14:28	
EPA 6010D	Sodium, Dissolved	12000	ug/L	1000	03/21/19 14:28	
EPA 6010D	Thallium, Dissolved	8.6J	ug/L	20.0	03/21/19 14:28	B
EPA 6010D	Vanadium, Dissolved	1.8J	ug/L	15.0	03/21/19 14:28	
SM 2320B	Alkalinity, Total as CaCO3	146	mg/L	5.0	03/18/19 09:58	
SM 2540C	Total Dissolved Solids	197	mg/L	10.0	03/20/19 16:21	
EPA 300.0	Chloride	3.3	mg/L	1.2	03/16/19 14:43	
EPA 300.0	Nitrate as N	0.14	mg/L	0.10	03/16/19 14:43	
EPA 300.0	Sulfate	3.1	mg/L	1.2	03/16/19 14:43	
EPA 353.2	Nitrogen, NO2 plus NO3	0.15	mg/L	0.10	03/20/19 15:55	
SM 5310C	Total Organic Carbon	0.56J	mg/L	1.0	03/21/19 18:42	B
10467061004	FD1-GW-031519					
EPA 6010D	Aluminum, Dissolved	48.8J	ug/L	200	03/21/19 14:29	
EPA 6010D	Barium, Dissolved	40.6	ug/L	10.0	03/21/19 14:29	
EPA 6010D	Beryllium, Dissolved	0.14J	ug/L	5.0	03/21/19 14:29	
EPA 6010D	Cadmium, Dissolved	0.32J	ug/L	3.0	03/21/19 14:29	
EPA 6010D	Calcium, Dissolved	62500	ug/L	500	03/21/19 14:29	
EPA 6010D	Cobalt, Dissolved	0.64J	ug/L	10.0	03/21/19 14:29	
EPA 6010D	Iron, Dissolved	260	ug/L	50.0	03/21/19 14:29	
EPA 6010D	Lead, Dissolved	2.5J	ug/L	10.0	03/21/19 14:29	
EPA 6010D	Magnesium, Dissolved	16300	ug/L	500	03/21/19 14:29	
EPA 6010D	Manganese, Dissolved	12.1	ug/L	5.0	03/21/19 14:29	
EPA 6010D	Nickel, Dissolved	4.9J	ug/L	20.0	03/21/19 14:29	
EPA 6010D	Potassium, Dissolved	2780	ug/L	2500	03/21/19 14:29	
EPA 6010D	Sodium, Dissolved	79300	ug/L	1000	03/21/19 14:29	
EPA 6010D	Thallium, Dissolved	6.9J	ug/L	20.0	03/21/19 14:29	B
EPA 6010D	Vanadium, Dissolved	5.8J	ug/L	15.0	03/21/19 14:29	
EPA 6010D	Zinc, Dissolved	3.1J	ug/L	20.0	03/21/19 14:29	
EPA 8260B	Carbon disulfide	0.42J	ug/L	1.0	03/18/19 18:39	
EPA 8260B	Carbon tetrachloride	754	ug/L	2.5	03/19/19 12:14	
EPA 8260B	Chloroform	21.2	ug/L	4.0	03/18/19 18:39	
SM 2320B	Alkalinity, Total as CaCO3	147	mg/L	5.0	03/18/19 10:01	
SM 2540C	Total Dissolved Solids	614	mg/L	10.0	03/20/19 16:21	
EPA 300.0	Chloride	163	mg/L	6.0	03/16/19 19:04	
EPA 300.0	Nitrate as N	5.7	mg/L	0.10	03/16/19 14:59	
EPA 300.0	Sulfate	32.0	mg/L	1.2	03/16/19 14:59	
EPA 353.2	Nitrogen, NO2 plus NO3	5.6	mg/L	0.50	03/20/19 16:51	FS
SM 5310C	Total Organic Carbon	1.3	mg/L	1.0	03/21/19 17:37	B

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
10467061005	FD2-GW-031519					
EPA 6010D	Barium, Dissolved	27.3	ug/L	10.0	03/21/19 14:31	
EPA 6010D	Beryllium, Dissolved	0.17J	ug/L	5.0	03/21/19 14:31	
EPA 6010D	Calcium, Dissolved	53100	ug/L	500	03/21/19 14:31	
EPA 6010D	Cobalt, Dissolved	0.89J	ug/L	10.0	03/21/19 14:31	
EPA 6010D	Magnesium, Dissolved	15100	ug/L	500	03/21/19 14:31	
EPA 6010D	Manganese, Dissolved	1.1J	ug/L	5.0	03/21/19 14:31	
EPA 6010D	Potassium, Dissolved	2230J	ug/L	2500	03/21/19 14:31	
EPA 6010D	Sodium, Dissolved	13300	ug/L	1000	03/21/19 14:31	
EPA 6010D	Thallium, Dissolved	4.4J	ug/L	20.0	03/21/19 14:31	B
EPA 6010D	Vanadium, Dissolved	7.9J	ug/L	15.0	03/21/19 14:31	
EPA 8260B	Carbon tetrachloride	135	ug/L	0.50	03/18/19 19:03	
EPA 8260B	Chloroform	4.6	ug/L	4.0	03/18/19 19:03	
SM 2320B	Alkalinity, Total as CaCO3	166	mg/L	5.0	03/18/19 10:04	
SM 2540C	Total Dissolved Solids	306	mg/L	10.0	03/22/19 14:36	
EPA 300.0	Chloride	12.2	mg/L	1.2	03/16/19 15:14	
EPA 300.0	Nitrate as N	4.3	mg/L	0.10	03/16/19 15:14	
EPA 300.0	Sulfate	33.6	mg/L	1.2	03/16/19 15:14	
EPA 353.2	Nitrogen, NO2 plus NO3	4.1	mg/L	0.50	03/20/19 16:52	
SM 5310C	Total Organic Carbon	1.0	mg/L	1.0	03/21/19 18:29	
10467061006	MW20D-GW-031519					
EPA 6010D	Aluminum, Dissolved	37.2J	ug/L	200	03/21/19 14:33	
EPA 6010D	Barium, Dissolved	18.8	ug/L	10.0	03/21/19 14:33	
EPA 6010D	Calcium, Dissolved	57600	ug/L	500	03/21/19 14:33	
EPA 6010D	Cobalt, Dissolved	0.67J	ug/L	10.0	03/21/19 14:33	
EPA 6010D	Iron, Dissolved	20.2J	ug/L	50.0	03/21/19 14:33	
EPA 6010D	Magnesium, Dissolved	21300	ug/L	500	03/21/19 14:33	
EPA 6010D	Manganese, Dissolved	2.6J	ug/L	5.0	03/21/19 14:33	
EPA 6010D	Potassium, Dissolved	3570	ug/L	2500	03/21/19 14:33	
EPA 6010D	Sodium, Dissolved	19000	ug/L	1000	03/21/19 14:33	
EPA 6010D	Thallium, Dissolved	7.8J	ug/L	20.0	03/21/19 14:33	B
EPA 6010D	Vanadium, Dissolved	5.5J	ug/L	15.0	03/21/19 14:33	
EPA 8260B	Carbon tetrachloride	35.6	ug/L	0.50	03/18/19 19:27	
EPA 8260B	Chloroform	1.3J	ug/L	4.0	03/18/19 19:27	
SM 2320B	Alkalinity, Total as CaCO3	269	mg/L	5.0	03/18/19 10:07	
SM 2540C	Total Dissolved Solids	332	mg/L	10.0	03/22/19 14:36	
EPA 300.0	Chloride	5.5	mg/L	1.2	03/16/19 15:29	
EPA 300.0	Nitrate as N	1.1	mg/L	0.10	03/16/19 15:29	
EPA 300.0	Sulfate	7.4	mg/L	1.2	03/16/19 15:29	
EPA 353.2	Nitrogen, NO2 plus NO3	1.2	mg/L	0.10	03/20/19 15:58	
SM 5310C	Total Organic Carbon	0.94J	mg/L	1.0	03/21/19 19:08	B
10467061007	FD3-GW-031519					
EPA 6010D	Barium, Dissolved	40.6	ug/L	10.0	03/21/19 14:34	
EPA 6010D	Beryllium, Dissolved	0.16J	ug/L	5.0	03/21/19 14:34	
EPA 6010D	Calcium, Dissolved	30600	ug/L	500	03/21/19 14:34	
EPA 6010D	Cobalt, Dissolved	0.70J	ug/L	10.0	03/21/19 14:34	
EPA 6010D	Iron, Dissolved	9.4J	ug/L	50.0	03/21/19 14:34	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10467061007	FD3-GW-031519					
EPA 6010D	Magnesium, Dissolved	8820	ug/L	500	03/21/19 14:34	
EPA 6010D	Manganese, Dissolved	4.7J	ug/L	5.0	03/21/19 14:34	
EPA 6010D	Potassium, Dissolved	1030J	ug/L	2500	03/21/19 14:34	
EPA 6010D	Sodium, Dissolved	12800	ug/L	1000	03/21/19 14:34	
EPA 6010D	Vanadium, Dissolved	1.7J	ug/L	15.0	03/21/19 14:34	
SM 2320B	Alkalinity, Total as CaCO ₃	142	mg/L	5.0	03/18/19 10:11	
SM 2540C	Total Dissolved Solids	201	mg/L	10.0	03/22/19 14:36	
EPA 300.0	Chloride	3.3	mg/L	1.2	03/16/19 16:44	
EPA 300.0	Nitrate as N	0.14	mg/L	0.10	03/16/19 16:44	
EPA 300.0	Sulfate	3.1	mg/L	1.2	03/16/19 16:44	
EPA 353.2	Nitrogen, NO ₂ plus NO ₃	0.15	mg/L	0.10	03/20/19 15:59	
SM 5310C	Total Organic Carbon	0.44J	mg/L	1.0	03/21/19 18:55	B

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Method: RSK 175

Description: RSK 175 GCV Headspace

Client: UPRR_CH2M/Jacobs

Date: March 26, 2019

General Information:

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

Hold Time:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Surrogates:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Duplicate Sample:

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

QC Batch: 594205

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 3212642)
 - Ethane
 - Methane

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling-Revised Report
Pace Project No.: 10467061

Method: EPA 6010D
Description: 6010D MET ICP, Dissolved
Client: UPRR_CH2M/Jacobs
Date: March 26, 2019

General Information:

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

Hold Time:

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

Sample Preparation:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Method Blank:

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

QC Batch: 594185

- B: Analyte was detected in the associated method blank.
 - BLANK for HBN 594185 [MPRP/907 (Lab ID: 3212574)]
 - Thallium, Dissolved

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 594185

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10467061001

- P6: Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
 - MSD (Lab ID: 3212577)
 - Sodium, Dissolved

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Method: EPA 7470A

Description: 7470A Mercury, Dissolved

Client: UPRR_CH2M/Jacobs

Date: March 26, 2019

General Information:

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

Hold Time:

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

Sample Preparation:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 26, 2019

General Information:

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

Hold Time:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Internal Standards:

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

Surrogates:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 594231

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10467107001

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

- MS (Lab ID: 3212820)
 - Acrolein
- MSD (Lab ID: 3212821)
 - Acrolein

Additional Comments:

Analyte Comments:

QC Batch: 594231

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3212730)
 - 1,2-Dichloroethene (Total)

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 26, 2019

Analyte Comments:

QC Batch: 594231

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3212730)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- FD1-GW-031519 (Lab ID: 10467061004)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- FD2-GW-031519 (Lab ID: 10467061005)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- FD3-GW-031519 (Lab ID: 10467061007)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3212731)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3212820)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3212821)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MW20D-GW-031519 (Lab ID: 10467061006)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MW3D-GW-031519 (Lab ID: 10467061003)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MW9D-GW-031519 (Lab ID: 10467061002)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MW9U-GW-031519 (Lab ID: 10467061001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 26, 2019

Analyte Comments:

QC Batch: 594231

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- MW9U-GW-031519 (Lab ID: 10467061001)
 - 2,2,4-Trimethylpentane
- TB-031519 (Lab ID: 10467061008)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Method: SM 2320B

Description: 2320B Alkalinity

Client: UPRR_CH2M/Jacobs

Date: March 26, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Method: SM 2540C

Description: 2540C Total Dissolved Solids

Client: UPRR_CH2M/Jacobs

Date: March 26, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Duplicate Sample:

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

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Method: SM 4500-S-2 D

Description: 4500S2D Sulfide, Total

Client: UPRR_CH2M/Jacobs

Date: March 26, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 136770

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2098851001

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

- MS (Lab ID: 595003)
- Sulfide, Total

Duplicate Sample:

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

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Method: EPA 300.0

Description: 300.0 IC Anions

Client: UPRR_CH2M/Jacobs

Date: March 26, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 594126

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10467061001

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

- MS (Lab ID: 3212258)
 - Chloride
 - Nitrate as N
 - Sulfate
- MSD (Lab ID: 3212259)
 - Chloride
 - Nitrate as N
 - Sulfate

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Method: EPA 353.2

Description: 353.2 Nitrate + Nitrite

Client: UPRR_CH2M/Jacobs

Date: March 26, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

Analyte Comments:

QC Batch: 594791

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 3215473)
 - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 3215474)
 - Nitrogen, NO2 plus NO3

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Method: EPA 410.4

Description: 410.4 COD

Client: UPRR_CH2M/Jacobs

Date: March 26, 2019

General Information:

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

Hold Time:

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

Sample Preparation:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Method: SM 5310C

Description: 5310C TOC

Client: UPRR_CH2M/Jacobs

Date: March 26, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

QC Batch: 163044

B: Analyte was detected in the associated method blank.

- BLANK for HBN 163044 [WETA/265 (Lab ID: 642680)]
 - Total Organic Carbon

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: **MW9U-GW-031519** Lab ID: **10467061001** Collected: 03/15/19 09:00 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		03/18/19 11:48	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/18/19 11:48	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/18/19 11:48	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Aluminum, Dissolved	71.2J	ug/L	200	15.5	1	03/18/19 13:19	03/21/19 14:12	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/18/19 13:19	03/21/19 14:12	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/18/19 13:19	03/21/19 14:12	7440-38-2	
Barium, Dissolved	44.2	ug/L	10.0	0.18	1	03/18/19 13:19	03/21/19 14:12	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/18/19 13:19	03/21/19 14:12	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	03/18/19 13:19	03/21/19 14:12	7440-43-9	
Calcium, Dissolved	67300	ug/L	500	13.9	1	03/18/19 13:19	03/21/19 14:12	7440-70-2	
Chromium, Dissolved	1.1J	ug/L	10.0	0.49	1	03/18/19 13:19	03/21/19 14:12	7440-47-3	
Cobalt, Dissolved	0.81J	ug/L	10.0	0.50	1	03/18/19 13:19	03/21/19 14:12	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/18/19 13:19	03/21/19 14:12	7440-50-8	
Iron, Dissolved	336	ug/L	50.0	4.3	1	03/18/19 13:19	03/21/19 14:12	7439-89-6	
Lead, Dissolved	3.4J	ug/L	10.0	2.0	1	03/18/19 13:19	03/21/19 14:12	7439-92-1	
Magnesium, Dissolved	17500	ug/L	500	9.8	1	03/18/19 13:19	03/21/19 14:12	7439-95-4	
Manganese, Dissolved	14.7	ug/L	5.0	0.22	1	03/18/19 13:19	03/21/19 14:12	7439-96-5	
Nickel, Dissolved	6.1J	ug/L	20.0	1.1	1	03/18/19 13:19	03/21/19 14:12	7440-02-0	
Potassium, Dissolved	3020	ug/L	2500	310	1	03/18/19 13:19	03/21/19 14:12	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/18/19 13:19	03/21/19 14:12	7782-49-2	
Silver, Dissolved	0.41J	ug/L	10.0	0.38	1	03/18/19 13:19	03/21/19 14:12	7440-22-4	
Sodium, Dissolved	85500	ug/L	1000	21.5	1	03/18/19 13:19	03/21/19 14:12	7440-23-5	P6
Thallium, Dissolved	6.3J	ug/L	20.0	4.3	1	03/18/19 13:19	03/21/19 14:12	7440-28-0	B
Vanadium, Dissolved	6.7J	ug/L	15.0	0.29	1	03/18/19 13:19	03/21/19 14:12	7440-62-2	
Zinc, Dissolved	7.9J	ug/L	20.0	2.5	1	03/18/19 13:19	03/21/19 14:12	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/18/19 17:13	03/19/19 15:44	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/18/19 17:27	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/18/19 17:27	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/18/19 17:27	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/18/19 17:27	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/18/19 17:27	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/18/19 17:27	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/18/19 17:27	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/18/19 17:27	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/18/19 17:27	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/18/19 17:27	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/18/19 17:27	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/18/19 17:27	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/18/19 17:27	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/18/19 17:27	106-93-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: **MW9U-GW-031519** Lab ID: **10467061001** Collected: 03/15/19 09:00 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/18/19 17:27	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/18/19 17:27	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/18/19 17:27	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/18/19 17:27	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	1.0	0.12	1		03/18/19 17:27	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/18/19 17:27	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/18/19 17:27	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/18/19 17:27	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/18/19 17:27	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/18/19 17:27	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/18/19 17:27	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/18/19 17:27	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/18/19 17:27	95-49-8	
2-Hexanone	<0.88	ug/L	20.0	0.88	1		03/18/19 17:27	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/18/19 17:27	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/18/19 17:27	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/18/19 17:27	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/18/19 17:27	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/18/19 17:27	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/18/19 17:27	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/18/19 17:27	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/18/19 17:27	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/18/19 17:27	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/18/19 17:27	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/18/19 17:27	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/18/19 17:27	75-15-0	
Carbon tetrachloride	810	ug/L	2.5	0.94	5		03/19/19 11:51	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/18/19 17:27	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/18/19 17:27	75-00-3	
Chloroform	21.8	ug/L	4.0	0.45	1		03/18/19 17:27	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/18/19 17:27	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/18/19 17:27	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/18/19 17:27	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/18/19 17:27	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/18/19 17:27	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/18/19 17:27	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/18/19 17:27	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/18/19 17:27	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/18/19 17:27	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		03/18/19 17:27	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/18/19 17:27	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/18/19 17:27	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/18/19 17:27	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/18/19 17:27	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/18/19 17:27	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/18/19 17:27	109-99-9	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: **MW9U-GW-031519** Lab ID: **10467061001** Collected: 03/15/19 09:00 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Toluene	<0.083	ug/L	0.50	0.083	1		03/18/19 17:27	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/18/19 17:27	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/18/19 17:27	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/18/19 17:27	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/18/19 17:27	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/18/19 17:27	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/18/19 17:27	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/18/19 17:27	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/18/19 17:27	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/18/19 17:27	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/18/19 17:27	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/18/19 17:27	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/18/19 17:27	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/18/19 17:27	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/18/19 17:27	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/18/19 17:27	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/18/19 17:27	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/18/19 17:27	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		03/18/19 17:27	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/18/19 17:27	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	107	%	75-136		1		03/18/19 17:27	17060-07-0	
Toluene-d8 (S)	100	%	75-125		1		03/18/19 17:27	2037-26-5	
4-Bromofluorobenzene (S)	98	%	75-125		1		03/18/19 17:27	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	155	mg/L	5.0	1.0	1		03/18/19 08:43		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	595	mg/L	10.0	5.0	1		03/20/19 16:21		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/20/19 09:42	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	161	mg/L	6.0	1.4	5		03/16/19 17:02	16887-00-6	M1
Nitrate as N	5.7	mg/L	0.10	0.015	1		03/16/19 12:59	14797-55-8	M1
Sulfate	32.5	mg/L	1.2	0.19	1		03/16/19 12:59	14808-79-8	M1
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	5.6	mg/L	0.50	0.088	5		03/20/19 16:49		
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	03/20/19 10:51	03/20/19 14:30		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report
Pace Project No.: 10467061

Sample: MW9U-GW-031519 **Lab ID: 10467061001** Collected: 03/15/19 09:00 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	2.8J	mg/L	5.0	1.0	5		03/21/19 16:58	7440-44-0	B

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: **MW9D-GW-031519** Lab ID: **10467061002** Collected: 03/15/19 10:15 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		03/18/19 11:55	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/18/19 11:55	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/18/19 11:55	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Aluminum, Dissolved	<15.5	ug/L	200	15.5	1	03/18/19 13:19	03/21/19 14:26	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/18/19 13:19	03/21/19 14:26	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/18/19 13:19	03/21/19 14:26	7440-38-2	
Barium, Dissolved	27.2	ug/L	10.0	0.18	1	03/18/19 13:19	03/21/19 14:26	7440-39-3	
Beryllium, Dissolved	0.14J	ug/L	5.0	0.12	1	03/18/19 13:19	03/21/19 14:26	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	03/18/19 13:19	03/21/19 14:26	7440-43-9	
Calcium, Dissolved	53500	ug/L	500	13.9	1	03/18/19 13:19	03/21/19 14:26	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/18/19 13:19	03/21/19 14:26	7440-47-3	
Cobalt, Dissolved	0.53J	ug/L	10.0	0.50	1	03/18/19 13:19	03/21/19 14:26	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/18/19 13:19	03/21/19 14:26	7440-50-8	
Iron, Dissolved	<4.3	ug/L	50.0	4.3	1	03/18/19 13:19	03/21/19 14:26	7439-89-6	
Lead, Dissolved	2.8J	ug/L	10.0	2.0	1	03/18/19 13:19	03/21/19 14:26	7439-92-1	
Magnesium, Dissolved	15200	ug/L	500	9.8	1	03/18/19 13:19	03/21/19 14:26	7439-95-4	
Manganese, Dissolved	1.1J	ug/L	5.0	0.22	1	03/18/19 13:19	03/21/19 14:26	7439-96-5	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	03/18/19 13:19	03/21/19 14:26	7440-02-0	
Potassium, Dissolved	2260J	ug/L	2500	310	1	03/18/19 13:19	03/21/19 14:26	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/18/19 13:19	03/21/19 14:26	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/18/19 13:19	03/21/19 14:26	7440-22-4	
Sodium, Dissolved	13200	ug/L	1000	21.5	1	03/18/19 13:19	03/21/19 14:26	7440-23-5	
Thallium, Dissolved	5.2J	ug/L	20.0	4.3	1	03/18/19 13:19	03/21/19 14:26	7440-28-0	B
Vanadium, Dissolved	8.3J	ug/L	15.0	0.29	1	03/18/19 13:19	03/21/19 14:26	7440-62-2	
Zinc, Dissolved	<2.5	ug/L	20.0	2.5	1	03/18/19 13:19	03/21/19 14:26	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/18/19 17:13	03/19/19 15:46	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/18/19 17:51	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/18/19 17:51	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/18/19 17:51	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/18/19 17:51	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/18/19 17:51	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/18/19 17:51	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/18/19 17:51	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/18/19 17:51	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/18/19 17:51	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/18/19 17:51	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/18/19 17:51	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/18/19 17:51	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/18/19 17:51	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/18/19 17:51	106-93-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: MW9D-GW-031519 Lab ID: 10467061002 Collected: 03/15/19 10:15 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/18/19 17:51	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/18/19 17:51	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/18/19 17:51	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/18/19 17:51	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	1.0	0.12	1		03/18/19 17:51	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/18/19 17:51	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/18/19 17:51	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/18/19 17:51	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/18/19 17:51	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/18/19 17:51	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/18/19 17:51	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/18/19 17:51	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/18/19 17:51	95-49-8	
2-Hexanone	<0.88	ug/L	20.0	0.88	1		03/18/19 17:51	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/18/19 17:51	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/18/19 17:51	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/18/19 17:51	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/18/19 17:51	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/18/19 17:51	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/18/19 17:51	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/18/19 17:51	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/18/19 17:51	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/18/19 17:51	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/18/19 17:51	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/18/19 17:51	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/18/19 17:51	75-15-0	
Carbon tetrachloride	124	ug/L	0.50	0.19	1		03/18/19 17:51	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/18/19 17:51	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/18/19 17:51	75-00-3	
Chloroform	4.5	ug/L	4.0	0.45	1		03/18/19 17:51	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/18/19 17:51	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/18/19 17:51	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/18/19 17:51	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/18/19 17:51	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/18/19 17:51	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/18/19 17:51	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/18/19 17:51	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/18/19 17:51	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/18/19 17:51	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		03/18/19 17:51	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/18/19 17:51	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/18/19 17:51	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/18/19 17:51	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/18/19 17:51	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/18/19 17:51	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/18/19 17:51	109-99-9	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: **MW9D-GW-031519** Lab ID: **10467061002** Collected: 03/15/19 10:15 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level Analytical Method: EPA 8260B									
Toluene	<0.083	ug/L	0.50	0.083	1		03/18/19 17:51	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/18/19 17:51	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/18/19 17:51	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/18/19 17:51	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/18/19 17:51	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/18/19 17:51	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/18/19 17:51	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/18/19 17:51	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/18/19 17:51	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/18/19 17:51	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/18/19 17:51	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/18/19 17:51	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/18/19 17:51	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/18/19 17:51	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/18/19 17:51	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/18/19 17:51	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/18/19 17:51	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/18/19 17:51	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		03/18/19 17:51	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/18/19 17:51	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	95	%	75-136		1		03/18/19 17:51	17060-07-0	
Toluene-d8 (S)	97	%	75-125		1		03/18/19 17:51	2037-26-5	
4-Bromofluorobenzene (S)	98	%	75-125		1		03/18/19 17:51	460-00-4	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	171	mg/L	5.0	1.0	1		03/18/19 08:54		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	315	mg/L	10.0	5.0	1		03/20/19 16:21		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/20/19 09:43	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	12.3	mg/L	1.2	0.28	1		03/16/19 14:28	16887-00-6	
Nitrate as N	4.3	mg/L	0.10	0.015	1		03/16/19 14:28	14797-55-8	
Sulfate	33.6	mg/L	1.2	0.19	1		03/16/19 14:28	14808-79-8	
353.2 Nitrate + Nitrite Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	4.3	mg/L	0.50	0.088	5		03/20/19 16:50		
410.4 COD Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	03/25/19 13:21	03/26/19 08:36		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: MW9D-GW-031519 **Lab ID: 10467061002** Collected: 03/15/19 10:15 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	0.92J	mg/L	1.0	0.20	1		03/21/19 17:50	7440-44-0	B

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: MW3D-GW-031519 **Lab ID:** 10467061003 Collected: 03/15/19 11:15 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		03/18/19 12:02	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/18/19 12:02	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/18/19 12:02	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Aluminum, Dissolved	<15.5	ug/L	200	15.5	1	03/18/19 13:19	03/21/19 14:28	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/18/19 13:19	03/21/19 14:28	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/18/19 13:19	03/21/19 14:28	7440-38-2	
Barium, Dissolved	38.3	ug/L	10.0	0.18	1	03/18/19 13:19	03/21/19 14:28	7440-39-3	
Beryllium, Dissolved	0.17J	ug/L	5.0	0.12	1	03/18/19 13:19	03/21/19 14:28	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	03/18/19 13:19	03/21/19 14:28	7440-43-9	
Calcium, Dissolved	28700	ug/L	500	13.9	1	03/18/19 13:19	03/21/19 14:28	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/18/19 13:19	03/21/19 14:28	7440-47-3	
Cobalt, Dissolved	0.89J	ug/L	10.0	0.50	1	03/18/19 13:19	03/21/19 14:28	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/18/19 13:19	03/21/19 14:28	7440-50-8	
Iron, Dissolved	9.3J	ug/L	50.0	4.3	1	03/18/19 13:19	03/21/19 14:28	7439-89-6	
Lead, Dissolved	2.4J	ug/L	10.0	2.0	1	03/18/19 13:19	03/21/19 14:28	7439-92-1	
Magnesium, Dissolved	8270	ug/L	500	9.8	1	03/18/19 13:19	03/21/19 14:28	7439-95-4	
Manganese, Dissolved	4.8J	ug/L	5.0	0.22	1	03/18/19 13:19	03/21/19 14:28	7439-96-5	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	03/18/19 13:19	03/21/19 14:28	7440-02-0	
Potassium, Dissolved	985J	ug/L	2500	310	1	03/18/19 13:19	03/21/19 14:28	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/18/19 13:19	03/21/19 14:28	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/18/19 13:19	03/21/19 14:28	7440-22-4	
Sodium, Dissolved	12000	ug/L	1000	21.5	1	03/18/19 13:19	03/21/19 14:28	7440-23-5	
Thallium, Dissolved	8.6J	ug/L	20.0	4.3	1	03/18/19 13:19	03/21/19 14:28	7440-28-0	B
Vanadium, Dissolved	1.8J	ug/L	15.0	0.29	1	03/18/19 13:19	03/21/19 14:28	7440-62-2	
Zinc, Dissolved	<2.5	ug/L	20.0	2.5	1	03/18/19 13:19	03/21/19 14:28	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/18/19 17:13	03/19/19 15:52	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/18/19 18:15	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/18/19 18:15	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/18/19 18:15	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/18/19 18:15	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/18/19 18:15	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/18/19 18:15	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/18/19 18:15	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/18/19 18:15	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/18/19 18:15	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/18/19 18:15	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/18/19 18:15	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/18/19 18:15	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/18/19 18:15	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/18/19 18:15	106-93-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: **MW3D-GW-031519** Lab ID: **10467061003** Collected: 03/15/19 11:15 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/18/19 18:15	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/18/19 18:15	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/18/19 18:15	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/18/19 18:15	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	1.0	0.12	1		03/18/19 18:15	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/18/19 18:15	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/18/19 18:15	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/18/19 18:15	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/18/19 18:15	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/18/19 18:15	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/18/19 18:15	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/18/19 18:15	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/18/19 18:15	95-49-8	
2-Hexanone	<0.88	ug/L	20.0	0.88	1		03/18/19 18:15	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/18/19 18:15	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/18/19 18:15	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/18/19 18:15	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/18/19 18:15	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/18/19 18:15	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/18/19 18:15	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/18/19 18:15	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/18/19 18:15	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/18/19 18:15	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/18/19 18:15	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/18/19 18:15	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/18/19 18:15	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/18/19 18:15	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/18/19 18:15	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/18/19 18:15	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/18/19 18:15	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/18/19 18:15	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/18/19 18:15	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/18/19 18:15	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/18/19 18:15	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/18/19 18:15	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/18/19 18:15	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/18/19 18:15	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/18/19 18:15	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/18/19 18:15	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		03/18/19 18:15	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/18/19 18:15	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/18/19 18:15	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/18/19 18:15	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/18/19 18:15	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/18/19 18:15	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/18/19 18:15	109-99-9	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: MW3D-GW-031519 **Lab ID: 10467061003** Collected: 03/15/19 11:15 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level Analytical Method: EPA 8260B									
Toluene	<0.083	ug/L	0.50	0.083	1		03/18/19 18:15	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/18/19 18:15	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/18/19 18:15	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/18/19 18:15	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/18/19 18:15	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/18/19 18:15	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/18/19 18:15	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/18/19 18:15	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/18/19 18:15	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/18/19 18:15	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/18/19 18:15	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/18/19 18:15	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/18/19 18:15	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/18/19 18:15	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/18/19 18:15	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/18/19 18:15	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/18/19 18:15	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/18/19 18:15	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		03/18/19 18:15	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/18/19 18:15	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	102	%	75-136		1		03/18/19 18:15	17060-07-0	
Toluene-d8 (S)	97	%	75-125		1		03/18/19 18:15	2037-26-5	
4-Bromofluorobenzene (S)	99	%	75-125		1		03/18/19 18:15	460-00-4	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	146	mg/L	5.0	1.0	1		03/18/19 09:58		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	197	mg/L	10.0	5.0	1		03/20/19 16:21		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/20/19 09:46	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	3.3	mg/L	1.2	0.28	1		03/16/19 14:43	16887-00-6	
Nitrate as N	0.14	mg/L	0.10	0.015	1		03/16/19 14:43	14797-55-8	
Sulfate	3.1	mg/L	1.2	0.19	1		03/16/19 14:43	14808-79-8	
353.2 Nitrate + Nitrite Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	0.15	mg/L	0.10	0.018	1		03/20/19 15:55		
410.4 COD Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	03/25/19 13:21	03/26/19 08:36		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: MW3D-GW-031519 **Lab ID: 10467061003** Collected: 03/15/19 11:15 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	0.56J	mg/L	1.0	0.20	1		03/21/19 18:42	7440-44-0	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: FD1-GW-031519 **Lab ID:** 10467061004 Collected: 03/15/19 09:05 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		03/18/19 12:38	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/18/19 12:38	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/18/19 12:38	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Aluminum, Dissolved	48.8J	ug/L	200	15.5	1	03/18/19 13:19	03/21/19 14:29	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/18/19 13:19	03/21/19 14:29	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/18/19 13:19	03/21/19 14:29	7440-38-2	
Barium, Dissolved	40.6	ug/L	10.0	0.18	1	03/18/19 13:19	03/21/19 14:29	7440-39-3	
Beryllium, Dissolved	0.14J	ug/L	5.0	0.12	1	03/18/19 13:19	03/21/19 14:29	7440-41-7	
Cadmium, Dissolved	0.32J	ug/L	3.0	0.26	1	03/18/19 13:19	03/21/19 14:29	7440-43-9	
Calcium, Dissolved	62500	ug/L	500	13.9	1	03/18/19 13:19	03/21/19 14:29	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/18/19 13:19	03/21/19 14:29	7440-47-3	
Cobalt, Dissolved	0.64J	ug/L	10.0	0.50	1	03/18/19 13:19	03/21/19 14:29	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/18/19 13:19	03/21/19 14:29	7440-50-8	
Iron, Dissolved	260	ug/L	50.0	4.3	1	03/18/19 13:19	03/21/19 14:29	7439-89-6	
Lead, Dissolved	2.5J	ug/L	10.0	2.0	1	03/18/19 13:19	03/21/19 14:29	7439-92-1	
Magnesium, Dissolved	16300	ug/L	500	9.8	1	03/18/19 13:19	03/21/19 14:29	7439-95-4	
Manganese, Dissolved	12.1	ug/L	5.0	0.22	1	03/18/19 13:19	03/21/19 14:29	7439-96-5	
Nickel, Dissolved	4.9J	ug/L	20.0	1.1	1	03/18/19 13:19	03/21/19 14:29	7440-02-0	
Potassium, Dissolved	2780	ug/L	2500	310	1	03/18/19 13:19	03/21/19 14:29	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/18/19 13:19	03/21/19 14:29	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/18/19 13:19	03/21/19 14:29	7440-22-4	
Sodium, Dissolved	79300	ug/L	1000	21.5	1	03/18/19 13:19	03/21/19 14:29	7440-23-5	
Thallium, Dissolved	6.9J	ug/L	20.0	4.3	1	03/18/19 13:19	03/21/19 14:29	7440-28-0	B
Vanadium, Dissolved	5.8J	ug/L	15.0	0.29	1	03/18/19 13:19	03/21/19 14:29	7440-62-2	
Zinc, Dissolved	3.1J	ug/L	20.0	2.5	1	03/18/19 13:19	03/21/19 14:29	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/18/19 17:13	03/19/19 15:54	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/18/19 18:39	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/18/19 18:39	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/18/19 18:39	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/18/19 18:39	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/18/19 18:39	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/18/19 18:39	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/18/19 18:39	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/18/19 18:39	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/18/19 18:39	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/18/19 18:39	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/18/19 18:39	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/18/19 18:39	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/18/19 18:39	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/18/19 18:39	106-93-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: FD1-GW-031519 **Lab ID: 10467061004** Collected: 03/15/19 09:05 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level									
Analytical Method: EPA 8260B									
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/18/19 18:39	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/18/19 18:39	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/18/19 18:39	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/18/19 18:39	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	1.0	0.12	1		03/18/19 18:39	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/18/19 18:39	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/18/19 18:39	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/18/19 18:39	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/18/19 18:39	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/18/19 18:39	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/18/19 18:39	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/18/19 18:39	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/18/19 18:39	95-49-8	
2-Hexanone	<0.88	ug/L	20.0	0.88	1		03/18/19 18:39	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/18/19 18:39	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/18/19 18:39	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/18/19 18:39	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/18/19 18:39	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/18/19 18:39	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/18/19 18:39	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/18/19 18:39	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/18/19 18:39	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/18/19 18:39	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/18/19 18:39	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/18/19 18:39	74-83-9	
Carbon disulfide	0.42J	ug/L	1.0	0.078	1		03/18/19 18:39	75-15-0	
Carbon tetrachloride	754	ug/L	2.5	0.94	5		03/19/19 12:14	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/18/19 18:39	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/18/19 18:39	75-00-3	
Chloroform	21.2	ug/L	4.0	0.45	1		03/18/19 18:39	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/18/19 18:39	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/18/19 18:39	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/18/19 18:39	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/18/19 18:39	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/18/19 18:39	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/18/19 18:39	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/18/19 18:39	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/18/19 18:39	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/18/19 18:39	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		03/18/19 18:39	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/18/19 18:39	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/18/19 18:39	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/18/19 18:39	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/18/19 18:39	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/18/19 18:39	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/18/19 18:39	109-99-9	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: FD1-GW-031519 **Lab ID: 10467061004** Collected: 03/15/19 09:05 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Toluene	<0.083	ug/L	0.50	0.083	1		03/18/19 18:39	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/18/19 18:39	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/18/19 18:39	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/18/19 18:39	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/18/19 18:39	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/18/19 18:39	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/18/19 18:39	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/18/19 18:39	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/18/19 18:39	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/18/19 18:39	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/18/19 18:39	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/18/19 18:39	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/18/19 18:39	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/18/19 18:39	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/18/19 18:39	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/18/19 18:39	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/18/19 18:39	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/18/19 18:39	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		03/18/19 18:39	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/18/19 18:39	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	102	%	75-136		1		03/18/19 18:39	17060-07-0	
Toluene-d8 (S)	99	%	75-125		1		03/18/19 18:39	2037-26-5	
4-Bromofluorobenzene (S)	97	%	75-125		1		03/18/19 18:39	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	147	mg/L	5.0	1.0	1		03/18/19 10:01		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	614	mg/L	10.0	5.0	1		03/20/19 16:21		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/20/19 09:43	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	163	mg/L	6.0	1.4	5		03/16/19 19:04	16887-00-6	
Nitrate as N	5.7	mg/L	0.10	0.015	1		03/16/19 14:59	14797-55-8	
Sulfate	32.0	mg/L	1.2	0.19	1		03/16/19 14:59	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	5.6	mg/L	0.50	0.088	5		03/20/19 16:51		FS
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	03/25/19 13:21	03/26/19 08:37		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: FD1-GW-031519 **Lab ID: 10467061004** Collected: 03/15/19 09:05 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	1.3	mg/L	1.0	0.20	1		03/21/19 17:37	7440-44-0	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: FD2-GW-031519 **Lab ID: 10467061005** Collected: 03/15/19 10:20 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		03/18/19 12:45	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/18/19 12:45	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/18/19 12:45	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Aluminum, Dissolved	<15.5	ug/L	200	15.5	1	03/18/19 13:19	03/21/19 14:31	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/18/19 13:19	03/21/19 14:31	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/18/19 13:19	03/21/19 14:31	7440-38-2	
Barium, Dissolved	27.3	ug/L	10.0	0.18	1	03/18/19 13:19	03/21/19 14:31	7440-39-3	
Beryllium, Dissolved	0.17J	ug/L	5.0	0.12	1	03/18/19 13:19	03/21/19 14:31	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	03/18/19 13:19	03/21/19 14:31	7440-43-9	
Calcium, Dissolved	53100	ug/L	500	13.9	1	03/18/19 13:19	03/21/19 14:31	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/18/19 13:19	03/21/19 14:31	7440-47-3	
Cobalt, Dissolved	0.89J	ug/L	10.0	0.50	1	03/18/19 13:19	03/21/19 14:31	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/18/19 13:19	03/21/19 14:31	7440-50-8	
Iron, Dissolved	<4.3	ug/L	50.0	4.3	1	03/18/19 13:19	03/21/19 14:31	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/18/19 13:19	03/21/19 14:31	7439-92-1	
Magnesium, Dissolved	15100	ug/L	500	9.8	1	03/18/19 13:19	03/21/19 14:31	7439-95-4	
Manganese, Dissolved	1.1J	ug/L	5.0	0.22	1	03/18/19 13:19	03/21/19 14:31	7439-96-5	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	03/18/19 13:19	03/21/19 14:31	7440-02-0	
Potassium, Dissolved	2230J	ug/L	2500	310	1	03/18/19 13:19	03/21/19 14:31	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/18/19 13:19	03/21/19 14:31	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/18/19 13:19	03/21/19 14:31	7440-22-4	
Sodium, Dissolved	13300	ug/L	1000	21.5	1	03/18/19 13:19	03/21/19 14:31	7440-23-5	
Thallium, Dissolved	4.4J	ug/L	20.0	4.3	1	03/18/19 13:19	03/21/19 14:31	7440-28-0	B
Vanadium, Dissolved	7.9J	ug/L	15.0	0.29	1	03/18/19 13:19	03/21/19 14:31	7440-62-2	
Zinc, Dissolved	<2.5	ug/L	20.0	2.5	1	03/18/19 13:19	03/21/19 14:31	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/18/19 17:13	03/19/19 16:00	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/18/19 19:03	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/18/19 19:03	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/18/19 19:03	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/18/19 19:03	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/18/19 19:03	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/18/19 19:03	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/18/19 19:03	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/18/19 19:03	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/18/19 19:03	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/18/19 19:03	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/18/19 19:03	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/18/19 19:03	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/18/19 19:03	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/18/19 19:03	106-93-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: **FD2-GW-031519** Lab ID: **10467061005** Collected: 03/15/19 10:20 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/18/19 19:03	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/18/19 19:03	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/18/19 19:03	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/18/19 19:03	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	1.0	0.12	1		03/18/19 19:03	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/18/19 19:03	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/18/19 19:03	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/18/19 19:03	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/18/19 19:03	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/18/19 19:03	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/18/19 19:03	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/18/19 19:03	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/18/19 19:03	95-49-8	
2-Hexanone	<0.88	ug/L	20.0	0.88	1		03/18/19 19:03	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/18/19 19:03	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/18/19 19:03	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/18/19 19:03	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/18/19 19:03	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/18/19 19:03	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/18/19 19:03	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/18/19 19:03	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/18/19 19:03	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/18/19 19:03	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/18/19 19:03	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/18/19 19:03	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/18/19 19:03	75-15-0	
Carbon tetrachloride	135	ug/L	0.50	0.19	1		03/18/19 19:03	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/18/19 19:03	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/18/19 19:03	75-00-3	
Chloroform	4.6	ug/L	4.0	0.45	1		03/18/19 19:03	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/18/19 19:03	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/18/19 19:03	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/18/19 19:03	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/18/19 19:03	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/18/19 19:03	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/18/19 19:03	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/18/19 19:03	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/18/19 19:03	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/18/19 19:03	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		03/18/19 19:03	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/18/19 19:03	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/18/19 19:03	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/18/19 19:03	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/18/19 19:03	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/18/19 19:03	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/18/19 19:03	109-99-9	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: FD2-GW-031519 **Lab ID: 10467061005** Collected: 03/15/19 10:20 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Toluene	<0.083	ug/L	0.50	0.083	1		03/18/19 19:03	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/18/19 19:03	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/18/19 19:03	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/18/19 19:03	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/18/19 19:03	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/18/19 19:03	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/18/19 19:03	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/18/19 19:03	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/18/19 19:03	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/18/19 19:03	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/18/19 19:03	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/18/19 19:03	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/18/19 19:03	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/18/19 19:03	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/18/19 19:03	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/18/19 19:03	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/18/19 19:03	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/18/19 19:03	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		03/18/19 19:03	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/18/19 19:03	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%	75-136		1		03/18/19 19:03	17060-07-0	
Toluene-d8 (S)	97	%	75-125		1		03/18/19 19:03	2037-26-5	
4-Bromofluorobenzene (S)	99	%	75-125		1		03/18/19 19:03	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	166	mg/L	5.0	1.0	1		03/18/19 10:04		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	306	mg/L	10.0	5.0	1		03/22/19 14:36		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/20/19 09:44	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	12.2	mg/L	1.2	0.28	1		03/16/19 15:14	16887-00-6	
Nitrate as N	4.3	mg/L	0.10	0.015	1		03/16/19 15:14	14797-55-8	
Sulfate	33.6	mg/L	1.2	0.19	1		03/16/19 15:14	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	4.1	mg/L	0.50	0.088	5		03/20/19 16:52		
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	03/25/19 13:21	03/26/19 08:37		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: FD2-GW-031519 **Lab ID: 10467061005** Collected: 03/15/19 10:20 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
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5310C TOC Analytical Method: SM 5310C

Total Organic Carbon	1.0	mg/L	1.0	0.20	1		03/21/19 18:29	7440-44-0	
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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: MW20D-GW-031519 **Lab ID: 10467061006** Collected: 03/15/19 13:00 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		03/18/19 12:23	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/18/19 12:23	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/18/19 12:23	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Aluminum, Dissolved	37.2J	ug/L	200	15.5	1	03/18/19 13:19	03/21/19 14:33	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/18/19 13:19	03/21/19 14:33	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/18/19 13:19	03/21/19 14:33	7440-38-2	
Barium, Dissolved	18.8	ug/L	10.0	0.18	1	03/18/19 13:19	03/21/19 14:33	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/18/19 13:19	03/21/19 14:33	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	03/18/19 13:19	03/21/19 14:33	7440-43-9	
Calcium, Dissolved	57600	ug/L	500	13.9	1	03/18/19 13:19	03/21/19 14:33	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/18/19 13:19	03/21/19 14:33	7440-47-3	
Cobalt, Dissolved	0.67J	ug/L	10.0	0.50	1	03/18/19 13:19	03/21/19 14:33	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/18/19 13:19	03/21/19 14:33	7440-50-8	
Iron, Dissolved	20.2J	ug/L	50.0	4.3	1	03/18/19 13:19	03/21/19 14:33	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/18/19 13:19	03/21/19 14:33	7439-92-1	
Magnesium, Dissolved	21300	ug/L	500	9.8	1	03/18/19 13:19	03/21/19 14:33	7439-95-4	
Manganese, Dissolved	2.6J	ug/L	5.0	0.22	1	03/18/19 13:19	03/21/19 14:33	7439-96-5	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	03/18/19 13:19	03/21/19 14:33	7440-02-0	
Potassium, Dissolved	3570	ug/L	2500	310	1	03/18/19 13:19	03/21/19 14:33	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/18/19 13:19	03/21/19 14:33	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/18/19 13:19	03/21/19 14:33	7440-22-4	
Sodium, Dissolved	19000	ug/L	1000	21.5	1	03/18/19 13:19	03/21/19 14:33	7440-23-5	
Thallium, Dissolved	7.8J	ug/L	20.0	4.3	1	03/18/19 13:19	03/21/19 14:33	7440-28-0	B
Vanadium, Dissolved	5.5J	ug/L	15.0	0.29	1	03/18/19 13:19	03/21/19 14:33	7440-62-2	
Zinc, Dissolved	<2.5	ug/L	20.0	2.5	1	03/18/19 13:19	03/21/19 14:33	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/18/19 17:13	03/19/19 16:02	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/18/19 19:27	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/18/19 19:27	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/18/19 19:27	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/18/19 19:27	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/18/19 19:27	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/18/19 19:27	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/18/19 19:27	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/18/19 19:27	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/18/19 19:27	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/18/19 19:27	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/18/19 19:27	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/18/19 19:27	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/18/19 19:27	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/18/19 19:27	106-93-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: **MW20D-GW-031519** Lab ID: **10467061006** Collected: 03/15/19 13:00 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/18/19 19:27	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/18/19 19:27	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/18/19 19:27	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/18/19 19:27	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	1.0	0.12	1		03/18/19 19:27	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/18/19 19:27	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/18/19 19:27	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/18/19 19:27	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/18/19 19:27	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/18/19 19:27	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/18/19 19:27	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/18/19 19:27	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/18/19 19:27	95-49-8	
2-Hexanone	<0.88	ug/L	20.0	0.88	1		03/18/19 19:27	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/18/19 19:27	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/18/19 19:27	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/18/19 19:27	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/18/19 19:27	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/18/19 19:27	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/18/19 19:27	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/18/19 19:27	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/18/19 19:27	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/18/19 19:27	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/18/19 19:27	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/18/19 19:27	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/18/19 19:27	75-15-0	
Carbon tetrachloride	35.6	ug/L	0.50	0.19	1		03/18/19 19:27	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/18/19 19:27	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/18/19 19:27	75-00-3	
Chloroform	1.3J	ug/L	4.0	0.45	1		03/18/19 19:27	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/18/19 19:27	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/18/19 19:27	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/18/19 19:27	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/18/19 19:27	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/18/19 19:27	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/18/19 19:27	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/18/19 19:27	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/18/19 19:27	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/18/19 19:27	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		03/18/19 19:27	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/18/19 19:27	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/18/19 19:27	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/18/19 19:27	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/18/19 19:27	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/18/19 19:27	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/18/19 19:27	109-99-9	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: MW20D-GW-031519 **Lab ID: 10467061006** Collected: 03/15/19 13:00 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Toluene	<0.083	ug/L	0.50	0.083	1		03/18/19 19:27	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/18/19 19:27	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/18/19 19:27	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/18/19 19:27	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/18/19 19:27	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/18/19 19:27	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/18/19 19:27	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/18/19 19:27	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/18/19 19:27	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/18/19 19:27	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/18/19 19:27	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/18/19 19:27	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/18/19 19:27	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/18/19 19:27	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/18/19 19:27	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/18/19 19:27	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/18/19 19:27	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/18/19 19:27	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		03/18/19 19:27	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/18/19 19:27	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	102	%	75-136		1		03/18/19 19:27	17060-07-0	
Toluene-d8 (S)	99	%	75-125		1		03/18/19 19:27	2037-26-5	
4-Bromofluorobenzene (S)	97	%	75-125		1		03/18/19 19:27	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	269	mg/L	5.0	1.0	1		03/18/19 10:07		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	332	mg/L	10.0	5.0	1		03/22/19 14:36		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/20/19 09:48	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	5.5	mg/L	1.2	0.28	1		03/16/19 15:29	16887-00-6	
Nitrate as N	1.1	mg/L	0.10	0.015	1		03/16/19 15:29	14797-55-8	
Sulfate	7.4	mg/L	1.2	0.19	1		03/16/19 15:29	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	1.2	mg/L	0.10	0.018	1		03/20/19 15:58		
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	03/25/19 13:21	03/26/19 08:37		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: MW20D-GW-031519 **Lab ID: 10467061006** Collected: 03/15/19 13:00 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	0.94J	mg/L	1.0	0.20	1		03/21/19 19:08	7440-44-0	B

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: FD3-GW-031519 **Lab ID: 10467061007** Collected: 03/15/19 11:20 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		03/18/19 12:52	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/18/19 12:52	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/18/19 12:52	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Aluminum, Dissolved	<15.5	ug/L	200	15.5	1	03/18/19 13:19	03/21/19 14:34	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/18/19 13:19	03/21/19 14:34	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/18/19 13:19	03/21/19 14:34	7440-38-2	
Barium, Dissolved	40.6	ug/L	10.0	0.18	1	03/18/19 13:19	03/21/19 14:34	7440-39-3	
Beryllium, Dissolved	0.16J	ug/L	5.0	0.12	1	03/18/19 13:19	03/21/19 14:34	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	03/18/19 13:19	03/21/19 14:34	7440-43-9	
Calcium, Dissolved	30600	ug/L	500	13.9	1	03/18/19 13:19	03/21/19 14:34	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/18/19 13:19	03/21/19 14:34	7440-47-3	
Cobalt, Dissolved	0.70J	ug/L	10.0	0.50	1	03/18/19 13:19	03/21/19 14:34	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/18/19 13:19	03/21/19 14:34	7440-50-8	
Iron, Dissolved	9.4J	ug/L	50.0	4.3	1	03/18/19 13:19	03/21/19 14:34	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/18/19 13:19	03/21/19 14:34	7439-92-1	
Magnesium, Dissolved	8820	ug/L	500	9.8	1	03/18/19 13:19	03/21/19 14:34	7439-95-4	
Manganese, Dissolved	4.7J	ug/L	5.0	0.22	1	03/18/19 13:19	03/21/19 14:34	7439-96-5	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	03/18/19 13:19	03/21/19 14:34	7440-02-0	
Potassium, Dissolved	1030J	ug/L	2500	310	1	03/18/19 13:19	03/21/19 14:34	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/18/19 13:19	03/21/19 14:34	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/18/19 13:19	03/21/19 14:34	7440-22-4	
Sodium, Dissolved	12800	ug/L	1000	21.5	1	03/18/19 13:19	03/21/19 14:34	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/18/19 13:19	03/21/19 14:34	7440-28-0	
Vanadium, Dissolved	1.7J	ug/L	15.0	0.29	1	03/18/19 13:19	03/21/19 14:34	7440-62-2	
Zinc, Dissolved	<2.5	ug/L	20.0	2.5	1	03/18/19 13:19	03/21/19 14:34	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/18/19 17:13	03/19/19 16:05	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/18/19 19:51	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/18/19 19:51	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/18/19 19:51	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/18/19 19:51	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/18/19 19:51	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/18/19 19:51	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/18/19 19:51	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/18/19 19:51	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/18/19 19:51	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/18/19 19:51	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/18/19 19:51	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/18/19 19:51	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/18/19 19:51	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/18/19 19:51	106-93-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: **FD3-GW-031519** Lab ID: **10467061007** Collected: 03/15/19 11:20 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/18/19 19:51	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/18/19 19:51	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/18/19 19:51	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/18/19 19:51	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	1.0	0.12	1		03/18/19 19:51	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/18/19 19:51	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/18/19 19:51	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/18/19 19:51	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/18/19 19:51	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/18/19 19:51	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/18/19 19:51	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/18/19 19:51	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/18/19 19:51	95-49-8	
2-Hexanone	<0.88	ug/L	20.0	0.88	1		03/18/19 19:51	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/18/19 19:51	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/18/19 19:51	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/18/19 19:51	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/18/19 19:51	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/18/19 19:51	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/18/19 19:51	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/18/19 19:51	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/18/19 19:51	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/18/19 19:51	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/18/19 19:51	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/18/19 19:51	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/18/19 19:51	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/18/19 19:51	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/18/19 19:51	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/18/19 19:51	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/18/19 19:51	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/18/19 19:51	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/18/19 19:51	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/18/19 19:51	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/18/19 19:51	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/18/19 19:51	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/18/19 19:51	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/18/19 19:51	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/18/19 19:51	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/18/19 19:51	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		03/18/19 19:51	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/18/19 19:51	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/18/19 19:51	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/18/19 19:51	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/18/19 19:51	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/18/19 19:51	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/18/19 19:51	109-99-9	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: FD3-GW-031519 **Lab ID: 10467061007** Collected: 03/15/19 11:20 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Toluene	<0.083	ug/L	0.50	0.083	1		03/18/19 19:51	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/18/19 19:51	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/18/19 19:51	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/18/19 19:51	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/18/19 19:51	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/18/19 19:51	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/18/19 19:51	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/18/19 19:51	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/18/19 19:51	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/18/19 19:51	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/18/19 19:51	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/18/19 19:51	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/18/19 19:51	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/18/19 19:51	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/18/19 19:51	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/18/19 19:51	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/18/19 19:51	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/18/19 19:51	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		03/18/19 19:51	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/18/19 19:51	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	101	%	75-136		1		03/18/19 19:51	17060-07-0	
Toluene-d8 (S)	97	%	75-125		1		03/18/19 19:51	2037-26-5	
4-Bromofluorobenzene (S)	97	%	75-125		1		03/18/19 19:51	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	142	mg/L	5.0	1.0	1		03/18/19 10:11		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	201	mg/L	10.0	5.0	1		03/22/19 14:36		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/20/19 09:47	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	3.3	mg/L	1.2	0.28	1		03/16/19 16:44	16887-00-6	
Nitrate as N	0.14	mg/L	0.10	0.015	1		03/16/19 16:44	14797-55-8	
Sulfate	3.1	mg/L	1.2	0.19	1		03/16/19 16:44	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	0.15	mg/L	0.10	0.018	1		03/20/19 15:59		
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	03/25/19 13:21	03/26/19 08:38		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: FD3-GW-031519 **Lab ID: 10467061007** Collected: 03/15/19 11:20 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	0.44J	mg/L	1.0	0.20	1		03/21/19 18:55	7440-44-0	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: TB-031519 **Lab ID: 10467061008** Collected: 03/15/19 08:00 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/18/19 15:27	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/18/19 15:27	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/18/19 15:27	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/18/19 15:27	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/18/19 15:27	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/18/19 15:27	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/18/19 15:27	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/18/19 15:27	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/18/19 15:27	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/18/19 15:27	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/18/19 15:27	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/18/19 15:27	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/18/19 15:27	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/18/19 15:27	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/18/19 15:27	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/18/19 15:27	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/18/19 15:27	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/18/19 15:27	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	1.0	0.12	1		03/18/19 15:27	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/18/19 15:27	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/18/19 15:27	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/18/19 15:27	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/18/19 15:27	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/18/19 15:27	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/18/19 15:27	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/18/19 15:27	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/18/19 15:27	95-49-8	
2-Hexanone	<0.88	ug/L	20.0	0.88	1		03/18/19 15:27	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/18/19 15:27	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/18/19 15:27	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/18/19 15:27	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/18/19 15:27	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/18/19 15:27	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/18/19 15:27	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/18/19 15:27	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/18/19 15:27	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/18/19 15:27	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/18/19 15:27	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/18/19 15:27	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/18/19 15:27	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/18/19 15:27	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/18/19 15:27	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/18/19 15:27	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/18/19 15:27	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/18/19 15:27	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/18/19 15:27	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Sample: TB-031519 **Lab ID: 10467061008** Collected: 03/15/19 08:00 Received: 03/16/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/18/19 15:27	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/18/19 15:27	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/18/19 15:27	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/18/19 15:27	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/18/19 15:27	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/18/19 15:27	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/18/19 15:27	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		03/18/19 15:27	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/18/19 15:27	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/18/19 15:27	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/18/19 15:27	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/18/19 15:27	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/18/19 15:27	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/18/19 15:27	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		03/18/19 15:27	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/18/19 15:27	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/18/19 15:27	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/18/19 15:27	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/18/19 15:27	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/18/19 15:27	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/18/19 15:27	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/18/19 15:27	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/18/19 15:27	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/18/19 15:27	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/18/19 15:27	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/18/19 15:27	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/18/19 15:27	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/18/19 15:27	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/18/19 15:27	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/18/19 15:27	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/18/19 15:27	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/18/19 15:27	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		03/18/19 15:27	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/18/19 15:27	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%	75-136		1		03/18/19 15:27	17060-07-0	
Toluene-d8 (S)	97	%	75-125		1		03/18/19 15:27	2037-26-5	
4-Bromofluorobenzene (S)	97	%	75-125		1		03/18/19 15:27	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

QC Batch: 594205 Analysis Method: RSK 175
 QC Batch Method: RSK 175 Analysis Description: RSK 175 GCV HEADSPACE
 Associated Lab Samples: 10467061001, 10467061002, 10467061003, 10467061004, 10467061005, 10467061006, 10467061007

METHOD BLANK: 3212639 Matrix: Water
 Associated Lab Samples: 10467061001, 10467061002, 10467061003, 10467061004, 10467061005, 10467061006, 10467061007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	03/18/19 08:51	
Ethene	ug/L	<2.9	10.0	2.9	03/18/19 08:51	
Methane	ug/L	<4.9	10.0	4.9	03/18/19 08:51	

LABORATORY CONTROL SAMPLE & LCSD: 3212640

Parameter	Units	3212641							Max RPD	Qualifiers
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD		
Ethane	ug/L	114	106	109	93	96	85-115	2	20	
Ethene	ug/L	106	99.3	101	94	96	85-115	2	20	
Methane	ug/L	60.7	56.4	57.6	93	95	85-115	2	20	

SAMPLE DUPLICATE: 3212642

Parameter	Units	10467068001 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	21.6	16.0	30	20	D6
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	15700	12100	26	20	D6

SAMPLE DUPLICATE: 3212643

Parameter	Units	10467061006 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<3.0	<3.0		20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	<4.9	<4.9		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

QC Batch: 594197 Analysis Method: EPA 7470A
 QC Batch Method: EPA 7470A Analysis Description: 7470A Mercury Water Dissolved
 Associated Lab Samples: 10467061001, 10467061002, 10467061003, 10467061004, 10467061005, 10467061006, 10467061007

METHOD BLANK: 3212618 Matrix: Water
 Associated Lab Samples: 10467061001, 10467061002, 10467061003, 10467061004, 10467061005, 10467061006, 10467061007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.078	0.20	0.078	03/19/19 15:40	

LABORATORY CONTROL SAMPLE: 3212619

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.2	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3212620 3212621

Parameter	Units	10467061002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.078	5	5	5.6	5.6	113	111	80-120	2	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

QC Batch: 594185 Analysis Method: EPA 6010D
 QC Batch Method: EPA 3010 Analysis Description: 6010D Water Dissolved
 Associated Lab Samples: 10467061001, 10467061002, 10467061003, 10467061004, 10467061005, 10467061006, 10467061007

METHOD BLANK: 3212574 Matrix: Water
 Associated Lab Samples: 10467061001, 10467061002, 10467061003, 10467061004, 10467061005, 10467061006, 10467061007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<15.5	200	15.5	03/21/19 14:08	
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	03/21/19 14:08	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	03/21/19 14:08	
Barium, Dissolved	ug/L	<0.18	10.0	0.18	03/21/19 14:08	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	03/21/19 14:08	
Cadmium, Dissolved	ug/L	<0.26	3.0	0.26	03/21/19 14:08	
Calcium, Dissolved	ug/L	<13.9	500	13.9	03/21/19 14:08	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	03/21/19 14:08	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	03/21/19 14:08	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	03/21/19 14:08	
Iron, Dissolved	ug/L	<4.3	50.0	4.3	03/21/19 14:08	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	03/21/19 14:08	
Magnesium, Dissolved	ug/L	<9.8	500	9.8	03/21/19 14:08	
Manganese, Dissolved	ug/L	<0.22	5.0	0.22	03/21/19 14:08	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	03/21/19 14:08	
Potassium, Dissolved	ug/L	<310	2500	310	03/21/19 14:08	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	03/21/19 14:08	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	03/21/19 14:08	
Sodium, Dissolved	ug/L	<21.5	1000	21.5	03/21/19 14:08	
Thallium, Dissolved	ug/L	5.8J	20.0	4.3	03/21/19 14:08	
Vanadium, Dissolved	ug/L	<0.29	15.0	0.29	03/21/19 14:08	
Zinc, Dissolved	ug/L	<2.5	20.0	2.5	03/21/19 14:08	

LABORATORY CONTROL SAMPLE: 3212575

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	19900	100	80-120	
Antimony, Dissolved	ug/L	1000	941	94	80-120	
Arsenic, Dissolved	ug/L	1000	916	92	80-120	
Barium, Dissolved	ug/L	1000	958	96	80-120	
Beryllium, Dissolved	ug/L	1000	961	96	80-120	
Cadmium, Dissolved	ug/L	1000	946	95	80-120	
Calcium, Dissolved	ug/L	20000	18500	93	80-120	
Chromium, Dissolved	ug/L	1000	948	95	80-120	
Cobalt, Dissolved	ug/L	1000	945	95	80-120	
Copper, Dissolved	ug/L	1000	913	91	80-120	
Iron, Dissolved	ug/L	20000	18300	91	80-120	
Lead, Dissolved	ug/L	1000	953	95	80-120	
Magnesium, Dissolved	ug/L	20000	18400	92	80-120	
Manganese, Dissolved	ug/L	1000	940	94	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

LABORATORY CONTROL SAMPLE: 3212575

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nickel, Dissolved	ug/L	1000	948	95	80-120	
Potassium, Dissolved	ug/L	20000	18200	91	80-120	
Selenium, Dissolved	ug/L	1000	990	99	80-120	
Silver, Dissolved	ug/L	500	473	95	80-120	
Sodium, Dissolved	ug/L	20000	18200	91	80-120	
Thallium, Dissolved	ug/L	1000	937	94	80-120	
Vanadium, Dissolved	ug/L	1000	943	94	80-120	
Zinc, Dissolved	ug/L	1000	957	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3212576 3212577

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10467061001 Result	Spike Conc.	Spike Conc.	MS Result						
Aluminum, Dissolved	ug/L	71.2J	20000	20000	19700	20000	98	99	75-125	1	20
Antimony, Dissolved	ug/L	<7.0	1000	1000	970	970	97	97	75-125	0	20
Arsenic, Dissolved	ug/L	<3.8	1000	1000	915	932	91	93	75-125	2	20
Barium, Dissolved	ug/L	44.2	1000	1000	981	982	94	94	75-125	0	20
Beryllium, Dissolved	ug/L	<0.12	1000	1000	947	965	95	97	75-125	2	20
Cadmium, Dissolved	ug/L	<0.26	1000	1000	938	957	94	96	75-125	2	20
Calcium, Dissolved	ug/L	67300	20000	20000	84600	84600	86	86	75-125	0	20
Chromium, Dissolved	ug/L	1.1J	1000	1000	923	936	92	93	75-125	1	20
Cobalt, Dissolved	ug/L	0.81J	1000	1000	912	930	91	93	75-125	2	20
Copper, Dissolved	ug/L	<1.2	1000	1000	923	929	92	93	75-125	1	20
Iron, Dissolved	ug/L	336	20000	20000	18600	18900	91	93	75-125	2	20
Lead, Dissolved	ug/L	3.4J	1000	1000	923	938	92	93	75-125	2	20
Magnesium, Dissolved	ug/L	17500	20000	20000	36400	36800	94	96	75-125	1	20
Manganese, Dissolved	ug/L	14.7	1000	1000	944	968	93	95	75-125	3	20
Nickel, Dissolved	ug/L	6.1J	1000	1000	915	931	91	93	75-125	2	20
Potassium, Dissolved	ug/L	3020	20000	20000	22200	22500	96	97	75-125	2	20
Selenium, Dissolved	ug/L	<5.8	1000	1000	975	1010	97	101	75-125	3	20
Silver, Dissolved	ug/L	0.41J	500	500	477	480	95	96	75-125	1	20
Sodium, Dissolved	ug/L	85500	20000	20000	101000	99800	78	72	75-125	1	20 P6
Thallium, Dissolved	ug/L	6.3J	1000	1000	932	943	93	94	75-125	1	20
Vanadium, Dissolved	ug/L	6.7J	1000	1000	937	950	93	94	75-125	1	20
Zinc, Dissolved	ug/L	7.9J	1000	1000	923	938	91	93	75-125	2	20

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

QC Batch: 594231 Analysis Method: EPA 8260B
 QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
 Associated Lab Samples: 10467061001, 10467061002, 10467061003, 10467061004, 10467061005, 10467061006, 10467061007, 10467061008

METHOD BLANK: 3212730 Matrix: Water
 Associated Lab Samples: 10467061001, 10467061002, 10467061003, 10467061004, 10467061005, 10467061006, 10467061007, 10467061008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	03/18/19 11:43	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	03/18/19 11:43	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	03/18/19 11:43	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	03/18/19 11:43	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	03/18/19 11:43	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	03/18/19 11:43	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	03/18/19 11:43	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	03/18/19 11:43	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	03/18/19 11:43	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	03/18/19 11:43	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	03/18/19 11:43	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	03/18/19 11:43	MN
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	03/18/19 11:43	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	03/18/19 11:43	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	03/18/19 11:43	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	03/18/19 11:43	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	03/18/19 11:43	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	03/18/19 11:43	
1,3,5-Trimethylbenzene	ug/L	<0.12	1.0	0.12	03/18/19 11:43	MN
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/18/19 11:43	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	03/18/19 11:43	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	03/18/19 11:43	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	03/18/19 11:43	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	03/18/19 11:43	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	03/18/19 11:43	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	03/18/19 11:43	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	03/18/19 11:43	
2-Hexanone	ug/L	<0.88	20.0	0.88	03/18/19 11:43	MN
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/18/19 11:43	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	03/18/19 11:43	
Acetone	ug/L	<9.2	20.0	9.2	03/18/19 11:43	
Acrolein	ug/L	<1.2	10.0	1.2	03/18/19 11:43	
Acrylonitrile	ug/L	<0.91	10.0	0.91	03/18/19 11:43	
Benzene	ug/L	<0.10	0.50	0.10	03/18/19 11:43	
Bromobenzene	ug/L	<0.21	0.50	0.21	03/18/19 11:43	
Bromochloromethane	ug/L	<0.27	1.0	0.27	03/18/19 11:43	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	03/18/19 11:43	
Bromoform	ug/L	<0.80	4.0	0.80	03/18/19 11:43	
Bromomethane	ug/L	<1.8	4.0	1.8	03/18/19 11:43	
Carbon disulfide	ug/L	<0.078	1.0	0.078	03/18/19 11:43	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

METHOD BLANK: 3212730

Matrix: Water

Associated Lab Samples: 10467061001, 10467061002, 10467061003, 10467061004, 10467061005, 10467061006, 10467061007, 10467061008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	03/18/19 11:43	
Chlorobenzene	ug/L	<0.17	0.50	0.17	03/18/19 11:43	
Chloroethane	ug/L	<0.49	1.0	0.49	03/18/19 11:43	
Chloroform	ug/L	<0.45	4.0	0.45	03/18/19 11:43	MN
Chloromethane	ug/L	<0.16	4.0	0.16	03/18/19 11:43	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	03/18/19 11:43	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	03/18/19 11:43	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	03/18/19 11:43	
Dibromomethane	ug/L	<0.16	1.0	0.16	03/18/19 11:43	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	03/18/19 11:43	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	03/18/19 11:43	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	03/18/19 11:43	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	03/18/19 11:43	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/18/19 11:43	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	03/18/19 11:43	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	03/18/19 11:43	MN
m&p-Xylene	ug/L	<0.31	1.0	0.31	03/18/19 11:43	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	03/18/19 11:43	
Methylene Chloride	ug/L	<0.98	4.0	0.98	03/18/19 11:43	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	03/18/19 11:43	MN
n-Propylbenzene	ug/L	<0.10	0.50	0.10	03/18/19 11:43	
Naphthalene	ug/L	<0.48	1.0	0.48	03/18/19 11:43	
o-Xylene	ug/L	<0.16	0.50	0.16	03/18/19 11:43	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	03/18/19 11:43	MN
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	03/18/19 11:43	MN
Styrene	ug/L	<0.19	1.0	0.19	03/18/19 11:43	MN
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	03/18/19 11:43	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	03/18/19 11:43	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	03/18/19 11:43	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	03/18/19 11:43	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	03/18/19 11:43	
Toluene	ug/L	<0.083	0.50	0.083	03/18/19 11:43	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	03/18/19 11:43	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	03/18/19 11:43	MN
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	03/18/19 11:43	
Trichloroethene	ug/L	<0.15	0.40	0.15	03/18/19 11:43	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	03/18/19 11:43	
Vinyl acetate	ug/L	<1.1	10.0	1.1	03/18/19 11:43	
Vinyl chloride	ug/L	<0.092	0.20	0.092	03/18/19 11:43	
Xylene (Total)	ug/L	<0.31	1.5	0.31	03/18/19 11:43	
1,2-Dichloroethane-d4 (S)	%	91	75-136		03/18/19 11:43	
4-Bromofluorobenzene (S)	%	98	75-125		03/18/19 11:43	
Toluene-d8 (S)	%	97	75-125		03/18/19 11:43	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

LABORATORY CONTROL SAMPLE: 3212731

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.6	98	68-141	
1,1,1-Trichloroethane	ug/L	20	19.4	97	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	19.8	99	73-125	
1,1,2-Trichloroethane	ug/L	20	19.2	96	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	19.9	100	69-132	
1,1-Dichloroethane	ug/L	20	20.5	102	73-125	
1,1-Dichloroethene	ug/L	20	19.5	98	71-126	
1,1-Dichloropropene	ug/L	20	21.0	105	73-126	
1,2,3-Trichlorobenzene	ug/L	20	19.1	96	72-126	
1,2,3-Trichloropropane	ug/L	20	20.4	102	75-126	
1,2,4-Trichlorobenzene	ug/L	20	18.2	91	71-134	
1,2,4-Trimethylbenzene	ug/L	20	17.8	89	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	45.8	92	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	19.4	97	75-129	
1,2-Dichlorobenzene	ug/L	20	19.1	95	75-129	
1,2-Dichloroethane	ug/L	20	19.2	96	75-125	
1,2-Dichloroethene (Total)	ug/L	40	40.6	102	74-125	N2
1,2-Dichloropropane	ug/L	20	19.8	99	75-125	
1,3,5-Trimethylbenzene	ug/L	20	17.7	89	75-127	
1,3-Dichlorobenzene	ug/L	20	18.0	90	75-126	
1,3-Dichloropropane	ug/L	20	19.1	95	75-125	
1,4-Dichlorobenzene	ug/L	20	18.2	91	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	374	94	72-129	
2,2,4-Trimethylpentane	ug/L	20	19.5	98	72-128	N2
2,2-Dichloropropane	ug/L	20	21.4	107	65-138	
2-Butanone (MEK)	ug/L	100	114	114	59-144	
2-Chlorotoluene	ug/L	20	18.8	94	75-127	
2-Hexanone	ug/L	100	98.8	99	73-134	
4-Chlorotoluene	ug/L	20	18.7	94	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	109	109	62-141	
Acetone	ug/L	100	119	119	60-137	
Acrolein	ug/L	200	212	106	60-141	
Acrylonitrile	ug/L	200	199	100	75-129	
Benzene	ug/L	20	19.1	95	73-125	
Bromobenzene	ug/L	20	18.3	92	73-125	
Bromochloromethane	ug/L	20	19.9	100	75-135	
Bromodichloromethane	ug/L	20	21.3	106	75-125	
Bromoform	ug/L	20	20.8	104	67-136	
Bromomethane	ug/L	20	18.4	92	30-150	
Carbon disulfide	ug/L	20	23.4	117	47-137	
Carbon tetrachloride	ug/L	20	20.2	101	75-125	
Chlorobenzene	ug/L	20	18.3	92	75-125	
Chloroethane	ug/L	20	24.6	123	63-136	
Chloroform	ug/L	20	19.2	96	73-128	
Chloromethane	ug/L	20	19.4	97	55-130	
cis-1,2-Dichloroethene	ug/L	20	19.5	98	75-125	
cis-1,3-Dichloropropene	ug/L	20	20.2	101	74-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

LABORATORY CONTROL SAMPLE: 3212731

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	20.9	105	75-125	
Dibromomethane	ug/L	20	19.5	98	75-125	
Dichlorodifluoromethane	ug/L	20	24.4	122	63-132	
Dichlorofluoromethane	ug/L	20	21.3	106	68-127	N2
Diisopropyl ether	ug/L	20	20.1	100	71-131	
Ethyl-tert-butyl ether	ug/L	20	21.1	105	75-125	
Ethylbenzene	ug/L	20	18.8	94	75-125	
Hexachloro-1,3-butadiene	ug/L	20	17.7	89	72-134	
Isopropylbenzene (Cumene)	ug/L	20	17.6	88	75-125	
m&p-Xylene	ug/L	40	37.7	94	75-126	
Methyl-tert-butyl ether	ug/L	20	21.5	108	75-125	
Methylene Chloride	ug/L	20	20.0	100	70-125	
n-Butylbenzene	ug/L	20	18.5	93	75-126	
n-Propylbenzene	ug/L	20	18.4	92	73-127	
Naphthalene	ug/L	20	19.5	97	63-128	
o-Xylene	ug/L	20	18.9	95	75-128	
p-Isopropyltoluene	ug/L	20	18.4	92	75-125	
sec-Butylbenzene	ug/L	20	17.1	85	75-126	
Styrene	ug/L	20	17.6	88	75-125	
tert-Amylmethyl ether	ug/L	20	21.0	105	75-125	
tert-Butyl Alcohol	ug/L	200	205	103	75-130	
tert-Butylbenzene	ug/L	20	18.7	93	75-131	
Tetrachloroethene	ug/L	20	18.4	92	74-125	
Tetrahydrofuran	ug/L	200	195	97	64-138	
Toluene	ug/L	20	17.9	90	74-125	
trans-1,2-Dichloroethene	ug/L	20	21.1	106	68-128	
trans-1,3-Dichloropropene	ug/L	20	21.2	106	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	43.6	87	60-127	
Trichloroethene	ug/L	20	20.1	101	75-127	
Trichlorofluoromethane	ug/L	20	21.6	108	72-133	
Vinyl acetate	ug/L	20	19.4	97	61-129	
Vinyl chloride	ug/L	20	21.4	107	75-128	
Xylene (Total)	ug/L	60	56.7	94	75-125	
1,2-Dichloroethane-d4 (S)	%			99	75-136	
4-Bromofluorobenzene (S)	%			101	75-125	
Toluene-d8 (S)	%			93	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3212820 3212821

Parameter	Units	10467107001		MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	MS Result	MSD Result						
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20	19.2	19.9	96	99	75-140	4	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20	20.8	21.6	104	108	74-136	4	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20	16.3	18.1	82	91	66-134	11	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20	17.3	18.4	87	92	75-126	6	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Parameter	Units	10467107001		MS		MSD		MS		MSD		% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result	% Rec	% Rec							
MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3212820 3212821																
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	20	23.5	24.2	117	121	65-146	3	30				
1,1-Dichloroethane	ug/L	<0.17	20	20	20	21.5	22.0	108	110	68-132	2	30				
1,1-Dichloroethene	ug/L	<0.16	20	20	20	22.6	21.7	113	108	66-139	4	30				
1,1-Dichloropropene	ug/L	<0.20	20	20	20	22.2	23.6	111	118	67-134	6	30				
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	20	18.1	18.7	90	94	67-129	4	30				
1,2,3-Trichloropropane	ug/L	<0.26	20	20	20	15.8	18.1	79	90	69-128	13	30				
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	20	18.4	18.3	92	91	65-140	1	30				
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	20	17.7	18.7	88	93	71-133	5	30				
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	50	38.1	45.0	76	90	54-138	17	30				
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	20	17.0	18.3	85	91	68-125	7	30				
1,2-Dichlorobenzene	ug/L	<0.14	20	20	20	17.9	19.3	90	97	74-136	8	30				
1,2-Dichloroethane	ug/L	<0.22	20	20	20	17.3	18.4	86	92	68-125	6	30				
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	40	43.5	42.5	109	106	71-126	2	30	N2			
1,2-Dichloropropane	ug/L	<0.16	20	20	20	19.3	19.8	97	99	67-125	3	30				
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	20	17.7	18.7	89	94	68-137	6	30				
1,3-Dichlorobenzene	ug/L	<0.16	20	20	20	18.1	18.8	91	94	75-131	4	30				
1,3-Dichloropropane	ug/L	<0.070	20	20	20	17.4	18.8	87	94	71-125	7	30				
1,4-Dichlorobenzene	ug/L	<0.17	20	20	20	18.1	19.1	91	95	74-126	5	30				
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	400	350	374	88	94	68-125	7	30				
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	20	22.0	21.0	110	105	54-129	4	30	N2			
2,2-Dichloropropane	ug/L	<0.17	20	20	20	22.8	23.0	114	115	69-139	1	30				
2-Butanone (MEK)	ug/L	<0.99	100	100	100	76.9	92.5	77	93	54-144	19	30				
2-Chlorotoluene	ug/L	<0.16	20	20	20	18.5	19.8	93	99	75-134	7	30				
2-Hexanone	ug/L	<0.88	100	100	100	71.3	86.2	71	86	58-137	19	30				
4-Chlorotoluene	ug/L	<0.13	20	20	20	18.6	19.5	93	97	72-133	5	30				
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	100	82.2	99.7	82	100	60-129	19	30				
Acetone	ug/L	<9.2	100	100	100	87.7	91.3	88	91	62-132	4	30				
Acrolein	ug/L	<1.2	200	200	200	307	335	153	167	30-150	9	30	M1			
Acrylonitrile	ug/L	<0.91	200	200	200	174	199	87	99	68-125	13	30				
Benzene	ug/L	<0.10	20	20	20	18.9	19.4	94	97	68-125	3	30				
Bromobenzene	ug/L	<0.21	20	20	20	17.6	17.9	88	89	73-126	1	30				
Bromochloromethane	ug/L	<0.27	20	20	20	19.9	20.3	99	102	66-143	2	30				
Bromodichloromethane	ug/L	<0.22	20	20	20	20.2	21.3	101	106	74-125	5	30				
Bromoform	ug/L	<0.80	20	20	20	18.3	19.9	91	100	64-134	9	30				
Bromomethane	ug/L	<1.8	20	20	20	19.2	19.2	96	96	30-150	0	30				
Carbon disulfide	ug/L	<0.078	20	20	20	28.6	25.1	143	125	43-147	13	30				
Carbon tetrachloride	ug/L	<0.19	20	20	20	22.1	23.1	111	115	71-143	4	30				
Chlorobenzene	ug/L	<0.17	20	20	20	17.9	18.8	89	94	75-125	5	30				
Chloroethane	ug/L	<0.49	20	20	20	24.5	23.3	122	117	75-129	5	30				
Chloroform	ug/L	<0.45	20	20	20	18.1	19.0	90	95	66-132	5	30				
Chloromethane	ug/L	<0.16	20	20	20	19.9	19.3	100	96	53-137	3	30				
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	20	19.8	20.3	99	101	67-133	3	30				
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	20	19.0	19.0	95	95	66-125	0	30				
Dibromochloromethane	ug/L	<0.12	20	20	20	19.4	20.7	97	104	62-132	7	30				

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Parameter	Units	10467107001		3212820		3212821		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Dibromomethane	ug/L	<0.16	20	20	18.1	19.2	91	96	67-125	6	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	27.3	25.0	137	125	71-142	9	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	22.4	21.8	112	109	70-131	2	30	N2	
Diisopropyl ether	ug/L	<0.13	20	20	18.8	19.9	94	100	63-131	6	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	19.4	21.3	97	106	66-128	9	30		
Ethylbenzene	ug/L	<0.14	20	20	18.7	19.7	93	98	74-126	5	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	21.3	17.8	106	89	68-143	18	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	18.2	19.6	91	98	74-130	8	30		
m&p-Xylene	ug/L	<0.31	40	40	37.8	40.4	95	101	69-132	7	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.5	21.5	98	108	65-131	10	30		
Methylene Chloride	ug/L	<0.98	20	20	20.3	20.8	102	104	57-125	2	30		
n-Butylbenzene	ug/L	<0.24	20	20	19.8	19.3	99	96	71-131	3	30		
n-Propylbenzene	ug/L	<0.10	20	20	19.2	20.0	96	100	67-138	4	30		
Naphthalene	ug/L	<0.48	20	20	16.2	18.5	81	93	60-130	13	30		
o-Xylene	ug/L	<0.16	20	20	18.7	19.6	93	98	69-131	5	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	19.7	19.7	99	98	72-133	0	30		
sec-Butylbenzene	ug/L	<0.15	20	20	18.7	18.3	94	92	73-134	2	30		
Styrene	ug/L	<0.19	20	20	16.9	18.1	84	90	72-125	7	30		
tert-Amylmethyl ether	ug/L	<0.11	20	20	17.7	20.0	88	100	67-125	13	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	178	214	89	107	64-137	18	30		
tert-Butylbenzene	ug/L	<0.15	20	20	19.9	20.3	99	102	70-143	2	30		
Tetrachloroethene	ug/L	<0.17	20	20	19.7	20.4	99	102	72-129	4	30		
Tetrahydrofuran	ug/L	<2.2	200	200	169	186	84	93	66-128	10	30		
Toluene	ug/L	<0.083	20	20	18.3	18.6	92	93	73-125	2	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	23.7	22.2	118	111	62-137	6	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	19.6	19.9	98	99	61-136	1	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	36.3	40.5	73	81	45-128	11	30		
Trichloroethene	ug/L	<0.15	20	20	21.1	20.9	106	104	74-132	1	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	23.9	23.5	120	117	75-139	2	30		
Vinyl acetate	ug/L	<1.1	20	20	16.9	19.0	85	95	51-135	12	30		
Vinyl chloride	ug/L	<0.092	20	20	24.8	21.6	124	108	68-146	14	30		
Xylene (Total)	ug/L	<0.31	60	60	56.5	60.0	94	100	67-137	6	30		
1,2-Dichloroethane-d4 (S)	%						94	100	75-136				
4-Bromofluorobenzene (S)	%						101	99	75-125				
Toluene-d8 (S)	%						96	95	75-125				

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report
Pace Project No.: 10467061

QC Batch: 594171 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10467061001, 10467061002, 10467061003, 10467061004, 10467061005, 10467061006, 10467061007

METHOD BLANK: 3212512 Matrix: Water
Associated Lab Samples: 10467061001, 10467061002, 10467061003, 10467061004, 10467061005, 10467061006, 10467061007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.0	5.0	1.0	03/18/19 08:28	

LABORATORY CONTROL SAMPLE & LCSD: 3212513 3212514

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	41.1	41.3	103	103	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3212515 3212516

Parameter	Units	10467061002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	171	40	40	211	213	102	107	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3212517 3212518

Parameter	Units	10467061001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	155	40	40	197	197	103	104	80-120	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

QC Batch: 594765

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 10467061001, 10467061002, 10467061003, 10467061004

METHOD BLANK: 3215317

Matrix: Water

Associated Lab Samples: 10467061001, 10467061002, 10467061003, 10467061004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	03/20/19 16:21	

LABORATORY CONTROL SAMPLE: 3215318

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	980	98	80-120	

SAMPLE DUPLICATE: 3215319

Parameter	Units	10466736001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	3430	3470	1	5	

SAMPLE DUPLICATE: 3215320

Parameter	Units	10466769001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	265	269	1	5	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

QC Batch: 595176

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 10467061005, 10467061006, 10467061007

METHOD BLANK: 3217536

Matrix: Water

Associated Lab Samples: 10467061005, 10467061006, 10467061007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	5.0J	10.0	5.0	03/22/19 14:36	

LABORATORY CONTROL SAMPLE: 3217537

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1020	102	80-120	

SAMPLE DUPLICATE: 3217538

Parameter	Units	10467228004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	271	265	2	5	

SAMPLE DUPLICATE: 3217539

Parameter	Units	10467319005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	800	821	3	5	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

QC Batch: 136770

Analysis Method: SM 4500-S-2 D

QC Batch Method: SM 4500-S-2 D

Analysis Description: 4500S2D Sulfide, Total

Associated Lab Samples: 10467061001, 10467061002, 10467061003, 10467061004, 10467061005, 10467061006, 10467061007

METHOD BLANK: 595000

Matrix: Water

Associated Lab Samples: 10467061001, 10467061002, 10467061003, 10467061004, 10467061005, 10467061006, 10467061007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	03/20/19 09:37	

LABORATORY CONTROL SAMPLE: 595001

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.2	0.20	99	90-110	

MATRIX SPIKE SAMPLE: 595003

Parameter	Units	2098851001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	0.2	0.069	27	75-125	M1

SAMPLE DUPLICATE: 595002

Parameter	Units	2098851001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	0.016J		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

QC Batch: 594126 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Associated Lab Samples: 10467061001, 10467061002, 10467061003, 10467061004, 10467061005, 10467061006, 10467061007

METHOD BLANK: 3212256 Matrix: Water
 Associated Lab Samples: 10467061001, 10467061002, 10467061003, 10467061004, 10467061005, 10467061006, 10467061007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.28	1.2	0.28	03/16/19 12:44	
Nitrate as N	mg/L	<0.015	0.10	0.015	03/16/19 12:44	
Sulfate	mg/L	<0.19	1.2	0.19	03/16/19 12:44	

LABORATORY CONTROL SAMPLE: 3212257

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.0	96	90-110	
Nitrate as N	mg/L	1	0.95	95	90-110	
Sulfate	mg/L	12.5	11.8	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3212258 3212259

Parameter	Units	10467061001		3212258		3212259		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec						
Chloride	mg/L	161	62.5	62.5	209	209	77	78	90-110	0	20	M1	
Nitrate as N	mg/L	5.7	1	1	5.5	5.5	-19	-17	90-110	0	20	M1	
Sulfate	mg/L	32.5	12.5	12.5	37.6	37.5	41	40	90-110	0	20	M1	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

QC Batch: 594791 Analysis Method: EPA 353.2
 QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
 Associated Lab Samples: 10467061001, 10467061002, 10467061003, 10467061004, 10467061005, 10467061006, 10467061007

METHOD BLANK: 3215469 Matrix: Water
 Associated Lab Samples: 10467061001, 10467061002, 10467061003, 10467061004, 10467061005, 10467061006, 10467061007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	03/20/19 16:12	FS

LABORATORY CONTROL SAMPLE: 3215470

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3215471 3215472

Parameter	Units	10467197001 Result	3215471		3215472		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Nitrogen, NO2 plus NO3	mg/L	0.49	1	1	1.5	1.5	103	101	90-110	1	20	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3215473 3215474

Parameter	Units	10466924001 Result	3215473		3215474		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Nitrogen, NO2 plus NO3	mg/L	2.1	2	2	4.2	4.2	104	105	90-110	0	20	E

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

QC Batch: 594657

Analysis Method: EPA 410.4

QC Batch Method: EPA 410.4

Analysis Description: 410.4 COD

Associated Lab Samples: 10467061001

METHOD BLANK: 3214818

Matrix: Water

Associated Lab Samples: 10467061001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	03/20/19 14:23	

LABORATORY CONTROL SAMPLE: 3214819

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	302	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3214820 3214821

Parameter	Units	10466793001 Result	MS		MSD		% Rec	MSD	% Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Conc.	Result	Result							
Chemical Oxygen Demand	mg/L	<17.0	250	250	256	261	101	103	90-110	2	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3214822 3214823

Parameter	Units	10466793002 Result	MS		MSD		% Rec	MSD	% Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Conc.	Result	Result							
Chemical Oxygen Demand	mg/L	22.7J	250	250	272	279	100	103	90-110	3	20		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

QC Batch: 595511

Analysis Method: EPA 410.4

QC Batch Method: EPA 410.4

Analysis Description: 410.4 COD

Associated Lab Samples: 10467061002, 10467061003, 10467061004, 10467061005, 10467061006, 10467061007

METHOD BLANK: 3219698

Matrix: Water

Associated Lab Samples: 10467061002, 10467061003, 10467061004, 10467061005, 10467061006, 10467061007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	03/26/19 08:34	

LABORATORY CONTROL SAMPLE: 3219699

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	304	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3219700 3219701

Parameter	Units	10467457001		3219700		3219701		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Chemical Oxygen Demand	mg/L	422	250	250	658	660	94	95	90-110	0	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3219702 3219703

Parameter	Units	10467475001		3219702		3219703		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Chemical Oxygen Demand	mg/L	ND	250	250	266	270	100	102	90-110	2	20

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

QC Batch: 163044

Analysis Method: SM 5310C

QC Batch Method: SM 5310C

Analysis Description: 5310C TOC

Associated Lab Samples: 10467061001, 10467061002, 10467061003, 10467061004, 10467061005, 10467061006, 10467061007

METHOD BLANK: 642680

Matrix: Water

Associated Lab Samples: 10467061001, 10467061002, 10467061003, 10467061004, 10467061005, 10467061006, 10467061007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	0.25J	1.0	0.20	03/21/19 15:53	

LABORATORY CONTROL SAMPLE: 642681

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.4	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 642682 642683

Parameter	Units	10467514001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.								
Total Organic Carbon	mg/L	12.4	25	25	37.5	36.8	100	98	80-120	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 642684 642685

Parameter	Units	10467061001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.								
Total Organic Carbon	mg/L	2.8J	125	125	131	131	102	103	80-120	0	20	

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

PASI-N Pace Analytical Services - New Orleans

PASI-V Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

FS The sample was filtered in the laboratory prior to analysis.

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

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10467061001	MW9U-GW-031519	RSK 175	594205		
10467061002	MW9D-GW-031519	RSK 175	594205		
10467061003	MW3D-GW-031519	RSK 175	594205		
10467061004	FD1-GW-031519	RSK 175	594205		
10467061005	FD2-GW-031519	RSK 175	594205		
10467061006	MW20D-GW-031519	RSK 175	594205		
10467061007	FD3-GW-031519	RSK 175	594205		
10467061001	MW9U-GW-031519	EPA 3010	594185	EPA 6010D	594410
10467061002	MW9D-GW-031519	EPA 3010	594185	EPA 6010D	594410
10467061003	MW3D-GW-031519	EPA 3010	594185	EPA 6010D	594410
10467061004	FD1-GW-031519	EPA 3010	594185	EPA 6010D	594410
10467061005	FD2-GW-031519	EPA 3010	594185	EPA 6010D	594410
10467061006	MW20D-GW-031519	EPA 3010	594185	EPA 6010D	594410
10467061007	FD3-GW-031519	EPA 3010	594185	EPA 6010D	594410
10467061001	MW9U-GW-031519	EPA 7470A	594197	EPA 7470A	594439
10467061002	MW9D-GW-031519	EPA 7470A	594197	EPA 7470A	594439
10467061003	MW3D-GW-031519	EPA 7470A	594197	EPA 7470A	594439
10467061004	FD1-GW-031519	EPA 7470A	594197	EPA 7470A	594439
10467061005	FD2-GW-031519	EPA 7470A	594197	EPA 7470A	594439
10467061006	MW20D-GW-031519	EPA 7470A	594197	EPA 7470A	594439
10467061007	FD3-GW-031519	EPA 7470A	594197	EPA 7470A	594439
10467061001	MW9U-GW-031519	EPA 8260B	594231		
10467061002	MW9D-GW-031519	EPA 8260B	594231		
10467061003	MW3D-GW-031519	EPA 8260B	594231		
10467061004	FD1-GW-031519	EPA 8260B	594231		
10467061005	FD2-GW-031519	EPA 8260B	594231		
10467061006	MW20D-GW-031519	EPA 8260B	594231		
10467061007	FD3-GW-031519	EPA 8260B	594231		
10467061008	TB-031519	EPA 8260B	594231		
10467061001	MW9U-GW-031519	SM 2320B	594171		
10467061002	MW9D-GW-031519	SM 2320B	594171		
10467061003	MW3D-GW-031519	SM 2320B	594171		
10467061004	FD1-GW-031519	SM 2320B	594171		
10467061005	FD2-GW-031519	SM 2320B	594171		
10467061006	MW20D-GW-031519	SM 2320B	594171		
10467061007	FD3-GW-031519	SM 2320B	594171		
10467061001	MW9U-GW-031519	SM 2540C	594765		
10467061002	MW9D-GW-031519	SM 2540C	594765		
10467061003	MW3D-GW-031519	SM 2540C	594765		
10467061004	FD1-GW-031519	SM 2540C	594765		
10467061005	FD2-GW-031519	SM 2540C	595176		
10467061006	MW20D-GW-031519	SM 2540C	595176		
10467061007	FD3-GW-031519	SM 2540C	595176		
10467061001	MW9U-GW-031519	SM 4500-S-2 D	136770		
10467061002	MW9D-GW-031519	SM 4500-S-2 D	136770		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10467061

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10467061003	MW3D-GW-031519	SM 4500-S-2 D	136770		
10467061004	FD1-GW-031519	SM 4500-S-2 D	136770		
10467061005	FD2-GW-031519	SM 4500-S-2 D	136770		
10467061006	MW20D-GW-031519	SM 4500-S-2 D	136770		
10467061007	FD3-GW-031519	SM 4500-S-2 D	136770		
10467061001	MW9U-GW-031519	EPA 300.0	594126		
10467061002	MW9D-GW-031519	EPA 300.0	594126		
10467061003	MW3D-GW-031519	EPA 300.0	594126		
10467061004	FD1-GW-031519	EPA 300.0	594126		
10467061005	FD2-GW-031519	EPA 300.0	594126		
10467061006	MW20D-GW-031519	EPA 300.0	594126		
10467061007	FD3-GW-031519	EPA 300.0	594126		
10467061001	MW9U-GW-031519	EPA 353.2	594791		
10467061002	MW9D-GW-031519	EPA 353.2	594791		
10467061003	MW3D-GW-031519	EPA 353.2	594791		
10467061004	FD1-GW-031519	EPA 353.2	594791		
10467061005	FD2-GW-031519	EPA 353.2	594791		
10467061006	MW20D-GW-031519	EPA 353.2	594791		
10467061007	FD3-GW-031519	EPA 353.2	594791		
10467061001	MW9U-GW-031519	EPA 410.4	594657	EPA 410.4	594816
10467061002	MW9D-GW-031519	EPA 410.4	595511	EPA 410.4	595695
10467061003	MW3D-GW-031519	EPA 410.4	595511	EPA 410.4	595695
10467061004	FD1-GW-031519	EPA 410.4	595511	EPA 410.4	595695
10467061005	FD2-GW-031519	EPA 410.4	595511	EPA 410.4	595695
10467061006	MW20D-GW-031519	EPA 410.4	595511	EPA 410.4	595695
10467061007	FD3-GW-031519	EPA 410.4	595511	EPA 410.4	595695
10467061001	MW9U-GW-031519	SM 5310C	163044		
10467061002	MW9D-GW-031519	SM 5310C	163044		
10467061003	MW3D-GW-031519	SM 5310C	163044		
10467061004	FD1-GW-031519	SM 5310C	163044		
10467061005	FD2-GW-031519	SM 5310C	163044		
10467061006	MW20D-GW-031519	SM 5310C	163044		
10467061007	FD3-GW-031519	SM 5310C	163044		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A
Required Client Information:

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

Section B
Required Project Information:

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

Section C
Invoice Information:

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

WO#: 10467061

 10467061

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 /, -) Sample Ids must be unique	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Analyses Test	Y/N	Requested #											
				DATE	TIME			Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other				Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, Nitrate 300.0	2540 TDS	TOC 6310	Sulfide 4500	Methane, Ethane, Ethene RSK176	COD 410.4	Nitrate-Nitrite 353.2	4500 Total Phosphorus
1	MW9U-GW-031519	WTG		3/15	0900	-	13	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X		001
2	MW9D-GW-031519				1015																						002
3	MW3D-GW-031519				1115																						003
4	FD2-GW-031519				0905																						004
5	FD2-GW-031519				1020																						005
6	MW3D-GW-031519																										
7	MW200-GW-031519				1300																						006
8	FD3-GW-031519				1120																						007
9	TB-031519				800		2					X			X												008
10																											
11																											
12																											

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Short hold analyses are in bold	<i>J. Li / Jacobs</i>	3/15/19	1700	<i>Hannah Pace</i>	3/16/19	900	0.4 Y Y Y
*Field filtered by client							

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: <i>Jonathan Espinoza</i>					
SIGNATURE of SAMPLER: <i>J. Li</i>					
DATE Signed: <i>3/15/19</i>					

Sample Condition Upon Receipt - ESI Tech Specs

Client Name: UPRR CH2M Hill Project #: WO# : 10467061

WO# : 10467061
PM: JMG Due Date: 03/25/19
CLIENT: UPRR_CH2M

Courier: Fed Ex UPS USPS Client
 Pace SpeeDee Commercial See Exception

Tracking Number: 7475 9397 4509/4494

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

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

Thermometer: G87A9155100842 G87A9170600254 Type of Ice: Wet Blue None Dry Melted

Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: 0.8, 0.3 °C Average Corrected Temp See Exceptions (no temp blank only):

Correction Factor: +0.1 Cooler Temp Corrected w/temp blank: 0.9, 0.4 °C

USDA Regulated Soil: (N/A, water sample/Other: _____) Date/Initials of Person Examining Contents: HE 3/16/19
 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No
 Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

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

	COMMENTS:
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Sample Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Triple Volume Provided for MS/MSD (if more than 10 samples)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: _____ See Exception <input type="checkbox"/>
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	12. Sample # <input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ <input checked="" type="checkbox"/> H ₂ SO ₄ <input checked="" type="checkbox"/> Zinc Acetate <u>1-8:1/1</u> <u>1/1</u> <u>1/1</u> Positive for Res. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Chlorine? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
All containers needing acid/base preservation have been checked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide) Exceptions: <u>VOA</u> Coliform, <u>TOC</u> DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS *If adding preservative to a container it must be added to associated field and equipment blanks (verify with PM first)	
Headspace in VOA Vials (greater than 6mm)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. See Exception <input checked="" type="checkbox"/>
3 Trip Blanks Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. <u>Only 2 Trip Blanks</u> Pace Trip Blank Lot # (if purchased): <u>199048</u>
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: Mark Date/Time: 06/27/18 Field Data Required? Yes No

Comments/Resolution: WA certs not required for 8260 2,2,4-TMP, dichlorofluoromethane, RSK or sulfide.

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins		
Opened Time: <u>940</u>	Temp: <u>0.8, 0.3</u>	Corrected Temp: <u>0.9, 0.4</u>
Time: <u>1000</u>	put in cooler	
Time:	Temp:	Corrected Temp:

Project Manager Review:

Note: Whenever there is a discrepancy affecting North Carolina compliance s hold, incorrect preservative, out of temp, incorrect containers)

JENNI GRASS

Date: 03/18/19

this form will be sent to the North Carolina DEHNR Certification Office (i.e out of

Labeled by: HE

Sample Condition Upon Receipt

Client Name: Pace Mpts Project #: _____

WO# : 12122536

PM: CLJ Due Date: 04/02/19
 CLIENT: PACE MPLS

Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

Tracking Number: _____

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

Optional: Proj. Due Date: _____ Proj. Name: _____

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

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

Cooler Temp Read °C: 0.9 Cooler Temp Corrected °C: 1.2 Biological Tissue Frozen? Yes No NA
 Temp should be above freezing to 6°C Correction Factor: 10.3 Date and Initials of Person Examining Contents: Bm 3/19/19

Comments:

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

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? Yes No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

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

Project Manager Review: Katie Richards Date: 3/19/2019

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



Sample Condition Upon Receipt

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

Project

WO#: 2098830

PM: CMM

Due Date: 04/02/1

CLIENT: PASI-MINN

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

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

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 3-19-19

Temp must be measured from Temperature blank when present

Comments:

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

If No, was preservative added? Yes No
If added record lot no.: HNO3 _____ H2SO4 _____

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

March 29, 2019

David Hodson
Jacobs
2020 SW 4th Ave
#300
Portland, OR 97201

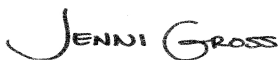
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467228

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 19, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Steve Demus, CH2M Hill
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792

Montana Certificate #CERT0103

Alaska Certification UST-107

Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203

Wisconsin DNR Certification #: 998027470

WA Department of Ecology Lab ID# C1007

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA

Florida Department of Health (NELAC): E87595

Illinois Environmental Protection Agency: 0025721

Kansas Department of Health and Environment (NELAC):

E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):

T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-
00119

Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10467228001	MW14D-GW-031819	Water	03/18/19 10:15	03/19/19 11:10
10467228002	MW2D-GW-031819	Water	03/18/19 11:45	03/19/19 11:10
10467228003	MW1D-GW-031819	Water	03/18/19 13:00	03/19/19 11:10
10467228004	MW5D-GW-031819	Water	03/18/19 14:30	03/19/19 11:10
10467228005	TB-031819	Water	03/18/19 09:00	03/19/19 11:10

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10467228001	MW14D-GW-031819	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10467228002	MW2D-GW-031819	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10467228003	MW1D-GW-031819	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10467228004	MW5D-GW-031819	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10467228005	TB-031819	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
10467228001	MW14D-GW-031819					
EPA 6010D	Aluminum, Dissolved	112J	ug/L	200	03/25/19 11:40	
EPA 6010D	Barium, Dissolved	23.2	ug/L	10.0	03/25/19 11:40	
EPA 6010D	Calcium, Dissolved	27400	ug/L	500	03/25/19 11:40	
EPA 6010D	Iron, Dissolved	278	ug/L	50.0	03/25/19 11:40	
EPA 6010D	Magnesium, Dissolved	8290	ug/L	500	03/25/19 11:40	
EPA 6010D	Manganese, Dissolved	260	ug/L	5.0	03/25/19 11:40	
EPA 6010D	Sodium, Dissolved	20300	ug/L	1000	03/25/19 11:40	
EPA 6010D	Vanadium, Dissolved	6.5J	ug/L	15.0	03/25/19 11:40	
EPA 6010D	Zinc, Dissolved	10.3J	ug/L	20.0	03/25/19 11:40	
SM 2320B	Alkalinity, Total as CaCO3	150	mg/L	5.0	03/26/19 13:53	
SM 2540C	Total Dissolved Solids	202	mg/L	10.0	03/22/19 14:36	
EPA 300.0	Chloride	1.1J	mg/L	1.2	03/19/19 19:47	M1
EPA 300.0	Nitrate as N	0.085J	mg/L	0.10	03/19/19 19:47	M1
EPA 300.0	Sulfate	1.2	mg/L	1.2	03/19/19 19:47	M1
EPA 353.2	Nitrogen, NO2 plus NO3	0.073J	mg/L	0.10	03/20/19 16:01	
SM 5310C	Total Organic Carbon	1.4	mg/L	1.0	03/21/19 19:34	B
10467228002	MW2D-GW-031819					
RSK 175	Methane	33.4	ug/L	10.0	03/20/19 08:50	
EPA 6010D	Aluminum, Dissolved	54.6J	ug/L	200	03/25/19 11:49	
EPA 6010D	Barium, Dissolved	94.3	ug/L	10.0	03/25/19 11:49	
EPA 6010D	Calcium, Dissolved	39200	ug/L	500	03/25/19 11:49	
EPA 6010D	Cobalt, Dissolved	1.3J	ug/L	10.0	03/25/19 11:49	
EPA 6010D	Iron, Dissolved	2220	ug/L	50.0	03/25/19 11:49	
EPA 6010D	Magnesium, Dissolved	10200	ug/L	500	03/25/19 11:49	
EPA 6010D	Manganese, Dissolved	947	ug/L	5.0	03/25/19 11:49	
EPA 6010D	Potassium, Dissolved	2890	ug/L	2500	03/25/19 11:49	
EPA 6010D	Sodium, Dissolved	16200	ug/L	1000	03/25/19 11:49	
EPA 6010D	Vanadium, Dissolved	1.2J	ug/L	15.0	03/25/19 11:49	
EPA 6010D	Zinc, Dissolved	3.3J	ug/L	20.0	03/25/19 11:49	
EPA 8260B	tert-Butyl Alcohol	1.8J	ug/L	10.0	03/21/19 21:26	
SM 2320B	Alkalinity, Total as CaCO3	176	mg/L	5.0	03/26/19 13:58	
SM 2540C	Total Dissolved Solids	216	mg/L	10.0	03/22/19 14:36	
EPA 300.0	Chloride	1.5	mg/L	1.2	03/19/19 20:51	
EPA 300.0	Nitrate as N	0.043J	mg/L	0.10	03/19/19 20:51	
EPA 300.0	Sulfate	2.1	mg/L	1.2	03/19/19 20:51	
EPA 353.2	Nitrogen, NO2 plus NO3	0.021J	mg/L	0.10	03/20/19 16:02	
SM 5310C	Total Organic Carbon	1.3	mg/L	1.0	03/21/19 19:47	B
10467228003	MW1D-GW-031819					
EPA 6010D	Aluminum, Dissolved	67.4J	ug/L	200	03/25/19 11:50	
EPA 6010D	Barium, Dissolved	76.4	ug/L	10.0	03/25/19 11:50	
EPA 6010D	Beryllium, Dissolved	0.17J	ug/L	5.0	03/25/19 11:50	
EPA 6010D	Calcium, Dissolved	50600	ug/L	500	03/25/19 11:50	
EPA 6010D	Iron, Dissolved	62.6	ug/L	50.0	03/25/19 11:50	
EPA 6010D	Magnesium, Dissolved	12100	ug/L	500	03/25/19 11:50	
EPA 6010D	Manganese, Dissolved	40.8	ug/L	5.0	03/25/19 11:50	
EPA 6010D	Potassium, Dissolved	1190J	ug/L	2500	03/25/19 11:50	

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10467228003	MW1D-GW-031819					
EPA 6010D	Sodium, Dissolved	11100	ug/L	1000	03/25/19 11:50	
EPA 6010D	Vanadium, Dissolved	1.8J	ug/L	15.0	03/25/19 11:50	
EPA 6010D	Zinc, Dissolved	4.9J	ug/L	20.0	03/25/19 11:50	
EPA 7470A	Mercury, Dissolved	0.16J	ug/L	0.20	03/21/19 15:19	
SM 2320B	Alkalinity, Total as CaCO3	205	mg/L	5.0	03/26/19 14:02	
SM 2540C	Total Dissolved Solids	247	mg/L	10.0	03/22/19 14:36	
EPA 300.0	Chloride	1.7	mg/L	1.2	03/20/19 00:42	
EPA 300.0	Nitrate as N	0.13	mg/L	0.10	03/20/19 00:42	
EPA 300.0	Sulfate	3.8	mg/L	1.2	03/20/19 00:42	
EPA 353.2	Nitrogen, NO2 plus NO3	0.13	mg/L	0.10	03/20/19 16:05	
SM 5310C	Total Organic Carbon	0.93J	mg/L	1.0	03/21/19 20:00	B
10467228004	MW5D-GW-031819					
EPA 6010D	Barium, Dissolved	99.0	ug/L	10.0	03/25/19 11:52	
EPA 6010D	Calcium, Dissolved	49300	ug/L	500	03/25/19 11:52	
EPA 6010D	Cobalt, Dissolved	0.67J	ug/L	10.0	03/25/19 11:52	
EPA 6010D	Iron, Dissolved	7.5J	ug/L	50.0	03/25/19 11:52	
EPA 6010D	Magnesium, Dissolved	14300	ug/L	500	03/25/19 11:52	
EPA 6010D	Manganese, Dissolved	0.64J	ug/L	5.0	03/25/19 11:52	
EPA 6010D	Potassium, Dissolved	1240J	ug/L	2500	03/25/19 11:52	
EPA 6010D	Silver, Dissolved	0.55J	ug/L	10.0	03/25/19 11:52	
EPA 6010D	Sodium, Dissolved	17400	ug/L	1000	03/25/19 11:52	
EPA 6010D	Vanadium, Dissolved	8.0J	ug/L	15.0	03/25/19 11:52	
EPA 6010D	Zinc, Dissolved	4.6J	ug/L	20.0	03/25/19 11:52	
SM 2320B	Alkalinity, Total as CaCO3	226	mg/L	5.0	03/27/19 09:40	M1
SM 2540C	Total Dissolved Solids	271	mg/L	10.0	03/22/19 14:36	
EPA 300.0	Chloride	1.0J	mg/L	1.2	03/20/19 03:40	
EPA 300.0	Nitrate as N	0.18	mg/L	0.10	03/20/19 03:40	
EPA 300.0	Sulfate	1.9	mg/L	1.2	03/20/19 03:40	
EPA 353.2	Nitrogen, NO2 plus NO3	0.19	mg/L	0.10	03/20/19 16:06	
SM 5310C	Total Organic Carbon	0.64J	mg/L	1.0	03/21/19 20:13	B

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Method: RSK 175

Description: RSK 175 GCV Headspace

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

General Information:

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

Hold Time:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Surrogates:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Duplicate Sample:

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

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Method: EPA 6010D

Description: 6010D MET ICP, Dissolved

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

General Information:

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

Hold Time:

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

Sample Preparation:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Method: EPA 7470A

Description: 7470A Mercury, Dissolved

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

General Information:

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

Hold Time:

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

Sample Preparation:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

General Information:

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

Hold Time:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Internal Standards:

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

Surrogates:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 595025

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10467660001

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

- MSD (Lab ID: 3216738)
- Acrolein

Additional Comments:

Analyte Comments:

QC Batch: 595025

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3216576)
- 1,2-Dichloroethene (Total)
- Dichlorofluoromethane
- 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

Analyte Comments:

QC Batch: 595025

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- LCS (Lab ID: 3216577)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3216737)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3216738)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MW14D-GW-031819 (Lab ID: 10467228001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MW1D-GW-031819 (Lab ID: 10467228003)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MW2D-GW-031819 (Lab ID: 10467228002)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MW5D-GW-031819 (Lab ID: 10467228004)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- TB-031819 (Lab ID: 10467228005)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Method: SM 2320B

Description: 2320B Alkalinity

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 595950

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10467228004,10468314010

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

- MS (Lab ID: 3222172)
 - Alkalinity, Total as CaCO₃
- MSD (Lab ID: 3222171)
 - Alkalinity, Total as CaCO₃
- MSD (Lab ID: 3222173)
 - Alkalinity, Total as CaCO₃

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Method: SM 2540C

Description: 2540C Total Dissolved Solids

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Duplicate Sample:

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

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Method: SM 4500-S-2 D

Description: 4500S2D Sulfide, Total

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 136770

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2098851001

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

- MS (Lab ID: 595003)
- Sulfide, Total

Duplicate Sample:

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

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Method: EPA 300.0

Description: 300.0 IC Anions

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 594605

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10467199007,10467228001

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

- MS (Lab ID: 3214414)
 - Chloride
 - Nitrate as N
 - Sulfate
- MS (Lab ID: 3214416)
 - Chloride
 - Nitrate as N
 - Sulfate
- MSD (Lab ID: 3214415)
 - Chloride
 - Nitrate as N
 - Sulfate
- MSD (Lab ID: 3214417)
 - Nitrate as N
 - Sulfate

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Method: EPA 353.2

Description: 353.2 Nitrate + Nitrite

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

Analyte Comments:

QC Batch: 594791

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 3215473)
 - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 3215474)
 - Nitrogen, NO2 plus NO3

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Method: EPA 410.4

Description: 410.4 COD

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

General Information:

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

Hold Time:

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

Sample Preparation:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Method: SM 5310C

Description: 5310C TOC

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

QC Batch: 163044

B: Analyte was detected in the associated method blank.

- BLANK for HBN 163044 [WETA/265 (Lab ID: 642680)]
 - Total Organic Carbon

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

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

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467228

Sample: **MW14D-GW-031819** Lab ID: **10467228001** Collected: 03/18/19 10:15 Received: 03/19/19 11:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace		Analytical Method: RSK 175							
Methane	<4.9	ug/L	10.0	4.9	1		03/20/19 08:36	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/20/19 08:36	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/20/19 08:36	74-85-1	
6010D MET ICP, Dissolved		Analytical Method: EPA 6010D Preparation Method: EPA 3010							
Aluminum, Dissolved	112J	ug/L	200	15.5	1	03/20/19 14:53	03/25/19 11:40	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/20/19 14:53	03/25/19 11:40	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/20/19 14:53	03/25/19 11:40	7440-38-2	
Barium, Dissolved	23.2	ug/L	10.0	0.18	1	03/20/19 14:53	03/25/19 11:40	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/20/19 14:53	03/25/19 11:40	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	03/20/19 14:53	03/25/19 11:40	7440-43-9	
Calcium, Dissolved	27400	ug/L	500	13.9	1	03/20/19 14:53	03/25/19 11:40	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/20/19 14:53	03/25/19 11:40	7440-47-3	
Cobalt, Dissolved	<0.50	ug/L	10.0	0.50	1	03/20/19 14:53	03/25/19 11:40	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/20/19 14:53	03/25/19 11:40	7440-50-8	
Iron, Dissolved	278	ug/L	50.0	4.3	1	03/20/19 14:53	03/25/19 11:40	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/20/19 14:53	03/25/19 11:40	7439-92-1	
Magnesium, Dissolved	8290	ug/L	500	9.8	1	03/20/19 14:53	03/25/19 11:40	7439-95-4	
Manganese, Dissolved	260	ug/L	5.0	0.22	1	03/20/19 14:53	03/25/19 11:40	7439-96-5	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	03/20/19 14:53	03/25/19 11:40	7440-02-0	
Potassium, Dissolved	<310	ug/L	2500	310	1	03/20/19 14:53	03/25/19 11:40	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/20/19 14:53	03/25/19 11:40	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/20/19 14:53	03/25/19 11:40	7440-22-4	
Sodium, Dissolved	20300	ug/L	1000	21.5	1	03/20/19 14:53	03/25/19 11:40	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/20/19 14:53	03/25/19 11:40	7440-28-0	
Vanadium, Dissolved	6.5J	ug/L	15.0	0.29	1	03/20/19 14:53	03/25/19 11:40	7440-62-2	
Zinc, Dissolved	10.3J	ug/L	20.0	2.5	1	03/20/19 14:53	03/25/19 11:40	7440-66-6	
7470A Mercury, Dissolved		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/20/19 17:33	03/21/19 15:09	7439-97-6	
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/21/19 21:02	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/21/19 21:02	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/21/19 21:02	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/21/19 21:02	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/21/19 21:02	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/21/19 21:02	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/21/19 21:02	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/21/19 21:02	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/21/19 21:02	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/21/19 21:02	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/21/19 21:02	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/21/19 21:02	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/21/19 21:02	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/21/19 21:02	106-93-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Project No.: 10467228

Sample: MW14D-GW-031819 Lab ID: 10467228001 Collected: 03/18/19 10:15 Received: 03/19/19 11:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/21/19 21:02	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/21/19 21:02	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/21/19 21:02	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/21/19 21:02	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	1.0	0.12	1		03/21/19 21:02	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/21/19 21:02	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/21/19 21:02	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/21/19 21:02	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/21/19 21:02	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/21/19 21:02	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/21/19 21:02	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/21/19 21:02	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/21/19 21:02	95-49-8	
2-Hexanone	<0.88	ug/L	20.0	0.88	1		03/21/19 21:02	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/21/19 21:02	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/21/19 21:02	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/21/19 21:02	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/21/19 21:02	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/21/19 21:02	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/21/19 21:02	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/21/19 21:02	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/21/19 21:02	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/21/19 21:02	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/21/19 21:02	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/21/19 21:02	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/21/19 21:02	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/21/19 21:02	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/21/19 21:02	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/21/19 21:02	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/21/19 21:02	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/21/19 21:02	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/21/19 21:02	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/21/19 21:02	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/21/19 21:02	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/21/19 21:02	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/21/19 21:02	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/21/19 21:02	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/21/19 21:02	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/21/19 21:02	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		03/21/19 21:02	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/21/19 21:02	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/21/19 21:02	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/21/19 21:02	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/21/19 21:02	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/21/19 21:02	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/21/19 21:02	109-99-9	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Sample: MW14D-GW-031819 **Lab ID: 10467228001** Collected: 03/18/19 10:15 Received: 03/19/19 11:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Toluene	<0.083	ug/L	0.50	0.083	1		03/21/19 21:02	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/21/19 21:02	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/21/19 21:02	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/21/19 21:02	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/21/19 21:02	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/21/19 21:02	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/21/19 21:02	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/21/19 21:02	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/21/19 21:02	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/21/19 21:02	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/21/19 21:02	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/21/19 21:02	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/21/19 21:02	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/21/19 21:02	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/21/19 21:02	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/21/19 21:02	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/21/19 21:02	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/21/19 21:02	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		03/21/19 21:02	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/21/19 21:02	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	102	%	75-136		1		03/21/19 21:02	17060-07-0	
Toluene-d8 (S)	97	%	75-125		1		03/21/19 21:02	2037-26-5	
4-Bromofluorobenzene (S)	97	%	75-125		1		03/21/19 21:02	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	150	mg/L	5.0	1.0	1		03/26/19 13:53		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	202	mg/L	10.0	5.0	1		03/22/19 14:36		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/20/19 14:45	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	1.1J	mg/L	1.2	0.28	1		03/19/19 19:47	16887-00-6	M1
Nitrate as N	0.085J	mg/L	0.10	0.015	1		03/19/19 19:47	14797-55-8	M1
Sulfate	1.2	mg/L	1.2	0.19	1		03/19/19 19:47	14808-79-8	M1
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	0.073J	mg/L	0.10	0.018	1		03/20/19 16:01		
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	03/25/19 13:21	03/26/19 08:39		

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Sample: MW14D-GW-031819 **Lab ID: 10467228001** Collected: 03/18/19 10:15 Received: 03/19/19 11:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	1.4	mg/L	1.0	0.20	1		03/21/19 19:34	7440-44-0	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467228

Sample: MW2D-GW-031819 **Lab ID:** 10467228002 Collected: 03/18/19 11:45 Received: 03/19/19 11:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	33.4	ug/L	10.0	4.9	1		03/20/19 08:50	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/20/19 08:50	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/20/19 08:50	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Aluminum, Dissolved	54.6J	ug/L	200	15.5	1	03/20/19 14:53	03/25/19 11:49	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/20/19 14:53	03/25/19 11:49	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/20/19 14:53	03/25/19 11:49	7440-38-2	
Barium, Dissolved	94.3	ug/L	10.0	0.18	1	03/20/19 14:53	03/25/19 11:49	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/20/19 14:53	03/25/19 11:49	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	03/20/19 14:53	03/25/19 11:49	7440-43-9	
Calcium, Dissolved	39200	ug/L	500	13.9	1	03/20/19 14:53	03/25/19 11:49	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/20/19 14:53	03/25/19 11:49	7440-47-3	
Cobalt, Dissolved	1.3J	ug/L	10.0	0.50	1	03/20/19 14:53	03/25/19 11:49	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/20/19 14:53	03/25/19 11:49	7440-50-8	
Iron, Dissolved	2220	ug/L	50.0	4.3	1	03/20/19 14:53	03/25/19 11:49	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/20/19 14:53	03/25/19 11:49	7439-92-1	
Magnesium, Dissolved	10200	ug/L	500	9.8	1	03/20/19 14:53	03/25/19 11:49	7439-95-4	
Manganese, Dissolved	947	ug/L	5.0	0.22	1	03/20/19 14:53	03/25/19 11:49	7439-96-5	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	03/20/19 14:53	03/25/19 11:49	7440-02-0	
Potassium, Dissolved	2890	ug/L	2500	310	1	03/20/19 14:53	03/25/19 11:49	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/20/19 14:53	03/25/19 11:49	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/20/19 14:53	03/25/19 11:49	7440-22-4	
Sodium, Dissolved	16200	ug/L	1000	21.5	1	03/20/19 14:53	03/25/19 11:49	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/20/19 14:53	03/25/19 11:49	7440-28-0	
Vanadium, Dissolved	1.2J	ug/L	15.0	0.29	1	03/20/19 14:53	03/25/19 11:49	7440-62-2	
Zinc, Dissolved	3.3J	ug/L	20.0	2.5	1	03/20/19 14:53	03/25/19 11:49	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/20/19 17:33	03/21/19 15:12	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/21/19 21:26	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/21/19 21:26	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/21/19 21:26	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/21/19 21:26	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/21/19 21:26	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/21/19 21:26	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/21/19 21:26	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/21/19 21:26	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/21/19 21:26	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/21/19 21:26	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/21/19 21:26	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/21/19 21:26	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/21/19 21:26	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/21/19 21:26	106-93-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Project No.: 10467228

Sample: MW2D-GW-031819 Lab ID: 10467228002 Collected: 03/18/19 11:45 Received: 03/19/19 11:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/21/19 21:26	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/21/19 21:26	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/21/19 21:26	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/21/19 21:26	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	1.0	0.12	1		03/21/19 21:26	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/21/19 21:26	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/21/19 21:26	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/21/19 21:26	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/21/19 21:26	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/21/19 21:26	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/21/19 21:26	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/21/19 21:26	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/21/19 21:26	95-49-8	
2-Hexanone	<0.88	ug/L	20.0	0.88	1		03/21/19 21:26	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/21/19 21:26	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/21/19 21:26	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/21/19 21:26	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/21/19 21:26	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/21/19 21:26	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/21/19 21:26	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/21/19 21:26	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/21/19 21:26	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/21/19 21:26	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/21/19 21:26	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/21/19 21:26	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/21/19 21:26	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/21/19 21:26	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/21/19 21:26	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/21/19 21:26	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/21/19 21:26	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/21/19 21:26	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/21/19 21:26	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/21/19 21:26	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/21/19 21:26	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/21/19 21:26	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/21/19 21:26	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/21/19 21:26	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/21/19 21:26	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/21/19 21:26	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		03/21/19 21:26	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/21/19 21:26	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/21/19 21:26	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/21/19 21:26	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/21/19 21:26	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/21/19 21:26	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/21/19 21:26	109-99-9	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Sample: MW2D-GW-031819 **Lab ID:** 10467228002 Collected: 03/18/19 11:45 Received: 03/19/19 11:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Toluene	<0.083	ug/L	0.50	0.083	1		03/21/19 21:26	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/21/19 21:26	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/21/19 21:26	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/21/19 21:26	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/21/19 21:26	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/21/19 21:26	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/21/19 21:26	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/21/19 21:26	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/21/19 21:26	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/21/19 21:26	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/21/19 21:26	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/21/19 21:26	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/21/19 21:26	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/21/19 21:26	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/21/19 21:26	994-05-8	
tert-Butyl Alcohol	1.8J	ug/L	10.0	1.2	1		03/21/19 21:26	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/21/19 21:26	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/21/19 21:26	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		03/21/19 21:26	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/21/19 21:26	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	102	%	75-136		1		03/21/19 21:26	17060-07-0	
Toluene-d8 (S)	97	%	75-125		1		03/21/19 21:26	2037-26-5	
4-Bromofluorobenzene (S)	96	%	75-125		1		03/21/19 21:26	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	176	mg/L	5.0	1.0	1		03/26/19 13:58		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	216	mg/L	10.0	5.0	1		03/22/19 14:36		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/20/19 14:46	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	1.5	mg/L	1.2	0.28	1		03/19/19 20:51	16887-00-6	
Nitrate as N	0.043J	mg/L	0.10	0.015	1		03/19/19 20:51	14797-55-8	
Sulfate	2.1	mg/L	1.2	0.19	1		03/19/19 20:51	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	0.021J	mg/L	0.10	0.018	1		03/20/19 16:02		
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	03/25/19 13:21	03/26/19 08:39		

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Sample: MW2D-GW-031819 **Lab ID: 10467228002** Collected: 03/18/19 11:45 Received: 03/19/19 11:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	1.3	mg/L	1.0	0.20	1		03/21/19 19:47	7440-44-0	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467228

Sample: MW1D-GW-031819 **Lab ID:** 10467228003 Collected: 03/18/19 13:00 Received: 03/19/19 11:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace		Analytical Method: RSK 175							
Methane	<4.9	ug/L	10.0	4.9	1		03/20/19 08:57	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/20/19 08:57	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/20/19 08:57	74-85-1	
6010D MET ICP, Dissolved		Analytical Method: EPA 6010D Preparation Method: EPA 3010							
Aluminum, Dissolved	67.4J	ug/L	200	15.5	1	03/20/19 14:53	03/25/19 11:50	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/20/19 14:53	03/25/19 11:50	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/20/19 14:53	03/25/19 11:50	7440-38-2	
Barium, Dissolved	76.4	ug/L	10.0	0.18	1	03/20/19 14:53	03/25/19 11:50	7440-39-3	
Beryllium, Dissolved	0.17J	ug/L	5.0	0.12	1	03/20/19 14:53	03/25/19 11:50	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	03/20/19 14:53	03/25/19 11:50	7440-43-9	
Calcium, Dissolved	50600	ug/L	500	13.9	1	03/20/19 14:53	03/25/19 11:50	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/20/19 14:53	03/25/19 11:50	7440-47-3	
Cobalt, Dissolved	<0.50	ug/L	10.0	0.50	1	03/20/19 14:53	03/25/19 11:50	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/20/19 14:53	03/25/19 11:50	7440-50-8	
Iron, Dissolved	62.6	ug/L	50.0	4.3	1	03/20/19 14:53	03/25/19 11:50	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/20/19 14:53	03/25/19 11:50	7439-92-1	
Magnesium, Dissolved	12100	ug/L	500	9.8	1	03/20/19 14:53	03/25/19 11:50	7439-95-4	
Manganese, Dissolved	40.8	ug/L	5.0	0.22	1	03/20/19 14:53	03/25/19 11:50	7439-96-5	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	03/20/19 14:53	03/25/19 11:50	7440-02-0	
Potassium, Dissolved	1190J	ug/L	2500	310	1	03/20/19 14:53	03/25/19 11:50	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/20/19 14:53	03/25/19 11:50	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/20/19 14:53	03/25/19 11:50	7440-22-4	
Sodium, Dissolved	11100	ug/L	1000	21.5	1	03/20/19 14:53	03/25/19 11:50	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/20/19 14:53	03/25/19 11:50	7440-28-0	
Vanadium, Dissolved	1.8J	ug/L	15.0	0.29	1	03/20/19 14:53	03/25/19 11:50	7440-62-2	
Zinc, Dissolved	4.9J	ug/L	20.0	2.5	1	03/20/19 14:53	03/25/19 11:50	7440-66-6	
7470A Mercury, Dissolved		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury, Dissolved	0.16J	ug/L	0.20	0.078	1	03/20/19 17:33	03/21/19 15:19	7439-97-6	
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/21/19 21:50	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/21/19 21:50	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/21/19 21:50	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/21/19 21:50	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/21/19 21:50	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/21/19 21:50	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/21/19 21:50	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/21/19 21:50	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/21/19 21:50	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/21/19 21:50	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/21/19 21:50	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/21/19 21:50	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/21/19 21:50	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/21/19 21:50	106-93-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Project No.: 10467228

Sample: MW1D-GW-031819 Lab ID: 10467228003 Collected: 03/18/19 13:00 Received: 03/19/19 11:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/21/19 21:50	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/21/19 21:50	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/21/19 21:50	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/21/19 21:50	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	1.0	0.12	1		03/21/19 21:50	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/21/19 21:50	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/21/19 21:50	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/21/19 21:50	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/21/19 21:50	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/21/19 21:50	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/21/19 21:50	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/21/19 21:50	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/21/19 21:50	95-49-8	
2-Hexanone	<0.88	ug/L	20.0	0.88	1		03/21/19 21:50	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/21/19 21:50	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/21/19 21:50	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/21/19 21:50	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/21/19 21:50	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/21/19 21:50	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/21/19 21:50	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/21/19 21:50	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/21/19 21:50	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/21/19 21:50	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/21/19 21:50	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/21/19 21:50	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/21/19 21:50	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/21/19 21:50	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/21/19 21:50	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/21/19 21:50	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/21/19 21:50	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/21/19 21:50	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/21/19 21:50	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/21/19 21:50	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/21/19 21:50	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/21/19 21:50	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/21/19 21:50	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/21/19 21:50	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/21/19 21:50	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/21/19 21:50	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		03/21/19 21:50	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/21/19 21:50	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/21/19 21:50	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/21/19 21:50	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/21/19 21:50	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/21/19 21:50	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/21/19 21:50	109-99-9	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Sample: MW1D-GW-031819 **Lab ID: 10467228003** Collected: 03/18/19 13:00 Received: 03/19/19 11:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level Analytical Method: EPA 8260B									
Toluene	<0.083	ug/L	0.50	0.083	1		03/21/19 21:50	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/21/19 21:50	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/21/19 21:50	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/21/19 21:50	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/21/19 21:50	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/21/19 21:50	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/21/19 21:50	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/21/19 21:50	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/21/19 21:50	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/21/19 21:50	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/21/19 21:50	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/21/19 21:50	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/21/19 21:50	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/21/19 21:50	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/21/19 21:50	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/21/19 21:50	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/21/19 21:50	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/21/19 21:50	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		03/21/19 21:50	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/21/19 21:50	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%	75-136		1		03/21/19 21:50	17060-07-0	
Toluene-d8 (S)	96	%	75-125		1		03/21/19 21:50	2037-26-5	
4-Bromofluorobenzene (S)	98	%	75-125		1		03/21/19 21:50	460-00-4	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	205	mg/L	5.0	1.0	1		03/26/19 14:02		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	247	mg/L	10.0	5.0	1		03/22/19 14:36		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/20/19 14:47	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	1.7	mg/L	1.2	0.28	1		03/20/19 00:42	16887-00-6	
Nitrate as N	0.13	mg/L	0.10	0.015	1		03/20/19 00:42	14797-55-8	
Sulfate	3.8	mg/L	1.2	0.19	1		03/20/19 00:42	14808-79-8	
353.2 Nitrate + Nitrite Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	0.13	mg/L	0.10	0.018	1		03/20/19 16:05		
410.4 COD Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	03/25/19 13:21	03/26/19 08:40		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Sample: MW1D-GW-031819 **Lab ID: 10467228003** Collected: 03/18/19 13:00 Received: 03/19/19 11:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	0.93J	mg/L	1.0	0.20	1		03/21/19 20:00	7440-44-0	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467228

Sample: MW5D-GW-031819 **Lab ID: 10467228004** Collected: 03/18/19 14:30 Received: 03/19/19 11:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		03/20/19 09:04	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/20/19 09:04	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/20/19 09:04	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Aluminum, Dissolved	<15.5	ug/L	200	15.5	1	03/20/19 14:53	03/25/19 11:52	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/20/19 14:53	03/25/19 11:52	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/20/19 14:53	03/25/19 11:52	7440-38-2	
Barium, Dissolved	99.0	ug/L	10.0	0.18	1	03/20/19 14:53	03/25/19 11:52	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/20/19 14:53	03/25/19 11:52	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	03/20/19 14:53	03/25/19 11:52	7440-43-9	
Calcium, Dissolved	49300	ug/L	500	13.9	1	03/20/19 14:53	03/25/19 11:52	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/20/19 14:53	03/25/19 11:52	7440-47-3	
Cobalt, Dissolved	0.67J	ug/L	10.0	0.50	1	03/20/19 14:53	03/25/19 11:52	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/20/19 14:53	03/25/19 11:52	7440-50-8	
Iron, Dissolved	7.5J	ug/L	50.0	4.3	1	03/20/19 14:53	03/25/19 11:52	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/20/19 14:53	03/25/19 11:52	7439-92-1	
Magnesium, Dissolved	14300	ug/L	500	9.8	1	03/20/19 14:53	03/25/19 11:52	7439-95-4	
Manganese, Dissolved	0.64J	ug/L	5.0	0.22	1	03/20/19 14:53	03/25/19 11:52	7439-96-5	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	03/20/19 14:53	03/25/19 11:52	7440-02-0	
Potassium, Dissolved	1240J	ug/L	2500	310	1	03/20/19 14:53	03/25/19 11:52	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/20/19 14:53	03/25/19 11:52	7782-49-2	
Silver, Dissolved	0.55J	ug/L	10.0	0.38	1	03/20/19 14:53	03/25/19 11:52	7440-22-4	
Sodium, Dissolved	17400	ug/L	1000	21.5	1	03/20/19 14:53	03/25/19 11:52	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/20/19 14:53	03/25/19 11:52	7440-28-0	
Vanadium, Dissolved	8.0J	ug/L	15.0	0.29	1	03/20/19 14:53	03/25/19 11:52	7440-62-2	
Zinc, Dissolved	4.6J	ug/L	20.0	2.5	1	03/20/19 14:53	03/25/19 11:52	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/20/19 17:33	03/21/19 15:21	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/21/19 22:13	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/21/19 22:13	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/21/19 22:13	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/21/19 22:13	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/21/19 22:13	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/21/19 22:13	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/21/19 22:13	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/21/19 22:13	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/21/19 22:13	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/21/19 22:13	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/21/19 22:13	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/21/19 22:13	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/21/19 22:13	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/21/19 22:13	106-93-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467228

Sample: MW5D-GW-031819 Lab ID: 10467228004 Collected: 03/18/19 14:30 Received: 03/19/19 11:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/21/19 22:13	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/21/19 22:13	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/21/19 22:13	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/21/19 22:13	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	1.0	0.12	1		03/21/19 22:13	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/21/19 22:13	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/21/19 22:13	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/21/19 22:13	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/21/19 22:13	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/21/19 22:13	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/21/19 22:13	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/21/19 22:13	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/21/19 22:13	95-49-8	
2-Hexanone	<0.88	ug/L	20.0	0.88	1		03/21/19 22:13	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/21/19 22:13	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/21/19 22:13	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/21/19 22:13	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/21/19 22:13	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/21/19 22:13	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/21/19 22:13	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/21/19 22:13	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/21/19 22:13	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/21/19 22:13	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/21/19 22:13	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/21/19 22:13	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/21/19 22:13	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/21/19 22:13	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/21/19 22:13	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/21/19 22:13	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/21/19 22:13	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/21/19 22:13	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/21/19 22:13	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/21/19 22:13	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/21/19 22:13	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/21/19 22:13	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/21/19 22:13	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/21/19 22:13	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/21/19 22:13	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/21/19 22:13	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		03/21/19 22:13	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/21/19 22:13	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/21/19 22:13	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/21/19 22:13	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/21/19 22:13	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/21/19 22:13	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/21/19 22:13	109-99-9	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Sample: MW5D-GW-031819 **Lab ID: 10467228004** Collected: 03/18/19 14:30 Received: 03/19/19 11:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level Analytical Method: EPA 8260B									
Toluene	<0.083	ug/L	0.50	0.083	1		03/21/19 22:13	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/21/19 22:13	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/21/19 22:13	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/21/19 22:13	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/21/19 22:13	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/21/19 22:13	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/21/19 22:13	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/21/19 22:13	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/21/19 22:13	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/21/19 22:13	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/21/19 22:13	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/21/19 22:13	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/21/19 22:13	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/21/19 22:13	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/21/19 22:13	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/21/19 22:13	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/21/19 22:13	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/21/19 22:13	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		03/21/19 22:13	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/21/19 22:13	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	94	%	75-136		1		03/21/19 22:13	17060-07-0	
Toluene-d8 (S)	97	%	75-125		1		03/21/19 22:13	2037-26-5	
4-Bromofluorobenzene (S)	98	%	75-125		1		03/21/19 22:13	460-00-4	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	226	mg/L	5.0	1.0	1		03/27/19 09:40		M1
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	271	mg/L	10.0	5.0	1		03/22/19 14:36		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/20/19 14:48	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	1.0J	mg/L	1.2	0.28	1		03/20/19 03:40	16887-00-6	
Nitrate as N	0.18	mg/L	0.10	0.015	1		03/20/19 03:40	14797-55-8	
Sulfate	1.9	mg/L	1.2	0.19	1		03/20/19 03:40	14808-79-8	
353.2 Nitrate + Nitrite Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	0.19	mg/L	0.10	0.018	1		03/20/19 16:06		
410.4 COD Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	03/25/19 13:21	03/26/19 08:40		

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Sample: MW5D-GW-031819 **Lab ID: 10467228004** Collected: 03/18/19 14:30 Received: 03/19/19 11:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	0.64J	mg/L	1.0	0.20	1		03/21/19 20:13	7440-44-0	B

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467228

Sample: TB-031819 **Lab ID: 10467228005** Collected: 03/18/19 09:00 Received: 03/19/19 11:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/21/19 16:16	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/21/19 16:16	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/21/19 16:16	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/21/19 16:16	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/21/19 16:16	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/21/19 16:16	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/21/19 16:16	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/21/19 16:16	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/21/19 16:16	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/21/19 16:16	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/21/19 16:16	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/21/19 16:16	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/21/19 16:16	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/21/19 16:16	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/21/19 16:16	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/21/19 16:16	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/21/19 16:16	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/21/19 16:16	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	1.0	0.12	1		03/21/19 16:16	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/21/19 16:16	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/21/19 16:16	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/21/19 16:16	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/21/19 16:16	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/21/19 16:16	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/21/19 16:16	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/21/19 16:16	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/21/19 16:16	95-49-8	
2-Hexanone	<0.88	ug/L	20.0	0.88	1		03/21/19 16:16	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/21/19 16:16	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/21/19 16:16	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/21/19 16:16	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/21/19 16:16	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/21/19 16:16	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/21/19 16:16	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/21/19 16:16	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/21/19 16:16	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/21/19 16:16	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/21/19 16:16	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/21/19 16:16	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/21/19 16:16	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/21/19 16:16	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/21/19 16:16	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/21/19 16:16	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/21/19 16:16	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/21/19 16:16	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/21/19 16:16	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Sample: TB-031819 **Lab ID: 10467228005** Collected: 03/18/19 09:00 Received: 03/19/19 11:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/21/19 16:16	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/21/19 16:16	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/21/19 16:16	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/21/19 16:16	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/21/19 16:16	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/21/19 16:16	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/21/19 16:16	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		03/21/19 16:16	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/21/19 16:16	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/21/19 16:16	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/21/19 16:16	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/21/19 16:16	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/21/19 16:16	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/21/19 16:16	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		03/21/19 16:16	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/21/19 16:16	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/21/19 16:16	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/21/19 16:16	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/21/19 16:16	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/21/19 16:16	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/21/19 16:16	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/21/19 16:16	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/21/19 16:16	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/21/19 16:16	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/21/19 16:16	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/21/19 16:16	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/21/19 16:16	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/21/19 16:16	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/21/19 16:16	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/21/19 16:16	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/21/19 16:16	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/21/19 16:16	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		03/21/19 16:16	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/21/19 16:16	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	107	%	75-136		1		03/21/19 16:16	17060-07-0	
Toluene-d8 (S)	98	%	75-125		1		03/21/19 16:16	2037-26-5	
4-Bromofluorobenzene (S)	97	%	75-125		1		03/21/19 16:16	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Project No.: 10467228

QC Batch: 594672 Analysis Method: RSK 175
 QC Batch Method: RSK 175 Analysis Description: RSK 175 GCV HEADSPACE
 Associated Lab Samples: 10467228001, 10467228002, 10467228003, 10467228004

METHOD BLANK: 3214897 Matrix: Water
 Associated Lab Samples: 10467228001, 10467228002, 10467228003, 10467228004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	03/20/19 08:11	
Ethene	ug/L	<2.9	10.0	2.9	03/20/19 08:11	
Methane	ug/L	<4.9	10.0	4.9	03/20/19 08:11	

LABORATORY CONTROL SAMPLE & LCSD: 3214898

Parameter	Units	3214899								
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	105	110	92	96	85-115	4	20	
Ethene	ug/L	106	98.0	102	92	96	85-115	4	20	
Methane	ug/L	60.7	55.4	57.7	91	95	85-115	4	20	

SAMPLE DUPLICATE: 3214900

Parameter	Units	10467228001		RPD	Max RPD	Qualifiers
		Result	Dup Result			
Ethane	ug/L	<3.0	<3.0		20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	<4.9	<4.9		20	

SAMPLE DUPLICATE: 3214901

Parameter	Units	12122571001		RPD	Max RPD	Qualifiers
		Result	Dup Result			
Ethane	ug/L	ND	4.6J		20	
Ethene	ug/L	ND	<2.9		20	
Methane	ug/L	4320	4080	6	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

QC Batch: 594603

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470A Mercury Water Dissolved

Associated Lab Samples: 10467228001, 10467228002, 10467228003, 10467228004

METHOD BLANK: 3214399

Matrix: Water

Associated Lab Samples: 10467228001, 10467228002, 10467228003, 10467228004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.078	0.20	0.078	03/21/19 15:05	

LABORATORY CONTROL SAMPLE: 3214400

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.7	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3214401 3214402

Parameter	Units	3214401		3214402		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10467228002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Mercury, Dissolved	ug/L	<0.078	5	5	4.9	4.9	99	97	80-120	1	20

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

QC Batch: 594595 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10467228001, 10467228002, 10467228003, 10467228004

METHOD BLANK: 3214366 Matrix: Water
Associated Lab Samples: 10467228001, 10467228002, 10467228003, 10467228004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<15.5	200	15.5	03/25/19 11:37	
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	03/25/19 11:37	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	03/25/19 11:37	
Barium, Dissolved	ug/L	<0.18	10.0	0.18	03/25/19 11:37	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	03/25/19 11:37	
Cadmium, Dissolved	ug/L	<0.26	3.0	0.26	03/25/19 11:37	
Calcium, Dissolved	ug/L	<13.9	500	13.9	03/25/19 11:37	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	03/25/19 11:37	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	03/25/19 11:37	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	03/25/19 11:37	
Iron, Dissolved	ug/L	<4.3	50.0	4.3	03/25/19 11:37	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	03/25/19 11:37	
Magnesium, Dissolved	ug/L	<9.8	500	9.8	03/25/19 11:37	
Manganese, Dissolved	ug/L	<0.22	5.0	0.22	03/25/19 11:37	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	03/25/19 11:37	
Potassium, Dissolved	ug/L	<310	2500	310	03/25/19 11:37	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	03/25/19 11:37	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	03/25/19 11:37	
Sodium, Dissolved	ug/L	<21.5	1000	21.5	03/25/19 11:37	
Thallium, Dissolved	ug/L	7.8J	20.0	4.3	03/25/19 11:37	
Vanadium, Dissolved	ug/L	<0.29	15.0	0.29	03/25/19 11:37	
Zinc, Dissolved	ug/L	<2.5	20.0	2.5	03/25/19 11:37	

LABORATORY CONTROL SAMPLE: 3214367

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	21300	106	80-120	
Antimony, Dissolved	ug/L	1000	1010	101	80-120	
Arsenic, Dissolved	ug/L	1000	1010	101	80-120	
Barium, Dissolved	ug/L	1000	1030	103	80-120	
Beryllium, Dissolved	ug/L	1000	1040	104	80-120	
Cadmium, Dissolved	ug/L	1000	1020	102	80-120	
Calcium, Dissolved	ug/L	20000	20300	101	80-120	
Chromium, Dissolved	ug/L	1000	1030	103	80-120	
Cobalt, Dissolved	ug/L	1000	1030	103	80-120	
Copper, Dissolved	ug/L	1000	993	99	80-120	
Iron, Dissolved	ug/L	20000	20600	103	80-120	
Lead, Dissolved	ug/L	1000	1040	104	80-120	
Magnesium, Dissolved	ug/L	20000	20200	101	80-120	
Manganese, Dissolved	ug/L	1000	1030	103	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

LABORATORY CONTROL SAMPLE: 3214367

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nickel, Dissolved	ug/L	1000	1030	103	80-120	
Potassium, Dissolved	ug/L	20000	20300	102	80-120	
Selenium, Dissolved	ug/L	1000	1080	108	80-120	
Silver, Dissolved	ug/L	500	505	101	80-120	
Sodium, Dissolved	ug/L	20000	20700	103	80-120	
Thallium, Dissolved	ug/L	1000	1020	102	80-120	
Vanadium, Dissolved	ug/L	1000	1030	103	80-120	
Zinc, Dissolved	ug/L	1000	1050	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3214368 3214369

Parameter	Units	MS 10467228001		MSD 3214369		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual	
		Result	Spike Conc.	Spike Conc.	Result						
Aluminum, Dissolved	ug/L	112J	20000	20000	21700	21600	108	108	75-125	0	20
Antimony, Dissolved	ug/L	<7.0	1000	1000	1030	1040	103	104	75-125	1	20
Arsenic, Dissolved	ug/L	<3.8	1000	1000	1020	1030	102	102	75-125	1	20
Barium, Dissolved	ug/L	23.2	1000	1000	1080	1070	106	105	75-125	1	20
Beryllium, Dissolved	ug/L	<0.12	1000	1000	1060	1050	106	105	75-125	0	20
Cadmium, Dissolved	ug/L	<0.26	1000	1000	1030	1030	103	103	75-125	0	20
Calcium, Dissolved	ug/L	27400	20000	20000	49200	48200	109	104	75-125	2	20
Chromium, Dissolved	ug/L	<0.49	1000	1000	1040	1040	104	104	75-125	0	20
Cobalt, Dissolved	ug/L	<0.50	1000	1000	1030	1030	103	103	75-125	0	20
Copper, Dissolved	ug/L	<1.2	1000	1000	1010	1000	101	100	75-125	1	20
Iron, Dissolved	ug/L	278	20000	20000	21100	20800	104	103	75-125	1	20
Lead, Dissolved	ug/L	<2.0	1000	1000	1050	1050	105	105	75-125	0	20
Magnesium, Dissolved	ug/L	8290	20000	20000	29400	29100	106	104	75-125	1	20
Manganese, Dissolved	ug/L	260	1000	1000	1310	1290	105	103	75-125	2	20
Nickel, Dissolved	ug/L	<1.1	1000	1000	1040	1030	104	103	75-125	0	20
Potassium, Dissolved	ug/L	<310	20000	20000	21300	21500	105	106	75-125	1	20
Selenium, Dissolved	ug/L	<5.8	1000	1000	1090	1090	109	109	75-125	0	20
Silver, Dissolved	ug/L	<0.38	500	500	510	513	102	103	75-125	1	20
Sodium, Dissolved	ug/L	20300	20000	20000	40900	41700	103	107	75-125	2	20
Thallium, Dissolved	ug/L	<4.3	1000	1000	1030	1030	103	103	75-125	0	20
Vanadium, Dissolved	ug/L	6.5J	1000	1000	1040	1050	104	104	75-125	0	20
Zinc, Dissolved	ug/L	10.3J	1000	1000	1060	1060	105	105	75-125	1	20

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

QC Batch: 595025 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10467228001, 10467228002, 10467228003, 10467228004, 10467228005

METHOD BLANK: 3216576 Matrix: Water
Associated Lab Samples: 10467228001, 10467228002, 10467228003, 10467228004, 10467228005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	03/21/19 15:04	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	03/21/19 15:04	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	03/21/19 15:04	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	03/21/19 15:04	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	03/21/19 15:04	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	03/21/19 15:04	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	03/21/19 15:04	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	03/21/19 15:04	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	03/21/19 15:04	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	03/21/19 15:04	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	03/21/19 15:04	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	03/21/19 15:04	MN
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	03/21/19 15:04	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	03/21/19 15:04	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	03/21/19 15:04	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	03/21/19 15:04	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	03/21/19 15:04	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	03/21/19 15:04	
1,3,5-Trimethylbenzene	ug/L	<0.12	1.0	0.12	03/21/19 15:04	MN
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/21/19 15:04	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	03/21/19 15:04	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	03/21/19 15:04	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	03/21/19 15:04	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	03/21/19 15:04	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	03/21/19 15:04	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	03/21/19 15:04	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	03/21/19 15:04	
2-Hexanone	ug/L	<0.88	20.0	0.88	03/21/19 15:04	MN
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/21/19 15:04	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	03/21/19 15:04	
Acetone	ug/L	<9.2	20.0	9.2	03/21/19 15:04	
Acrolein	ug/L	<1.2	10.0	1.2	03/21/19 15:04	
Acrylonitrile	ug/L	<0.91	10.0	0.91	03/21/19 15:04	
Benzene	ug/L	<0.10	0.50	0.10	03/21/19 15:04	
Bromobenzene	ug/L	<0.21	0.50	0.21	03/21/19 15:04	
Bromochloromethane	ug/L	<0.27	1.0	0.27	03/21/19 15:04	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	03/21/19 15:04	
Bromoform	ug/L	<0.80	4.0	0.80	03/21/19 15:04	
Bromomethane	ug/L	<1.8	4.0	1.8	03/21/19 15:04	
Carbon disulfide	ug/L	<0.078	1.0	0.078	03/21/19 15:04	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	03/21/19 15:04	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

METHOD BLANK: 3216576

Matrix: Water

Associated Lab Samples: 10467228001, 10467228002, 10467228003, 10467228004, 10467228005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	03/21/19 15:04	
Chloroethane	ug/L	<0.49	1.0	0.49	03/21/19 15:04	
Chloroform	ug/L	<0.45	4.0	0.45	03/21/19 15:04	MN
Chloromethane	ug/L	<0.16	4.0	0.16	03/21/19 15:04	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	03/21/19 15:04	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	03/21/19 15:04	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	03/21/19 15:04	
Dibromomethane	ug/L	<0.16	1.0	0.16	03/21/19 15:04	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	03/21/19 15:04	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	03/21/19 15:04	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	03/21/19 15:04	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	03/21/19 15:04	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/21/19 15:04	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	03/21/19 15:04	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	03/21/19 15:04	MN
m&p-Xylene	ug/L	<0.31	1.0	0.31	03/21/19 15:04	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	03/21/19 15:04	
Methylene Chloride	ug/L	<0.98	4.0	0.98	03/21/19 15:04	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	03/21/19 15:04	MN
n-Propylbenzene	ug/L	<0.10	0.50	0.10	03/21/19 15:04	
Naphthalene	ug/L	<0.48	1.0	0.48	03/21/19 15:04	
o-Xylene	ug/L	<0.16	0.50	0.16	03/21/19 15:04	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	03/21/19 15:04	MN
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	03/21/19 15:04	MN
Styrene	ug/L	<0.19	1.0	0.19	03/21/19 15:04	MN
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	03/21/19 15:04	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	03/21/19 15:04	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	03/21/19 15:04	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	03/21/19 15:04	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	03/21/19 15:04	
Toluene	ug/L	<0.083	0.50	0.083	03/21/19 15:04	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	03/21/19 15:04	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	03/21/19 15:04	MN
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	03/21/19 15:04	
Trichloroethene	ug/L	<0.15	0.40	0.15	03/21/19 15:04	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	03/21/19 15:04	
Vinyl acetate	ug/L	<1.1	10.0	1.1	03/21/19 15:04	
Vinyl chloride	ug/L	<0.092	0.20	0.092	03/21/19 15:04	
Xylene (Total)	ug/L	<0.31	1.5	0.31	03/21/19 15:04	
1,2-Dichloroethane-d4 (S)	%	108	75-136		03/21/19 15:04	
4-Bromofluorobenzene (S)	%	98	75-125		03/21/19 15:04	
Toluene-d8 (S)	%	97	75-125		03/21/19 15:04	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

LABORATORY CONTROL SAMPLE: 3216577

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	20.4	102	68-141	
1,1,1-Trichloroethane	ug/L	20	22.6	113	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	18.4	92	73-125	
1,1,2-Trichloroethane	ug/L	20	19.6	98	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	22.4	112	69-132	
1,1-Dichloroethane	ug/L	20	22.9	115	73-125	
1,1-Dichloroethene	ug/L	20	21.0	105	71-126	
1,1-Dichloropropene	ug/L	20	23.4	117	73-126	
1,2,3-Trichlorobenzene	ug/L	20	17.9	90	72-126	
1,2,3-Trichloropropane	ug/L	20	19.2	96	75-126	
1,2,4-Trichlorobenzene	ug/L	20	16.2	81	71-134	
1,2,4-Trimethylbenzene	ug/L	20	17.0	85	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	42.6	85	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	18.4	92	75-129	
1,2-Dichlorobenzene	ug/L	20	18.4	92	75-129	
1,2-Dichloroethane	ug/L	20	20.2	101	75-125	
1,2-Dichloroethene (Total)	ug/L	40	44.0	110	74-125	N2
1,2-Dichloropropane	ug/L	20	21.6	108	75-125	
1,3,5-Trimethylbenzene	ug/L	20	17.2	86	75-127	
1,3-Dichlorobenzene	ug/L	20	18.0	90	75-126	
1,3-Dichloropropane	ug/L	20	18.8	94	75-125	
1,4-Dichlorobenzene	ug/L	20	18.0	90	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	383	96	72-129	
2,2,4-Trimethylpentane	ug/L	20	20.4	102	72-128	N2
2,2-Dichloropropane	ug/L	20	22.3	111	65-138	
2-Butanone (MEK)	ug/L	100	122	122	59-144	
2-Chlorotoluene	ug/L	20	18.4	92	75-127	
2-Hexanone	ug/L	100	89.0	89	73-134	
4-Chlorotoluene	ug/L	20	18.2	91	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	105	105	62-141	
Acetone	ug/L	100	114	114	60-137	
Acrolein	ug/L	200	280	140	60-141	
Acrylonitrile	ug/L	200	219	110	75-129	
Benzene	ug/L	20	20.1	100	73-125	
Bromobenzene	ug/L	20	17.5	88	73-125	
Bromochloromethane	ug/L	20	20.5	103	75-135	
Bromodichloromethane	ug/L	20	23.2	116	75-125	
Bromoform	ug/L	20	20.6	103	67-136	
Bromomethane	ug/L	20	18.3	91	30-150	
Carbon disulfide	ug/L	20	22.9	114	47-137	
Carbon tetrachloride	ug/L	20	23.1	115	75-125	
Chlorobenzene	ug/L	20	18.8	94	75-125	
Chloroethane	ug/L	20	23.0	115	63-136	
Chloroform	ug/L	20	21.7	109	73-128	
Chloromethane	ug/L	20	20.7	103	55-130	
cis-1,2-Dichloroethene	ug/L	20	21.3	106	75-125	
cis-1,3-Dichloropropene	ug/L	20	21.3	106	74-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

LABORATORY CONTROL SAMPLE: 3216577

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	21.0	105	75-125	
Dibromomethane	ug/L	20	19.8	99	75-125	
Dichlorodifluoromethane	ug/L	20	24.4	122	63-132	
Dichlorofluoromethane	ug/L	20	22.7	114	68-127	N2
Diisopropyl ether	ug/L	20	21.6	108	71-131	
Ethyl-tert-butyl ether	ug/L	20	21.2	106	75-125	
Ethylbenzene	ug/L	20	18.9	94	75-125	
Hexachloro-1,3-butadiene	ug/L	20	17.9	89	72-134	
Isopropylbenzene (Cumene)	ug/L	20	17.4	87	75-125	
m&p-Xylene	ug/L	40	37.6	94	75-126	
Methyl-tert-butyl ether	ug/L	20	21.4	107	75-125	
Methylene Chloride	ug/L	20	21.3	107	70-125	
n-Butylbenzene	ug/L	20	17.4	87	75-126	
n-Propylbenzene	ug/L	20	18.0	90	73-127	
Naphthalene	ug/L	20	15.7	78	63-128	
o-Xylene	ug/L	20	18.2	91	75-128	
p-Isopropyltoluene	ug/L	20	18.0	90	75-125	
sec-Butylbenzene	ug/L	20	16.8	84	75-126	
Styrene	ug/L	20	17.6	88	75-125	
tert-Amylmethyl ether	ug/L	20	19.9	99	75-125	
tert-Butyl Alcohol	ug/L	200	206	103	75-130	
tert-Butylbenzene	ug/L	20	18.0	90	75-131	
Tetrachloroethene	ug/L	20	18.1	90	74-125	
Tetrahydrofuran	ug/L	200	184	92	64-138	
Toluene	ug/L	20	18.3	91	74-125	
trans-1,2-Dichloroethene	ug/L	20	22.8	114	68-128	
trans-1,3-Dichloropropene	ug/L	20	20.2	101	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	40.7	81	60-127	
Trichloroethene	ug/L	20	21.4	107	75-127	
Trichlorofluoromethane	ug/L	20	22.9	115	72-133	
Vinyl acetate	ug/L	20	19.0	95	61-129	
Vinyl chloride	ug/L	20	21.7	109	75-128	
Xylene (Total)	ug/L	60	55.9	93	75-125	
1,2-Dichloroethane-d4 (S)	%			102	75-136	
4-Bromofluorobenzene (S)	%			95	75-125	
Toluene-d8 (S)	%			93	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3216737 3216738

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10467660001 Result	Spike Conc.	Spike Conc.	MS Result						
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	19.5	21.0	97	105	75-140	7	30
1,1,1-Trichloroethane	ug/L	<0.14	20	20	22.1	23.7	110	119	74-136	7	30
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	17.7	19.1	89	96	66-134	8	30
1,1,2-Trichloroethane	ug/L	<0.18	20	20	17.3	18.7	87	94	75-126	8	30

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Parameter	Units	10467660001		3216737		3216738		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	24.2	25.9	121	130	65-146	7	30		
1,1-Dichloroethane	ug/L	<0.17	20	20	22.0	23.1	110	115	68-132	5	30		
1,1-Dichloroethene	ug/L	<0.16	20	20	22.6	23.0	113	115	66-139	2	30		
1,1-Dichloropropene	ug/L	<0.20	20	20	23.4	25.5	117	128	67-134	9	30		
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	18.1	20.2	91	101	67-129	11	30		
1,2,3-Trichloropropane	ug/L	<0.26	20	20	17.3	19.2	86	96	69-128	11	30		
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	16.7	18.1	84	91	65-140	8	30		
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	16.8	19.3	84	97	71-133	14	30		
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	40.5	45.1	81	90	54-138	11	30		
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	16.8	18.3	84	92	68-125	9	30		
1,2-Dichlorobenzene	ug/L	<0.14	20	20	17.4	19.9	87	99	74-136	13	30		
1,2-Dichloroethane	ug/L	<0.22	20	20	19.4	20.9	97	105	68-125	7	30		
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	42.4	45.5	106	114	71-126	7	30	N2	
1,2-Dichloropropane	ug/L	<0.16	20	20	20.0	20.9	100	105	67-125	4	30		
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	17.2	19.7	86	98	68-137	13	30		
1,3-Dichlorobenzene	ug/L	<0.16	20	20	16.9	19.9	85	100	75-131	16	30		
1,3-Dichloropropane	ug/L	<0.070	20	20	17.1	18.7	85	93	71-125	9	30		
1,4-Dichlorobenzene	ug/L	<0.17	20	20	17.4	20.0	87	100	74-126	14	30		
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	333	357	83	89	68-125	7	30		
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	23.4	23.3	117	116	54-129	1	30	N2	
2,2-Dichloropropane	ug/L	<0.17	20	20	23.0	25.9	115	129	69-139	12	30		
2-Butanone (MEK)	ug/L	<0.99	100	100	102	114	102	114	54-144	11	30		
2-Chlorotoluene	ug/L	<0.16	20	20	18.0	20.9	90	104	75-134	15	30		
2-Hexanone	ug/L	<0.88	100	100	77.7	85.8	78	86	58-137	10	30		
4-Chlorotoluene	ug/L	<0.13	20	20	17.8	20.4	89	102	72-133	14	30		
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	94.2	103	94	103	60-129	9	30		
Acetone	ug/L	<9.2	100	100	90.6	92.1	91	92	62-132	2	30		
Acrolein	ug/L	<1.2	200	200	299	337	150	169	30-150	12	30	M1	
Acrylonitrile	ug/L	<0.91	200	200	200	214	100	107	68-125	7	30		
Benzene	ug/L	<0.10	20	20	20.4	22.0	102	110	68-125	7	30		
Bromobenzene	ug/L	<0.21	20	20	16.7	18.5	83	92	73-126	10	30		
Bromochloromethane	ug/L	<0.27	20	20	19.4	21.0	97	105	66-143	8	30		
Bromodichloromethane	ug/L	<0.22	20	20	20.8	23.0	104	115	74-125	10	30		
Bromoform	ug/L	<0.80	20	20	19.2	21.6	96	108	64-134	12	30		
Bromomethane	ug/L	<1.8	20	20	17.7	18.5	88	93	30-150	5	30		
Carbon disulfide	ug/L	<0.078	20	20	25.0	24.3	125	122	43-147	3	30		
Carbon tetrachloride	ug/L	<0.19	20	20	23.3	26.0	116	130	71-143	11	30		
Chlorobenzene	ug/L	<0.17	20	20	18.3	19.8	92	99	75-125	8	30		
Chloroethane	ug/L	<0.49	20	20	24.4	25.6	122	128	75-129	5	30		
Chloroform	ug/L	<0.45	20	20	19.5	21.6	97	108	66-132	10	30		
Chloromethane	ug/L	<0.16	20	20	20.4	20.6	102	103	53-137	1	30		
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	19.9	22.4	99	112	67-133	12	30		
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	17.6	20.1	88	100	66-125	13	30		
Dibromochloromethane	ug/L	<0.12	20	20	19.2	21.2	96	106	62-132	10	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

Parameter	Units	10467660001		3216737		3216738		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Dibromomethane	ug/L	<0.16	20	20	18.0	19.2	90	96	67-125	6	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	25.0	25.4	125	127	71-142	2	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	22.1	22.7	110	113	70-131	3	30	N2	
Diisopropyl ether	ug/L	<0.13	20	20	20.6	22.0	103	110	63-131	6	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	20.2	21.6	101	108	66-128	7	30		
Ethylbenzene	ug/L	<0.14	20	20	18.5	20.4	93	102	74-126	10	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	19.7	19.8	98	99	68-143	1	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	17.5	20.1	88	101	74-130	14	30		
m&p-Xylene	ug/L	<0.31	40	40	37.2	41.8	93	104	69-132	11	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	20.1	22.4	100	112	65-131	11	30		
Methylene Chloride	ug/L	<0.98	20	20	21.0	22.2	105	111	57-125	5	30		
n-Butylbenzene	ug/L	<0.24	20	20	18.6	19.8	93	99	71-131	7	30		
n-Propylbenzene	ug/L	<0.10	20	20	18.0	20.9	90	104	67-138	15	30		
Naphthalene	ug/L	<0.48	20	20	15.0	17.9	75	90	60-130	17	30		
o-Xylene	ug/L	<0.16	20	20	17.5	19.4	87	97	69-131	10	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	18.4	20.3	92	101	72-133	10	30		
sec-Butylbenzene	ug/L	<0.15	20	20	17.5	18.8	87	94	73-134	7	30		
Styrene	ug/L	<0.19	20	20	16.7	18.2	84	91	72-125	8	30		
tert-Amylmethyl ether	ug/L	<0.11	20	20	19.7	21.8	99	109	67-125	10	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	195	205	98	102	64-137	5	30		
tert-Butylbenzene	ug/L	<0.15	20	20	18.0	20.5	90	102	70-143	13	30		
Tetrachloroethene	ug/L	<0.17	20	20	18.1	20.8	91	104	72-129	14	30		
Tetrahydrofuran	ug/L	<2.2	200	200	168	183	84	91	66-128	8	30		
Toluene	ug/L	<0.083	20	20	18.2	19.4	91	97	73-125	7	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	22.6	23.2	113	116	62-137	3	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	19.0	20.5	95	103	61-136	8	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	38.2	41.4	76	83	45-128	8	30		
Trichloroethene	ug/L	<0.15	20	20	20.8	22.4	104	112	74-132	7	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	22.8	22.7	114	114	75-139	0	30		
Vinyl acetate	ug/L	<1.1	20	20	18.7	19.7	93	99	51-135	6	30		
Vinyl chloride	ug/L	<0.092	20	20	21.7	22.2	108	111	68-146	2	30		
Xylene (Total)	ug/L	<0.31	60	60	54.7	61.2	91	102	67-137	11	30		
1,2-Dichloroethane-d4 (S)	%						104	105	75-136				
4-Bromofluorobenzene (S)	%						95	96	75-125				
Toluene-d8 (S)	%						91	92	75-125				

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467228

QC Batch: 595406 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10467228001, 10467228002, 10467228003

METHOD BLANK: 3219282 Matrix: Water
Associated Lab Samples: 10467228001, 10467228002, 10467228003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<1.0	5.0	1.0	03/26/19 11:38	

LABORATORY CONTROL SAMPLE & LCSD: 3219283 3219284

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	42.7	43.1	107	108	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3219285 3219286

Parameter	Units	10467460002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	34.0	40	40	75.0	75.7	102	104	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3219287 3219288

Parameter	Units	10466793001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	213	40	40	257	254	110	102	80-120	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

QC Batch: 595950 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10467228004

METHOD BLANK: 3222167 Matrix: Water
Associated Lab Samples: 10467228004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<1.0	5.0	1.0	03/27/19 09:26	

LABORATORY CONTROL SAMPLE & LCSD: 3222168 3222169

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	43.9	43.6	110	109	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222170 3222171

Parameter	Units	10467228004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	226	40	40	270	276	110	126	80-120	2	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222172 3222173

Parameter	Units	10468314010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	692	40	40	723	744	77	129	80-120	3	20	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

QC Batch: 595176

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 10467228001, 10467228002, 10467228003, 10467228004

METHOD BLANK: 3217536

Matrix: Water

Associated Lab Samples: 10467228001, 10467228002, 10467228003, 10467228004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	5.0J	10.0	5.0	03/22/19 14:36	

LABORATORY CONTROL SAMPLE: 3217537

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1020	102	80-120	

SAMPLE DUPLICATE: 3217538

Parameter	Units	10467228004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	271	265	2	5	

SAMPLE DUPLICATE: 3217539

Parameter	Units	10467319005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	800	821	3	5	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

QC Batch: 136770

Analysis Method: SM 4500-S-2 D

QC Batch Method: SM 4500-S-2 D

Analysis Description: 4500S2D Sulfide, Total

Associated Lab Samples: 10467228001, 10467228002, 10467228003, 10467228004

METHOD BLANK: 595000

Matrix: Water

Associated Lab Samples: 10467228001, 10467228002, 10467228003, 10467228004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	03/20/19 09:37	

LABORATORY CONTROL SAMPLE: 595001

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	.2	0.20	99	90-110	

MATRIX SPIKE SAMPLE: 595003

Parameter	Units	2098851001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	.2	0.069	27	75-125	M1

SAMPLE DUPLICATE: 595002

Parameter	Units	2098851001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	0.016J		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467228

QC Batch: 594605 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10467228001, 10467228002, 10467228003, 10467228004

METHOD BLANK: 3214412 Matrix: Water
Associated Lab Samples: 10467228001, 10467228002, 10467228003, 10467228004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.28	1.2	0.28	03/19/19 18:16	
Nitrate as N	mg/L	<0.015	0.10	0.015	03/19/19 18:16	
Sulfate	mg/L	<0.19	1.2	0.19	03/19/19 18:16	

LABORATORY CONTROL SAMPLE: 3214413

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.3	98	90-110	
Nitrate as N	mg/L	1	0.99	99	90-110	
Sulfate	mg/L	12.5	12.2	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3214414 3214415

Parameter	Units	10467199007		3214415		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MS Spike Conc.	MS Result	MSD Spike Conc.						
Chloride	mg/L	17.5	12.5	25.6	25.6	65	65	90-110	0	20	M1
Nitrate as N	mg/L	0.040J	1	0.87	0.87	83	83	90-110	0	20	M1
Sulfate	mg/L	5.0	12.5	15.8	15.8	87	87	90-110	0	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3214416 3214417

Parameter	Units	10467228001		3214417		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MS Spike Conc.	MS Result	MSD Spike Conc.						
Chloride	mg/L	1.1J	12.5	12.2	12.3	89	90	90-110	0	20	M1
Nitrate as N	mg/L	0.085J	1	0.92	0.91	83	83	90-110	0	20	M1
Sulfate	mg/L	1.2	12.5	12.3	12.4	89	89	90-110	1	20	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

QC Batch: 594791

Analysis Method: EPA 353.2

QC Batch Method: EPA 353.2

Analysis Description: 353.2 Nitrate + Nitrite, preserved

Associated Lab Samples: 10467228001, 10467228002, 10467228003, 10467228004

METHOD BLANK: 3215469

Matrix: Water

Associated Lab Samples: 10467228001, 10467228002, 10467228003, 10467228004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	03/20/19 16:12	FS

LABORATORY CONTROL SAMPLE: 3215470

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3215471 3215472

Parameter	Units	10467197001		3215471		3215472		% Rec Limits	RPD	Max RPD	Qual		
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Nitrogen, NO2 plus NO3	mg/L	0.49	1	1	1	1.5	1.5	103	101	90-110	1	20	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3215473 3215474

Parameter	Units	10466924001		3215473		3215474		% Rec Limits	RPD	Max RPD	Qual		
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Nitrogen, NO2 plus NO3	mg/L	2.1	2	2	2	4.2	4.2	104	105	90-110	0	20	E

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

QC Batch: 595511 Analysis Method: EPA 410.4

QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD

Associated Lab Samples: 10467228001, 10467228002, 10467228003, 10467228004

METHOD BLANK: 3219698 Matrix: Water

Associated Lab Samples: 10467228001, 10467228002, 10467228003, 10467228004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	03/26/19 08:34	

LABORATORY CONTROL SAMPLE: 3219699

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	304	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3219700 3219701

Parameter	Units	10467457001		3219700		3219701		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Chemical Oxygen Demand	mg/L	422	250	250	658	660	94	95	90-110	0	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3219702 3219703

Parameter	Units	10467475001		3219702		3219703		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Chemical Oxygen Demand	mg/L	ND	250	250	266	270	100	102	90-110	2	20

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467228

QC Batch: 163044 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C TOC
Associated Lab Samples: 10467228001, 10467228002, 10467228003, 10467228004

METHOD BLANK: 642680 Matrix: Water
Associated Lab Samples: 10467228001, 10467228002, 10467228003, 10467228004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	0.25J	1.0	0.20	03/21/19 15:53	

LABORATORY CONTROL SAMPLE: 642681

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.4	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 642682 642683

Parameter	Units	10467514001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Total Organic Carbon	mg/L	12.4	25	37.5	25	36.8	100	98	80-120	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 642684 642685

Parameter	Units	10467061001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Total Organic Carbon	mg/L	2.8J	125	131	125	131	102	103	80-120	0	20	

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

PASI-N Pace Analytical Services - New Orleans

PASI-V Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

FS The sample was filtered in the laboratory prior to analysis.

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

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467228

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467228

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10467228001	MW14D-GW-031819	RSK 175	594672		
10467228002	MW2D-GW-031819	RSK 175	594672		
10467228003	MW1D-GW-031819	RSK 175	594672		
10467228004	MW5D-GW-031819	RSK 175	594672		
10467228001	MW14D-GW-031819	EPA 3010	594595	EPA 6010D	594909
10467228002	MW2D-GW-031819	EPA 3010	594595	EPA 6010D	594909
10467228003	MW1D-GW-031819	EPA 3010	594595	EPA 6010D	594909
10467228004	MW5D-GW-031819	EPA 3010	594595	EPA 6010D	594909
10467228001	MW14D-GW-031819	EPA 7470A	594603	EPA 7470A	594973
10467228002	MW2D-GW-031819	EPA 7470A	594603	EPA 7470A	594973
10467228003	MW1D-GW-031819	EPA 7470A	594603	EPA 7470A	594973
10467228004	MW5D-GW-031819	EPA 7470A	594603	EPA 7470A	594973
10467228001	MW14D-GW-031819	EPA 8260B	595025		
10467228002	MW2D-GW-031819	EPA 8260B	595025		
10467228003	MW1D-GW-031819	EPA 8260B	595025		
10467228004	MW5D-GW-031819	EPA 8260B	595025		
10467228005	TB-031819	EPA 8260B	595025		
10467228001	MW14D-GW-031819	SM 2320B	595406		
10467228002	MW2D-GW-031819	SM 2320B	595406		
10467228003	MW1D-GW-031819	SM 2320B	595406		
10467228004	MW5D-GW-031819	SM 2320B	595950		
10467228001	MW14D-GW-031819	SM 2540C	595176		
10467228002	MW2D-GW-031819	SM 2540C	595176		
10467228003	MW1D-GW-031819	SM 2540C	595176		
10467228004	MW5D-GW-031819	SM 2540C	595176		
10467228001	MW14D-GW-031819	SM 4500-S-2 D	136770		
10467228002	MW2D-GW-031819	SM 4500-S-2 D	136770		
10467228003	MW1D-GW-031819	SM 4500-S-2 D	136770		
10467228004	MW5D-GW-031819	SM 4500-S-2 D	136770		
10467228001	MW14D-GW-031819	EPA 300.0	594605		
10467228002	MW2D-GW-031819	EPA 300.0	594605		
10467228003	MW1D-GW-031819	EPA 300.0	594605		
10467228004	MW5D-GW-031819	EPA 300.0	594605		
10467228001	MW14D-GW-031819	EPA 353.2	594791		
10467228002	MW2D-GW-031819	EPA 353.2	594791		
10467228003	MW1D-GW-031819	EPA 353.2	594791		
10467228004	MW5D-GW-031819	EPA 353.2	594791		
10467228001	MW14D-GW-031819	EPA 410.4	595511	EPA 410.4	595695
10467228002	MW2D-GW-031819	EPA 410.4	595511	EPA 410.4	595695
10467228003	MW1D-GW-031819	EPA 410.4	595511	EPA 410.4	595695
10467228004	MW5D-GW-031819	EPA 410.4	595511	EPA 410.4	595695
10467228001	MW14D-GW-031819	SM 5310C	163044		
10467228002	MW2D-GW-031819	SM 5310C	163044		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467228

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10467228003	MW1D-GW-031819	SM 5310C	163044		
10467228004	MW5D-GW-031819	SM 5310C	163044		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt **Client Name:** CH₂M Hill **Project #** **WO#: 10467228**

Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception

Tracking Number: 4486 7792 7129

Custody Seal on Cooler/Box Present? Yes No **Seals Intact?** Yes No **Biological Tissue Frozen?** Yes No N/A

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

Thermometer: G87A9155100842 G87A9170600254 **Type of Ice:** Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: <u>0.7</u> °C	Average Corrected Temp (no temp blank only): _____ °C	See Exceptions <input type="checkbox"/>
Correction Factor: <u>1.1</u>	Cooler Temp Corrected w/temp blank: <u>0.8</u> °C		

USDA Regulated Soil: (N/A, water sample/Other: _____) **Date/Initials of Person Examining Contents:** RES 3/19/19

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

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

	COMMENTS:
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other JMG 032019	11. If no, write ID/ Date/Time on Container Below: _____ See Exception <input type="checkbox"/>
All containers needing acid/base preservation have been checked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12. Sample # <input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ <input checked="" type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate <u>1-4: 1/1</u> <u>1/1</u>
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No See Exception <input type="checkbox"/>
Exceptions: VOA, Coliform, TOC, DOC, Oil and Grease, DRO/8015 (water) and Dioxin/PFAS <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No See Exception <input type="checkbox"/>
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. _____ See Exception <input checked="" type="checkbox"/>
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. Pace Trip Blank Lot # (if purchased): <u>199048</u>
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

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

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: J. Eise **Date:** 3/19/2019

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



Document Name:
Headspace Exception

Document Revised: 17Dec2018
Page 1 of 1

Document No.:
F-MN-C-276-Rev.01

Issuing Authority:
Pace Minnesota Quality Office

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
MWSD-6w-031819	0	1	2	3	N

Sample Condition Upon Receipt

Client Name: Pace WA Project #: _____

WO# : 12122589
 PM: CLJ Due Date: 04/02/19
 CLIENT: PACE MPLS

Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

Tracking Number: _____

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

Optional: Proj. Due Date: _____ Proj. Name: _____

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

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

Cooler Temp Read °C: 0.8 Cooler Temp Corrected °C: 1.1 Biological Tissue Frozen? Yes No NA
 Temp should be above freezing to 6°C Correction Factor: 0.3 Date and Initials of Person Examining Contents: 3/19/19 DC
 Comments: 3/20/19 RH

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

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? Yes No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

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

Project Manager Review: Katie Richards Date: 3/20/2019

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

Chain of Custody




Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA
 Cert. Needed: Yes No
 Owner Received Date: 3/19/2019

Results Requested By: 4/2/2019

Workorder: 10467228 Workorder Name: 1497 Freeman WA-Grain Handling

Report To		Subcontract To				Requested Analysis											
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426		Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333				<div style="text-align: right; font-size: 24pt; font-weight: bold;">WO# : 2098945</div>  <div style="text-align: center; font-weight: bold;">2098945</div>											
						5636267 / 4500 Sulfide											
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				LAB USE ONLY							
						Other											
1	MW14D-GW-031819	PS	3/18/2019 10:15	10467228001	Water	1				X							
2	MW2D-GW-031819	PS	3/18/2019 11:45	10467228002	Water	1				X							
3	MW1D-GW-031819	PS	3/18/2019 13:00	10467228003	Water	1				X							
4	MW5D-GW-031819	PS	3/18/2019 14:30	10467228004	Water	1				X							
5																	
Transfers		Released By		Date/Time		Received By		Date/Time		Comments							
1		<i>[Signature]</i>		3/19/19 14:55		<i>[Signature]</i>				SHORT HOLD							
2		<i>[Signature]</i>		3-20-19		<i>[Signature]</i>		3-20-19									
3																	
Cooler Temperature on Receipt			Custody Seal			Received on Ice			Samples Intact								
4.2c			Y or N			Y or N			Y or N								

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



1000 Riverbend Blvd., Suite F
St. Rose, LA 70067

Sample Condition Upon Receipt

Project

WO#: 2098945

PM: CMM

Due Date: 04/02/1

CLIENT: PASI-MINN

Courier: Pace Courier Hired Courier Fed X UPS DHL

USPS Customer Other

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

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and initials of person examining contents: 3/20/19 CJ

Temp must be measured from Temperature blank when present

Comments:

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

If No, was preservative added? Yes No
If added record lot no.: HNO3 _____ H2SO4 _____

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

April 02, 2019

David Hodson
Jacobs
2020 SW 4th Ave
#300
Portland, OR 97201

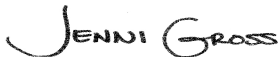
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467464

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 20, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Steve Demus, CH2M Hill
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467464

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #: 74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Montana Certificate #CERT0103
Alaska Certification UST-107
Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203
Wisconsin DNR Certification #: 998027470
WA Department of Ecology Lab ID# C1007

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC):
E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC):
T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10467464001	MW16D-GW-031919	Water	03/19/19 09:20	03/20/19 08:40
10467464002	MW18D-GW-031919	Water	03/19/19 10:35	03/20/19 08:40
10467464003	W20-GW-031919	Water	03/19/19 12:35	03/20/19 08:40
10467464004	MW4D-GW-031919	Water	03/19/19 14:25	03/20/19 08:40
10467464005	MW13S-GW-031919	Water	03/19/19 16:15	03/20/19 08:40
10467464006	TB-031919	Water	03/19/19 07:00	03/20/19 08:40

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10467464001	MW16D-GW-031919	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JFP	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10467464002	MW18D-GW-031919	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JFP	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10467464003	W20-GW-031919	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JFP	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10467464004	MW4D-GW-031919	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JFP	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10467464005	MW13S-GW-031919	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JFP	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10467464006	TB-031919	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467464

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
10467464001	MW16D-GW-031919					
EPA 6010D	Barium, Dissolved	66.4	ug/L	10.0	03/25/19 11:13	
EPA 6010D	Beryllium, Dissolved	0.16J	ug/L	5.0	03/25/19 11:13	
EPA 6010D	Calcium, Dissolved	67200	ug/L	500	03/25/19 11:13	
EPA 6010D	Chromium, Dissolved	0.51J	ug/L	10.0	03/25/19 11:13	
EPA 6010D	Cobalt, Dissolved	0.58J	ug/L	10.0	03/25/19 11:13	
EPA 6010D	Iron, Dissolved	15.0J	ug/L	50.0	03/25/19 11:13	B
EPA 6010D	Magnesium, Dissolved	19700	ug/L	500	03/25/19 11:13	
EPA 6010D	Manganese, Dissolved	0.64J	ug/L	5.0	03/25/19 11:13	B
EPA 6010D	Potassium, Dissolved	1730J	ug/L	2500	03/25/19 11:13	
EPA 6010D	Sodium, Dissolved	20100	ug/L	1000	03/25/19 11:13	
EPA 6010D	Vanadium, Dissolved	10.6J	ug/L	15.0	03/25/19 11:13	
EPA 6010D	Zinc, Dissolved	3.6J	ug/L	20.0	03/25/19 11:13	
SM 2320B	Alkalinity, Total as CaCO3	234	mg/L	5.0	03/28/19 09:53	
SM 2540C	Total Dissolved Solids	361	mg/L	10.0	03/23/19 16:19	
EPA 300.0	Chloride	6.8	mg/L	1.2	03/20/19 22:48	
EPA 300.0	Nitrate as N	6.0	mg/L	0.10	03/20/19 22:48	
EPA 300.0	Sulfate	24.2	mg/L	1.2	03/20/19 22:48	
EPA 353.2	Nitrogen, NO2 plus NO3	6.5	mg/L	1.0	03/20/19 16:53	
SM 5310C	Total Organic Carbon	1.7J	mg/L	2.0	03/22/19 10:33	B
10467464002	MW18D-GW-031919					
EPA 6010D	Aluminum, Dissolved	15.5J	ug/L	200	03/25/19 11:21	
EPA 6010D	Barium, Dissolved	51.8	ug/L	10.0	03/25/19 11:21	
EPA 6010D	Beryllium, Dissolved	0.16J	ug/L	5.0	03/25/19 11:21	
EPA 6010D	Calcium, Dissolved	22300	ug/L	500	03/25/19 11:21	
EPA 6010D	Cobalt, Dissolved	0.65J	ug/L	10.0	03/25/19 11:21	
EPA 6010D	Iron, Dissolved	73.8	ug/L	50.0	03/25/19 11:21	
EPA 6010D	Magnesium, Dissolved	15600	ug/L	500	03/25/19 11:21	
EPA 6010D	Manganese, Dissolved	44.1	ug/L	5.0	03/25/19 11:21	
EPA 6010D	Potassium, Dissolved	4160	ug/L	2500	03/25/19 11:21	
EPA 6010D	Sodium, Dissolved	19700	ug/L	1000	03/25/19 11:21	
EPA 6010D	Vanadium, Dissolved	0.84J	ug/L	15.0	03/25/19 11:21	
SM 2320B	Alkalinity, Total as CaCO3	154	mg/L	5.0	03/28/19 09:58	
SM 2540C	Total Dissolved Solids	191	mg/L	10.0	03/23/19 16:19	
EPA 300.0	Chloride	2.0	mg/L	1.2	03/21/19 00:04	
EPA 300.0	Sulfate	6.2	mg/L	1.2	03/21/19 00:04	
SM 5310C	Total Organic Carbon	0.52J	mg/L	1.0	03/21/19 21:57	B
10467464003	W20-GW-031919					
RSK 175	Methane	357	ug/L	10.0	03/21/19 09:18	
EPA 6010D	Aluminum, Dissolved	709	ug/L	200	03/25/19 11:23	
EPA 6010D	Barium, Dissolved	21.2	ug/L	10.0	03/25/19 11:23	
EPA 6010D	Calcium, Dissolved	15400	ug/L	500	03/25/19 11:23	
EPA 6010D	Iron, Dissolved	1400	ug/L	50.0	03/25/19 11:23	
EPA 6010D	Magnesium, Dissolved	6790	ug/L	500	03/25/19 11:23	
EPA 6010D	Manganese, Dissolved	118	ug/L	5.0	03/25/19 11:23	
EPA 6010D	Potassium, Dissolved	1890J	ug/L	2500	03/25/19 11:23	
EPA 6010D	Sodium, Dissolved	8150	ug/L	1000	03/25/19 11:23	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
10467464003	W20-GW-031919					
EPA 6010D	Vanadium, Dissolved	1.1J	ug/L	15.0	03/25/19 11:23	
EPA 6010D	Zinc, Dissolved	42.9	ug/L	20.0	03/25/19 11:23	
EPA 8260B	2-Butanone (MEK)	275	ug/L	5.0	03/21/19 23:25	
EPA 8260B	Acetone	105	ug/L	20.0	03/21/19 23:25	
SM 2320B	Alkalinity, Total as CaCO3	81.0	mg/L	5.0	03/28/19 10:02	
SM 2540C	Total Dissolved Solids	121	mg/L	10.0	03/23/19 16:19	
EPA 300.0	Chloride	3.0	mg/L	1.2	03/21/19 00:19	
EPA 300.0	Sulfate	0.83J	mg/L	1.2	03/21/19 00:19	
EPA 410.4	Chemical Oxygen Demand	20.7J	mg/L	50.0	03/26/19 08:41	
SM 5310C	Total Organic Carbon	3.1	mg/L	1.0	03/21/19 22:10	
10467464004	MW4D-GW-031919					
EPA 6010D	Aluminum, Dissolved	6970	ug/L	200	03/25/19 11:24	
EPA 6010D	Barium, Dissolved	70.2	ug/L	10.0	03/25/19 11:24	
EPA 6010D	Cadmium, Dissolved	0.30J	ug/L	3.0	03/25/19 11:24	B
EPA 6010D	Calcium, Dissolved	12600	ug/L	500	03/25/19 11:24	
EPA 6010D	Chromium, Dissolved	14.5	ug/L	10.0	03/25/19 11:24	
EPA 6010D	Cobalt, Dissolved	4.4J	ug/L	10.0	03/25/19 11:24	
EPA 6010D	Copper, Dissolved	7.7J	ug/L	10.0	03/25/19 11:24	
EPA 6010D	Iron, Dissolved	6190	ug/L	50.0	03/25/19 11:24	
EPA 6010D	Lead, Dissolved	39.5	ug/L	10.0	03/25/19 11:24	
EPA 6010D	Magnesium, Dissolved	4220	ug/L	500	03/25/19 11:24	
EPA 6010D	Manganese, Dissolved	168	ug/L	5.0	03/25/19 11:24	
EPA 6010D	Nickel, Dissolved	15.4J	ug/L	20.0	03/25/19 11:24	
EPA 6010D	Potassium, Dissolved	3740	ug/L	2500	03/25/19 11:24	
EPA 6010D	Silver, Dissolved	0.39J	ug/L	10.0	03/25/19 11:24	
EPA 6010D	Sodium, Dissolved	9260	ug/L	1000	03/25/19 11:24	
EPA 6010D	Vanadium, Dissolved	12.0J	ug/L	15.0	03/25/19 11:24	
EPA 6010D	Zinc, Dissolved	39.6	ug/L	20.0	03/25/19 11:24	
EPA 8260B	Acetone	15.0J	ug/L	20.0	03/21/19 23:49	
EPA 8260B	Carbon tetrachloride	0.37J	ug/L	0.50	03/21/19 23:49	
EPA 8260B	Toluene	0.36J	ug/L	0.50	03/21/19 23:49	
SM 2320B	Alkalinity, Total as CaCO3	54.0	mg/L	5.0	03/28/19 10:06	
SM 2540C	Total Dissolved Solids	255	mg/L	10.0	03/23/19 16:19	
EPA 300.0	Chloride	8.4	mg/L	1.2	03/21/19 00:34	
EPA 300.0	Sulfate	3.2	mg/L	1.2	03/21/19 00:34	
EPA 353.2	Nitrogen, NO2 plus NO3	0.042J	mg/L	0.10	03/20/19 16:24	FS
EPA 410.4	Chemical Oxygen Demand	61.6	mg/L	50.0	03/26/19 08:41	
SM 5310C	Total Organic Carbon	10.5	mg/L	1.0	03/22/19 16:03	
10467464005	MW13S-GW-031919					
EPA 6010D	Aluminum, Dissolved	33.6J	ug/L	200	03/25/19 11:26	
EPA 6010D	Barium, Dissolved	66.0	ug/L	10.0	03/25/19 11:26	
EPA 6010D	Beryllium, Dissolved	0.16J	ug/L	5.0	03/25/19 11:26	
EPA 6010D	Calcium, Dissolved	35800	ug/L	500	03/25/19 11:26	
EPA 6010D	Chromium, Dissolved	1.1J	ug/L	10.0	03/25/19 11:26	
EPA 6010D	Cobalt, Dissolved	0.74J	ug/L	10.0	03/25/19 11:26	
EPA 6010D	Iron, Dissolved	29.6J	ug/L	50.0	03/25/19 11:26	B

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10467464005	MW13S-GW-031919					
EPA 6010D	Magnesium, Dissolved	10500	ug/L	500	03/25/19 11:26	
EPA 6010D	Manganese, Dissolved	0.98J	ug/L	5.0	03/25/19 11:26	B
EPA 6010D	Potassium, Dissolved	1170J	ug/L	2500	03/25/19 11:26	
EPA 6010D	Silver, Dissolved	0.46J	ug/L	10.0	03/25/19 11:26	
EPA 6010D	Sodium, Dissolved	15600	ug/L	1000	03/25/19 11:26	
EPA 6010D	Vanadium, Dissolved	9.9J	ug/L	15.0	03/25/19 11:26	
EPA 6010D	Zinc, Dissolved	8.1J	ug/L	20.0	03/25/19 11:26	
SM 2320B	Alkalinity, Total as CaCO ₃	163	mg/L	5.0	03/28/19 10:10	
SM 2540C	Total Dissolved Solids	183	mg/L	10.0	03/23/19 16:19	
EPA 300.0	Chloride	1.1J	mg/L	1.2	03/21/19 02:22	
EPA 300.0	Nitrate as N	0.32	mg/L	0.10	03/21/19 02:22	
EPA 300.0	Sulfate	4.9	mg/L	1.2	03/21/19 02:22	
EPA 353.2	Nitrogen, NO ₂ plus NO ₃	0.39	mg/L	0.10	03/20/19 16:25	
SM 5310C	Total Organic Carbon	0.82J	mg/L	1.0	03/22/19 16:16	B
10467464006	TB-031919					
EPA 8260B	Toluene	0.10J	ug/L	0.50	03/28/19 15:11	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Method: RSK 175

Description: RSK 175 GCV Headspace

Client: UPRR_CH2M/Jacobs

Date: April 02, 2019

General Information:

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

Hold Time:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Surrogates:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Duplicate Sample:

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

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Method: EPA 6010D

Description: 6010D MET ICP, Dissolved

Client: UPRR_CH2M/Jacobs

Date: April 02, 2019

General Information:

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

Hold Time:

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

Sample Preparation:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Method Blank:

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

QC Batch: 594838

B: Analyte was detected in the associated method blank.

- BLANK for HBN 594838 [MPRP/908 (Lab ID: 3215724)]
 - Cadmium, Dissolved
 - Iron, Dissolved
 - Manganese, Dissolved

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Method: EPA 7470A

Description: 7470A Mercury, Dissolved

Client: UPRR_CH2M/Jacobs

Date: April 02, 2019

General Information:

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

Hold Time:

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

Sample Preparation:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: April 02, 2019

General Information:

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

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

- TB-031919 (Lab ID: 10467464006)

Hold Time:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Internal Standards:

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

Surrogates:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 595025

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10467660001

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

- MSD (Lab ID: 3216738)
 - Acrolein

QC Batch: 596233

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10468569001

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

- MSD (Lab ID: 3224890)
 - Acrolein
 - m&p-Xylene

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: April 02, 2019

Additional Comments:

Analyte Comments:

QC Batch: 595025

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3216576)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3216577)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3216737)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3216738)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MW13S-GW-031919 (Lab ID: 10467464005)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MW16D-GW-031919 (Lab ID: 10467464001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MW18D-GW-031919 (Lab ID: 10467464002)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MW4D-GW-031919 (Lab ID: 10467464004)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- W20-GW-031919 (Lab ID: 10467464003)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: April 02, 2019

Analyte Comments:

QC Batch: 596233

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3223555)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3223556)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3224889)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3224890)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- TB-031919 (Lab ID: 10467464006)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Method: SM 2320B

Description: 2320B Alkalinity

Client: UPRR_CH2M/Jacobs

Date: April 02, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 596194

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10468314012,10468314013

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

- MS (Lab ID: 3223466)
 - Alkalinity, Total as CaCO₃
- MSD (Lab ID: 3223467)
 - Alkalinity, Total as CaCO₃

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Method: SM 2540C

Description: 2540C Total Dissolved Solids

Client: UPRR_CH2M/Jacobs

Date: April 02, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Duplicate Sample:

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

QC Batch: 595361

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 3218907)
- Total Dissolved Solids

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Method: SM 4500-S-2 D

Description: 4500S2D Sulfide, Total

Client: UPRR_CH2M/Jacobs

Date: April 02, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 136952

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2099097001

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

- MS (Lab ID: 595970)
- Sulfide, Total

Duplicate Sample:

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

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Method: EPA 300.0

Description: 300.0 IC Anions

Client: UPRR_CH2M/Jacobs

Date: April 02, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 594805

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10467306001,10467306002

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

- MS (Lab ID: 3215588)
 - Chloride
 - Nitrate as N
 - Sulfate
- MS (Lab ID: 3215590)
 - Chloride
 - Nitrate as N
 - Sulfate
- MSD (Lab ID: 3215589)
 - Chloride
 - Nitrate as N
 - Sulfate
- MSD (Lab ID: 3215591)
 - Chloride
 - Nitrate as N
 - Sulfate

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Method: EPA 353.2

Description: 353.2 Nitrate + Nitrite

Client: UPRR_CH2M/Jacobs

Date: April 02, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Method: EPA 410.4

Description: 410.4 COD

Client: UPRR_CH2M/Jacobs

Date: April 02, 2019

General Information:

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

Hold Time:

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

Sample Preparation:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Method: SM 5310C

Description: 5310C TOC

Client: UPRR_CH2M/Jacobs

Date: April 02, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

QC Batch: 163044

B: Analyte was detected in the associated method blank.

- BLANK for HBN 163044 [WETA/265 (Lab ID: 642680)
- Total Organic Carbon

QC Batch: 163132

B: Analyte was detected in the associated method blank.

- BLANK for HBN 163132 [WETA/266 (Lab ID: 642989)
- Total Organic Carbon

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467464

Sample: **MW16D-GW-031919** Lab ID: **10467464001** Collected: 03/19/19 09:20 Received: 03/20/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		03/21/19 09:04	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/21/19 09:04	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/21/19 09:04	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Aluminum, Dissolved	<15.5	ug/L	200	15.5	1	03/21/19 14:30	03/25/19 11:13	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/21/19 14:30	03/25/19 11:13	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/21/19 14:30	03/25/19 11:13	7440-38-2	
Barium, Dissolved	66.4	ug/L	10.0	0.18	1	03/21/19 14:30	03/25/19 11:13	7440-39-3	
Beryllium, Dissolved	0.16J	ug/L	5.0	0.12	1	03/21/19 14:30	03/25/19 11:13	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	03/21/19 14:30	03/25/19 11:13	7440-43-9	
Calcium, Dissolved	67200	ug/L	500	13.9	1	03/21/19 14:30	03/25/19 11:13	7440-70-2	
Chromium, Dissolved	0.51J	ug/L	10.0	0.49	1	03/21/19 14:30	03/25/19 11:13	7440-47-3	
Cobalt, Dissolved	0.58J	ug/L	10.0	0.50	1	03/21/19 14:30	03/25/19 11:13	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/21/19 14:30	03/25/19 11:13	7440-50-8	
Iron, Dissolved	15.0J	ug/L	50.0	4.3	1	03/21/19 14:30	03/25/19 11:13	7439-89-6	B
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/21/19 14:30	03/25/19 11:13	7439-92-1	
Magnesium, Dissolved	19700	ug/L	500	9.8	1	03/21/19 14:30	03/25/19 11:13	7439-95-4	
Manganese, Dissolved	0.64J	ug/L	5.0	0.22	1	03/21/19 14:30	03/25/19 11:13	7439-96-5	B
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	03/21/19 14:30	03/25/19 11:13	7440-02-0	
Potassium, Dissolved	1730J	ug/L	2500	310	1	03/21/19 14:30	03/25/19 11:13	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/21/19 14:30	03/25/19 11:13	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/21/19 14:30	03/25/19 11:13	7440-22-4	
Sodium, Dissolved	20100	ug/L	1000	21.5	1	03/21/19 14:30	03/25/19 11:13	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/21/19 14:30	03/25/19 11:13	7440-28-0	
Vanadium, Dissolved	10.6J	ug/L	15.0	0.29	1	03/21/19 14:30	03/25/19 11:13	7440-62-2	
Zinc, Dissolved	3.6J	ug/L	20.0	2.5	1	03/21/19 14:30	03/25/19 11:13	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/21/19 18:28	03/26/19 12:45	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/21/19 22:37	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/21/19 22:37	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/21/19 22:37	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/21/19 22:37	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/21/19 22:37	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/21/19 22:37	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/21/19 22:37	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/21/19 22:37	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/21/19 22:37	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/21/19 22:37	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/21/19 22:37	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/21/19 22:37	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/21/19 22:37	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/21/19 22:37	106-93-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Project No.: 10467464

Sample: MW16D-GW-031919 Lab ID: 10467464001 Collected: 03/19/19 09:20 Received: 03/20/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/21/19 22:37	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/21/19 22:37	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/21/19 22:37	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/21/19 22:37	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	1.0	0.12	1		03/21/19 22:37	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/21/19 22:37	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/21/19 22:37	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/21/19 22:37	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/21/19 22:37	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/21/19 22:37	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/21/19 22:37	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/21/19 22:37	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/21/19 22:37	95-49-8	
2-Hexanone	<0.88	ug/L	20.0	0.88	1		03/21/19 22:37	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/21/19 22:37	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/21/19 22:37	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/21/19 22:37	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/21/19 22:37	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/21/19 22:37	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/21/19 22:37	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/21/19 22:37	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/21/19 22:37	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/21/19 22:37	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/21/19 22:37	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/21/19 22:37	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/21/19 22:37	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/21/19 22:37	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/21/19 22:37	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/21/19 22:37	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/21/19 22:37	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/21/19 22:37	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/21/19 22:37	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/21/19 22:37	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/21/19 22:37	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/21/19 22:37	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/21/19 22:37	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/21/19 22:37	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/21/19 22:37	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/21/19 22:37	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		03/21/19 22:37	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/21/19 22:37	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/21/19 22:37	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/21/19 22:37	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/21/19 22:37	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/21/19 22:37	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/21/19 22:37	109-99-9	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Sample: MW16D-GW-031919 **Lab ID: 10467464001** Collected: 03/19/19 09:20 Received: 03/20/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level Analytical Method: EPA 8260B									
Toluene	<0.083	ug/L	0.50	0.083	1		03/21/19 22:37	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/21/19 22:37	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/21/19 22:37	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/21/19 22:37	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/21/19 22:37	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/21/19 22:37	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/21/19 22:37	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/21/19 22:37	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/21/19 22:37	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/21/19 22:37	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/21/19 22:37	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/21/19 22:37	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/21/19 22:37	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/21/19 22:37	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/21/19 22:37	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/21/19 22:37	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/21/19 22:37	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/21/19 22:37	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		03/21/19 22:37	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/21/19 22:37	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	93	%	75-136		1		03/21/19 22:37	17060-07-0	
Toluene-d8 (S)	96	%	75-125		1		03/21/19 22:37	2037-26-5	
4-Bromofluorobenzene (S)	97	%	75-125		1		03/21/19 22:37	460-00-4	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	234	mg/L	5.0	1.0	1		03/28/19 09:53		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	361	mg/L	10.0	5.0	1		03/23/19 16:19		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/21/19 14:05	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	6.8	mg/L	1.2	0.28	1		03/20/19 22:48	16887-00-6	
Nitrate as N	6.0	mg/L	0.10	0.015	1		03/20/19 22:48	14797-55-8	
Sulfate	24.2	mg/L	1.2	0.19	1		03/20/19 22:48	14808-79-8	
353.2 Nitrate + Nitrite Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	6.5	mg/L	1.0	0.18	10		03/20/19 16:53		
410.4 COD Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	03/25/19 13:21	03/26/19 08:40		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Sample: MW16D-GW-031919 **Lab ID: 10467464001** Collected: 03/19/19 09:20 Received: 03/20/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	1.7J	mg/L	2.0	0.40	2		03/22/19 10:33	7440-44-0	B

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467464

Sample: MW18D-GW-031919 Lab ID: 10467464002 Collected: 03/19/19 10:35 Received: 03/20/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace		Analytical Method: RSK 175							
Methane	<4.9	ug/L	10.0	4.9	1		03/21/19 09:11	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/21/19 09:11	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/21/19 09:11	74-85-1	
6010D MET ICP, Dissolved		Analytical Method: EPA 6010D Preparation Method: EPA 3010							
Aluminum, Dissolved	15.5J	ug/L	200	15.5	1	03/21/19 14:30	03/25/19 11:21	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/21/19 14:30	03/25/19 11:21	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/21/19 14:30	03/25/19 11:21	7440-38-2	
Barium, Dissolved	51.8	ug/L	10.0	0.18	1	03/21/19 14:30	03/25/19 11:21	7440-39-3	
Beryllium, Dissolved	0.16J	ug/L	5.0	0.12	1	03/21/19 14:30	03/25/19 11:21	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	03/21/19 14:30	03/25/19 11:21	7440-43-9	
Calcium, Dissolved	22300	ug/L	500	13.9	1	03/21/19 14:30	03/25/19 11:21	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/21/19 14:30	03/25/19 11:21	7440-47-3	
Cobalt, Dissolved	0.65J	ug/L	10.0	0.50	1	03/21/19 14:30	03/25/19 11:21	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/21/19 14:30	03/25/19 11:21	7440-50-8	
Iron, Dissolved	73.8	ug/L	50.0	4.3	1	03/21/19 14:30	03/25/19 11:21	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/21/19 14:30	03/25/19 11:21	7439-92-1	
Magnesium, Dissolved	15600	ug/L	500	9.8	1	03/21/19 14:30	03/25/19 11:21	7439-95-4	
Manganese, Dissolved	44.1	ug/L	5.0	0.22	1	03/21/19 14:30	03/25/19 11:21	7439-96-5	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	03/21/19 14:30	03/25/19 11:21	7440-02-0	
Potassium, Dissolved	4160	ug/L	2500	310	1	03/21/19 14:30	03/25/19 11:21	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/21/19 14:30	03/25/19 11:21	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/21/19 14:30	03/25/19 11:21	7440-22-4	
Sodium, Dissolved	19700	ug/L	1000	21.5	1	03/21/19 14:30	03/25/19 11:21	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/21/19 14:30	03/25/19 11:21	7440-28-0	
Vanadium, Dissolved	0.84J	ug/L	15.0	0.29	1	03/21/19 14:30	03/25/19 11:21	7440-62-2	
Zinc, Dissolved	<2.5	ug/L	20.0	2.5	1	03/21/19 14:30	03/25/19 11:21	7440-66-6	
7470A Mercury, Dissolved		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/21/19 18:28	03/26/19 12:47	7439-97-6	
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/21/19 23:01	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/21/19 23:01	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/21/19 23:01	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/21/19 23:01	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/21/19 23:01	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/21/19 23:01	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/21/19 23:01	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/21/19 23:01	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/21/19 23:01	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/21/19 23:01	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/21/19 23:01	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/21/19 23:01	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/21/19 23:01	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/21/19 23:01	106-93-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Sample: MW18D-GW-031919 Lab ID: 10467464002 Collected: 03/19/19 10:35 Received: 03/20/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/21/19 23:01	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/21/19 23:01	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/21/19 23:01	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/21/19 23:01	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	1.0	0.12	1		03/21/19 23:01	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/21/19 23:01	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/21/19 23:01	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/21/19 23:01	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/21/19 23:01	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/21/19 23:01	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/21/19 23:01	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/21/19 23:01	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/21/19 23:01	95-49-8	
2-Hexanone	<0.88	ug/L	20.0	0.88	1		03/21/19 23:01	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/21/19 23:01	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/21/19 23:01	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/21/19 23:01	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/21/19 23:01	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/21/19 23:01	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/21/19 23:01	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/21/19 23:01	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/21/19 23:01	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/21/19 23:01	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/21/19 23:01	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/21/19 23:01	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/21/19 23:01	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/21/19 23:01	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/21/19 23:01	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/21/19 23:01	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/21/19 23:01	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/21/19 23:01	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/21/19 23:01	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/21/19 23:01	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/21/19 23:01	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/21/19 23:01	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/21/19 23:01	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/21/19 23:01	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/21/19 23:01	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/21/19 23:01	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		03/21/19 23:01	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/21/19 23:01	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/21/19 23:01	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/21/19 23:01	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/21/19 23:01	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/21/19 23:01	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/21/19 23:01	109-99-9	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Sample: MW18D-GW-031919 **Lab ID: 10467464002** Collected: 03/19/19 10:35 Received: 03/20/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Toluene	<0.083	ug/L	0.50	0.083	1		03/21/19 23:01	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/21/19 23:01	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/21/19 23:01	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/21/19 23:01	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/21/19 23:01	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/21/19 23:01	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/21/19 23:01	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/21/19 23:01	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/21/19 23:01	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/21/19 23:01	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/21/19 23:01	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/21/19 23:01	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/21/19 23:01	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/21/19 23:01	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/21/19 23:01	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/21/19 23:01	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/21/19 23:01	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/21/19 23:01	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		03/21/19 23:01	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/21/19 23:01	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	101	%	75-136		1		03/21/19 23:01	17060-07-0	
Toluene-d8 (S)	100	%	75-125		1		03/21/19 23:01	2037-26-5	
4-Bromofluorobenzene (S)	98	%	75-125		1		03/21/19 23:01	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	154	mg/L	5.0	1.0	1		03/28/19 09:58		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	191	mg/L	10.0	5.0	1		03/23/19 16:19		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/21/19 14:06	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	2.0	mg/L	1.2	0.28	1		03/21/19 00:04	16887-00-6	
Nitrate as N	<0.015	mg/L	0.10	0.015	1		03/21/19 00:04	14797-55-8	
Sulfate	6.2	mg/L	1.2	0.19	1		03/21/19 00:04	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	<0.018	mg/L	0.10	0.018	1		03/20/19 16:59		
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	03/25/19 13:21	03/26/19 08:40		

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Sample: MW18D-GW-031919 **Lab ID: 10467464002** Collected: 03/19/19 10:35 Received: 03/20/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	0.52J	mg/L	1.0	0.20	1		03/21/19 21:57	7440-44-0	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467464

Sample: W20-GW-031919 **Lab ID: 10467464003** Collected: 03/19/19 12:35 Received: 03/20/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	357	ug/L	10.0	4.9	1		03/21/19 09:18	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/21/19 09:18	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/21/19 09:18	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Aluminum, Dissolved	709	ug/L	200	15.5	1	03/21/19 14:30	03/25/19 11:23	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/21/19 14:30	03/25/19 11:23	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/21/19 14:30	03/25/19 11:23	7440-38-2	
Barium, Dissolved	21.2	ug/L	10.0	0.18	1	03/21/19 14:30	03/25/19 11:23	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/21/19 14:30	03/25/19 11:23	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	03/21/19 14:30	03/25/19 11:23	7440-43-9	
Calcium, Dissolved	15400	ug/L	500	13.9	1	03/21/19 14:30	03/25/19 11:23	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/21/19 14:30	03/25/19 11:23	7440-47-3	
Cobalt, Dissolved	<0.50	ug/L	10.0	0.50	1	03/21/19 14:30	03/25/19 11:23	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/21/19 14:30	03/25/19 11:23	7440-50-8	
Iron, Dissolved	1400	ug/L	50.0	4.3	1	03/21/19 14:30	03/25/19 11:23	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/21/19 14:30	03/25/19 11:23	7439-92-1	
Magnesium, Dissolved	6790	ug/L	500	9.8	1	03/21/19 14:30	03/25/19 11:23	7439-95-4	
Manganese, Dissolved	118	ug/L	5.0	0.22	1	03/21/19 14:30	03/25/19 11:23	7439-96-5	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	03/21/19 14:30	03/25/19 11:23	7440-02-0	
Potassium, Dissolved	1890J	ug/L	2500	310	1	03/21/19 14:30	03/25/19 11:23	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/21/19 14:30	03/25/19 11:23	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/21/19 14:30	03/25/19 11:23	7440-22-4	
Sodium, Dissolved	8150	ug/L	1000	21.5	1	03/21/19 14:30	03/25/19 11:23	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/21/19 14:30	03/25/19 11:23	7440-28-0	
Vanadium, Dissolved	1.1J	ug/L	15.0	0.29	1	03/21/19 14:30	03/25/19 11:23	7440-62-2	
Zinc, Dissolved	42.9	ug/L	20.0	2.5	1	03/21/19 14:30	03/25/19 11:23	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/21/19 18:28	03/26/19 12:53	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/21/19 23:25	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/21/19 23:25	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/21/19 23:25	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/21/19 23:25	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/21/19 23:25	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/21/19 23:25	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/21/19 23:25	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/21/19 23:25	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/21/19 23:25	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/21/19 23:25	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/21/19 23:25	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/21/19 23:25	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/21/19 23:25	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/21/19 23:25	106-93-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Sample: **W20-GW-031919** Lab ID: **10467464003** Collected: 03/19/19 12:35 Received: 03/20/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/21/19 23:25	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/21/19 23:25	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/21/19 23:25	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/21/19 23:25	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	1.0	0.12	1		03/21/19 23:25	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/21/19 23:25	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/21/19 23:25	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/21/19 23:25	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/21/19 23:25	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/21/19 23:25	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/21/19 23:25	594-20-7	
2-Butanone (MEK)	275	ug/L	5.0	0.99	1		03/21/19 23:25	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/21/19 23:25	95-49-8	
2-Hexanone	<0.88	ug/L	20.0	0.88	1		03/21/19 23:25	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/21/19 23:25	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/21/19 23:25	108-10-1	
Acetone	105	ug/L	20.0	9.2	1		03/21/19 23:25	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/21/19 23:25	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/21/19 23:25	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/21/19 23:25	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/21/19 23:25	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/21/19 23:25	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/21/19 23:25	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/21/19 23:25	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/21/19 23:25	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/21/19 23:25	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/21/19 23:25	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/21/19 23:25	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/21/19 23:25	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/21/19 23:25	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/21/19 23:25	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/21/19 23:25	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/21/19 23:25	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/21/19 23:25	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/21/19 23:25	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/21/19 23:25	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/21/19 23:25	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/21/19 23:25	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/21/19 23:25	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		03/21/19 23:25	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/21/19 23:25	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/21/19 23:25	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/21/19 23:25	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/21/19 23:25	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/21/19 23:25	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/21/19 23:25	109-99-9	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Sample: W20-GW-031919 **Lab ID: 10467464003** Collected: 03/19/19 12:35 Received: 03/20/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level Analytical Method: EPA 8260B									
Toluene	<0.083	ug/L	0.50	0.083	1		03/21/19 23:25	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/21/19 23:25	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/21/19 23:25	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/21/19 23:25	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/21/19 23:25	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/21/19 23:25	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/21/19 23:25	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/21/19 23:25	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/21/19 23:25	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/21/19 23:25	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/21/19 23:25	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/21/19 23:25	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/21/19 23:25	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/21/19 23:25	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/21/19 23:25	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/21/19 23:25	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/21/19 23:25	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/21/19 23:25	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		03/21/19 23:25	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/21/19 23:25	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%	75-136		1		03/21/19 23:25	17060-07-0	
Toluene-d8 (S)	100	%	75-125		1		03/21/19 23:25	2037-26-5	
4-Bromofluorobenzene (S)	98	%	75-125		1		03/21/19 23:25	460-00-4	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	81.0	mg/L	5.0	1.0	1		03/28/19 10:02		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	121	mg/L	10.0	5.0	1		03/23/19 16:19		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/21/19 14:15	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	3.0	mg/L	1.2	0.28	1		03/21/19 00:19	16887-00-6	
Nitrate as N	<0.015	mg/L	0.10	0.015	1		03/21/19 00:19	14797-55-8	
Sulfate	0.83J	mg/L	1.2	0.19	1		03/21/19 00:19	14808-79-8	
353.2 Nitrate + Nitrite Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	<0.018	mg/L	0.10	0.018	1		03/20/19 16:23		
410.4 COD Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	20.7J	mg/L	50.0	17.0	1	03/25/19 13:21	03/26/19 08:41		

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Sample: W20-GW-031919 **Lab ID: 10467464003** Collected: 03/19/19 12:35 Received: 03/20/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	3.1	mg/L	1.0	0.20	1		03/21/19 22:10	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467464

Sample: MW4D-GW-031919 **Lab ID: 10467464004** Collected: 03/19/19 14:25 Received: 03/20/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		03/21/19 09:26	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/21/19 09:26	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/21/19 09:26	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Aluminum, Dissolved	6970	ug/L	200	15.5	1	03/21/19 14:30	03/25/19 11:24	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/21/19 14:30	03/25/19 11:24	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/21/19 14:30	03/25/19 11:24	7440-38-2	
Barium, Dissolved	70.2	ug/L	10.0	0.18	1	03/21/19 14:30	03/25/19 11:24	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/21/19 14:30	03/25/19 11:24	7440-41-7	
Cadmium, Dissolved	0.30J	ug/L	3.0	0.26	1	03/21/19 14:30	03/25/19 11:24	7440-43-9	B
Calcium, Dissolved	12600	ug/L	500	13.9	1	03/21/19 14:30	03/25/19 11:24	7440-70-2	
Chromium, Dissolved	14.5	ug/L	10.0	0.49	1	03/21/19 14:30	03/25/19 11:24	7440-47-3	
Cobalt, Dissolved	4.4J	ug/L	10.0	0.50	1	03/21/19 14:30	03/25/19 11:24	7440-48-4	
Copper, Dissolved	7.7J	ug/L	10.0	1.2	1	03/21/19 14:30	03/25/19 11:24	7440-50-8	
Iron, Dissolved	6190	ug/L	50.0	4.3	1	03/21/19 14:30	03/25/19 11:24	7439-89-6	
Lead, Dissolved	39.5	ug/L	10.0	2.0	1	03/21/19 14:30	03/25/19 11:24	7439-92-1	
Magnesium, Dissolved	4220	ug/L	500	9.8	1	03/21/19 14:30	03/25/19 11:24	7439-95-4	
Manganese, Dissolved	168	ug/L	5.0	0.22	1	03/21/19 14:30	03/25/19 11:24	7439-96-5	
Nickel, Dissolved	15.4J	ug/L	20.0	1.1	1	03/21/19 14:30	03/25/19 11:24	7440-02-0	
Potassium, Dissolved	3740	ug/L	2500	310	1	03/21/19 14:30	03/25/19 11:24	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/21/19 14:30	03/25/19 11:24	7782-49-2	
Silver, Dissolved	0.39J	ug/L	10.0	0.38	1	03/21/19 14:30	03/25/19 11:24	7440-22-4	
Sodium, Dissolved	9260	ug/L	1000	21.5	1	03/21/19 14:30	03/25/19 11:24	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/21/19 14:30	03/25/19 11:24	7440-28-0	
Vanadium, Dissolved	12.0J	ug/L	15.0	0.29	1	03/21/19 14:30	03/25/19 11:24	7440-62-2	
Zinc, Dissolved	39.6	ug/L	20.0	2.5	1	03/21/19 14:30	03/25/19 11:24	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/21/19 18:28	03/26/19 12:55	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/21/19 23:49	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/21/19 23:49	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/21/19 23:49	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/21/19 23:49	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/21/19 23:49	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/21/19 23:49	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/21/19 23:49	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/21/19 23:49	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/21/19 23:49	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/21/19 23:49	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/21/19 23:49	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/21/19 23:49	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/21/19 23:49	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/21/19 23:49	106-93-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Project No.: 10467464

Sample: MW4D-GW-031919 Lab ID: 10467464004 Collected: 03/19/19 14:25 Received: 03/20/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/21/19 23:49	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/21/19 23:49	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/21/19 23:49	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/21/19 23:49	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	1.0	0.12	1		03/21/19 23:49	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/21/19 23:49	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/21/19 23:49	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/21/19 23:49	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/21/19 23:49	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/21/19 23:49	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/21/19 23:49	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/21/19 23:49	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/21/19 23:49	95-49-8	
2-Hexanone	<0.88	ug/L	20.0	0.88	1		03/21/19 23:49	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/21/19 23:49	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/21/19 23:49	108-10-1	
Acetone	15.0J	ug/L	20.0	9.2	1		03/21/19 23:49	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/21/19 23:49	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/21/19 23:49	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/21/19 23:49	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/21/19 23:49	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/21/19 23:49	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/21/19 23:49	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/21/19 23:49	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/21/19 23:49	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/21/19 23:49	75-15-0	
Carbon tetrachloride	0.37J	ug/L	0.50	0.19	1		03/21/19 23:49	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/21/19 23:49	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/21/19 23:49	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/21/19 23:49	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/21/19 23:49	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/21/19 23:49	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/21/19 23:49	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/21/19 23:49	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/21/19 23:49	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/21/19 23:49	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/21/19 23:49	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/21/19 23:49	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/21/19 23:49	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		03/21/19 23:49	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/21/19 23:49	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/21/19 23:49	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/21/19 23:49	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/21/19 23:49	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/21/19 23:49	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/21/19 23:49	109-99-9	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Sample: MW4D-GW-031919 **Lab ID: 10467464004** Collected: 03/19/19 14:25 Received: 03/20/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level Analytical Method: EPA 8260B									
Toluene	0.36J	ug/L	0.50	0.083	1		03/21/19 23:49	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/21/19 23:49	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/21/19 23:49	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/21/19 23:49	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/21/19 23:49	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/21/19 23:49	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/21/19 23:49	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/21/19 23:49	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/21/19 23:49	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/21/19 23:49	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/21/19 23:49	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/21/19 23:49	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/21/19 23:49	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/21/19 23:49	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/21/19 23:49	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/21/19 23:49	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/21/19 23:49	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/21/19 23:49	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		03/21/19 23:49	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/21/19 23:49	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%	75-136		1		03/21/19 23:49	17060-07-0	
Toluene-d8 (S)	98	%	75-125		1		03/21/19 23:49	2037-26-5	
4-Bromofluorobenzene (S)	97	%	75-125		1		03/21/19 23:49	460-00-4	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	54.0	mg/L	5.0	1.0	1		03/28/19 10:06		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	255	mg/L	10.0	5.0	1		03/23/19 16:19		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/21/19 14:17	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	8.4	mg/L	1.2	0.28	1		03/21/19 00:34	16887-00-6	
Nitrate as N	<0.015	mg/L	0.10	0.015	1		03/21/19 00:34	14797-55-8	
Sulfate	3.2	mg/L	1.2	0.19	1		03/21/19 00:34	14808-79-8	
353.2 Nitrate + Nitrite Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	0.042J	mg/L	0.10	0.018	1		03/20/19 16:24		FS
410.4 COD Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	61.6	mg/L	50.0	17.0	1	03/25/19 13:21	03/26/19 08:41		

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Sample: MW4D-GW-031919 **Lab ID: 10467464004** Collected: 03/19/19 14:25 Received: 03/20/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	10.5	mg/L	1.0	0.20	1		03/22/19 16:03	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467464

Sample: **MW13S-GW-031919** Lab ID: **10467464005** Collected: 03/19/19 16:15 Received: 03/20/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		03/22/19 16:16	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/22/19 16:16	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/22/19 16:16	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Aluminum, Dissolved	33.6J	ug/L	200	15.5	1	03/21/19 14:30	03/25/19 11:26	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/21/19 14:30	03/25/19 11:26	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/21/19 14:30	03/25/19 11:26	7440-38-2	
Barium, Dissolved	66.0	ug/L	10.0	0.18	1	03/21/19 14:30	03/25/19 11:26	7440-39-3	
Beryllium, Dissolved	0.16J	ug/L	5.0	0.12	1	03/21/19 14:30	03/25/19 11:26	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	03/21/19 14:30	03/25/19 11:26	7440-43-9	
Calcium, Dissolved	35800	ug/L	500	13.9	1	03/21/19 14:30	03/25/19 11:26	7440-70-2	
Chromium, Dissolved	1.1J	ug/L	10.0	0.49	1	03/21/19 14:30	03/25/19 11:26	7440-47-3	
Cobalt, Dissolved	0.74J	ug/L	10.0	0.50	1	03/21/19 14:30	03/25/19 11:26	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/21/19 14:30	03/25/19 11:26	7440-50-8	
Iron, Dissolved	29.6J	ug/L	50.0	4.3	1	03/21/19 14:30	03/25/19 11:26	7439-89-6	B
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/21/19 14:30	03/25/19 11:26	7439-92-1	
Magnesium, Dissolved	10500	ug/L	500	9.8	1	03/21/19 14:30	03/25/19 11:26	7439-95-4	
Manganese, Dissolved	0.98J	ug/L	5.0	0.22	1	03/21/19 14:30	03/25/19 11:26	7439-96-5	B
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	03/21/19 14:30	03/25/19 11:26	7440-02-0	
Potassium, Dissolved	1170J	ug/L	2500	310	1	03/21/19 14:30	03/25/19 11:26	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/21/19 14:30	03/25/19 11:26	7782-49-2	
Silver, Dissolved	0.46J	ug/L	10.0	0.38	1	03/21/19 14:30	03/25/19 11:26	7440-22-4	
Sodium, Dissolved	15600	ug/L	1000	21.5	1	03/21/19 14:30	03/25/19 11:26	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/21/19 14:30	03/25/19 11:26	7440-28-0	
Vanadium, Dissolved	9.9J	ug/L	15.0	0.29	1	03/21/19 14:30	03/25/19 11:26	7440-62-2	
Zinc, Dissolved	8.1J	ug/L	20.0	2.5	1	03/21/19 14:30	03/25/19 11:26	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/21/19 18:28	03/26/19 12:57	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/22/19 00:12	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/22/19 00:12	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/22/19 00:12	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/22/19 00:12	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/22/19 00:12	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/22/19 00:12	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/22/19 00:12	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/22/19 00:12	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/22/19 00:12	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/22/19 00:12	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/22/19 00:12	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/22/19 00:12	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/22/19 00:12	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/22/19 00:12	106-93-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467464

Sample: MW13S-GW-031919 Lab ID: 10467464005 Collected: 03/19/19 16:15 Received: 03/20/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/22/19 00:12	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/22/19 00:12	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/22/19 00:12	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/22/19 00:12	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	1.0	0.12	1		03/22/19 00:12	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/22/19 00:12	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/22/19 00:12	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/22/19 00:12	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/22/19 00:12	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/22/19 00:12	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/22/19 00:12	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/22/19 00:12	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/22/19 00:12	95-49-8	
2-Hexanone	<0.88	ug/L	20.0	0.88	1		03/22/19 00:12	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/22/19 00:12	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/22/19 00:12	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/22/19 00:12	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/22/19 00:12	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/22/19 00:12	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/22/19 00:12	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/22/19 00:12	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/22/19 00:12	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/22/19 00:12	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/22/19 00:12	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/22/19 00:12	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/22/19 00:12	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/22/19 00:12	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/22/19 00:12	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/22/19 00:12	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/22/19 00:12	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/22/19 00:12	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/22/19 00:12	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/22/19 00:12	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/22/19 00:12	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/22/19 00:12	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/22/19 00:12	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/22/19 00:12	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/22/19 00:12	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/22/19 00:12	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		03/22/19 00:12	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/22/19 00:12	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/22/19 00:12	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/22/19 00:12	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/22/19 00:12	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/22/19 00:12	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/22/19 00:12	109-99-9	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Sample: MW13S-GW-031919 Lab ID: 10467464005 Collected: 03/19/19 16:15 Received: 03/20/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Toluene	<0.083	ug/L	0.50	0.083	1		03/22/19 00:12	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/22/19 00:12	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/22/19 00:12	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/22/19 00:12	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/22/19 00:12	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/22/19 00:12	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/22/19 00:12	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/22/19 00:12	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/22/19 00:12	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/22/19 00:12	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/22/19 00:12	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/22/19 00:12	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/22/19 00:12	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/22/19 00:12	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/22/19 00:12	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/22/19 00:12	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/22/19 00:12	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/22/19 00:12	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		03/22/19 00:12	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/22/19 00:12	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%	75-136		1		03/22/19 00:12	17060-07-0	
Toluene-d8 (S)	102	%	75-125		1		03/22/19 00:12	2037-26-5	
4-Bromofluorobenzene (S)	98	%	75-125		1		03/22/19 00:12	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	163	mg/L	5.0	1.0	1		03/28/19 10:10		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	183	mg/L	10.0	5.0	1		03/23/19 16:19		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/21/19 14:18	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	1.1J	mg/L	1.2	0.28	1		03/21/19 02:22	16887-00-6	
Nitrate as N	0.32	mg/L	0.10	0.015	1		03/21/19 02:22	14797-55-8	
Sulfate	4.9	mg/L	1.2	0.19	1		03/21/19 02:22	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	0.39	mg/L	0.10	0.018	1		03/20/19 16:25		
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	04/01/19 12:04	04/01/19 16:30		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Sample: MW13S-GW-031919 **Lab ID: 10467464005** Collected: 03/19/19 16:15 Received: 03/20/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	0.82J	mg/L	1.0	0.20	1		03/22/19 16:16	7440-44-0	B

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Sample: **TB-031919** Lab ID: **10467464006** Collected: 03/19/19 07:00 Received: 03/20/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/28/19 15:11	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/28/19 15:11	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 15:11	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/28/19 15:11	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/28/19 15:11	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 15:11	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/28/19 15:11	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		03/28/19 15:11	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 15:11	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/28/19 15:11	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/28/19 15:11	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/28/19 15:11	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/28/19 15:11	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/28/19 15:11	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 15:11	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/28/19 15:11	107-06-2	L2
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/28/19 15:11	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/28/19 15:11	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		03/28/19 15:11	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/28/19 15:11	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/28/19 15:11	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 15:11	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/28/19 15:11	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/28/19 15:11	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/28/19 15:11	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/28/19 15:11	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/28/19 15:11	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		03/28/19 15:11	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/28/19 15:11	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/28/19 15:11	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/28/19 15:11	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/28/19 15:11	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/28/19 15:11	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/28/19 15:11	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 15:11	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/28/19 15:11	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/28/19 15:11	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/28/19 15:11	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/28/19 15:11	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/28/19 15:11	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/28/19 15:11	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 15:11	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/28/19 15:11	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/28/19 15:11	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/28/19 15:11	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/28/19 15:11	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Sample: TB-031919 **Lab ID: 10467464006** Collected: 03/19/19 07:00 Received: 03/20/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/28/19 15:11	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/28/19 15:11	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/28/19 15:11	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/28/19 15:11	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/28/19 15:11	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 15:11	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/28/19 15:11	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		03/28/19 15:11	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/28/19 15:11	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/28/19 15:11	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/28/19 15:11	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/28/19 15:11	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/28/19 15:11	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/28/19 15:11	109-99-9	
Toluene	0.10J	ug/L	0.50	0.083	1		03/28/19 15:11	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/28/19 15:11	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/28/19 15:11	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/28/19 15:11	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/28/19 15:11	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/28/19 15:11	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/28/19 15:11	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/28/19 15:11	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/28/19 15:11	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/28/19 15:11	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/28/19 15:11	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/28/19 15:11	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/28/19 15:11	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/28/19 15:11	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/28/19 15:11	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/28/19 15:11	75-65-0	
tert-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/28/19 15:11	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/28/19 15:11	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		03/28/19 15:11	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/28/19 15:11	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%	75-136		1		03/28/19 15:11	17060-07-0	
Toluene-d8 (S)	108	%	75-125		1		03/28/19 15:11	2037-26-5	
4-Bromofluorobenzene (S)	99	%	75-125		1		03/28/19 15:11	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467464

QC Batch: 594916 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 GCV HEADSPACE
Associated Lab Samples: 10467464001, 10467464002, 10467464003, 10467464004

METHOD BLANK: 3216122 Matrix: Water
Associated Lab Samples: 10467464001, 10467464002, 10467464003, 10467464004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	03/21/19 08:09	
Ethene	ug/L	<2.9	10.0	2.9	03/21/19 08:09	
Methane	ug/L	<4.9	10.0	4.9	03/21/19 08:09	

LABORATORY CONTROL SAMPLE & LCSD: 3216123

Parameter	Units	3216124							Max RPD	Qualifiers
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD		
Ethane	ug/L	114	109	106	96	93	85-115	3	20	
Ethene	ug/L	106	102	98.7	96	93	85-115	3	20	
Methane	ug/L	60.7	57.9	56.5	95	93	85-115	2	20	

SAMPLE DUPLICATE: 3216125

Parameter	Units	75104962001 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	ND	<3.0		20	
Ethene	ug/L	ND	<2.9		20	
Methane	ug/L	0.54 mg/L	500	8	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467464

QC Batch: 595040 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 GCV HEADSPACE
Associated Lab Samples: 10467464005

METHOD BLANK: 3216620 Matrix: Water
Associated Lab Samples: 10467464005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	03/22/19 15:27	
Ethene	ug/L	<2.9	10.0	2.9	03/22/19 15:27	
Methane	ug/L	<4.9	10.0	4.9	03/22/19 15:27	

LABORATORY CONTROL SAMPLE & LCSD: 3216621

Parameter	Units	3216622								Qualifiers
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	
Ethane	ug/L	114	104	104	91	92	85-115	1	20	
Ethene	ug/L	106	97.1	97.7	91	92	85-115	1	20	
Methane	ug/L	60.7	55.4	55.7	91	92	85-115	1	20	

SAMPLE DUPLICATE: 3219416

Parameter	Units	10467285019 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<3.0	<3.0		20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	<4.9	<4.9		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

QC Batch: 594851

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470A Mercury Water Dissolved

Associated Lab Samples: 10467464001, 10467464002, 10467464003, 10467464004, 10467464005

METHOD BLANK: 3215761

Matrix: Water

Associated Lab Samples: 10467464001, 10467464002, 10467464003, 10467464004, 10467464005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.078	0.20	0.078	03/26/19 12:41	

LABORATORY CONTROL SAMPLE: 3215762

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.5	110	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3215763 3215764

Parameter	Units	3215763		3215764		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10467464002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Mercury, Dissolved	ug/L	<0.078	5	5	5.2	5.4	104	108	80-120	4	20

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

QC Batch: 594838

Analysis Method: EPA 6010D

QC Batch Method: EPA 3010

Analysis Description: 6010D Water Dissolved

Associated Lab Samples: 10467464001, 10467464002, 10467464003, 10467464004, 10467464005

METHOD BLANK: 3215724

Matrix: Water

Associated Lab Samples: 10467464001, 10467464002, 10467464003, 10467464004, 10467464005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<15.5	200	15.5	03/25/19 11:04	
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	03/25/19 11:04	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	03/25/19 11:04	
Barium, Dissolved	ug/L	<0.18	10.0	0.18	03/25/19 11:04	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	03/25/19 11:04	
Cadmium, Dissolved	ug/L	0.31J	3.0	0.26	03/25/19 11:04	
Calcium, Dissolved	ug/L	70.2J	500	13.9	03/25/19 11:04	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	03/25/19 11:04	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	03/25/19 11:04	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	03/25/19 11:04	
Iron, Dissolved	ug/L	5.8J	50.0	4.3	03/25/19 11:04	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	03/25/19 11:04	
Magnesium, Dissolved	ug/L	<9.8	500	9.8	03/25/19 11:04	
Manganese, Dissolved	ug/L	0.22J	5.0	0.22	03/25/19 11:04	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	03/25/19 11:04	
Potassium, Dissolved	ug/L	<310	2500	310	03/25/19 11:04	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	03/25/19 11:04	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	03/25/19 11:04	
Sodium, Dissolved	ug/L	111J	1000	21.5	03/25/19 11:04	
Thallium, Dissolved	ug/L	<4.3	20.0	4.3	03/25/19 11:04	
Vanadium, Dissolved	ug/L	<0.29	15.0	0.29	03/25/19 11:04	
Zinc, Dissolved	ug/L	<2.5	20.0	2.5	03/25/19 11:04	

LABORATORY CONTROL SAMPLE: 3215725

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	21900	109	80-120	
Antimony, Dissolved	ug/L	1000	1060	106	80-120	
Arsenic, Dissolved	ug/L	1000	1030	103	80-120	
Barium, Dissolved	ug/L	1000	1080	108	80-120	
Beryllium, Dissolved	ug/L	1000	1070	107	80-120	
Cadmium, Dissolved	ug/L	1000	1050	105	80-120	
Calcium, Dissolved	ug/L	20000	20400	102	80-120	
Chromium, Dissolved	ug/L	1000	1050	105	80-120	
Cobalt, Dissolved	ug/L	1000	1050	105	80-120	
Copper, Dissolved	ug/L	1000	1010	101	80-120	
Iron, Dissolved	ug/L	20000	20900	104	80-120	
Lead, Dissolved	ug/L	1000	1060	106	80-120	
Magnesium, Dissolved	ug/L	20000	20500	102	80-120	
Manganese, Dissolved	ug/L	1000	1050	105	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

LABORATORY CONTROL SAMPLE: 3215725

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nickel, Dissolved	ug/L	1000	1060	106	80-120	
Potassium, Dissolved	ug/L	20000	21200	106	80-120	
Selenium, Dissolved	ug/L	1000	1110	111	80-120	
Silver, Dissolved	ug/L	500	523	105	80-120	
Sodium, Dissolved	ug/L	20000	21000	105	80-120	
Thallium, Dissolved	ug/L	1000	1050	105	80-120	
Vanadium, Dissolved	ug/L	1000	1050	105	80-120	
Zinc, Dissolved	ug/L	1000	1060	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3215726 3215727

Parameter	Units	MS 10467464001		MSD 3215726		MS 3215727		MSD 3215727		% Rec Limits	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	MSD Result	% Rec	% Rec				
Aluminum, Dissolved	ug/L	<15.5	20000	20000	21000	21300	105	107	75-125	1	20	
Antimony, Dissolved	ug/L	<7.0	1000	1000	1070	1050	106	105	75-125	1	20	
Arsenic, Dissolved	ug/L	<3.8	1000	1000	1010	1010	101	101	75-125	1	20	
Barium, Dissolved	ug/L	66.4	1000	1000	1080	1090	101	102	75-125	1	20	
Beryllium, Dissolved	ug/L	0.16J	1000	1000	1040	1050	104	105	75-125	1	20	
Cadmium, Dissolved	ug/L	<0.26	1000	1000	1020	1030	102	103	75-125	1	20	
Calcium, Dissolved	ug/L	67200	20000	20000	86500	86500	97	96	75-125	0	20	
Chromium, Dissolved	ug/L	0.51J	1000	1000	1020	1020	102	102	75-125	1	20	
Cobalt, Dissolved	ug/L	0.58J	1000	1000	996	1000	100	100	75-125	1	20	
Copper, Dissolved	ug/L	<1.2	1000	1000	984	986	98	99	75-125	0	20	
Iron, Dissolved	ug/L	15.0J	20000	20000	20100	20200	100	101	75-125	1	20	
Lead, Dissolved	ug/L	<2.0	1000	1000	1020	1030	102	103	75-125	1	20	
Magnesium, Dissolved	ug/L	19700	20000	20000	40500	40500	104	104	75-125	0	20	
Manganese, Dissolved	ug/L	0.64J	1000	1000	1030	1010	103	101	75-125	2	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	997	1010	100	100	75-125	1	20	
Potassium, Dissolved	ug/L	1730J	20000	20000	22500	22700	104	105	75-125	1	20	
Selenium, Dissolved	ug/L	<5.8	1000	1000	1060	1070	106	107	75-125	1	20	
Silver, Dissolved	ug/L	<0.38	500	500	511	514	102	103	75-125	1	20	
Sodium, Dissolved	ug/L	20100	20000	20000	39400	40000	96	100	75-125	2	20	
Thallium, Dissolved	ug/L	<4.3	1000	1000	1020	1030	102	102	75-125	0	20	
Vanadium, Dissolved	ug/L	10.6J	1000	1000	1030	1040	102	103	75-125	1	20	
Zinc, Dissolved	ug/L	3.6J	1000	1000	1010	1020	101	102	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

QC Batch: 595025 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10467464001, 10467464002, 10467464003, 10467464004, 10467464005

METHOD BLANK: 3216576 Matrix: Water
Associated Lab Samples: 10467464001, 10467464002, 10467464003, 10467464004, 10467464005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	03/21/19 15:04	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	03/21/19 15:04	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	03/21/19 15:04	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	03/21/19 15:04	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	03/21/19 15:04	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	03/21/19 15:04	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	03/21/19 15:04	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	03/21/19 15:04	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	03/21/19 15:04	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	03/21/19 15:04	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	03/21/19 15:04	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	03/21/19 15:04	MN
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	03/21/19 15:04	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	03/21/19 15:04	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	03/21/19 15:04	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	03/21/19 15:04	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	03/21/19 15:04	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	03/21/19 15:04	
1,3,5-Trimethylbenzene	ug/L	<0.12	1.0	0.12	03/21/19 15:04	MN
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/21/19 15:04	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	03/21/19 15:04	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	03/21/19 15:04	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	03/21/19 15:04	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	03/21/19 15:04	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	03/21/19 15:04	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	03/21/19 15:04	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	03/21/19 15:04	
2-Hexanone	ug/L	<0.88	20.0	0.88	03/21/19 15:04	MN
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/21/19 15:04	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	03/21/19 15:04	
Acetone	ug/L	<9.2	20.0	9.2	03/21/19 15:04	
Acrolein	ug/L	<1.2	10.0	1.2	03/21/19 15:04	
Acrylonitrile	ug/L	<0.91	10.0	0.91	03/21/19 15:04	
Benzene	ug/L	<0.10	0.50	0.10	03/21/19 15:04	
Bromobenzene	ug/L	<0.21	0.50	0.21	03/21/19 15:04	
Bromochloromethane	ug/L	<0.27	1.0	0.27	03/21/19 15:04	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	03/21/19 15:04	
Bromoform	ug/L	<0.80	4.0	0.80	03/21/19 15:04	
Bromomethane	ug/L	<1.8	4.0	1.8	03/21/19 15:04	
Carbon disulfide	ug/L	<0.078	1.0	0.078	03/21/19 15:04	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	03/21/19 15:04	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

METHOD BLANK: 3216576

Matrix: Water

Associated Lab Samples: 10467464001, 10467464002, 10467464003, 10467464004, 10467464005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	03/21/19 15:04	
Chloroethane	ug/L	<0.49	1.0	0.49	03/21/19 15:04	
Chloroform	ug/L	<0.45	4.0	0.45	03/21/19 15:04	MN
Chloromethane	ug/L	<0.16	4.0	0.16	03/21/19 15:04	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	03/21/19 15:04	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	03/21/19 15:04	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	03/21/19 15:04	
Dibromomethane	ug/L	<0.16	1.0	0.16	03/21/19 15:04	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	03/21/19 15:04	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	03/21/19 15:04	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	03/21/19 15:04	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	03/21/19 15:04	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/21/19 15:04	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	03/21/19 15:04	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	03/21/19 15:04	MN
m&p-Xylene	ug/L	<0.31	1.0	0.31	03/21/19 15:04	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	03/21/19 15:04	
Methylene Chloride	ug/L	<0.98	4.0	0.98	03/21/19 15:04	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	03/21/19 15:04	MN
n-Propylbenzene	ug/L	<0.10	0.50	0.10	03/21/19 15:04	
Naphthalene	ug/L	<0.48	1.0	0.48	03/21/19 15:04	
o-Xylene	ug/L	<0.16	0.50	0.16	03/21/19 15:04	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	03/21/19 15:04	MN
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	03/21/19 15:04	MN
Styrene	ug/L	<0.19	1.0	0.19	03/21/19 15:04	MN
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	03/21/19 15:04	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	03/21/19 15:04	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	03/21/19 15:04	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	03/21/19 15:04	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	03/21/19 15:04	
Toluene	ug/L	<0.083	0.50	0.083	03/21/19 15:04	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	03/21/19 15:04	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	03/21/19 15:04	MN
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	03/21/19 15:04	
Trichloroethene	ug/L	<0.15	0.40	0.15	03/21/19 15:04	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	03/21/19 15:04	
Vinyl acetate	ug/L	<1.1	10.0	1.1	03/21/19 15:04	
Vinyl chloride	ug/L	<0.092	0.20	0.092	03/21/19 15:04	
Xylene (Total)	ug/L	<0.31	1.5	0.31	03/21/19 15:04	
1,2-Dichloroethane-d4 (S)	%	108	75-136		03/21/19 15:04	
4-Bromofluorobenzene (S)	%	98	75-125		03/21/19 15:04	
Toluene-d8 (S)	%	97	75-125		03/21/19 15:04	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

LABORATORY CONTROL SAMPLE: 3216577

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	20.4	102	68-141	
1,1,1-Trichloroethane	ug/L	20	22.6	113	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	18.4	92	73-125	
1,1,2-Trichloroethane	ug/L	20	19.6	98	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	22.4	112	69-132	
1,1-Dichloroethane	ug/L	20	22.9	115	73-125	
1,1-Dichloroethene	ug/L	20	21.0	105	71-126	
1,1-Dichloropropene	ug/L	20	23.4	117	73-126	
1,2,3-Trichlorobenzene	ug/L	20	17.9	90	72-126	
1,2,3-Trichloropropane	ug/L	20	19.2	96	75-126	
1,2,4-Trichlorobenzene	ug/L	20	16.2	81	71-134	
1,2,4-Trimethylbenzene	ug/L	20	17.0	85	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	42.6	85	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	18.4	92	75-129	
1,2-Dichlorobenzene	ug/L	20	18.4	92	75-129	
1,2-Dichloroethane	ug/L	20	20.2	101	75-125	
1,2-Dichloroethene (Total)	ug/L	40	44.0	110	74-125	N2
1,2-Dichloropropane	ug/L	20	21.6	108	75-125	
1,3,5-Trimethylbenzene	ug/L	20	17.2	86	75-127	
1,3-Dichlorobenzene	ug/L	20	18.0	90	75-126	
1,3-Dichloropropane	ug/L	20	18.8	94	75-125	
1,4-Dichlorobenzene	ug/L	20	18.0	90	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	383	96	72-129	
2,2,4-Trimethylpentane	ug/L	20	20.4	102	72-128	N2
2,2-Dichloropropane	ug/L	20	22.3	111	65-138	
2-Butanone (MEK)	ug/L	100	122	122	59-144	
2-Chlorotoluene	ug/L	20	18.4	92	75-127	
2-Hexanone	ug/L	100	89.0	89	73-134	
4-Chlorotoluene	ug/L	20	18.2	91	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	105	105	62-141	
Acetone	ug/L	100	114	114	60-137	
Acrolein	ug/L	200	280	140	60-141	
Acrylonitrile	ug/L	200	219	110	75-129	
Benzene	ug/L	20	20.1	100	73-125	
Bromobenzene	ug/L	20	17.5	88	73-125	
Bromochloromethane	ug/L	20	20.5	103	75-135	
Bromodichloromethane	ug/L	20	23.2	116	75-125	
Bromoform	ug/L	20	20.6	103	67-136	
Bromomethane	ug/L	20	18.3	91	30-150	
Carbon disulfide	ug/L	20	22.9	114	47-137	
Carbon tetrachloride	ug/L	20	23.1	115	75-125	
Chlorobenzene	ug/L	20	18.8	94	75-125	
Chloroethane	ug/L	20	23.0	115	63-136	
Chloroform	ug/L	20	21.7	109	73-128	
Chloromethane	ug/L	20	20.7	103	55-130	
cis-1,2-Dichloroethene	ug/L	20	21.3	106	75-125	
cis-1,3-Dichloropropene	ug/L	20	21.3	106	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

LABORATORY CONTROL SAMPLE: 3216577

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	21.0	105	75-125	
Dibromomethane	ug/L	20	19.8	99	75-125	
Dichlorodifluoromethane	ug/L	20	24.4	122	63-132	
Dichlorofluoromethane	ug/L	20	22.7	114	68-127	N2
Diisopropyl ether	ug/L	20	21.6	108	71-131	
Ethyl-tert-butyl ether	ug/L	20	21.2	106	75-125	
Ethylbenzene	ug/L	20	18.9	94	75-125	
Hexachloro-1,3-butadiene	ug/L	20	17.9	89	72-134	
Isopropylbenzene (Cumene)	ug/L	20	17.4	87	75-125	
m&p-Xylene	ug/L	40	37.6	94	75-126	
Methyl-tert-butyl ether	ug/L	20	21.4	107	75-125	
Methylene Chloride	ug/L	20	21.3	107	70-125	
n-Butylbenzene	ug/L	20	17.4	87	75-126	
n-Propylbenzene	ug/L	20	18.0	90	73-127	
Naphthalene	ug/L	20	15.7	78	63-128	
o-Xylene	ug/L	20	18.2	91	75-128	
p-Isopropyltoluene	ug/L	20	18.0	90	75-125	
sec-Butylbenzene	ug/L	20	16.8	84	75-126	
Styrene	ug/L	20	17.6	88	75-125	
tert-Amylmethyl ether	ug/L	20	19.9	99	75-125	
tert-Butyl Alcohol	ug/L	200	206	103	75-130	
tert-Butylbenzene	ug/L	20	18.0	90	75-131	
Tetrachloroethene	ug/L	20	18.1	90	74-125	
Tetrahydrofuran	ug/L	200	184	92	64-138	
Toluene	ug/L	20	18.3	91	74-125	
trans-1,2-Dichloroethene	ug/L	20	22.8	114	68-128	
trans-1,3-Dichloropropene	ug/L	20	20.2	101	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	40.7	81	60-127	
Trichloroethene	ug/L	20	21.4	107	75-127	
Trichlorofluoromethane	ug/L	20	22.9	115	72-133	
Vinyl acetate	ug/L	20	19.0	95	61-129	
Vinyl chloride	ug/L	20	21.7	109	75-128	
Xylene (Total)	ug/L	60	55.9	93	75-125	
1,2-Dichloroethane-d4 (S)	%			102	75-136	
4-Bromofluorobenzene (S)	%			95	75-125	
Toluene-d8 (S)	%			93	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3216737 3216738

Parameter	Units	10467660001		MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	MS Result	MSD Result						
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20	19.5	21.0	97	105	75-140	7	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20	22.1	23.7	110	119	74-136	7	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20	17.7	19.1	89	96	66-134	8	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20	17.3	18.7	87	94	75-126	8	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Parameter	Units	10467660001		3216737		3216738		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	24.2	25.9	121	130	65-146	7	30		
1,1-Dichloroethane	ug/L	<0.17	20	20	22.0	23.1	110	115	68-132	5	30		
1,1-Dichloroethene	ug/L	<0.16	20	20	22.6	23.0	113	115	66-139	2	30		
1,1-Dichloropropene	ug/L	<0.20	20	20	23.4	25.5	117	128	67-134	9	30		
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	18.1	20.2	91	101	67-129	11	30		
1,2,3-Trichloropropane	ug/L	<0.26	20	20	17.3	19.2	86	96	69-128	11	30		
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	16.7	18.1	84	91	65-140	8	30		
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	16.8	19.3	84	97	71-133	14	30		
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	40.5	45.1	81	90	54-138	11	30		
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	16.8	18.3	84	92	68-125	9	30		
1,2-Dichlorobenzene	ug/L	<0.14	20	20	17.4	19.9	87	99	74-136	13	30		
1,2-Dichloroethane	ug/L	<0.22	20	20	19.4	20.9	97	105	68-125	7	30		
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	42.4	45.5	106	114	71-126	7	30	N2	
1,2-Dichloropropane	ug/L	<0.16	20	20	20.0	20.9	100	105	67-125	4	30		
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	17.2	19.7	86	98	68-137	13	30		
1,3-Dichlorobenzene	ug/L	<0.16	20	20	16.9	19.9	85	100	75-131	16	30		
1,3-Dichloropropane	ug/L	<0.070	20	20	17.1	18.7	85	93	71-125	9	30		
1,4-Dichlorobenzene	ug/L	<0.17	20	20	17.4	20.0	87	100	74-126	14	30		
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	333	357	83	89	68-125	7	30		
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	23.4	23.3	117	116	54-129	1	30	N2	
2,2-Dichloropropane	ug/L	<0.17	20	20	23.0	25.9	115	129	69-139	12	30		
2-Butanone (MEK)	ug/L	<0.99	100	100	102	114	102	114	54-144	11	30		
2-Chlorotoluene	ug/L	<0.16	20	20	18.0	20.9	90	104	75-134	15	30		
2-Hexanone	ug/L	<0.88	100	100	77.7	85.8	78	86	58-137	10	30		
4-Chlorotoluene	ug/L	<0.13	20	20	17.8	20.4	89	102	72-133	14	30		
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	94.2	103	94	103	60-129	9	30		
Acetone	ug/L	<9.2	100	100	90.6	92.1	91	92	62-132	2	30		
Acrolein	ug/L	<1.2	200	200	299	337	150	169	30-150	12	30	M1	
Acrylonitrile	ug/L	<0.91	200	200	200	214	100	107	68-125	7	30		
Benzene	ug/L	<0.10	20	20	20.4	22.0	102	110	68-125	7	30		
Bromobenzene	ug/L	<0.21	20	20	16.7	18.5	83	92	73-126	10	30		
Bromochloromethane	ug/L	<0.27	20	20	19.4	21.0	97	105	66-143	8	30		
Bromodichloromethane	ug/L	<0.22	20	20	20.8	23.0	104	115	74-125	10	30		
Bromoform	ug/L	<0.80	20	20	19.2	21.6	96	108	64-134	12	30		
Bromomethane	ug/L	<1.8	20	20	17.7	18.5	88	93	30-150	5	30		
Carbon disulfide	ug/L	<0.078	20	20	25.0	24.3	125	122	43-147	3	30		
Carbon tetrachloride	ug/L	<0.19	20	20	23.3	26.0	116	130	71-143	11	30		
Chlorobenzene	ug/L	<0.17	20	20	18.3	19.8	92	99	75-125	8	30		
Chloroethane	ug/L	<0.49	20	20	24.4	25.6	122	128	75-129	5	30		
Chloroform	ug/L	<0.45	20	20	19.5	21.6	97	108	66-132	10	30		
Chloromethane	ug/L	<0.16	20	20	20.4	20.6	102	103	53-137	1	30		
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	19.9	22.4	99	112	67-133	12	30		
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	17.6	20.1	88	100	66-125	13	30		
Dibromochloromethane	ug/L	<0.12	20	20	19.2	21.2	96	106	62-132	10	30		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Parameter	Units	10467660001		3216737		3216738		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Dibromomethane	ug/L	<0.16	20	20	18.0	19.2	90	96	67-125	6	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	25.0	25.4	125	127	71-142	2	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	22.1	22.7	110	113	70-131	3	30	N2	
Diisopropyl ether	ug/L	<0.13	20	20	20.6	22.0	103	110	63-131	6	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	20.2	21.6	101	108	66-128	7	30		
Ethylbenzene	ug/L	<0.14	20	20	18.5	20.4	93	102	74-126	10	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	19.7	19.8	98	99	68-143	1	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	17.5	20.1	88	101	74-130	14	30		
m&p-Xylene	ug/L	<0.31	40	40	37.2	41.8	93	104	69-132	11	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	20.1	22.4	100	112	65-131	11	30		
Methylene Chloride	ug/L	<0.98	20	20	21.0	22.2	105	111	57-125	5	30		
n-Butylbenzene	ug/L	<0.24	20	20	18.6	19.8	93	99	71-131	7	30		
n-Propylbenzene	ug/L	<0.10	20	20	18.0	20.9	90	104	67-138	15	30		
Naphthalene	ug/L	<0.48	20	20	15.0	17.9	75	90	60-130	17	30		
o-Xylene	ug/L	<0.16	20	20	17.5	19.4	87	97	69-131	10	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	18.4	20.3	92	101	72-133	10	30		
sec-Butylbenzene	ug/L	<0.15	20	20	17.5	18.8	87	94	73-134	7	30		
Styrene	ug/L	<0.19	20	20	16.7	18.2	84	91	72-125	8	30		
tert-Amylmethyl ether	ug/L	<0.11	20	20	19.7	21.8	99	109	67-125	10	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	195	205	98	102	64-137	5	30		
tert-Butylbenzene	ug/L	<0.15	20	20	18.0	20.5	90	102	70-143	13	30		
Tetrachloroethene	ug/L	<0.17	20	20	18.1	20.8	91	104	72-129	14	30		
Tetrahydrofuran	ug/L	<2.2	200	200	168	183	84	91	66-128	8	30		
Toluene	ug/L	<0.083	20	20	18.2	19.4	91	97	73-125	7	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	22.6	23.2	113	116	62-137	3	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	19.0	20.5	95	103	61-136	8	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	38.2	41.4	76	83	45-128	8	30		
Trichloroethene	ug/L	<0.15	20	20	20.8	22.4	104	112	74-132	7	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	22.8	22.7	114	114	75-139	0	30		
Vinyl acetate	ug/L	<1.1	20	20	18.7	19.7	93	99	51-135	6	30		
Vinyl chloride	ug/L	<0.092	20	20	21.7	22.2	108	111	68-146	2	30		
Xylene (Total)	ug/L	<0.31	60	60	54.7	61.2	91	102	67-137	11	30		
1,2-Dichloroethane-d4 (S)	%						104	105	75-136				
4-Bromofluorobenzene (S)	%						95	96	75-125				
Toluene-d8 (S)	%						91	92	75-125				

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

QC Batch: 596233

Analysis Method: EPA 8260B

QC Batch Method: EPA 8260B

Analysis Description: 8260 MSV LL Water

Associated Lab Samples: 10467464006

METHOD BLANK: 3223555

Matrix: Water

Associated Lab Samples: 10467464006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	03/28/19 10:27	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	03/28/19 10:27	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	03/28/19 10:27	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	03/28/19 10:27	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	03/28/19 10:27	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	03/28/19 10:27	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	03/28/19 10:27	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	03/28/19 10:27	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	03/28/19 10:27	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	03/28/19 10:27	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	03/28/19 10:27	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	03/28/19 10:27	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	03/28/19 10:27	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	03/28/19 10:27	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	03/28/19 10:27	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	03/28/19 10:27	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	03/28/19 10:27	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	03/28/19 10:27	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	03/28/19 10:27	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/28/19 10:27	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	03/28/19 10:27	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	03/28/19 10:27	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	03/28/19 10:27	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	03/28/19 10:27	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	03/28/19 10:27	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	03/28/19 10:27	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	03/28/19 10:27	
2-Hexanone	ug/L	<0.88	5.0	0.88	03/28/19 10:27	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/28/19 10:27	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	03/28/19 10:27	
Acetone	ug/L	<9.2	20.0	9.2	03/28/19 10:27	
Acrolein	ug/L	<1.2	10.0	1.2	03/28/19 10:27	
Acrylonitrile	ug/L	<0.91	10.0	0.91	03/28/19 10:27	
Benzene	ug/L	<0.10	0.50	0.10	03/28/19 10:27	
Bromobenzene	ug/L	<0.21	0.50	0.21	03/28/19 10:27	
Bromochloromethane	ug/L	<0.27	1.0	0.27	03/28/19 10:27	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	03/28/19 10:27	
Bromoform	ug/L	<0.80	4.0	0.80	03/28/19 10:27	
Bromomethane	ug/L	<1.8	4.0	1.8	03/28/19 10:27	
Carbon disulfide	ug/L	<0.078	1.0	0.078	03/28/19 10:27	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	03/28/19 10:27	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

METHOD BLANK: 3223555

Matrix: Water

Associated Lab Samples: 10467464006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	03/28/19 10:27	
Chloroethane	ug/L	<0.49	1.0	0.49	03/28/19 10:27	
Chloroform	ug/L	<0.45	4.0	0.45	03/28/19 10:27	
Chloromethane	ug/L	<0.16	4.0	0.16	03/28/19 10:27	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	03/28/19 10:27	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	03/28/19 10:27	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	03/28/19 10:27	
Dibromomethane	ug/L	<0.16	1.0	0.16	03/28/19 10:27	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	03/28/19 10:27	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	03/28/19 10:27	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	03/28/19 10:27	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	03/28/19 10:27	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/28/19 10:27	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	03/28/19 10:27	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	03/28/19 10:27	
m&p-Xylene	ug/L	<0.31	1.0	0.31	03/28/19 10:27	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	03/28/19 10:27	
Methylene Chloride	ug/L	<0.98	4.0	0.98	03/28/19 10:27	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	03/28/19 10:27	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	03/28/19 10:27	
Naphthalene	ug/L	<0.48	1.0	0.48	03/28/19 10:27	
o-Xylene	ug/L	<0.16	0.50	0.16	03/28/19 10:27	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	03/28/19 10:27	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	03/28/19 10:27	
Styrene	ug/L	<0.19	1.0	0.19	03/28/19 10:27	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	03/28/19 10:27	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	03/28/19 10:27	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	03/28/19 10:27	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	03/28/19 10:27	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	03/28/19 10:27	
Toluene	ug/L	<0.083	0.50	0.083	03/28/19 10:27	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	03/28/19 10:27	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	03/28/19 10:27	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	03/28/19 10:27	
Trichloroethene	ug/L	<0.15	0.40	0.15	03/28/19 10:27	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	03/28/19 10:27	
Vinyl acetate	ug/L	<1.1	10.0	1.1	03/28/19 10:27	
Vinyl chloride	ug/L	<0.092	0.20	0.092	03/28/19 10:27	
Xylene (Total)	ug/L	<0.31	1.5	0.31	03/28/19 10:27	
1,2-Dichloroethane-d4 (S)	%	105	75-136		03/28/19 10:27	
4-Bromofluorobenzene (S)	%	100	75-125		03/28/19 10:27	
Toluene-d8 (S)	%	107	75-125		03/28/19 10:27	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

LABORATORY CONTROL SAMPLE: 3223556

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.8	99	68-141	
1,1,1-Trichloroethane	ug/L	20	16.4	82	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	20.2	101	73-125	
1,1,2-Trichloroethane	ug/L	20	20.4	102	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	17.0	85	69-132	
1,1-Dichloroethane	ug/L	20	16.5	82	73-125	
1,1-Dichloroethene	ug/L	20	16.7	84	71-126	
1,1-Dichloropropene	ug/L	20	15.7	79	73-126	
1,2,3-Trichlorobenzene	ug/L	20	20.5	102	72-126	
1,2,3-Trichloropropane	ug/L	20	19.8	99	75-126	
1,2,4-Trichlorobenzene	ug/L	20	20.7	103	71-134	
1,2,4-Trimethylbenzene	ug/L	20	20.8	104	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	45.5	91	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	20.3	101	75-129	
1,2-Dichlorobenzene	ug/L	20	21.2	106	75-129	
1,2-Dichloroethane	ug/L	20	14.3	71	75-125	L2
1,2-Dichloroethene (Total)	ug/L	40	33.0	82	74-125	N2
1,2-Dichloropropane	ug/L	20	18.7	93	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.9	104	75-127	
1,3-Dichlorobenzene	ug/L	20	21.2	106	75-126	
1,3-Dichloropropane	ug/L	20	19.6	98	75-125	
1,4-Dichlorobenzene	ug/L	20	20.1	101	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	438	109	72-129	
2,2,4-Trimethylpentane	ug/L	20	16.5	82	72-128	N2
2,2-Dichloropropane	ug/L	20	17.3	86	65-138	
2-Butanone (MEK)	ug/L	100	78.9	79	59-144	
2-Chlorotoluene	ug/L	20	22.0	110	75-127	
2-Hexanone	ug/L	100	101	101	73-134	
4-Chlorotoluene	ug/L	20	22.5	112	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	92.3	92	62-141	
Acetone	ug/L	100	121	121	60-137	
Acrolein	ug/L	200	170	85	60-141	
Acrylonitrile	ug/L	200	156	78	75-129	
Benzene	ug/L	20	16.5	82	73-125	
Bromobenzene	ug/L	20	20.1	101	73-125	
Bromochloromethane	ug/L	20	16.3	82	75-135	
Bromodichloromethane	ug/L	20	19.0	95	75-125	
Bromoform	ug/L	20	20.3	101	67-136	
Bromomethane	ug/L	20	14.4	72	30-150	
Carbon disulfide	ug/L	20	16.5	82	47-137	
Carbon tetrachloride	ug/L	20	17.0	85	75-125	
Chlorobenzene	ug/L	20	19.1	96	75-125	
Chloroethane	ug/L	20	17.7	89	63-136	
Chloroform	ug/L	20	16.5	83	73-128	
Chloromethane	ug/L	20	16.1	81	55-130	
cis-1,2-Dichloroethene	ug/L	20	16.5	83	75-125	
cis-1,3-Dichloropropene	ug/L	20	18.4	92	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

LABORATORY CONTROL SAMPLE: 3223556

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	19.3	96	75-125	
Dibromomethane	ug/L	20	18.8	94	75-125	
Dichlorodifluoromethane	ug/L	20	19.1	95	63-132	
Dichlorofluoromethane	ug/L	20	16.9	84	68-127	N2
Diisopropyl ether	ug/L	20	15.5	78	71-131	
Ethyl-tert-butyl ether	ug/L	20	16.0	80	75-125	
Ethylbenzene	ug/L	20	20.4	102	75-125	
Hexachloro-1,3-butadiene	ug/L	20	19.9	100	72-134	
Isopropylbenzene (Cumene)	ug/L	20	20.6	103	75-125	
m&p-Xylene	ug/L	40	46.6	116	75-126	
Methyl-tert-butyl ether	ug/L	20	16.2	81	75-125	
Methylene Chloride	ug/L	20	16.8	84	70-125	
n-Butylbenzene	ug/L	20	21.2	106	75-126	
n-Propylbenzene	ug/L	20	23.0	115	73-127	
Naphthalene	ug/L	20	20.2	101	63-128	
o-Xylene	ug/L	20	20.8	104	75-128	
p-Isopropyltoluene	ug/L	20	21.1	105	75-125	
sec-Butylbenzene	ug/L	20	21.6	108	75-126	
Styrene	ug/L	20	19.9	99	75-125	
tert-Amylmethyl ether	ug/L	20	15.2	76	75-125	
tert-Butyl Alcohol	ug/L	200	193	97	75-130	
tert-Butylbenzene	ug/L	20	21.1	105	75-131	
Tetrachloroethene	ug/L	20	20.4	102	74-125	
Tetrahydrofuran	ug/L	200	192	96	64-138	
Toluene	ug/L	20	18.9	94	74-125	
trans-1,2-Dichloroethene	ug/L	20	16.5	82	68-128	
trans-1,3-Dichloropropene	ug/L	20	20.4	102	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	49.1	98	60-127	
Trichloroethene	ug/L	20	19.9	100	75-127	
Trichlorofluoromethane	ug/L	20	18.3	91	72-133	
Vinyl acetate	ug/L	20	15.3	76	61-129	
Vinyl chloride	ug/L	20	17.2	86	75-128	
Xylene (Total)	ug/L	60	67.4	112	75-125	
1,2-Dichloroethane-d4 (S)	%			89	75-136	
4-Bromofluorobenzene (S)	%			100	75-125	
Toluene-d8 (S)	%			103	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3224889 3224890

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10468569001 Result	Spike Conc.	Spike Conc.	MS Result						
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	19.9	21.5	99	75-140	8	30	
1,1,1-Trichloroethane	ug/L	ND	20	20	18.0	21.4	90	74-136	17	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	20.7	22.1	104	66-134	6	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	20.4	21.7	102	75-126	6	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Parameter	Units	10468569001		3224889		3224890		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
1,1,2-Trichlorotrifluoroethane	ug/L	ND	20	20	20.3	23.2	101	116	65-146	14	30		
1,1-Dichloroethane	ug/L	ND	20	20	18.9	20.9	94	105	68-132	10	30		
1,1-Dichloroethene	ug/L	ND	20	20	19.3	22.0	97	110	66-139	13	30		
1,1-Dichloropropene	ug/L	ND	20	20	18.2	21.3	91	106	67-134	15	30		
1,2,3-Trichlorobenzene	ug/L	ND	20	20	21.7	22.9	108	114	67-129	5	30		
1,2,3-Trichloropropane	ug/L	ND	20	20	20.4	21.1	102	106	69-128	4	30		
1,2,4-Trichlorobenzene	ug/L	ND	20	20	22.5	23.8	113	119	65-140	5	30		
1,2,4-Trimethylbenzene	ug/L	ND	20	20	21.7	24.1	109	120	71-133	10	30		
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	49.3	53.9	99	108	54-138	9	30		
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	19.5	21.5	98	108	68-125	10	30		
1,2-Dichlorobenzene	ug/L	ND	20	20	22.0	24.1	110	120	74-136	9	30		
1,2-Dichloroethane	ug/L	ND	20	20	14.0	18.4	70	92	68-125	27	30		
1,2-Dichloroethene (Total)	ug/L	ND	40	40	37.4	41.7	94	104	71-126	11	30	N2	
1,2-Dichloropropane	ug/L	ND	20	20	18.4	19.4	92	97	67-125	5	30		
1,3,5-Trimethylbenzene	ug/L	ND	20	20	21.9	23.9	110	120	68-137	9	30		
1,3-Dichlorobenzene	ug/L	ND	20	20	22.1	24.4	111	122	75-131	10	30		
1,3-Dichloropropane	ug/L	ND	20	20	20.2	20.9	101	104	71-125	4	30		
1,4-Dichlorobenzene	ug/L	ND	20	20	20.6	22.6	103	113	74-126	9	30		
1,4-Dioxane (p-Dioxane)	ug/L	ND	400	400	409	420	102	105	68-125	3	30		
2,2,4-Trimethylpentane	ug/L	ND	20	20	19.6	20.1	98	101	54-129	3	30	N2	
2,2-Dichloropropane	ug/L	ND	20	20	19.3	22.2	97	111	69-139	14	30		
2-Butanone (MEK)	ug/L	ND	100	100	69.9	82.7	70	83	54-144	17	30		
2-Chlorotoluene	ug/L	ND	20	20	22.7	25.3	114	126	75-134	11	30		
2-Hexanone	ug/L	ND	100	100	95.9	104	96	104	58-137	8	30		
4-Chlorotoluene	ug/L	ND	20	20	23.3	25.5	116	127	72-133	9	30		
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	96.0	106	96	106	60-129	9	30		
Acetone	ug/L	ND	100	100	76.1	79.5	76	80	62-132	4	30		
Acrolein	ug/L	ND	200	200	270	305	135	152	30-150	12	30	M1	
Acrylonitrile	ug/L	ND	200	200	173	194	87	97	68-125	11	30		
Benzene	ug/L	ND	20	20	16.6	20.4	83	102	68-125	21	30		
Bromobenzene	ug/L	ND	20	20	21.4	22.0	107	110	73-126	3	30		
Bromochloromethane	ug/L	ND	20	20	18.1	20.1	90	100	66-143	10	30		
Bromodichloromethane	ug/L	ND	20	20	18.8	19.9	94	99	74-125	6	30		
Bromoform	ug/L	ND	20	20	19.6	21.3	98	107	64-134	8	30		
Bromomethane	ug/L	ND	20	20	14.5	16.8	73	84	30-150	15	30		
Carbon disulfide	ug/L	ND	20	20	20.7	21.0	103	105	43-147	2	30		
Carbon tetrachloride	ug/L	ND	20	20	18.7	22.4	93	112	71-143	18	30		
Chlorobenzene	ug/L	ND	20	20	19.6	20.9	98	105	75-125	7	30		
Chloroethane	ug/L	ND	20	20	16.7	20.7	84	104	75-129	21	30		
Chloroform	ug/L	ND	20	20	17.1	19.4	85	97	66-132	13	30		
Chloromethane	ug/L	ND	20	20	16.6	20.2	83	101	53-137	20	30		
cis-1,2-Dichloroethene	ug/L	ND	20	20	18.4	20.1	92	101	67-133	9	30		
cis-1,3-Dichloropropene	ug/L	ND	20	20	17.1	17.6	86	88	66-125	3	30		
Dibromochloromethane	ug/L	ND	20	20	19.5	20.4	97	102	62-132	4	30		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Parameter	Units	10468569001		3224889		3224890		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Dibromomethane	ug/L	ND	20	20	18.2	19.5	91	98	67-125	7	30		
Dichlorodifluoromethane	ug/L	ND	20	20	19.1	22.9	95	114	71-142	18	30		
Dichlorofluoromethane	ug/L	ND	20	20	17.2	20.4	86	102	70-131	17	30	N2	
Diisopropyl ether	ug/L	ND	20	20	18.0	19.6	90	98	63-131	8	30		
Ethyl-tert-butyl ether	ug/L	ND	20	20	17.7	20.1	88	101	66-128	13	30		
Ethylbenzene	ug/L	ND	20	20	21.0	23.4	105	117	74-126	11	30		
Hexachloro-1,3-butadiene	ug/L	ND	20	20	23.8	20.9	119	104	68-143	13	30		
Isopropylbenzene (Cumene)	ug/L	ND	20	20	21.9	24.2	109	121	74-130	10	30		
m&p-Xylene	ug/L	ND	40	40	47.5	53.3	119	133	69-132	12	30	M1	
Methyl-tert-butyl ether	ug/L	ND	20	20	18.3	20.6	92	103	65-131	12	30		
Methylene Chloride	ug/L	ND	20	20	19.1	20.2	96	101	57-125	6	30		
n-Butylbenzene	ug/L	ND	20	20	23.7	23.9	118	120	71-131	1	30		
n-Propylbenzene	ug/L	ND	20	20	24.7	27.3	123	137	67-138	10	30		
Naphthalene	ug/L	ND	20	20	22.1	24.9	111	124	60-130	12	30		
o-Xylene	ug/L	ND	20	20	20.9	23.3	105	116	69-131	11	30		
p-Isopropyltoluene	ug/L	ND	20	20	22.7	24.2	114	121	72-133	6	30		
sec-Butylbenzene	ug/L	ND	20	20	23.4	24.4	117	122	73-134	4	30		
Styrene	ug/L	ND	20	20	20.6	22.2	103	111	72-125	7	30		
tert-Amylmethyl ether	ug/L	ND	20	20	15.2	19.9	76	99	67-125	26	30		
tert-Butyl Alcohol	ug/L	ND	200	200	209	204	104	102	64-137	2	30		
tert-Butylbenzene	ug/L	ND	20	20	22.5	24.4	112	122	70-143	8	30		
Tetrachloroethene	ug/L	ND	20	20	21.1	23.5	106	118	72-129	11	30		
Tetrahydrofuran	ug/L	ND	200	200	172	192	86	96	66-128	11	30		
Toluene	ug/L	ND	20	20	19.7	21.0	98	104	73-125	6	30		
trans-1,2-Dichloroethene	ug/L	ND	20	20	19.0	21.5	95	108	62-137	12	30		
trans-1,3-Dichloropropene	ug/L	ND	20	20	21.1	21.4	106	107	61-136	1	30		
trans-1,4-Dichloro-2-butene	ug/L	ND	50	50	50.8	55.8	102	112	45-128	9	30		
Trichloroethene	ug/L	ND	20	20	20.7	19.7	103	99	74-132	4	30		
Trichlorofluoromethane	ug/L	ND	20	20	19.4	23.1	97	116	75-139	17	30		
Vinyl acetate	ug/L	ND	20	20	17.4	19.9	87	99	51-135	13	30		
Vinyl chloride	ug/L	ND	20	20	18.0	21.2	90	106	68-146	17	30		
Xylene (Total)	ug/L	ND	60	60	68.4	76.6	114	128	67-137	11	30	MS	
1,2-Dichloroethane-d4 (S)	%						85	105	75-136				
4-Bromofluorobenzene (S)	%						102	98	75-125				
Toluene-d8 (S)	%						103	101	75-125				

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467464

QC Batch: 596194 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10467464001, 10467464002, 10467464003, 10467464004, 10467464005

METHOD BLANK: 3223461 Matrix: Water
Associated Lab Samples: 10467464001, 10467464002, 10467464003, 10467464004, 10467464005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<1.0	5.0	1.0	03/28/19 08:17	

LABORATORY CONTROL SAMPLE & LCSD: 3223462 3223463

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	43.3	43.2	108	108	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3223464 3223465

Parameter	Units	10468314012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	908	40	40	949	953	101	111	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3223466 3223467

Parameter	Units	10468314013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	921	40	40	943	988	56	168	80-120	5	20	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

QC Batch: 595361

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 10467464001, 10467464002, 10467464003, 10467464004, 10467464005

METHOD BLANK: 3218904

Matrix: Water

Associated Lab Samples: 10467464001, 10467464002, 10467464003, 10467464004, 10467464005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	5.0J	10.0	5.0	03/23/19 16:19	

LABORATORY CONTROL SAMPLE: 3218905

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	968	97	80-120	

SAMPLE DUPLICATE: 3218906

Parameter	Units	10467415001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2050	1960	4	5	

SAMPLE DUPLICATE: 3218907

Parameter	Units	10467293006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	176	161	9	5	D6

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

QC Batch: 136952

Analysis Method: SM 4500-S-2 D

QC Batch Method: SM 4500-S-2 D

Analysis Description: 4500S2D Sulfide, Total

Associated Lab Samples: 10467464001, 10467464002, 10467464003, 10467464004, 10467464005

METHOD BLANK: 595967

Matrix: Water

Associated Lab Samples: 10467464001, 10467464002, 10467464003, 10467464004, 10467464005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	03/21/19 13:30	

LABORATORY CONTROL SAMPLE: 595968

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.2	0.20	98	90-110	

MATRIX SPIKE SAMPLE: 595970

Parameter	Units	2099097001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	0.2	0.10	51	75-125	M1

SAMPLE DUPLICATE: 595969

Parameter	Units	2099097001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<0.0054		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

QC Batch: 594805 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Associated Lab Samples: 10467464001, 10467464002, 10467464003, 10467464004, 10467464005

METHOD BLANK: 3215586 Matrix: Water
 Associated Lab Samples: 10467464001, 10467464002, 10467464003, 10467464004, 10467464005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.28	1.2	0.28	03/20/19 17:38	
Nitrate as N	mg/L	<0.015	0.10	0.015	03/20/19 17:38	
Sulfate	mg/L	<0.19	1.2	0.19	03/20/19 17:38	

LABORATORY CONTROL SAMPLE: 3215587

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.1	97	90-110	
Nitrate as N	mg/L	1	0.94	94	90-110	
Sulfate	mg/L	12.5	12.0	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3215588 3215589

Parameter	Units	10467306001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.6	12.5	12.5	12.6	12.6	79	80	90-110	0	20	M1
Nitrate as N	mg/L	<0.015	1	1	0.78	0.79	78	79	90-110	0	20	M1
Sulfate	mg/L	11.2	12.5	12.5	19.9	20.0	69	71	90-110	1	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3215590 3215591

Parameter	Units	10467306002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	180	62.5	62.5	222	223	67	68	90-110	0	20	M1
Nitrate as N	mg/L	<0.015	1	1	0.79	0.79	79	79	90-110	0	20	M1
Sulfate	mg/L	20.2	12.5	12.5	27.2	27.2	56	56	90-110	0	20	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

QC Batch: 594793

Analysis Method: EPA 353.2

QC Batch Method: EPA 353.2

Analysis Description: 353.2 Nitrate + Nitrite, preserved

Associated Lab Samples: 10467464001, 10467464002, 10467464003, 10467464004, 10467464005

METHOD BLANK: 3215483

Matrix: Water

Associated Lab Samples: 10467464001, 10467464002, 10467464003, 10467464004, 10467464005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	03/20/19 16:26	FS

LABORATORY CONTROL SAMPLE: 3215484

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3215485 3215486

Parameter	Units	3215485		3215486		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10467464001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Nitrogen, NO2 plus NO3	mg/L	6.5	10	10	16.7	16.9	102	104	90-110	1	20

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467464

QC Batch: 595511 Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
Associated Lab Samples: 10467464001, 10467464002, 10467464003, 10467464004

METHOD BLANK: 3219698 Matrix: Water
Associated Lab Samples: 10467464001, 10467464002, 10467464003, 10467464004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	03/26/19 08:34	

LABORATORY CONTROL SAMPLE: 3219699

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	304	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3219700 3219701

Parameter	Units	10467457001		3219700		3219701		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Chemical Oxygen Demand	mg/L	422	250	250	658	660	94	95	90-110	0	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3219702 3219703

Parameter	Units	10467475001		3219702		3219703		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Chemical Oxygen Demand	mg/L	ND	250	250	266	270	100	102	90-110	2	20

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467464

QC Batch: 596803 Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
Associated Lab Samples: 10467464005

METHOD BLANK: 3227321 Matrix: Water
Associated Lab Samples: 10467464005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	04/01/19 16:27	

LABORATORY CONTROL SAMPLE: 3227322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	297	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3227323 3227324

Parameter	Units	10467822001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Spike Conc.	MSD Result						
Chemical Oxygen Demand	mg/L	<17.0	250	240	250	239	96	96	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3227325 3227326

Parameter	Units	10467822002 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Spike Conc.	MSD Result						
Chemical Oxygen Demand	mg/L	<17.0	250	239	250	236	95	94	90-110	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

QC Batch: 163044

Analysis Method: SM 5310C

QC Batch Method: SM 5310C

Analysis Description: 5310C TOC

Associated Lab Samples: 10467464001, 10467464002, 10467464003

METHOD BLANK: 642680

Matrix: Water

Associated Lab Samples: 10467464001, 10467464002, 10467464003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	0.25J	1.0	0.20	03/21/19 15:53	

LABORATORY CONTROL SAMPLE: 642681

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.4	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 642682 642683

Parameter	Units	10467514001 Result	642682		642683		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
			MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Total Organic Carbon	mg/L	12.4	25	25	37.5	36.8	100	98	80-120	2	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 642684 642685

Parameter	Units	10467061001 Result	642684		642685		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
			MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Total Organic Carbon	mg/L	2.8J	125	125	131	131	102	103	80-120	0	20		

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

QC Batch: 163132

Analysis Method: SM 5310C

QC Batch Method: SM 5310C

Analysis Description: 5310C TOC

Associated Lab Samples: 10467464004, 10467464005

METHOD BLANK: 642989

Matrix: Water

Associated Lab Samples: 10467464004, 10467464005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	0.34J	1.0	0.20	03/22/19 14:44	

LABORATORY CONTROL SAMPLE: 642990

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.7	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 642991

642992

Parameter	Units	10467410001		642992		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Total Organic Carbon	mg/L	<1.0	25	25	27.0	27.0	106	106	80-120	0	20

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467464

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

PASI-N Pace Analytical Services - New Orleans

PASI-V Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

FS The sample was filtered in the laboratory prior to analysis.

L2 Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

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

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

MS Analyte recovery in the matrix spike was outside QC limits for one or more of the constituent analytes used in the calculated result.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467464

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10467464001	MW16D-GW-031919	RSK 175	594916		
10467464002	MW18D-GW-031919	RSK 175	594916		
10467464003	W20-GW-031919	RSK 175	594916		
10467464004	MW4D-GW-031919	RSK 175	594916		
10467464005	MW13S-GW-031919	RSK 175	595040		
10467464001	MW16D-GW-031919	EPA 3010	594838	EPA 6010D	595138
10467464002	MW18D-GW-031919	EPA 3010	594838	EPA 6010D	595138
10467464003	W20-GW-031919	EPA 3010	594838	EPA 6010D	595138
10467464004	MW4D-GW-031919	EPA 3010	594838	EPA 6010D	595138
10467464005	MW13S-GW-031919	EPA 3010	594838	EPA 6010D	595138
10467464001	MW16D-GW-031919	EPA 7470A	594851	EPA 7470A	595199
10467464002	MW18D-GW-031919	EPA 7470A	594851	EPA 7470A	595199
10467464003	W20-GW-031919	EPA 7470A	594851	EPA 7470A	595199
10467464004	MW4D-GW-031919	EPA 7470A	594851	EPA 7470A	595199
10467464005	MW13S-GW-031919	EPA 7470A	594851	EPA 7470A	595199
10467464001	MW16D-GW-031919	EPA 8260B	595025		
10467464002	MW18D-GW-031919	EPA 8260B	595025		
10467464003	W20-GW-031919	EPA 8260B	595025		
10467464004	MW4D-GW-031919	EPA 8260B	595025		
10467464005	MW13S-GW-031919	EPA 8260B	595025		
10467464006	TB-031919	EPA 8260B	596233		
10467464001	MW16D-GW-031919	SM 2320B	596194		
10467464002	MW18D-GW-031919	SM 2320B	596194		
10467464003	W20-GW-031919	SM 2320B	596194		
10467464004	MW4D-GW-031919	SM 2320B	596194		
10467464005	MW13S-GW-031919	SM 2320B	596194		
10467464001	MW16D-GW-031919	SM 2540C	595361		
10467464002	MW18D-GW-031919	SM 2540C	595361		
10467464003	W20-GW-031919	SM 2540C	595361		
10467464004	MW4D-GW-031919	SM 2540C	595361		
10467464005	MW13S-GW-031919	SM 2540C	595361		
10467464001	MW16D-GW-031919	SM 4500-S-2 D	136952		
10467464002	MW18D-GW-031919	SM 4500-S-2 D	136952		
10467464003	W20-GW-031919	SM 4500-S-2 D	136952		
10467464004	MW4D-GW-031919	SM 4500-S-2 D	136952		
10467464005	MW13S-GW-031919	SM 4500-S-2 D	136952		
10467464001	MW16D-GW-031919	EPA 300.0	594805		
10467464002	MW18D-GW-031919	EPA 300.0	594805		
10467464003	W20-GW-031919	EPA 300.0	594805		
10467464004	MW4D-GW-031919	EPA 300.0	594805		
10467464005	MW13S-GW-031919	EPA 300.0	594805		
10467464001	MW16D-GW-031919	EPA 353.2	594793		
10467464002	MW18D-GW-031919	EPA 353.2	594793		
10467464003	W20-GW-031919	EPA 353.2	594793		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467464

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10467464004	MW4D-GW-031919	EPA 353.2	594793		
10467464005	MW13S-GW-031919	EPA 353.2	594793		
10467464001	MW16D-GW-031919	EPA 410.4	595511	EPA 410.4	595695
10467464002	MW18D-GW-031919	EPA 410.4	595511	EPA 410.4	595695
10467464003	W20-GW-031919	EPA 410.4	595511	EPA 410.4	595695
10467464004	MW4D-GW-031919	EPA 410.4	595511	EPA 410.4	595695
10467464005	MW13S-GW-031919	EPA 410.4	596803	EPA 410.4	597127
10467464001	MW16D-GW-031919	SM 5310C	163044		
10467464002	MW18D-GW-031919	SM 5310C	163044		
10467464003	W20-GW-031919	SM 5310C	163044		
10467464004	MW4D-GW-031919	SM 5310C	163132		
10467464005	MW13S-GW-031919	SM 5310C	163132		

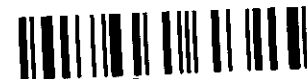
REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Doc
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be

WO#: 10467464



10467464

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

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9, -,) Sample IDs must be unique	MATRIX CODE Drinking Water: DW Water: WT Waste Water: WW Product: P Soil/Solid: SL Oil: OL Wipe: WP Air: AR Other: OT Tissue: TS	CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives Unpreserved H2SO4 HNO3 HCl NaOH + Zn Acetate Other	Y/N	Requested Analysis Filtered (Y/N)													MS/MSD Requested	SAMPLE CONDITIONS	
											Analyses Test Low Level VOCs by 8260 6010/7470 TAl, Dissolved Metals* 2320 Alkalinity Chloride, Sulfate, Nitrate 300.0 2540 TDS TOC 5310 Sulfido 4500 Methane, Ethane, Ethene RSK175 COD 410.4 Nitrate+Nitrite 353.2 4500 Total Phosphorus 6010 Total Iron															
1	MW16D-GW-031919		5	G	03/19/19	0920	-	13	X X X X X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	001
2	MW18D-GW-031919					1035																				002
3	N20-GW-031919					1235																				003
4	MW4D-GW-031919					1425																				004
5	MW13S-GW-031919					1615																				005
6	TB-031919		16	G	03/19/19	0700		2			X															006
7																										
8																										
9																										
10																										
11																										
12																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Short hold analyses are in bold	Natalie Dowdy / JACOBS	03/19/19	1700	Ent Pace	3/21/19	08:40	0-5 7 7 7
*Field filtered by client							

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on ice (Y/N)	Custody Sealed (Y/N)	Cooler (Y/N)	Samples intact (Y/N)
PRINT Name of SAMPLER:	Natalie Dowdy					
SIGNATURE of SAMPLER:	Natalie Dowdy	DATE Signed:	03/19/19			

Sample Condition Upon Receipt

Client Name: CH₂M Hill

Project #: **WO# : 10467464**

Courier: Fed Ex UPS USPS Client
 Pace SpeedDee Commercial See Exception

PM: JMG Due Date: 03/27/19
 CLIENT: UPRR_CH2M

Tracking Number: 4986 7792 7118

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

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

Thermometer: G87A9155100842 G87A9170600254 Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: <u>0.2</u> °C	Average Corrected Temp (no temp blank only): <input type="checkbox"/>	See Exceptions <input type="checkbox"/>
Correction Factor: <u>1.0</u>	Cooler Temp Corrected w/temp blank: <u>0.5</u> °C		

USDA Regulated Soil: (N/A, water sample/Other: _____) Date/Initials of Person Examining Contents: JE 3/20/19

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

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

	COMMENTS:
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception <input type="checkbox"/>
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	
All containers needing acid/base preservation have been checked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ <input checked="" type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exception <input type="checkbox"/>
Chlorine? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception <input checked="" type="checkbox"/>
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. Pace Trip Blank Lot # (if purchased): <u>199048</u>
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: Mark Ochsner Date/Time: 03/20/19 Field Data Required? Yes No

Comments/Resolution: WA certs not required for 8260 2,2,4-TMP, dichlorofluoromethane, RSK or sulfide.

Project Manager Review: JENNI GROSS Date: 03/20/19

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

Labeled by: JE

Page 75 of 80



Document Name:
Headspace Exception

Document Revised: 17Dec2018
Page 1 of 1

Document No.:
F-MN-C-276-Rev.01

Issuing Authority:
Pace Minnesota Quality Office

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
MW18D-GW-031919	0	1	2	3	N
MW40-GW-031919	0	0	3	3	Y

Chain of Custody

WO#: 12122680



Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Cert. Needed: Yes

Owner Received Date: 3/20/2019 Results Requested By: 4/3/2019

Workorder: 10467464 Workorder Name: 1497 Freeman WA-Grain Handling

Report To		Subcontract To				Requested Analysis																																																				
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426		Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042				<table border="1" style="width:100%; height:100%;"> <tr> <td colspan="13" style="text-align:center; vertical-align:top;">Preserved Containers</td> </tr> <tr> <td style="writing-mode:vertical-rl; transform:rotate(180deg);">H2SO4 VG9S</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td colspan="13">LAB USE ONLY</td> </tr> </table>													Preserved Containers													H2SO4 VG9S														LAB USE ONLY												
Preserved Containers																																																										
H2SO4 VG9S																																																										
LAB USE ONLY																																																										
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix																																																					
1	MW16D-GW-031919	PS	3/19/2019 09:20	10467464001	Water														2								X																															
2	MW18D-GW-031919	PS	3/19/2019 10:35	10467464002	Water														2								X																															
3	W20-GW-031919	PS	3/19/2019 12:35	10467464003	Water														2								X																															
4	MW4D-GW-031919	PS	3/19/2019 14:25	10467464004	Water														2								X																															
5	MW13S-GW-031919	PS	3/19/2019 16:15	10467464005	Water														2								X																															
					Comments																																																					
Transfers	Released By	Date/Time	Received By	Date/Time																																																						
1	[Signature]	3/20/19 16:50	[Signature]	3/20/19 17:25																																																						
2	[Signature]	3/20/19 21:00	[Signature]	3/21/19 08:30																																																						
3																																																										
Cooler Temperature on Receipt		1.4 °C	Custody Seal	<input checked="" type="checkbox"/> Y or <input type="checkbox"/> N	Received on Ice	<input checked="" type="checkbox"/> Y or <input type="checkbox"/> N	Samples Intact						<input checked="" type="checkbox"/> Y or <input type="checkbox"/> N																																													

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



Sample Condition Upon Receipt

Client Name: MINNEAPOLIS PACE

Project #:

WO# : 12122680

PM: CLJ

Due Date: 04/04/19

CLIENT: PACE MPLS

Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

Tracking Number: _____

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

Optional: Proj. Due Date: _____ Proj. Name: _____

Packing Material: Bubble Wrap Bubble Bags None Other: _____

Temp Blank? Yes No

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

Cooler Temp Read °C: 1.1 Cooler Temp Corrected °C: 1.4 Biological Tissue Frozen? Yes No N/A

Temp should be above freezing to 6°C Correction Factor: +0.3 Date and Initials of Person Examining Contents: CLJ 3/21/19

Comments: RH 3/21/19

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

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? Yes No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

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

Project Manager Review: Katie Richards Date: 3/21/2019

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

Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Cert. Needed: Yes No

Owner Received Date: 3/20/2019 Results Requested By: 4/3/2019



Workorder: 10467464

Workorder Name: 1497 Freeman WA-Grain Handling

Report To: Jennifer Gross
Pace Analytical Seattle
596 Industry Drive,
Suite 602
Tukwila, WA 98188
Phone (206)957-2426

Subcontract To: Pace Analytical New Orleans
1000 Riverbend Blvd
Suite F
St. Rose, LA 70087
Phone (504)469-0333

Requested Analysis

WO#: 2099074



5696267 / 4500 Sulfide

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Other	LAB USE ONLY	
						BP	PZ	ZZ	ZZ			
1	MW16D-GW-031919	PS	3/19/2019 09:20	10467464001	Water	1					X	
2	MW18D-GW-031919	PS	3/19/2019 10:35	10467464002	Water	1					X	
3	W20-GW-031919	PS	3/19/2019 12:35	10467464003	Water	1					X	
4	MW4D-GW-031919	PS	3/19/2019 14:25	10467464004	Water	1					X	
5	MW13S-GW-031919	PS	3/19/2019 16:15	10467464005	Water	1					X	

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	<i>[Signature]</i>	3/19/19 16:00	Kathy 512117		SHORT HOLD
2	Fed Ex	3/21/19 08:50	Kathleen D	3/21/19 8:50	
3					

Cooler Temperature on Receipt 2.3 °C Custody Seal or N Received on Ice or N Samples Intact or N

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



Sample Condition Upon Receipt

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

Project

WO#: 2099074

PM: CMM

Due Date: 04/03/1

CLIENT: PASI-MINN

Courier: Pace Courier Hired Courier Fed X UPS DHL

USPS Customer Other

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

Custody Seals Intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 3/21/19 CF

Temp must be measured from Temperature blank when present

Comments:

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

If No, was preservative added? Yes No
If added record lot no.: HNO3 _____ H2SO4 _____

Client Notification/ Resolution:

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

April 04, 2019

David Hodson
Jacobs
2020 SW 4th Ave
#300
Portland, OR 97201

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467602

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 21, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Steve Demus, CH2M Hill
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792

Alaska Certification UST-107

Montana Certificate #CERT0103

Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203

Wisconsin DNR Certification #: 998027470

WA Department of Ecology Lab ID# C1007

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA

Florida Department of Health (NELAC): E87595

Illinois Environmental Protection Agency: 0025721

Kansas Department of Health and Environment (NELAC):
E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):
T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-
00119

Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10467602001	W26-GW-032019	Water	03/20/19 10:00	03/21/19 10:00
10467602002	No.2-GW-032019	Water	03/20/19 11:20	03/21/19 10:00
10467602003	MW17D-GW-032019	Water	03/20/19 13:00	03/21/19 10:00
10467602004	FD4-GW-032019	Water	03/20/19 13:05	03/21/19 10:00
10467602005	MW19D-GW-032019	Water	03/20/19 14:45	03/21/19 10:00
10467602006	FD5-GW-032019	Water	03/20/19 14:50	03/21/19 10:00
10467602007	TB-032019	Water	03/20/19 07:00	03/21/19 10:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10467602001	W26-GW-032019	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10467602002	No.2-GW-032019	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10467602003	MW17D-GW-032019	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
10467602004	FD4-GW-032019	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10467602005	MW19D-GW-032019	SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
		RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
10467602006	FD5-GW-032019	EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
		RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
		10467602007	TB-032019	EPA 8260B	DS2

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10467602001	W26-GW-032019					
EPA 6010D	Barium, Dissolved	6.8J	ug/L	10.0	03/26/19 10:05	
EPA 6010D	Cadmium, Dissolved	0.83J	ug/L	3.0	03/26/19 10:05	
EPA 6010D	Calcium, Dissolved	36900	ug/L	500	03/26/19 10:05	
EPA 6010D	Cobalt, Dissolved	1.7J	ug/L	10.0	03/26/19 10:05	
EPA 6010D	Iron, Dissolved	4.5J	ug/L	50.0	03/26/19 10:05	
EPA 6010D	Magnesium, Dissolved	10500	ug/L	500	03/26/19 10:05	
EPA 6010D	Manganese, Dissolved	0.64J	ug/L	5.0	03/26/19 10:05	
EPA 6010D	Potassium, Dissolved	1990J	ug/L	2500	03/26/19 10:05	
EPA 6010D	Sodium, Dissolved	12800	ug/L	1000	03/26/19 10:05	
EPA 6010D	Vanadium, Dissolved	7.2J	ug/L	15.0	03/26/19 10:05	
EPA 6010D	Zinc, Dissolved	81.8	ug/L	20.0	03/26/19 10:05	
SM 2320B	Alkalinity, Total as CaCO3	147	mg/L	5.0	03/29/19 10:49	
SM 2540C	Total Dissolved Solids	230	mg/L	10.0	03/27/19 11:29	
EPA 300.0	Chloride	3.8	mg/L	1.2	03/21/19 20:43	
EPA 300.0	Nitrate as N	2.1	mg/L	0.10	03/21/19 20:43	
EPA 300.0	Sulfate	8.6	mg/L	1.2	03/21/19 20:43	
EPA 353.2	Nitrogen, NO2 plus NO3	2.4	mg/L	0.50	03/28/19 16:45	
SM 5310C	Total Organic Carbon	1.2	mg/L	1.0	03/29/19 10:20	
10467602002	No.2-GW-032019					
RSK 175	Methane	87.6	ug/L	10.0	03/25/19 11:24	
EPA 6010D	Barium, Dissolved	18.2	ug/L	10.0	03/26/19 10:13	
EPA 6010D	Calcium, Dissolved	54900	ug/L	500	03/26/19 10:13	
EPA 6010D	Iron, Dissolved	3520	ug/L	50.0	03/26/19 10:13	
EPA 6010D	Magnesium, Dissolved	15500	ug/L	500	03/26/19 10:13	
EPA 6010D	Manganese, Dissolved	152	ug/L	5.0	03/26/19 10:13	
EPA 6010D	Potassium, Dissolved	399J	ug/L	2500	03/26/19 10:13	
EPA 6010D	Sodium, Dissolved	15700	ug/L	1000	03/26/19 10:13	
EPA 6010D	Vanadium, Dissolved	2.5J	ug/L	15.0	03/26/19 10:13	
EPA 6010D	Zinc, Dissolved	15.4J	ug/L	20.0	03/26/19 10:13	
SM 2320B	Alkalinity, Total as CaCO3	239	mg/L	5.0	03/29/19 10:53	
SM 2540C	Total Dissolved Solids	271	mg/L	10.0	03/27/19 11:29	
EPA 300.0	Chloride	2.3	mg/L	1.2	03/22/19 07:35	
EPA 300.0	Nitrate as N	0.56	mg/L	0.10	03/22/19 07:35	
EPA 300.0	Sulfate	2.2	mg/L	1.2	03/22/19 07:35	
EPA 353.2	Nitrogen, NO2 plus NO3	0.71	mg/L	0.10	03/28/19 16:43	
SM 5310C	Total Organic Carbon	1.4J	mg/L	2.0	03/29/19 10:34	
10467602003	MW17D-GW-032019					
RSK 175	Ethene	5.8J	ug/L	10.0	03/25/19 11:31	
EPA 6010D	Aluminum, Dissolved	188J	ug/L	200	03/26/19 10:15	
EPA 6010D	Barium, Dissolved	85.5	ug/L	10.0	03/26/19 10:15	
EPA 6010D	Calcium, Dissolved	41700	ug/L	500	03/26/19 10:15	
EPA 6010D	Cobalt, Dissolved	1.6J	ug/L	10.0	03/26/19 10:15	
EPA 6010D	Iron, Dissolved	585	ug/L	50.0	03/26/19 10:15	
EPA 6010D	Magnesium, Dissolved	18500	ug/L	500	03/26/19 10:15	
EPA 6010D	Manganese, Dissolved	209	ug/L	5.0	03/26/19 10:15	
EPA 6010D	Potassium, Dissolved	10700	ug/L	2500	03/26/19 10:15	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10467602003	MW17D-GW-032019					
EPA 6010D	Sodium, Dissolved	42600	ug/L	1000	03/26/19 10:15	
EPA 6010D	Vanadium, Dissolved	1.0J	ug/L	15.0	03/26/19 10:15	
EPA 8260B	Carbon disulfide	0.46J	ug/L	1.0	03/28/19 11:39	
SM 2320B	Alkalinity, Total as CaCO3	198	mg/L	5.0	03/29/19 11:21	
SM 2540C	Total Dissolved Solids	391	mg/L	10.0	03/27/19 11:29	
SM 4500-S-2 D	Sulfide, Total	0.024	mg/L	0.020	03/26/19 11:50	
EPA 300.0	Chloride	22.6	mg/L	1.2	03/21/19 21:29	
EPA 300.0	Nitrate as N	0.039J	mg/L	0.10	03/21/19 21:29	
EPA 300.0	Sulfate	60.2	mg/L	1.2	03/21/19 21:29	
EPA 410.4	Chemical Oxygen Demand	25.4J	mg/L	50.0	04/01/19 16:31	
SM 5310C	Total Organic Carbon	8.5	mg/L	1.0	03/29/19 10:48	
10467602004	FD4-GW-032019					
RSK 175	Ethene	6.3J	ug/L	10.0	03/25/19 11:38	
EPA 6010D	Aluminum, Dissolved	174J	ug/L	200	03/26/19 10:17	
EPA 6010D	Barium, Dissolved	85.8	ug/L	10.0	03/26/19 10:17	
EPA 6010D	Calcium, Dissolved	41800	ug/L	500	03/26/19 10:17	
EPA 6010D	Cobalt, Dissolved	1.4J	ug/L	10.0	03/26/19 10:17	
EPA 6010D	Iron, Dissolved	592	ug/L	50.0	03/26/19 10:17	
EPA 6010D	Magnesium, Dissolved	18600	ug/L	500	03/26/19 10:17	
EPA 6010D	Manganese, Dissolved	211	ug/L	5.0	03/26/19 10:17	
EPA 6010D	Potassium, Dissolved	10800	ug/L	2500	03/26/19 10:17	
EPA 6010D	Sodium, Dissolved	43300	ug/L	1000	03/26/19 10:17	
EPA 6010D	Vanadium, Dissolved	1.0J	ug/L	15.0	03/26/19 10:17	
EPA 8260B	Carbon disulfide	0.54J	ug/L	1.0	03/28/19 14:00	
SM 2320B	Alkalinity, Total as CaCO3	213	mg/L	5.0	03/29/19 11:25	
SM 2540C	Total Dissolved Solids	395	mg/L	10.0	03/27/19 11:29	
SM 4500-S-2 D	Sulfide, Total	0.013J	mg/L	0.020	03/26/19 11:54	
EPA 300.0	Chloride	23.3	mg/L	1.2	03/22/19 06:49	
EPA 300.0	Sulfate	61.9	mg/L	1.2	03/22/19 06:49	
EPA 410.4	Chemical Oxygen Demand	27.5J	mg/L	50.0	04/01/19 16:32	
SM 5310C	Total Organic Carbon	8.4	mg/L	1.0	03/29/19 11:03	
10467602005	MW19D-GW-032019					
EPA 6010D	Aluminum, Dissolved	25.3J	ug/L	200	03/26/19 13:52	
EPA 6010D	Barium, Dissolved	10.2	ug/L	10.0	03/26/19 13:52	
EPA 6010D	Cadmium, Dissolved	0.77J	ug/L	3.0	03/26/19 13:52	
EPA 6010D	Calcium, Dissolved	41100	ug/L	500	03/26/19 13:52	
EPA 6010D	Cobalt, Dissolved	1.3J	ug/L	10.0	03/26/19 13:52	
EPA 6010D	Iron, Dissolved	29.6J	ug/L	50.0	03/26/19 13:52	
EPA 6010D	Magnesium, Dissolved	17900	ug/L	500	03/26/19 13:52	
EPA 6010D	Manganese, Dissolved	1.1J	ug/L	5.0	03/26/19 13:52	
EPA 6010D	Nickel, Dissolved	3.6J	ug/L	20.0	03/26/19 13:52	
EPA 6010D	Potassium, Dissolved	4450	ug/L	2500	03/26/19 13:52	
EPA 6010D	Sodium, Dissolved	15200	ug/L	1000	03/26/19 13:52	
EPA 6010D	Vanadium, Dissolved	6.6J	ug/L	15.0	03/26/19 13:52	
EPA 8260B	Carbon disulfide	0.23J	ug/L	1.0	03/28/19 14:24	
EPA 8260B	Carbon tetrachloride	386	ug/L	2.5	03/28/19 19:32	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10467602005	MW19D-GW-032019					
EPA 8260B	Chloroform	21.0	ug/L	4.0	03/28/19 14:24	
SM 2320B	Alkalinity, Total as CaCO ₃	180	mg/L	5.0	03/29/19 11:29	
SM 2540C	Total Dissolved Solids	292	mg/L	10.0	03/27/19 11:29	
EPA 300.0	Chloride	6.8	mg/L	1.2	03/22/19 07:05	
EPA 300.0	Nitrate as N	4.1	mg/L	0.10	03/22/19 07:05	
EPA 300.0	Sulfate	22.5	mg/L	1.2	03/22/19 07:05	
EPA 353.2	Nitrogen, NO ₂ plus NO ₃	4.5	mg/L	0.50	04/04/19 13:37	
SM 5310C	Total Organic Carbon	0.84J	mg/L	1.0	03/29/19 11:17	
10467602006	FD5-GW-032019					
EPA 6010D	Aluminum, Dissolved	20.4J	ug/L	200	03/26/19 13:54	
EPA 6010D	Barium, Dissolved	10.1	ug/L	10.0	03/26/19 13:54	
EPA 6010D	Cadmium, Dissolved	0.63J	ug/L	3.0	03/26/19 13:54	
EPA 6010D	Calcium, Dissolved	40600	ug/L	500	03/26/19 13:54	
EPA 6010D	Cobalt, Dissolved	1.2J	ug/L	10.0	03/26/19 13:54	
EPA 6010D	Iron, Dissolved	28.6J	ug/L	50.0	03/26/19 13:54	
EPA 6010D	Magnesium, Dissolved	17700	ug/L	500	03/26/19 13:54	
EPA 6010D	Manganese, Dissolved	1.1J	ug/L	5.0	03/26/19 13:54	
EPA 6010D	Nickel, Dissolved	1.5J	ug/L	20.0	03/26/19 13:54	
EPA 6010D	Potassium, Dissolved	4400	ug/L	2500	03/26/19 13:54	
EPA 6010D	Sodium, Dissolved	15100	ug/L	1000	03/26/19 13:54	
EPA 6010D	Vanadium, Dissolved	6.4J	ug/L	15.0	03/26/19 13:54	
EPA 8260B	Carbon disulfide	0.26J	ug/L	1.0	03/28/19 12:02	
EPA 8260B	Carbon tetrachloride	400	ug/L	2.5	03/28/19 18:44	
EPA 8260B	Chloroform	21.5	ug/L	4.0	03/28/19 12:02	
SM 2320B	Alkalinity, Total as CaCO ₃	177	mg/L	5.0	03/29/19 11:33	
SM 2540C	Total Dissolved Solids	286	mg/L	10.0	03/27/19 11:29	
EPA 300.0	Chloride	6.7	mg/L	1.2	03/22/19 07:20	
EPA 300.0	Nitrate as N	4.0	mg/L	0.10	03/22/19 07:20	
EPA 300.0	Sulfate	22.5	mg/L	1.2	03/22/19 07:20	
EPA 353.2	Nitrogen, NO ₂ plus NO ₃	4.3	mg/L	0.50	04/04/19 13:38	
SM 5310C	Total Organic Carbon	0.78J	mg/L	1.0	03/29/19 11:31	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Method: RSK 175

Description: RSK 175 GCV Headspace

Client: UPRR_CH2M/Jacobs

Date: April 04, 2019

General Information:

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

Hold Time:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Surrogates:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Duplicate Sample:

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

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Method: EPA 6010D

Description: 6010D MET ICP, Dissolved

Client: UPRR_CH2M/Jacobs

Date: April 04, 2019

General Information:

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

Hold Time:

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

Sample Preparation:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Method: EPA 7470A

Description: 7470A Mercury, Dissolved

Client: UPRR_CH2M/Jacobs

Date: April 04, 2019

General Information:

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

Hold Time:

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

Sample Preparation:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: April 04, 2019

General Information:

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

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

- FD4-GW-032019 (Lab ID: 10467602004)
- FD5-GW-032019 (Lab ID: 10467602006)
- MW17D-GW-032019 (Lab ID: 10467602003)
- MW19D-GW-032019 (Lab ID: 10467602005)
- TB-032019 (Lab ID: 10467602007)

Hold Time:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Internal Standards:

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

Surrogates:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 596233

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10468569001

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

- MSD (Lab ID: 3224890)
 - Acrolein
 - m&p-Xylene

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: April 04, 2019

Analyte Comments:

QC Batch: 596233

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3223555)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- FD4-GW-032019 (Lab ID: 10467602004)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- FD5-GW-032019 (Lab ID: 10467602006)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3223556)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3224889)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3224890)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MW17D-GW-032019 (Lab ID: 10467602003)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MW19D-GW-032019 (Lab ID: 10467602005)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- TB-032019 (Lab ID: 10467602007)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Method: SM 2320B

Description: 2320B Alkalinity

Client: UPRR_CH2M/Jacobs

Date: April 04, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Method: SM 2540C

Description: 2540C Total Dissolved Solids

Client: UPRR_CH2M/Jacobs

Date: April 04, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Duplicate Sample:

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

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Method: SM 4500-S-2 D

Description: 4500S2D Sulfide, Total

Client: UPRR_CH2M/Jacobs

Date: April 04, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 137338

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10467822001,10467822002

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

- MS (Lab ID: 597984)
 - Sulfide, Total
- MS (Lab ID: 597986)
 - Sulfide, Total

Duplicate Sample:

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

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Method: EPA 300.0

Description: 300.0 IC Anions

Client: UPRR_CH2M/Jacobs

Date: April 04, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 595095

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10467529005,10467529006

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

- MS (Lab ID: 3217008)
 - Chloride
 - Nitrate as N
 - Sulfate
- MS (Lab ID: 3217010)
 - Chloride
 - Nitrate as N
 - Sulfate
- MSD (Lab ID: 3217009)
 - Chloride
 - Nitrate as N
 - Sulfate
- MSD (Lab ID: 3217011)
 - Chloride
 - Nitrate as N
 - Sulfate

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Method: EPA 353.2

Description: 353.2 Nitrate + Nitrite

Client: UPRR_CH2M/Jacobs

Date: April 04, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 597595

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10467822001,10467822002

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

- MSD (Lab ID: 3231498)
 - Nitrogen, NO2 plus NO3

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Method: EPA 410.4

Description: 410.4 COD

Client: UPRR_CH2M/Jacobs

Date: April 04, 2019

General Information:

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

Hold Time:

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

Sample Preparation:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Method: SM 5310C

Description: 5310C TOC

Client: UPRR_CH2M/Jacobs

Date: April 04, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Sample: W26-GW-032019 **Lab ID: 10467602001** Collected: 03/20/19 10:00 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		03/25/19 11:17	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/25/19 11:17	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/25/19 11:17	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Aluminum, Dissolved	<15.5	ug/L	200	15.5	1	03/22/19 13:12	03/26/19 10:05	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/22/19 13:12	03/26/19 10:05	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/22/19 13:12	03/26/19 10:05	7440-38-2	
Barium, Dissolved	6.8J	ug/L	10.0	0.18	1	03/22/19 13:12	03/26/19 10:05	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/22/19 13:12	03/26/19 10:05	7440-41-7	
Cadmium, Dissolved	0.83J	ug/L	3.0	0.26	1	03/22/19 13:12	03/26/19 10:05	7440-43-9	
Calcium, Dissolved	36900	ug/L	500	13.9	1	03/22/19 13:12	03/26/19 10:05	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/22/19 13:12	03/26/19 10:05	7440-47-3	
Cobalt, Dissolved	1.7J	ug/L	10.0	0.50	1	03/22/19 13:12	03/26/19 10:05	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/22/19 13:12	03/26/19 10:05	7440-50-8	
Iron, Dissolved	4.5J	ug/L	50.0	4.3	1	03/22/19 13:12	03/26/19 10:05	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/22/19 13:12	03/26/19 10:05	7439-92-1	
Magnesium, Dissolved	10500	ug/L	500	9.8	1	03/22/19 13:12	03/26/19 10:05	7439-95-4	
Manganese, Dissolved	0.64J	ug/L	5.0	0.22	1	03/22/19 13:12	03/26/19 10:05	7439-96-5	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	03/22/19 13:12	03/26/19 10:05	7440-02-0	
Potassium, Dissolved	1990J	ug/L	2500	310	1	03/22/19 13:12	03/26/19 10:05	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/22/19 13:12	03/26/19 10:05	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/22/19 13:12	03/26/19 10:05	7440-22-4	
Sodium, Dissolved	12800	ug/L	1000	21.5	1	03/22/19 13:12	03/26/19 10:05	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/22/19 13:12	03/26/19 10:05	7440-28-0	
Vanadium, Dissolved	7.2J	ug/L	15.0	0.29	1	03/22/19 13:12	03/26/19 10:05	7440-62-2	
Zinc, Dissolved	81.8	ug/L	20.0	2.5	1	03/22/19 13:12	03/26/19 10:05	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/22/19 13:31	03/26/19 14:09	7439-97-6	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO ₃	147	mg/L	5.0	1.0	1		03/29/19 10:49		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	230	mg/L	10.0	5.0	1		03/27/19 11:29		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/26/19 11:47	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	3.8	mg/L	1.2	0.28	1		03/21/19 20:43	16887-00-6	
Nitrate as N	2.1	mg/L	0.10	0.015	1		03/21/19 20:43	14797-55-8	
Sulfate	8.6	mg/L	1.2	0.19	1		03/21/19 20:43	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Sample: W26-GW-032019 **Lab ID: 10467602001** Collected: 03/20/19 10:00 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	2.4	mg/L	0.50	0.088	5		03/28/19 16:45		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	04/01/19 12:04	04/01/19 16:31		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	1.2	mg/L	1.0	0.39	1		03/29/19 10:20	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Sample: No.2-GW-032019 **Lab ID: 10467602002** Collected: 03/20/19 11:20 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	87.6	ug/L	10.0	4.9	1		03/25/19 11:24	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/25/19 11:24	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/25/19 11:24	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Aluminum, Dissolved	<15.5	ug/L	200	15.5	1	03/22/19 13:12	03/26/19 10:13	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/22/19 13:12	03/26/19 10:13	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/22/19 13:12	03/26/19 10:13	7440-38-2	
Barium, Dissolved	18.2	ug/L	10.0	0.18	1	03/22/19 13:12	03/26/19 10:13	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/22/19 13:12	03/26/19 10:13	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	03/22/19 13:12	03/26/19 10:13	7440-43-9	
Calcium, Dissolved	54900	ug/L	500	13.9	1	03/22/19 13:12	03/26/19 10:13	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/22/19 13:12	03/26/19 10:13	7440-47-3	
Cobalt, Dissolved	<0.50	ug/L	10.0	0.50	1	03/22/19 13:12	03/26/19 10:13	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/22/19 13:12	03/26/19 10:13	7440-50-8	
Iron, Dissolved	3520	ug/L	50.0	4.3	1	03/22/19 13:12	03/26/19 10:13	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/22/19 13:12	03/26/19 10:13	7439-92-1	
Magnesium, Dissolved	15500	ug/L	500	9.8	1	03/22/19 13:12	03/26/19 10:13	7439-95-4	
Manganese, Dissolved	152	ug/L	5.0	0.22	1	03/22/19 13:12	03/26/19 10:13	7439-96-5	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	03/22/19 13:12	03/26/19 10:13	7440-02-0	
Potassium, Dissolved	399J	ug/L	2500	310	1	03/22/19 13:12	03/26/19 10:13	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/22/19 13:12	03/26/19 10:13	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/22/19 13:12	03/26/19 10:13	7440-22-4	
Sodium, Dissolved	15700	ug/L	1000	21.5	1	03/22/19 13:12	03/26/19 10:13	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/22/19 13:12	03/26/19 10:13	7440-28-0	
Vanadium, Dissolved	2.5J	ug/L	15.0	0.29	1	03/22/19 13:12	03/26/19 10:13	7440-62-2	
Zinc, Dissolved	15.4J	ug/L	20.0	2.5	1	03/22/19 13:12	03/26/19 10:13	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/22/19 13:31	03/26/19 14:11	7439-97-6	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	239	mg/L	5.0	1.0	1		03/29/19 10:53		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	271	mg/L	10.0	5.0	1		03/27/19 11:29		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/26/19 11:49	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	2.3	mg/L	1.2	0.28	1		03/22/19 07:35	16887-00-6	
Nitrate as N	0.56	mg/L	0.10	0.015	1		03/22/19 07:35	14797-55-8	
Sulfate	2.2	mg/L	1.2	0.19	1		03/22/19 07:35	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Sample: No.2-GW-032019 **Lab ID: 10467602002** Collected: 03/20/19 11:20 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	0.71	mg/L	0.10	0.018	1		03/28/19 16:43		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	04/01/19 12:04	04/01/19 16:31		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	1.4J	mg/L	2.0	0.79	2		03/29/19 10:34	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467602

Sample: MW17D-GW-032019 **Lab ID: 10467602003** Collected: 03/20/19 13:00 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		03/25/19 11:31	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/25/19 11:31	74-84-0	
Ethene	5.8J	ug/L	10.0	2.9	1		03/25/19 11:31	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Aluminum, Dissolved	188J	ug/L	200	15.5	1	03/22/19 13:12	03/26/19 10:15	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/22/19 13:12	03/26/19 10:15	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/22/19 13:12	03/26/19 10:15	7440-38-2	
Barium, Dissolved	85.5	ug/L	10.0	0.18	1	03/22/19 13:12	03/26/19 10:15	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/22/19 13:12	03/26/19 10:15	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	03/22/19 13:12	03/26/19 10:15	7440-43-9	
Calcium, Dissolved	41700	ug/L	500	13.9	1	03/22/19 13:12	03/26/19 10:15	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/22/19 13:12	03/26/19 10:15	7440-47-3	
Cobalt, Dissolved	1.6J	ug/L	10.0	0.50	1	03/22/19 13:12	03/26/19 10:15	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/22/19 13:12	03/26/19 10:15	7440-50-8	
Iron, Dissolved	585	ug/L	50.0	4.3	1	03/22/19 13:12	03/26/19 10:15	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/22/19 13:12	03/26/19 10:15	7439-92-1	
Magnesium, Dissolved	18500	ug/L	500	9.8	1	03/22/19 13:12	03/26/19 10:15	7439-95-4	
Manganese, Dissolved	209	ug/L	5.0	0.22	1	03/22/19 13:12	03/26/19 10:15	7439-96-5	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	03/22/19 13:12	03/26/19 10:15	7440-02-0	
Potassium, Dissolved	10700	ug/L	2500	310	1	03/22/19 13:12	03/26/19 10:15	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/22/19 13:12	03/26/19 10:15	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/22/19 13:12	03/26/19 10:15	7440-22-4	
Sodium, Dissolved	42600	ug/L	1000	21.5	1	03/22/19 13:12	03/26/19 10:15	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/22/19 13:12	03/26/19 10:15	7440-28-0	
Vanadium, Dissolved	1.0J	ug/L	15.0	0.29	1	03/22/19 13:12	03/26/19 10:15	7440-62-2	
Zinc, Dissolved	<2.5	ug/L	20.0	2.5	1	03/22/19 13:12	03/26/19 10:15	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/22/19 13:31	03/26/19 14:18	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/28/19 11:39	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/28/19 11:39	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 11:39	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/28/19 11:39	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/28/19 11:39	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 11:39	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/28/19 11:39	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		03/28/19 11:39	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 11:39	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/28/19 11:39	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/28/19 11:39	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/28/19 11:39	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/28/19 11:39	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/28/19 11:39	106-93-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Sample: MW17D-GW-032019 Lab ID: 10467602003 Collected: 03/20/19 13:00 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 11:39	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/28/19 11:39	107-06-2	L2
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/28/19 11:39	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/28/19 11:39	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		03/28/19 11:39	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/28/19 11:39	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/28/19 11:39	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 11:39	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/28/19 11:39	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/28/19 11:39	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/28/19 11:39	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/28/19 11:39	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/28/19 11:39	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		03/28/19 11:39	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/28/19 11:39	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/28/19 11:39	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/28/19 11:39	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/28/19 11:39	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/28/19 11:39	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/28/19 11:39	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 11:39	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/28/19 11:39	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/28/19 11:39	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/28/19 11:39	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/28/19 11:39	74-83-9	
Carbon disulfide	0.46J	ug/L	1.0	0.078	1		03/28/19 11:39	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/28/19 11:39	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 11:39	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/28/19 11:39	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/28/19 11:39	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/28/19 11:39	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/28/19 11:39	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/28/19 11:39	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/28/19 11:39	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/28/19 11:39	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/28/19 11:39	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/28/19 11:39	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 11:39	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/28/19 11:39	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		03/28/19 11:39	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/28/19 11:39	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/28/19 11:39	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/28/19 11:39	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/28/19 11:39	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/28/19 11:39	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/28/19 11:39	109-99-9	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Sample: MW17D-GW-032019 **Lab ID: 10467602003** Collected: 03/20/19 13:00 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Toluene	<0.083	ug/L	0.50	0.083	1		03/28/19 11:39	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/28/19 11:39	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/28/19 11:39	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/28/19 11:39	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/28/19 11:39	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/28/19 11:39	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/28/19 11:39	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/28/19 11:39	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/28/19 11:39	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/28/19 11:39	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/28/19 11:39	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/28/19 11:39	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/28/19 11:39	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/28/19 11:39	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/28/19 11:39	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/28/19 11:39	75-65-0	
tert-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/28/19 11:39	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/28/19 11:39	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		03/28/19 11:39	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/28/19 11:39	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	104	%	75-136		1		03/28/19 11:39	17060-07-0	
Toluene-d8 (S)	110	%	75-125		1		03/28/19 11:39	2037-26-5	
4-Bromofluorobenzene (S)	99	%	75-125		1		03/28/19 11:39	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	198	mg/L	5.0	1.0	1		03/29/19 11:21		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	391	mg/L	10.0	5.0	1		03/27/19 11:29		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	0.024	mg/L	0.020	0.0054	1		03/26/19 11:50	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	22.6	mg/L	1.2	0.28	1		03/21/19 21:29	16887-00-6	
Nitrate as N	0.039J	mg/L	0.10	0.015	1		03/21/19 21:29	14797-55-8	
Sulfate	60.2	mg/L	1.2	0.19	1		03/21/19 21:29	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	<0.018	mg/L	0.10	0.018	1		04/04/19 13:34		
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	25.4J	mg/L	50.0	17.0	1	04/01/19 12:04	04/01/19 16:31		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Sample: MW17D-GW-032019 **Lab ID: 10467602003** Collected: 03/20/19 13:00 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	8.5	mg/L	1.0	0.39	1		03/29/19 10:48	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467602

Sample: FD4-GW-032019 **Lab ID: 10467602004** Collected: 03/20/19 13:05 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		03/25/19 11:38	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/25/19 11:38	74-84-0	
Ethene	6.3J	ug/L	10.0	2.9	1		03/25/19 11:38	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Aluminum, Dissolved	174J	ug/L	200	15.5	1	03/22/19 13:12	03/26/19 10:17	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/22/19 13:12	03/26/19 10:17	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/22/19 13:12	03/26/19 10:17	7440-38-2	
Barium, Dissolved	85.8	ug/L	10.0	0.18	1	03/22/19 13:12	03/26/19 10:17	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/22/19 13:12	03/26/19 10:17	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	03/22/19 13:12	03/26/19 10:17	7440-43-9	
Calcium, Dissolved	41800	ug/L	500	13.9	1	03/22/19 13:12	03/26/19 10:17	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/22/19 13:12	03/26/19 10:17	7440-47-3	
Cobalt, Dissolved	1.4J	ug/L	10.0	0.50	1	03/22/19 13:12	03/26/19 10:17	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/22/19 13:12	03/26/19 10:17	7440-50-8	
Iron, Dissolved	592	ug/L	50.0	4.3	1	03/22/19 13:12	03/26/19 10:17	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/22/19 13:12	03/26/19 10:17	7439-92-1	
Magnesium, Dissolved	18600	ug/L	500	9.8	1	03/22/19 13:12	03/26/19 10:17	7439-95-4	
Manganese, Dissolved	211	ug/L	5.0	0.22	1	03/22/19 13:12	03/26/19 10:17	7439-96-5	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	03/22/19 13:12	03/26/19 10:17	7440-02-0	
Potassium, Dissolved	10800	ug/L	2500	310	1	03/22/19 13:12	03/26/19 10:17	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/22/19 13:12	03/26/19 10:17	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/22/19 13:12	03/26/19 10:17	7440-22-4	
Sodium, Dissolved	43300	ug/L	1000	21.5	1	03/22/19 13:12	03/26/19 10:17	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/22/19 13:12	03/26/19 10:17	7440-28-0	
Vanadium, Dissolved	1.0J	ug/L	15.0	0.29	1	03/22/19 13:12	03/26/19 10:17	7440-62-2	
Zinc, Dissolved	<2.5	ug/L	20.0	2.5	1	03/22/19 13:12	03/26/19 10:17	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/22/19 13:31	03/26/19 14:20	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/28/19 14:00	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/28/19 14:00	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 14:00	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/28/19 14:00	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/28/19 14:00	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 14:00	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/28/19 14:00	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		03/28/19 14:00	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 14:00	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/28/19 14:00	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/28/19 14:00	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/28/19 14:00	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/28/19 14:00	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/28/19 14:00	106-93-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Sample: **FD4-GW-032019** Lab ID: **10467602004** Collected: 03/20/19 13:05 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 14:00	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/28/19 14:00	107-06-2	L2
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/28/19 14:00	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/28/19 14:00	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		03/28/19 14:00	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/28/19 14:00	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/28/19 14:00	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 14:00	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/28/19 14:00	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/28/19 14:00	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/28/19 14:00	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/28/19 14:00	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/28/19 14:00	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		03/28/19 14:00	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/28/19 14:00	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/28/19 14:00	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/28/19 14:00	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/28/19 14:00	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/28/19 14:00	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/28/19 14:00	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 14:00	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/28/19 14:00	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/28/19 14:00	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/28/19 14:00	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/28/19 14:00	74-83-9	
Carbon disulfide	0.54J	ug/L	1.0	0.078	1		03/28/19 14:00	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/28/19 14:00	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 14:00	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/28/19 14:00	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/28/19 14:00	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/28/19 14:00	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/28/19 14:00	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/28/19 14:00	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/28/19 14:00	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/28/19 14:00	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/28/19 14:00	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/28/19 14:00	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 14:00	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/28/19 14:00	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		03/28/19 14:00	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/28/19 14:00	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/28/19 14:00	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/28/19 14:00	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/28/19 14:00	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/28/19 14:00	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/28/19 14:00	109-99-9	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467602

Sample: FD4-GW-032019 **Lab ID: 10467602004** Collected: 03/20/19 13:05 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Toluene	<0.083	ug/L	0.50	0.083	1		03/28/19 14:00	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/28/19 14:00	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/28/19 14:00	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/28/19 14:00	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/28/19 14:00	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/28/19 14:00	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/28/19 14:00	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/28/19 14:00	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/28/19 14:00	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/28/19 14:00	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/28/19 14:00	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/28/19 14:00	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/28/19 14:00	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/28/19 14:00	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/28/19 14:00	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/28/19 14:00	75-65-0	
tert-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/28/19 14:00	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/28/19 14:00	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		03/28/19 14:00	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/28/19 14:00	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%	75-136		1		03/28/19 14:00	17060-07-0	
Toluene-d8 (S)	108	%	75-125		1		03/28/19 14:00	2037-26-5	
4-Bromofluorobenzene (S)	101	%	75-125		1		03/28/19 14:00	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	213	mg/L	5.0	1.0	1		03/29/19 11:25		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	395	mg/L	10.0	5.0	1		03/27/19 11:29		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	0.013J	mg/L	0.020	0.0054	1		03/26/19 11:54	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	23.3	mg/L	1.2	0.28	1		03/22/19 06:49	16887-00-6	
Nitrate as N	<0.015	mg/L	0.10	0.015	1		03/22/19 06:49	14797-55-8	
Sulfate	61.9	mg/L	1.2	0.19	1		03/22/19 06:49	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	<0.018	mg/L	0.10	0.018	1		04/04/19 13:35		
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	27.5J	mg/L	50.0	17.0	1	04/01/19 12:04	04/01/19 16:32		

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Sample: FD4-GW-032019 **Lab ID: 10467602004** Collected: 03/20/19 13:05 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	8.4	mg/L	1.0	0.39	1		03/29/19 11:03	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467602

Sample: **MW19D-GW-032019** Lab ID: **10467602005** Collected: 03/20/19 14:45 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace		Analytical Method: RSK 175							
Methane	<4.9	ug/L	10.0	4.9	1		03/25/19 11:45	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/25/19 11:45	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/25/19 11:45	74-85-1	
6010D MET ICP, Dissolved		Analytical Method: EPA 6010D Preparation Method: EPA 3010							
Aluminum, Dissolved	25.3J	ug/L	200	15.5	1	03/22/19 13:12	03/26/19 13:52	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/22/19 13:12	03/26/19 13:52	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/22/19 13:12	03/26/19 13:52	7440-38-2	
Barium, Dissolved	10.2	ug/L	10.0	0.18	1	03/22/19 13:12	03/26/19 13:52	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/22/19 13:12	03/26/19 13:52	7440-41-7	
Cadmium, Dissolved	0.77J	ug/L	3.0	0.26	1	03/22/19 13:12	03/26/19 13:52	7440-43-9	
Calcium, Dissolved	41100	ug/L	500	13.9	1	03/22/19 13:12	03/26/19 13:52	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/22/19 13:12	03/26/19 13:52	7440-47-3	
Cobalt, Dissolved	1.3J	ug/L	10.0	0.50	1	03/22/19 13:12	03/26/19 13:52	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/22/19 13:12	03/26/19 13:52	7440-50-8	
Iron, Dissolved	29.6J	ug/L	50.0	4.3	1	03/22/19 13:12	03/26/19 13:52	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/22/19 13:12	03/26/19 13:52	7439-92-1	
Magnesium, Dissolved	17900	ug/L	500	9.8	1	03/22/19 13:12	03/26/19 13:52	7439-95-4	
Manganese, Dissolved	1.1J	ug/L	5.0	0.22	1	03/22/19 13:12	03/26/19 13:52	7439-96-5	
Nickel, Dissolved	3.6J	ug/L	20.0	1.1	1	03/22/19 13:12	03/26/19 13:52	7440-02-0	
Potassium, Dissolved	4450	ug/L	2500	310	1	03/22/19 13:12	03/26/19 13:52	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/22/19 13:12	03/26/19 13:52	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/22/19 13:12	03/26/19 13:52	7440-22-4	
Sodium, Dissolved	15200	ug/L	1000	21.5	1	03/22/19 13:12	03/26/19 13:52	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/22/19 13:12	03/26/19 13:52	7440-28-0	
Vanadium, Dissolved	6.6J	ug/L	15.0	0.29	1	03/22/19 13:12	03/26/19 13:52	7440-62-2	
Zinc, Dissolved	<2.5	ug/L	20.0	2.5	1	03/22/19 13:12	03/26/19 13:52	7440-66-6	
7470A Mercury, Dissolved		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/22/19 13:31	03/26/19 14:22	7439-97-6	
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/28/19 14:24	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/28/19 14:24	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 14:24	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/28/19 14:24	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/28/19 14:24	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 14:24	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/28/19 14:24	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		03/28/19 14:24	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 14:24	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/28/19 14:24	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/28/19 14:24	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/28/19 14:24	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/28/19 14:24	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/28/19 14:24	106-93-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467602

Sample: **MW19D-GW-032019** Lab ID: **10467602005** Collected: 03/20/19 14:45 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 14:24	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/28/19 14:24	107-06-2	L2
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/28/19 14:24	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/28/19 14:24	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		03/28/19 14:24	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/28/19 14:24	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/28/19 14:24	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 14:24	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/28/19 14:24	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/28/19 14:24	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/28/19 14:24	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/28/19 14:24	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/28/19 14:24	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		03/28/19 14:24	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/28/19 14:24	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/28/19 14:24	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/28/19 14:24	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/28/19 14:24	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/28/19 14:24	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/28/19 14:24	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 14:24	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/28/19 14:24	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/28/19 14:24	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/28/19 14:24	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/28/19 14:24	74-83-9	
Carbon disulfide	0.23J	ug/L	1.0	0.078	1		03/28/19 14:24	75-15-0	
Carbon tetrachloride	386	ug/L	2.5	0.94	5		03/28/19 19:32	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 14:24	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/28/19 14:24	75-00-3	
Chloroform	21.0	ug/L	4.0	0.45	1		03/28/19 14:24	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/28/19 14:24	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/28/19 14:24	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/28/19 14:24	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/28/19 14:24	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/28/19 14:24	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/28/19 14:24	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/28/19 14:24	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 14:24	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/28/19 14:24	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		03/28/19 14:24	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/28/19 14:24	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/28/19 14:24	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/28/19 14:24	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/28/19 14:24	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/28/19 14:24	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/28/19 14:24	109-99-9	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Sample: MW19D-GW-032019 Lab ID: 10467602005 Collected: 03/20/19 14:45 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Toluene	<0.083	ug/L	0.50	0.083	1		03/28/19 14:24	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/28/19 14:24	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/28/19 14:24	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/28/19 14:24	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/28/19 14:24	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/28/19 14:24	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/28/19 14:24	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/28/19 14:24	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/28/19 14:24	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/28/19 14:24	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/28/19 14:24	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/28/19 14:24	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/28/19 14:24	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/28/19 14:24	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/28/19 14:24	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/28/19 14:24	75-65-0	
tert-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/28/19 14:24	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/28/19 14:24	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		03/28/19 14:24	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/28/19 14:24	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%	75-136		1		03/28/19 14:24	17060-07-0	
Toluene-d8 (S)	109	%	75-125		1		03/28/19 14:24	2037-26-5	
4-Bromofluorobenzene (S)	100	%	75-125		1		03/28/19 14:24	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	180	mg/L	5.0	1.0	1		03/29/19 11:29		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	292	mg/L	10.0	5.0	1		03/27/19 11:29		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/26/19 12:06	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	6.8	mg/L	1.2	0.28	1		03/22/19 07:05	16887-00-6	
Nitrate as N	4.1	mg/L	0.10	0.015	1		03/22/19 07:05	14797-55-8	
Sulfate	22.5	mg/L	1.2	0.19	1		03/22/19 07:05	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	4.5	mg/L	0.50	0.088	5		04/04/19 13:37		
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	04/01/19 12:04	04/01/19 16:32		

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Sample: MW19D-GW-032019 **Lab ID: 10467602005** Collected: 03/20/19 14:45 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	0.84J	mg/L	1.0	0.39	1		03/29/19 11:17	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467602

Sample: FD5-GW-032019 **Lab ID: 10467602006** Collected: 03/20/19 14:50 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace		Analytical Method: RSK 175							
Methane	<4.9	ug/L	10.0	4.9	1		03/25/19 12:18	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/25/19 12:18	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/25/19 12:18	74-85-1	
6010D MET ICP, Dissolved		Analytical Method: EPA 6010D Preparation Method: EPA 3010							
Aluminum, Dissolved	20.4J	ug/L	200	15.5	1	03/22/19 13:12	03/26/19 13:54	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/22/19 13:12	03/26/19 13:54	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/22/19 13:12	03/26/19 13:54	7440-38-2	
Barium, Dissolved	10.1	ug/L	10.0	0.18	1	03/22/19 13:12	03/26/19 13:54	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/22/19 13:12	03/26/19 13:54	7440-41-7	
Cadmium, Dissolved	0.63J	ug/L	3.0	0.26	1	03/22/19 13:12	03/26/19 13:54	7440-43-9	
Calcium, Dissolved	40600	ug/L	500	13.9	1	03/22/19 13:12	03/26/19 13:54	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/22/19 13:12	03/26/19 13:54	7440-47-3	
Cobalt, Dissolved	1.2J	ug/L	10.0	0.50	1	03/22/19 13:12	03/26/19 13:54	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/22/19 13:12	03/26/19 13:54	7440-50-8	
Iron, Dissolved	28.6J	ug/L	50.0	4.3	1	03/22/19 13:12	03/26/19 13:54	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/22/19 13:12	03/26/19 13:54	7439-92-1	
Magnesium, Dissolved	17700	ug/L	500	9.8	1	03/22/19 13:12	03/26/19 13:54	7439-95-4	
Manganese, Dissolved	1.1J	ug/L	5.0	0.22	1	03/22/19 13:12	03/26/19 13:54	7439-96-5	
Nickel, Dissolved	1.5J	ug/L	20.0	1.1	1	03/22/19 13:12	03/26/19 13:54	7440-02-0	
Potassium, Dissolved	4400	ug/L	2500	310	1	03/22/19 13:12	03/26/19 13:54	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/22/19 13:12	03/26/19 13:54	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/22/19 13:12	03/26/19 13:54	7440-22-4	
Sodium, Dissolved	15100	ug/L	1000	21.5	1	03/22/19 13:12	03/26/19 13:54	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/22/19 13:12	03/26/19 13:54	7440-28-0	
Vanadium, Dissolved	6.4J	ug/L	15.0	0.29	1	03/22/19 13:12	03/26/19 13:54	7440-62-2	
Zinc, Dissolved	<2.5	ug/L	20.0	2.5	1	03/22/19 13:12	03/26/19 13:54	7440-66-6	
7470A Mercury, Dissolved		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/22/19 13:31	03/26/19 14:24	7439-97-6	
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/28/19 12:02	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/28/19 12:02	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 12:02	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/28/19 12:02	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/28/19 12:02	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 12:02	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/28/19 12:02	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		03/28/19 12:02	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 12:02	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/28/19 12:02	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/28/19 12:02	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/28/19 12:02	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/28/19 12:02	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/28/19 12:02	106-93-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467602

Sample: **FD5-GW-032019** Lab ID: **10467602006** Collected: 03/20/19 14:50 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 12:02	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/28/19 12:02	107-06-2	L2
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/28/19 12:02	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/28/19 12:02	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		03/28/19 12:02	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/28/19 12:02	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/28/19 12:02	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 12:02	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/28/19 12:02	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/28/19 12:02	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/28/19 12:02	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/28/19 12:02	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/28/19 12:02	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		03/28/19 12:02	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/28/19 12:02	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/28/19 12:02	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/28/19 12:02	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/28/19 12:02	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/28/19 12:02	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/28/19 12:02	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 12:02	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/28/19 12:02	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/28/19 12:02	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/28/19 12:02	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/28/19 12:02	74-83-9	
Carbon disulfide	0.26J	ug/L	1.0	0.078	1		03/28/19 12:02	75-15-0	
Carbon tetrachloride	400	ug/L	2.5	0.94	5		03/28/19 18:44	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 12:02	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/28/19 12:02	75-00-3	
Chloroform	21.5	ug/L	4.0	0.45	1		03/28/19 12:02	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/28/19 12:02	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/28/19 12:02	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/28/19 12:02	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/28/19 12:02	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/28/19 12:02	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/28/19 12:02	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/28/19 12:02	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 12:02	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/28/19 12:02	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		03/28/19 12:02	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/28/19 12:02	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/28/19 12:02	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/28/19 12:02	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/28/19 12:02	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/28/19 12:02	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/28/19 12:02	109-99-9	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Sample: **FD5-GW-032019** Lab ID: **10467602006** Collected: 03/20/19 14:50 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level Analytical Method: EPA 8260B									
Toluene	<0.083	ug/L	0.50	0.083	1		03/28/19 12:02	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/28/19 12:02	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/28/19 12:02	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/28/19 12:02	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/28/19 12:02	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/28/19 12:02	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/28/19 12:02	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/28/19 12:02	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/28/19 12:02	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/28/19 12:02	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/28/19 12:02	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/28/19 12:02	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/28/19 12:02	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/28/19 12:02	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/28/19 12:02	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/28/19 12:02	75-65-0	
tert-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/28/19 12:02	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/28/19 12:02	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		03/28/19 12:02	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/28/19 12:02	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%	75-136		1		03/28/19 12:02	17060-07-0	
Toluene-d8 (S)	109	%	75-125		1		03/28/19 12:02	2037-26-5	
4-Bromofluorobenzene (S)	99	%	75-125		1		03/28/19 12:02	460-00-4	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	177	mg/L	5.0	1.0	1		03/29/19 11:33		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	286	mg/L	10.0	5.0	1		03/27/19 11:29		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/26/19 12:08	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	6.7	mg/L	1.2	0.28	1		03/22/19 07:20	16887-00-6	
Nitrate as N	4.0	mg/L	0.10	0.015	1		03/22/19 07:20	14797-55-8	
Sulfate	22.5	mg/L	1.2	0.19	1		03/22/19 07:20	14808-79-8	
353.2 Nitrate + Nitrite Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	4.3	mg/L	0.50	0.088	5		04/04/19 13:38		
410.4 COD Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	04/01/19 12:04	04/01/19 16:33		

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Sample: FD5-GW-032019 **Lab ID: 10467602006** Collected: 03/20/19 14:50 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	0.78J	mg/L	1.0	0.39	1		03/29/19 11:31	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467602

Sample: TB-032019 **Lab ID: 10467602007** Collected: 03/20/19 07:00 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/28/19 16:22	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/28/19 16:22	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 16:22	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/28/19 16:22	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/28/19 16:22	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 16:22	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/28/19 16:22	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		03/28/19 16:22	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 16:22	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/28/19 16:22	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/28/19 16:22	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/28/19 16:22	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/28/19 16:22	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/28/19 16:22	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 16:22	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/28/19 16:22	107-06-2	L2
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/28/19 16:22	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/28/19 16:22	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		03/28/19 16:22	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/28/19 16:22	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/28/19 16:22	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 16:22	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/28/19 16:22	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/28/19 16:22	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/28/19 16:22	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/28/19 16:22	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/28/19 16:22	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		03/28/19 16:22	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/28/19 16:22	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/28/19 16:22	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/28/19 16:22	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/28/19 16:22	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/28/19 16:22	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/28/19 16:22	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 16:22	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/28/19 16:22	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/28/19 16:22	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/28/19 16:22	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/28/19 16:22	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/28/19 16:22	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/28/19 16:22	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 16:22	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/28/19 16:22	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/28/19 16:22	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/28/19 16:22	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/28/19 16:22	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Sample: TB-032019 **Lab ID: 10467602007** Collected: 03/20/19 07:00 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/28/19 16:22	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/28/19 16:22	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/28/19 16:22	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/28/19 16:22	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/28/19 16:22	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 16:22	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/28/19 16:22	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		03/28/19 16:22	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/28/19 16:22	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/28/19 16:22	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/28/19 16:22	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/28/19 16:22	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/28/19 16:22	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/28/19 16:22	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		03/28/19 16:22	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/28/19 16:22	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/28/19 16:22	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/28/19 16:22	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/28/19 16:22	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/28/19 16:22	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/28/19 16:22	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/28/19 16:22	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/28/19 16:22	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/28/19 16:22	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/28/19 16:22	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/28/19 16:22	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/28/19 16:22	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/28/19 16:22	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/28/19 16:22	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/28/19 16:22	75-65-0	
tert-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/28/19 16:22	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/28/19 16:22	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		03/28/19 16:22	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/28/19 16:22	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%	75-136		1		03/28/19 16:22	17060-07-0	
Toluene-d8 (S)	106	%	75-125		1		03/28/19 16:22	2037-26-5	
4-Bromofluorobenzene (S)	101	%	75-125		1		03/28/19 16:22	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Project No.: 10467602

QC Batch: 595160 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 GCV HEADSPACE
Associated Lab Samples: 10467602001, 10467602002, 10467602003, 10467602004, 10467602005, 10467602006

METHOD BLANK: 3217458 Matrix: Water
Associated Lab Samples: 10467602001, 10467602002, 10467602003, 10467602004, 10467602005, 10467602006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	03/25/19 10:25	
Ethene	ug/L	<2.9	10.0	2.9	03/25/19 10:25	
Methane	ug/L	<4.9	10.0	4.9	03/25/19 10:25	

LABORATORY CONTROL SAMPLE & LCSD: 3217459

Parameter	Units	3217459		3217460		% Rec Limits	RPD	Max RPD	Qualifiers
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec				
Ethane	ug/L	114	106	101	93	89	85-115	5	20
Ethene	ug/L	106	98.8	94.3	93	89	85-115	5	20
Methane	ug/L	60.7	56.2	53.7	93	88	85-115	5	20

SAMPLE DUPLICATE: 3217461

Parameter	Units	60297300001 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	ND	<3.0		20	
Ethene	ug/L	ND	<2.9		20	
Methane	ug/L	ND	<4.9		20	

SAMPLE DUPLICATE: 3217462

Parameter	Units	10467602006 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<3.0	<3.0		20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	<4.9	<4.9		20	

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

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

QC Batch: 595090

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470A Mercury Water Dissolved

Associated Lab Samples: 10467602001, 10467602002, 10467602003, 10467602004, 10467602005, 10467602006

METHOD BLANK: 3216978

Matrix: Water

Associated Lab Samples: 10467602001, 10467602002, 10467602003, 10467602004, 10467602005, 10467602006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.078	0.20	0.078	03/26/19 14:05	

LABORATORY CONTROL SAMPLE: 3216979

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.3	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3216980 3216981

Parameter	Units	10467602002		3216981		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Mercury, Dissolved	ug/L	<0.078	5	5	5.6	5.4	112	108	80-120	4	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

QC Batch: 595080

Analysis Method: EPA 6010D

QC Batch Method: EPA 3010

Analysis Description: 6010D Water Dissolved

Associated Lab Samples: 10467602001, 10467602002, 10467602003, 10467602004, 10467602005, 10467602006

METHOD BLANK: 3216932

Matrix: Water

Associated Lab Samples: 10467602001, 10467602002, 10467602003, 10467602004, 10467602005, 10467602006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<15.5	200	15.5	03/26/19 10:02	
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	03/26/19 10:02	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	03/26/19 10:02	
Barium, Dissolved	ug/L	<0.18	10.0	0.18	03/26/19 10:02	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	03/26/19 10:02	
Cadmium, Dissolved	ug/L	<0.26	3.0	0.26	03/26/19 10:02	
Calcium, Dissolved	ug/L	<13.9	500	13.9	03/26/19 10:02	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	03/26/19 10:02	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	03/26/19 10:02	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	03/26/19 10:02	
Iron, Dissolved	ug/L	<4.3	50.0	4.3	03/26/19 10:02	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	03/26/19 10:02	
Magnesium, Dissolved	ug/L	<9.8	500	9.8	03/26/19 10:02	
Manganese, Dissolved	ug/L	<0.22	5.0	0.22	03/26/19 10:02	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	03/26/19 10:02	
Potassium, Dissolved	ug/L	<310	2500	310	03/26/19 10:02	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	03/26/19 10:02	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	03/26/19 10:02	
Sodium, Dissolved	ug/L	<21.5	1000	21.5	03/26/19 10:02	
Thallium, Dissolved	ug/L	<4.3	20.0	4.3	03/26/19 10:02	
Vanadium, Dissolved	ug/L	<0.29	15.0	0.29	03/26/19 10:02	
Zinc, Dissolved	ug/L	<2.5	20.0	2.5	03/26/19 10:02	

LABORATORY CONTROL SAMPLE: 3216933

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	20500	103	80-120	
Antimony, Dissolved	ug/L	1000	999	100	80-120	
Arsenic, Dissolved	ug/L	1000	952	95	80-120	
Barium, Dissolved	ug/L	1000	970	97	80-120	
Beryllium, Dissolved	ug/L	1000	993	99	80-120	
Cadmium, Dissolved	ug/L	1000	978	98	80-120	
Calcium, Dissolved	ug/L	20000	19100	95	80-120	
Chromium, Dissolved	ug/L	1000	977	98	80-120	
Cobalt, Dissolved	ug/L	1000	982	98	80-120	
Copper, Dissolved	ug/L	1000	954	95	80-120	
Iron, Dissolved	ug/L	20000	19300	97	80-120	
Lead, Dissolved	ug/L	1000	981	98	80-120	
Magnesium, Dissolved	ug/L	20000	19200	96	80-120	
Manganese, Dissolved	ug/L	1000	992	99	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

LABORATORY CONTROL SAMPLE: 3216933

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nickel, Dissolved	ug/L	1000	973	97	80-120	
Potassium, Dissolved	ug/L	20000	19200	96	80-120	
Selenium, Dissolved	ug/L	1000	1040	104	80-120	
Silver, Dissolved	ug/L	500	491	98	80-120	
Sodium, Dissolved	ug/L	20000	19500	97	80-120	
Thallium, Dissolved	ug/L	1000	975	98	80-120	
Vanadium, Dissolved	ug/L	1000	972	97	80-120	
Zinc, Dissolved	ug/L	1000	984	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3216934 3216935

Parameter	Units	MS 10467602001		MSD 3216935		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	MS Result							
Aluminum, Dissolved	ug/L	<15.5	20000	20000	20800	20200	104	101	75-125	3	20	
Antimony, Dissolved	ug/L	<7.0	1000	1000	1010	1010	101	101	75-125	0	20	
Arsenic, Dissolved	ug/L	<3.8	1000	1000	967	946	97	95	75-125	2	20	
Barium, Dissolved	ug/L	6.8J	1000	1000	1000	969	100	96	75-125	3	20	
Beryllium, Dissolved	ug/L	<0.12	1000	1000	1020	991	102	99	75-125	3	20	
Cadmium, Dissolved	ug/L	0.83J	1000	1000	990	971	99	97	75-125	2	20	
Calcium, Dissolved	ug/L	36900	20000	20000	56700	56200	99	96	75-125	1	20	
Chromium, Dissolved	ug/L	<0.49	1000	1000	997	969	100	97	75-125	3	20	
Cobalt, Dissolved	ug/L	1.7J	1000	1000	982	955	98	95	75-125	3	20	
Copper, Dissolved	ug/L	<1.2	1000	1000	974	936	97	94	75-125	4	20	
Iron, Dissolved	ug/L	4.5J	20000	20000	19600	19200	98	96	75-125	2	20	
Lead, Dissolved	ug/L	<2.0	1000	1000	990	966	99	96	75-125	2	20	
Magnesium, Dissolved	ug/L	10500	20000	20000	30700	30200	101	98	75-125	2	20	
Manganese, Dissolved	ug/L	0.64J	1000	1000	998	973	100	97	75-125	3	20	
Nickel, Dissolved	ug/L	<1.1	1000	1000	975	949	97	95	75-125	3	20	
Potassium, Dissolved	ug/L	1990J	20000	20000	22200	21600	101	98	75-125	3	20	
Selenium, Dissolved	ug/L	<5.8	1000	1000	1040	1020	104	102	75-125	3	20	
Silver, Dissolved	ug/L	<0.38	500	500	502	487	100	97	75-125	3	20	
Sodium, Dissolved	ug/L	12800	20000	20000	32700	31600	99	94	75-125	3	20	
Thallium, Dissolved	ug/L	<4.3	1000	1000	1000	975	100	97	75-125	2	20	
Vanadium, Dissolved	ug/L	7.2J	1000	1000	994	968	99	96	75-125	3	20	
Zinc, Dissolved	ug/L	81.8	1000	1000	1060	1040	98	96	75-125	2	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

QC Batch: 596233 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10467602003, 10467602004, 10467602005, 10467602006, 10467602007

METHOD BLANK: 3223555 Matrix: Water
Associated Lab Samples: 10467602003, 10467602004, 10467602005, 10467602006, 10467602007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	03/28/19 10:27	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	03/28/19 10:27	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	03/28/19 10:27	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	03/28/19 10:27	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	03/28/19 10:27	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	03/28/19 10:27	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	03/28/19 10:27	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	03/28/19 10:27	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	03/28/19 10:27	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	03/28/19 10:27	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	03/28/19 10:27	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	03/28/19 10:27	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	03/28/19 10:27	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	03/28/19 10:27	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	03/28/19 10:27	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	03/28/19 10:27	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	03/28/19 10:27	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	03/28/19 10:27	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	03/28/19 10:27	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/28/19 10:27	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	03/28/19 10:27	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	03/28/19 10:27	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	03/28/19 10:27	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	03/28/19 10:27	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	03/28/19 10:27	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	03/28/19 10:27	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	03/28/19 10:27	
2-Hexanone	ug/L	<0.88	5.0	0.88	03/28/19 10:27	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/28/19 10:27	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	03/28/19 10:27	
Acetone	ug/L	<9.2	20.0	9.2	03/28/19 10:27	
Acrolein	ug/L	<1.2	10.0	1.2	03/28/19 10:27	
Acrylonitrile	ug/L	<0.91	10.0	0.91	03/28/19 10:27	
Benzene	ug/L	<0.10	0.50	0.10	03/28/19 10:27	
Bromobenzene	ug/L	<0.21	0.50	0.21	03/28/19 10:27	
Bromochloromethane	ug/L	<0.27	1.0	0.27	03/28/19 10:27	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	03/28/19 10:27	
Bromoform	ug/L	<0.80	4.0	0.80	03/28/19 10:27	
Bromomethane	ug/L	<1.8	4.0	1.8	03/28/19 10:27	
Carbon disulfide	ug/L	<0.078	1.0	0.078	03/28/19 10:27	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	03/28/19 10:27	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

METHOD BLANK: 3223555

Matrix: Water

Associated Lab Samples: 10467602003, 10467602004, 10467602005, 10467602006, 10467602007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	03/28/19 10:27	
Chloroethane	ug/L	<0.49	1.0	0.49	03/28/19 10:27	
Chloroform	ug/L	<0.45	4.0	0.45	03/28/19 10:27	
Chloromethane	ug/L	<0.16	4.0	0.16	03/28/19 10:27	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	03/28/19 10:27	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	03/28/19 10:27	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	03/28/19 10:27	
Dibromomethane	ug/L	<0.16	1.0	0.16	03/28/19 10:27	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	03/28/19 10:27	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	03/28/19 10:27	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	03/28/19 10:27	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	03/28/19 10:27	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/28/19 10:27	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	03/28/19 10:27	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	03/28/19 10:27	
m&p-Xylene	ug/L	<0.31	1.0	0.31	03/28/19 10:27	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	03/28/19 10:27	
Methylene Chloride	ug/L	<0.98	4.0	0.98	03/28/19 10:27	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	03/28/19 10:27	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	03/28/19 10:27	
Naphthalene	ug/L	<0.48	1.0	0.48	03/28/19 10:27	
o-Xylene	ug/L	<0.16	0.50	0.16	03/28/19 10:27	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	03/28/19 10:27	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	03/28/19 10:27	
Styrene	ug/L	<0.19	1.0	0.19	03/28/19 10:27	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	03/28/19 10:27	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	03/28/19 10:27	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	03/28/19 10:27	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	03/28/19 10:27	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	03/28/19 10:27	
Toluene	ug/L	<0.083	0.50	0.083	03/28/19 10:27	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	03/28/19 10:27	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	03/28/19 10:27	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	03/28/19 10:27	
Trichloroethene	ug/L	<0.15	0.40	0.15	03/28/19 10:27	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	03/28/19 10:27	
Vinyl acetate	ug/L	<1.1	10.0	1.1	03/28/19 10:27	
Vinyl chloride	ug/L	<0.092	0.20	0.092	03/28/19 10:27	
Xylene (Total)	ug/L	<0.31	1.5	0.31	03/28/19 10:27	
1,2-Dichloroethane-d4 (S)	%	105	75-136		03/28/19 10:27	
4-Bromofluorobenzene (S)	%	100	75-125		03/28/19 10:27	
Toluene-d8 (S)	%	107	75-125		03/28/19 10:27	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

LABORATORY CONTROL SAMPLE: 3223556

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.8	99	68-141	
1,1,1-Trichloroethane	ug/L	20	16.4	82	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	20.2	101	73-125	
1,1,2-Trichloroethane	ug/L	20	20.4	102	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	17.0	85	69-132	
1,1-Dichloroethane	ug/L	20	16.5	82	73-125	
1,1-Dichloroethene	ug/L	20	16.7	84	71-126	
1,1-Dichloropropene	ug/L	20	15.7	79	73-126	
1,2,3-Trichlorobenzene	ug/L	20	20.5	102	72-126	
1,2,3-Trichloropropane	ug/L	20	19.8	99	75-126	
1,2,4-Trichlorobenzene	ug/L	20	20.7	103	71-134	
1,2,4-Trimethylbenzene	ug/L	20	20.8	104	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	45.5	91	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	20.3	101	75-129	
1,2-Dichlorobenzene	ug/L	20	21.2	106	75-129	
1,2-Dichloroethane	ug/L	20	14.3	71	75-125	L2
1,2-Dichloroethene (Total)	ug/L	40	33.0	82	74-125	N2
1,2-Dichloropropane	ug/L	20	18.7	93	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.9	104	75-127	
1,3-Dichlorobenzene	ug/L	20	21.2	106	75-126	
1,3-Dichloropropane	ug/L	20	19.6	98	75-125	
1,4-Dichlorobenzene	ug/L	20	20.1	101	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	438	109	72-129	
2,2,4-Trimethylpentane	ug/L	20	16.5	82	72-128	N2
2,2-Dichloropropane	ug/L	20	17.3	86	65-138	
2-Butanone (MEK)	ug/L	100	78.9	79	59-144	
2-Chlorotoluene	ug/L	20	22.0	110	75-127	
2-Hexanone	ug/L	100	101	101	73-134	
4-Chlorotoluene	ug/L	20	22.5	112	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	92.3	92	62-141	
Acetone	ug/L	100	121	121	60-137	
Acrolein	ug/L	200	170	85	60-141	
Acrylonitrile	ug/L	200	156	78	75-129	
Benzene	ug/L	20	16.5	82	73-125	
Bromobenzene	ug/L	20	20.1	101	73-125	
Bromochloromethane	ug/L	20	16.3	82	75-135	
Bromodichloromethane	ug/L	20	19.0	95	75-125	
Bromoform	ug/L	20	20.3	101	67-136	
Bromomethane	ug/L	20	14.4	72	30-150	
Carbon disulfide	ug/L	20	16.5	82	47-137	
Carbon tetrachloride	ug/L	20	17.0	85	75-125	
Chlorobenzene	ug/L	20	19.1	96	75-125	
Chloroethane	ug/L	20	17.7	89	63-136	
Chloroform	ug/L	20	16.5	83	73-128	
Chloromethane	ug/L	20	16.1	81	55-130	
cis-1,2-Dichloroethene	ug/L	20	16.5	83	75-125	
cis-1,3-Dichloropropene	ug/L	20	18.4	92	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

LABORATORY CONTROL SAMPLE: 3223556

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	19.3	96	75-125	
Dibromomethane	ug/L	20	18.8	94	75-125	
Dichlorodifluoromethane	ug/L	20	19.1	95	63-132	
Dichlorofluoromethane	ug/L	20	16.9	84	68-127	N2
Diisopropyl ether	ug/L	20	15.5	78	71-131	
Ethyl-tert-butyl ether	ug/L	20	16.0	80	75-125	
Ethylbenzene	ug/L	20	20.4	102	75-125	
Hexachloro-1,3-butadiene	ug/L	20	19.9	100	72-134	
Isopropylbenzene (Cumene)	ug/L	20	20.6	103	75-125	
m&p-Xylene	ug/L	40	46.6	116	75-126	
Methyl-tert-butyl ether	ug/L	20	16.2	81	75-125	
Methylene Chloride	ug/L	20	16.8	84	70-125	
n-Butylbenzene	ug/L	20	21.2	106	75-126	
n-Propylbenzene	ug/L	20	23.0	115	73-127	
Naphthalene	ug/L	20	20.2	101	63-128	
o-Xylene	ug/L	20	20.8	104	75-128	
p-Isopropyltoluene	ug/L	20	21.1	105	75-125	
sec-Butylbenzene	ug/L	20	21.6	108	75-126	
Styrene	ug/L	20	19.9	99	75-125	
tert-Amylmethyl ether	ug/L	20	15.2	76	75-125	
tert-Butyl Alcohol	ug/L	200	193	97	75-130	
tert-Butylbenzene	ug/L	20	21.1	105	75-131	
Tetrachloroethene	ug/L	20	20.4	102	74-125	
Tetrahydrofuran	ug/L	200	192	96	64-138	
Toluene	ug/L	20	18.9	94	74-125	
trans-1,2-Dichloroethene	ug/L	20	16.5	82	68-128	
trans-1,3-Dichloropropene	ug/L	20	20.4	102	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	49.1	98	60-127	
Trichloroethene	ug/L	20	19.9	100	75-127	
Trichlorofluoromethane	ug/L	20	18.3	91	72-133	
Vinyl acetate	ug/L	20	15.3	76	61-129	
Vinyl chloride	ug/L	20	17.2	86	75-128	
Xylene (Total)	ug/L	60	67.4	112	75-125	
1,2-Dichloroethane-d4 (S)	%			89	75-136	
4-Bromofluorobenzene (S)	%			100	75-125	
Toluene-d8 (S)	%			103	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3224889 3224890

Parameter	Units	MS 10468569001		MSD 3224890		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result						
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	19.9	21.5	99	107	75-140	8	30
1,1,1-Trichloroethane	ug/L	ND	20	20	18.0	21.4	90	107	74-136	17	30
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	20.7	22.1	104	110	66-134	6	30
1,1,2-Trichloroethane	ug/L	ND	20	20	20.4	21.7	102	109	75-126	6	30

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Parameter	Units	10468569001		3224889		3224890		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
1,1,2-Trichlorotrifluoroethane	ug/L	ND	20	20	20.3	23.2	101	116	65-146	14	30		
1,1-Dichloroethane	ug/L	ND	20	20	18.9	20.9	94	105	68-132	10	30		
1,1-Dichloroethene	ug/L	ND	20	20	19.3	22.0	97	110	66-139	13	30		
1,1-Dichloropropene	ug/L	ND	20	20	18.2	21.3	91	106	67-134	15	30		
1,2,3-Trichlorobenzene	ug/L	ND	20	20	21.7	22.9	108	114	67-129	5	30		
1,2,3-Trichloropropane	ug/L	ND	20	20	20.4	21.1	102	106	69-128	4	30		
1,2,4-Trichlorobenzene	ug/L	ND	20	20	22.5	23.8	113	119	65-140	5	30		
1,2,4-Trimethylbenzene	ug/L	ND	20	20	21.7	24.1	109	120	71-133	10	30		
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	49.3	53.9	99	108	54-138	9	30		
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	19.5	21.5	98	108	68-125	10	30		
1,2-Dichlorobenzene	ug/L	ND	20	20	22.0	24.1	110	120	74-136	9	30		
1,2-Dichloroethane	ug/L	ND	20	20	14.0	18.4	70	92	68-125	27	30		
1,2-Dichloroethene (Total)	ug/L	ND	40	40	37.4	41.7	94	104	71-126	11	30	N2	
1,2-Dichloropropane	ug/L	ND	20	20	18.4	19.4	92	97	67-125	5	30		
1,3,5-Trimethylbenzene	ug/L	ND	20	20	21.9	23.9	110	120	68-137	9	30		
1,3-Dichlorobenzene	ug/L	ND	20	20	22.1	24.4	111	122	75-131	10	30		
1,3-Dichloropropane	ug/L	ND	20	20	20.2	20.9	101	104	71-125	4	30		
1,4-Dichlorobenzene	ug/L	ND	20	20	20.6	22.6	103	113	74-126	9	30		
1,4-Dioxane (p-Dioxane)	ug/L	ND	400	400	409	420	102	105	68-125	3	30		
2,2,4-Trimethylpentane	ug/L	ND	20	20	19.6	20.1	98	101	54-129	3	30	N2	
2,2-Dichloropropane	ug/L	ND	20	20	19.3	22.2	97	111	69-139	14	30		
2-Butanone (MEK)	ug/L	ND	100	100	69.9	82.7	70	83	54-144	17	30		
2-Chlorotoluene	ug/L	ND	20	20	22.7	25.3	114	126	75-134	11	30		
2-Hexanone	ug/L	ND	100	100	95.9	104	96	104	58-137	8	30		
4-Chlorotoluene	ug/L	ND	20	20	23.3	25.5	116	127	72-133	9	30		
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	96.0	106	96	106	60-129	9	30		
Acetone	ug/L	ND	100	100	76.1	79.5	76	80	62-132	4	30		
Acrolein	ug/L	ND	200	200	270	305	135	152	30-150	12	30	M1	
Acrylonitrile	ug/L	ND	200	200	173	194	87	97	68-125	11	30		
Benzene	ug/L	ND	20	20	16.6	20.4	83	102	68-125	21	30		
Bromobenzene	ug/L	ND	20	20	21.4	22.0	107	110	73-126	3	30		
Bromochloromethane	ug/L	ND	20	20	18.1	20.1	90	100	66-143	10	30		
Bromodichloromethane	ug/L	ND	20	20	18.8	19.9	94	99	74-125	6	30		
Bromoform	ug/L	ND	20	20	19.6	21.3	98	107	64-134	8	30		
Bromomethane	ug/L	ND	20	20	14.5	16.8	73	84	30-150	15	30		
Carbon disulfide	ug/L	ND	20	20	20.7	21.0	103	105	43-147	2	30		
Carbon tetrachloride	ug/L	ND	20	20	18.7	22.4	93	112	71-143	18	30		
Chlorobenzene	ug/L	ND	20	20	19.6	20.9	98	105	75-125	7	30		
Chloroethane	ug/L	ND	20	20	16.7	20.7	84	104	75-129	21	30		
Chloroform	ug/L	ND	20	20	17.1	19.4	85	97	66-132	13	30		
Chloromethane	ug/L	ND	20	20	16.6	20.2	83	101	53-137	20	30		
cis-1,2-Dichloroethene	ug/L	ND	20	20	18.4	20.1	92	101	67-133	9	30		
cis-1,3-Dichloropropene	ug/L	ND	20	20	17.1	17.6	86	88	66-125	3	30		
Dibromochloromethane	ug/L	ND	20	20	19.5	20.4	97	102	62-132	4	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Parameter	Units	10468569001		3224889		3224890		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Dibromomethane	ug/L	ND	20	20	18.2	19.5	91	98	67-125	7	30		
Dichlorodifluoromethane	ug/L	ND	20	20	19.1	22.9	95	114	71-142	18	30		
Dichlorofluoromethane	ug/L	ND	20	20	17.2	20.4	86	102	70-131	17	30	N2	
Diisopropyl ether	ug/L	ND	20	20	18.0	19.6	90	98	63-131	8	30		
Ethyl-tert-butyl ether	ug/L	ND	20	20	17.7	20.1	88	101	66-128	13	30		
Ethylbenzene	ug/L	ND	20	20	21.0	23.4	105	117	74-126	11	30		
Hexachloro-1,3-butadiene	ug/L	ND	20	20	23.8	20.9	119	104	68-143	13	30		
Isopropylbenzene (Cumene)	ug/L	ND	20	20	21.9	24.2	109	121	74-130	10	30		
m&p-Xylene	ug/L	ND	40	40	47.5	53.3	119	133	69-132	12	30	M1	
Methyl-tert-butyl ether	ug/L	ND	20	20	18.3	20.6	92	103	65-131	12	30		
Methylene Chloride	ug/L	ND	20	20	19.1	20.2	96	101	57-125	6	30		
n-Butylbenzene	ug/L	ND	20	20	23.7	23.9	118	120	71-131	1	30		
n-Propylbenzene	ug/L	ND	20	20	24.7	27.3	123	137	67-138	10	30		
Naphthalene	ug/L	ND	20	20	22.1	24.9	111	124	60-130	12	30		
o-Xylene	ug/L	ND	20	20	20.9	23.3	105	116	69-131	11	30		
p-Isopropyltoluene	ug/L	ND	20	20	22.7	24.2	114	121	72-133	6	30		
sec-Butylbenzene	ug/L	ND	20	20	23.4	24.4	117	122	73-134	4	30		
Styrene	ug/L	ND	20	20	20.6	22.2	103	111	72-125	7	30		
tert-Amylmethyl ether	ug/L	ND	20	20	15.2	19.9	76	99	67-125	26	30		
tert-Butyl Alcohol	ug/L	ND	200	200	209	204	104	102	64-137	2	30		
tert-Butylbenzene	ug/L	ND	20	20	22.5	24.4	112	122	70-143	8	30		
Tetrachloroethene	ug/L	ND	20	20	21.1	23.5	106	118	72-129	11	30		
Tetrahydrofuran	ug/L	ND	200	200	172	192	86	96	66-128	11	30		
Toluene	ug/L	ND	20	20	19.7	21.0	98	104	73-125	6	30		
trans-1,2-Dichloroethene	ug/L	ND	20	20	19.0	21.5	95	108	62-137	12	30		
trans-1,3-Dichloropropene	ug/L	ND	20	20	21.1	21.4	106	107	61-136	1	30		
trans-1,4-Dichloro-2-butene	ug/L	ND	50	50	50.8	55.8	102	112	45-128	9	30		
Trichloroethene	ug/L	ND	20	20	20.7	19.7	103	99	74-132	4	30		
Trichlorofluoromethane	ug/L	ND	20	20	19.4	23.1	97	116	75-139	17	30		
Vinyl acetate	ug/L	ND	20	20	17.4	19.9	87	99	51-135	13	30		
Vinyl chloride	ug/L	ND	20	20	18.0	21.2	90	106	68-146	17	30		
Xylene (Total)	ug/L	ND	60	60	68.4	76.6	114	128	67-137	11	30	MS	
1,2-Dichloroethane-d4 (S)	%						85	105	75-136				
4-Bromofluorobenzene (S)	%						102	98	75-125				
Toluene-d8 (S)	%						103	101	75-125				

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467602

QC Batch: 596448 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10467602001, 10467602002, 10467602003, 10467602004, 10467602005, 10467602006

METHOD BLANK: 3224908 Matrix: Water
Associated Lab Samples: 10467602001, 10467602002, 10467602003, 10467602004, 10467602005, 10467602006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.0	5.0	1.0	03/29/19 08:56	

LABORATORY CONTROL SAMPLE & LCSD: 3224909 3224910

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	43.0	43.0	107	107	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3224911 3224912

Parameter	Units	10468417001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	62.3	40	40	105	105	106	107	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3224913 3224914

Parameter	Units	10468417002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	61.6	40	40	104	106	106	110	80-120	2	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

QC Batch: 595958

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 10467602001, 10467602002, 10467602003, 10467602004, 10467602005, 10467602006

METHOD BLANK: 3222190

Matrix: Water

Associated Lab Samples: 10467602001, 10467602002, 10467602003, 10467602004, 10467602005, 10467602006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	03/27/19 11:29	

LABORATORY CONTROL SAMPLE: 3222191

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	976	98	80-120	

SAMPLE DUPLICATE: 3222192

Parameter	Units	10467543001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1050	1040	1	5	

SAMPLE DUPLICATE: 3222193

Parameter	Units	10467602001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	230	231	0	5	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
 Pace Project No.: 10467602

QC Batch: 137338 Analysis Method: SM 4500-S-2 D
 QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
 Associated Lab Samples: 10467602001, 10467602002, 10467602003, 10467602004, 10467602005, 10467602006

METHOD BLANK: 597969 Matrix: Water
 Associated Lab Samples: 10467602001, 10467602002, 10467602003, 10467602004, 10467602005, 10467602006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	03/26/19 11:23	

LABORATORY CONTROL SAMPLE: 597970

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.2	0.18	90	90-110	

MATRIX SPIKE SAMPLE: 597984

Parameter	Units	10467822001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.0074J	0.2	0.098	45	75-125	M1

MATRIX SPIKE SAMPLE: 597986

Parameter	Units	10467822002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.2	0.076	36	75-125	M1

SAMPLE DUPLICATE: 597983

Parameter	Units	10467822001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.0074J	0.0066J		20	

SAMPLE DUPLICATE: 597985

Parameter	Units	10467822002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

QC Batch:	595095	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
Associated Lab Samples:	10467602001, 10467602002, 10467602003, 10467602004, 10467602005, 10467602006		

METHOD BLANK:	3217006	Matrix:	Water
Associated Lab Samples:	10467602001, 10467602002, 10467602003, 10467602004, 10467602005, 10467602006		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.28	1.2	0.28	03/21/19 17:11	
Nitrate as N	mg/L	<0.015	0.10	0.015	03/21/19 17:11	
Sulfate	mg/L	<0.19	1.2	0.19	03/21/19 17:11	

LABORATORY CONTROL SAMPLE: 3217007						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	13.1	105	90-110	
Nitrate as N	mg/L	1	0.96	96	90-110	
Sulfate	mg/L	12.5	13.3	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3217008												3217009	
Parameter	Units	10467529005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Chloride	mg/L	128	62.5	62.5	175	176	75	77	90-110	1	20	M1	
Nitrate as N	mg/L	<0.015	1	1	0.83	0.83	83	83	90-110	0	20	M1	
Sulfate	mg/L	8.5	12.5	12.5	18.2	18.2	78	78	90-110	0	20	M1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3217010												3217011	
Parameter	Units	10467529006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Chloride	mg/L	141	62.5	62.5	187	188	73	75	90-110	1	20	M1	
Nitrate as N	mg/L	<0.015	1	1	0.83	0.83	83	83	90-110	1	20	M1	
Sulfate	mg/L	28.7	12.5	12.5	34.4	34.3	46	45	90-110	0	20	M1	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

QC Batch: 596374

Analysis Method: EPA 353.2

QC Batch Method: EPA 353.2

Analysis Description: 353.2 Nitrate + Nitrite, preserved

Associated Lab Samples: 10467602001, 10467602002

METHOD BLANK: 3224130

Matrix: Water

Associated Lab Samples: 10467602001, 10467602002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	03/28/19 16:44	

LABORATORY CONTROL SAMPLE: 3224131

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	1.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3224132 3224133

Parameter	Units	3224132		3224133		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10468418001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Nitrogen, NO2 plus NO3	mg/L	0.36	1	1	1.4	1.4	107	107	90-110	0	20

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467602

QC Batch: 597595 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10467602003, 10467602004, 10467602005, 10467602006

METHOD BLANK: 3231493 Matrix: Water
Associated Lab Samples: 10467602003, 10467602004, 10467602005, 10467602006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	04/04/19 11:47	FS

LABORATORY CONTROL SAMPLE: 3231494

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3231495 3231496

Parameter	Units	10467822001		MSD		MS		MSD		% Rec Limits	Max		Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result	% Rec	% Rec		RPD	RPD	
Nitrogen, NO2 plus NO3	mg/L	2.5	5	5	7.8	8.0	107	110	90-110	2	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3231497 3231498

Parameter	Units	10467822002		MSD		MS		MSD		% Rec Limits	Max		Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result	% Rec	% Rec		RPD	RPD	
Nitrogen, NO2 plus NO3	mg/L	7.1	10	10	17.5	19.0	104	119	90-110	8	20	M6	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

QC Batch: 596803

Analysis Method: EPA 410.4

QC Batch Method: EPA 410.4

Analysis Description: 410.4 COD

Associated Lab Samples: 10467602001, 10467602002, 10467602003, 10467602004, 10467602005, 10467602006

METHOD BLANK: 3227321

Matrix: Water

Associated Lab Samples: 10467602001, 10467602002, 10467602003, 10467602004, 10467602005, 10467602006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	04/01/19 16:27	

LABORATORY CONTROL SAMPLE: 3227322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	297	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3227323 3227324

Parameter	Units	10467822001		3227323		3227324		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Chemical Oxygen Demand	mg/L	<17.0	250	250	240	239	96	96	90-110	0	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3227325 3227326

Parameter	Units	10467822002		3227325		3227326		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Chemical Oxygen Demand	mg/L	<17.0	250	250	239	236	95	94	90-110	1	20

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

QC Batch: 163249 Analysis Method: SM 5310C
 QC Batch Method: SM 5310C Analysis Description: 5310C TOC
 Associated Lab Samples: 10467602001, 10467602002, 10467602003, 10467602004, 10467602005, 10467602006

METHOD BLANK: 643413 Matrix: Water
 Associated Lab Samples: 10467602001, 10467602002, 10467602003, 10467602004, 10467602005, 10467602006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.39	1.0	0.39	03/29/19 09:38	

LABORATORY CONTROL SAMPLE: 643414

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.7	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 643415 643416

Parameter	Units	10467822001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	0.52J	25	25	25.5	25.5	100	100	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 643417 643418

Parameter	Units	10467822002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	0.94J	25	25	25.4	26.2	98	101	80-120	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 643419 643420

Parameter	Units	10467822006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	0.58J	25	25	26.6	26.2	104	103	80-120	1	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

PASI-N Pace Analytical Services - New Orleans

PASI-V Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

FS The sample was filtered in the laboratory prior to analysis.

L2 Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

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

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

MS Analyte recovery in the matrix spike was outside QC limits for one or more of the constituent analytes used in the calculated result.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467602

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10467602001	W26-GW-032019	RSK 175	595160		
10467602002	No.2-GW-032019	RSK 175	595160		
10467602003	MW17D-GW-032019	RSK 175	595160		
10467602004	FD4-GW-032019	RSK 175	595160		
10467602005	MW19D-GW-032019	RSK 175	595160		
10467602006	FD5-GW-032019	RSK 175	595160		
10467602001	W26-GW-032019	EPA 3010	595080	EPA 6010D	595429
10467602002	No.2-GW-032019	EPA 3010	595080	EPA 6010D	595429
10467602003	MW17D-GW-032019	EPA 3010	595080	EPA 6010D	595429
10467602004	FD4-GW-032019	EPA 3010	595080	EPA 6010D	595429
10467602005	MW19D-GW-032019	EPA 3010	595080	EPA 6010D	595429
10467602006	FD5-GW-032019	EPA 3010	595080	EPA 6010D	595429
10467602001	W26-GW-032019	EPA 7470A	595090	EPA 7470A	595264
10467602002	No.2-GW-032019	EPA 7470A	595090	EPA 7470A	595264
10467602003	MW17D-GW-032019	EPA 7470A	595090	EPA 7470A	595264
10467602004	FD4-GW-032019	EPA 7470A	595090	EPA 7470A	595264
10467602005	MW19D-GW-032019	EPA 7470A	595090	EPA 7470A	595264
10467602006	FD5-GW-032019	EPA 7470A	595090	EPA 7470A	595264
10467602003	MW17D-GW-032019	EPA 8260B	596233		
10467602004	FD4-GW-032019	EPA 8260B	596233		
10467602005	MW19D-GW-032019	EPA 8260B	596233		
10467602006	FD5-GW-032019	EPA 8260B	596233		
10467602007	TB-032019	EPA 8260B	596233		
10467602001	W26-GW-032019	SM 2320B	596448		
10467602002	No.2-GW-032019	SM 2320B	596448		
10467602003	MW17D-GW-032019	SM 2320B	596448		
10467602004	FD4-GW-032019	SM 2320B	596448		
10467602005	MW19D-GW-032019	SM 2320B	596448		
10467602006	FD5-GW-032019	SM 2320B	596448		
10467602001	W26-GW-032019	SM 2540C	595958		
10467602002	No.2-GW-032019	SM 2540C	595958		
10467602003	MW17D-GW-032019	SM 2540C	595958		
10467602004	FD4-GW-032019	SM 2540C	595958		
10467602005	MW19D-GW-032019	SM 2540C	595958		
10467602006	FD5-GW-032019	SM 2540C	595958		
10467602001	W26-GW-032019	SM 4500-S-2 D	137338		
10467602002	No.2-GW-032019	SM 4500-S-2 D	137338		
10467602003	MW17D-GW-032019	SM 4500-S-2 D	137338		
10467602004	FD4-GW-032019	SM 4500-S-2 D	137338		
10467602005	MW19D-GW-032019	SM 4500-S-2 D	137338		
10467602006	FD5-GW-032019	SM 4500-S-2 D	137338		
10467602001	W26-GW-032019	EPA 300.0	595095		
10467602002	No.2-GW-032019	EPA 300.0	595095		
10467602003	MW17D-GW-032019	EPA 300.0	595095		
10467602004	FD4-GW-032019	EPA 300.0	595095		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467602

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10467602005	MW19D-GW-032019	EPA 300.0	595095		
10467602006	FD5-GW-032019	EPA 300.0	595095		
10467602001	W26-GW-032019	EPA 353.2	596374		
10467602002	No.2-GW-032019	EPA 353.2	596374		
10467602003	MW17D-GW-032019	EPA 353.2	597595		
10467602004	FD4-GW-032019	EPA 353.2	597595		
10467602005	MW19D-GW-032019	EPA 353.2	597595		
10467602006	FD5-GW-032019	EPA 353.2	597595		
10467602001	W26-GW-032019	EPA 410.4	596803	EPA 410.4	597127
10467602002	No.2-GW-032019	EPA 410.4	596803	EPA 410.4	597127
10467602003	MW17D-GW-032019	EPA 410.4	596803	EPA 410.4	597127
10467602004	FD4-GW-032019	EPA 410.4	596803	EPA 410.4	597127
10467602005	MW19D-GW-032019	EPA 410.4	596803	EPA 410.4	597127
10467602006	FD5-GW-032019	EPA 410.4	596803	EPA 410.4	597127
10467602001	W26-GW-032019	SM 5310C	163249		
10467602002	No.2-GW-032019	SM 5310C	163249		
10467602003	MW17D-GW-032019	SM 5310C	163249		
10467602004	FD4-GW-032019	SM 5310C	163249		
10467602005	MW19D-GW-032019	SM 5310C	163249		
10467602006	FD5-GW-032019	SM 5310C	163249		

REPORT OF LABORATORY ANALYSIS

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WO#: 10467602

PM: JMG Due Date: 04/04/19
CLIENT: UPRR_CH2M

Sample Condition Upon Receipt Client Name: CH2M Mill Project #: _____
 Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception

Tracking Number: 4486 7792 7079/7081
 Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A
 Packing Material: Bubble Wrap Bubble Bags None Other: PB Temp Blank? Yes No
 Thermometer: G87A9155100842 G87A9170600254 Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)
 Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: 1.0, 0.2 °C Average Corrected Temp See Exceptions (no temp blank only):
 Correction Factor: +0.1 Cooler Temp Corrected w/temp blank: 1.1, 0.3 °C

USDA Regulated Soil: (N/A, water sample/Other: _____) Date/Initials of Person Examining Contents: CG 3/21/19
 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No
 If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

	COMMENTS:
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input checked="" type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: See Exception <u>Sample ID TB: 032019 received 1 VG 9H <input type="checkbox"/> w/ popped top</u>
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	
All containers needing acid/base preservation have been checked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12. Sample # <input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ <input checked="" type="checkbox"/> H ₂ SO ₄ <input checked="" type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No See Exception
Exceptions: (VOA), Coliform, (TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exception
Headspace in VOA Vials (greater than 6mm)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. <input checked="" type="checkbox"/> See Exception
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. Pace Trip Blank Lot # (if purchased): <u>109280</u>
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

CLIENT NOTIFICATION/RESOLUTION Field Data Required? Yes No
 Person Contacted: Mark Ochsner Date/Time: 06/27/19
 Comments/Resolution: WA certs not required for 8260 2,2,4-TMP, dichlorofluoromethane, RSK or sulfide.

Project Manager Review: _____ Date: 03/21/19
 Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: [Signature]



Document Name:
Headspace Exception

Document Revised: 17Dec2018
Page 1 of 1

Document No.:
F-MN-C-276-Rev.01

Issuing Authority:
Pace Minnesota Quality Office

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
MW17D-GW-032019	0	1	2	3	N
TB-032019	1	1	0	2	N

Sample Condition Upon Receipt

Client Name: Pace WA Project #: _____

WO#: 12122733

PM: **CLJ** Due Date: **04/05/19**
CLIENT: PACE MPLS

Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

Tracking Number: _____

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Optional: Proj. Due Date: _____ Proj. Name: _____

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

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

Cooler Temp Read °C: 1.1 Cooler Temp Corrected °C: 1.4 Biological Tissue Frozen? Yes No NA
 Temp should be above freezing to 6°C Correction Factor: 0.3 Date and Initials of Person Examining Contents: 3/21/19 DC

Comments: RIH 3/22/19

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

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? Yes No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

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

Project Manager Review: Katie Richards Date: 3/22/2019

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



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

Sample Condition Upon Receipt

Project

WO#: 2099234

PM: CMM

Due Date: 04/04/19

CLIENT: PASI-MINN

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

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

Custody Seals intact: Yes No

Thermometer Used:
 Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 3/22/19 CMM

Temp must be measured from Temperature blank when present

Comments:

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

Client Notification/ Resolution:

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

March 22, 2019

David Hodson
Jacobs
2020 SW 4th Ave
#300
Portland, OR 97201

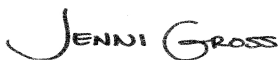
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467607

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 21, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Steve Demus, CH2M Hill
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467607

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #:74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467607

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10467607001	W26-GW-032019	Water	03/20/19 10:00	03/21/19 10:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467607

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10467607001	W26-GW-032019	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467607

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10467607001	W26-GW-032019					
EPA 8260B	Carbon tetrachloride	34.9	ug/L	0.50	03/21/19 20:14	
EPA 8260B	Chloroform	2.7J	ug/L	4.0	03/21/19 20:14	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467607

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 22, 2019

General Information:

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

Hold Time:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Internal Standards:

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

Surrogates:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 595025

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10467660001

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

- MSD (Lab ID: 3216738)
- Acrolein

Additional Comments:

Analyte Comments:

QC Batch: 595025

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3216576)
- 1,2-Dichloroethene (Total)
- Dichlorofluoromethane
- 2,2,4-Trimethylpentane

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467607

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 22, 2019

Analyte Comments:

QC Batch: 595025

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- LCS (Lab ID: 3216577)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3216737)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3216738)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- W26-GW-032019 (Lab ID: 10467607001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467607

Sample: **W26-GW-032019** Lab ID: **10467607001** Collected: 03/20/19 10:00 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/21/19 20:14	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/21/19 20:14	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/21/19 20:14	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/21/19 20:14	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/21/19 20:14	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/21/19 20:14	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/21/19 20:14	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/21/19 20:14	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/21/19 20:14	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/21/19 20:14	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/21/19 20:14	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/21/19 20:14	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/21/19 20:14	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/21/19 20:14	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/21/19 20:14	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/21/19 20:14	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/21/19 20:14	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/21/19 20:14	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	1.0	0.12	1		03/21/19 20:14	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/21/19 20:14	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/21/19 20:14	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/21/19 20:14	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/21/19 20:14	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/21/19 20:14	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/21/19 20:14	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/21/19 20:14	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/21/19 20:14	95-49-8	
2-Hexanone	<0.88	ug/L	20.0	0.88	1		03/21/19 20:14	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/21/19 20:14	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/21/19 20:14	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/21/19 20:14	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/21/19 20:14	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/21/19 20:14	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/21/19 20:14	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/21/19 20:14	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/21/19 20:14	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/21/19 20:14	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/21/19 20:14	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/21/19 20:14	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/21/19 20:14	75-15-0	
Carbon tetrachloride	34.9	ug/L	0.50	0.19	1		03/21/19 20:14	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/21/19 20:14	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/21/19 20:14	75-00-3	
Chloroform	2.7J	ug/L	4.0	0.45	1		03/21/19 20:14	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/21/19 20:14	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/21/19 20:14	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467607

Sample: W26-GW-032019 **Lab ID: 10467607001** Collected: 03/20/19 10:00 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level									
Analytical Method: EPA 8260B									
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/21/19 20:14	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/21/19 20:14	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/21/19 20:14	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/21/19 20:14	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/21/19 20:14	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/21/19 20:14	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/21/19 20:14	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		03/21/19 20:14	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/21/19 20:14	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/21/19 20:14	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/21/19 20:14	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/21/19 20:14	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/21/19 20:14	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/21/19 20:14	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		03/21/19 20:14	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/21/19 20:14	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/21/19 20:14	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/21/19 20:14	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/21/19 20:14	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/21/19 20:14	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/21/19 20:14	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/21/19 20:14	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/21/19 20:14	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/21/19 20:14	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/21/19 20:14	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/21/19 20:14	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/21/19 20:14	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/21/19 20:14	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/21/19 20:14	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/21/19 20:14	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/21/19 20:14	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/21/19 20:14	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		03/21/19 20:14	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/21/19 20:14	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	102	%	75-136		1		03/21/19 20:14	17060-07-0	
Toluene-d8 (S)	102	%	75-125		1		03/21/19 20:14	2037-26-5	
4-Bromofluorobenzene (S)	97	%	75-125		1		03/21/19 20:14	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467607

QC Batch: 595025

Analysis Method: EPA 8260B

QC Batch Method: EPA 8260B

Analysis Description: 8260 MSV LL Water

Associated Lab Samples: 10467607001

METHOD BLANK: 3216576

Matrix: Water

Associated Lab Samples: 10467607001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	03/21/19 15:04	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	03/21/19 15:04	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	03/21/19 15:04	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	03/21/19 15:04	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	03/21/19 15:04	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	03/21/19 15:04	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	03/21/19 15:04	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	03/21/19 15:04	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	03/21/19 15:04	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	03/21/19 15:04	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	03/21/19 15:04	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	03/21/19 15:04	MN
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	03/21/19 15:04	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	03/21/19 15:04	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	03/21/19 15:04	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	03/21/19 15:04	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	03/21/19 15:04	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	03/21/19 15:04	
1,3,5-Trimethylbenzene	ug/L	<0.12	1.0	0.12	03/21/19 15:04	MN
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/21/19 15:04	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	03/21/19 15:04	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	03/21/19 15:04	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	03/21/19 15:04	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	03/21/19 15:04	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	03/21/19 15:04	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	03/21/19 15:04	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	03/21/19 15:04	
2-Hexanone	ug/L	<0.88	20.0	0.88	03/21/19 15:04	MN
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/21/19 15:04	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	03/21/19 15:04	
Acetone	ug/L	<9.2	20.0	9.2	03/21/19 15:04	
Acrolein	ug/L	<1.2	10.0	1.2	03/21/19 15:04	
Acrylonitrile	ug/L	<0.91	10.0	0.91	03/21/19 15:04	
Benzene	ug/L	<0.10	0.50	0.10	03/21/19 15:04	
Bromobenzene	ug/L	<0.21	0.50	0.21	03/21/19 15:04	
Bromochloromethane	ug/L	<0.27	1.0	0.27	03/21/19 15:04	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	03/21/19 15:04	
Bromoform	ug/L	<0.80	4.0	0.80	03/21/19 15:04	
Bromomethane	ug/L	<1.8	4.0	1.8	03/21/19 15:04	
Carbon disulfide	ug/L	<0.078	1.0	0.078	03/21/19 15:04	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	03/21/19 15:04	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467607

METHOD BLANK: 3216576

Matrix: Water

Associated Lab Samples: 10467607001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	03/21/19 15:04	
Chloroethane	ug/L	<0.49	1.0	0.49	03/21/19 15:04	
Chloroform	ug/L	<0.45	4.0	0.45	03/21/19 15:04	MN
Chloromethane	ug/L	<0.16	4.0	0.16	03/21/19 15:04	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	03/21/19 15:04	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	03/21/19 15:04	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	03/21/19 15:04	
Dibromomethane	ug/L	<0.16	1.0	0.16	03/21/19 15:04	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	03/21/19 15:04	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	03/21/19 15:04	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	03/21/19 15:04	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	03/21/19 15:04	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/21/19 15:04	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	03/21/19 15:04	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	03/21/19 15:04	MN
m&p-Xylene	ug/L	<0.31	1.0	0.31	03/21/19 15:04	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	03/21/19 15:04	
Methylene Chloride	ug/L	<0.98	4.0	0.98	03/21/19 15:04	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	03/21/19 15:04	MN
n-Propylbenzene	ug/L	<0.10	0.50	0.10	03/21/19 15:04	
Naphthalene	ug/L	<0.48	1.0	0.48	03/21/19 15:04	
o-Xylene	ug/L	<0.16	0.50	0.16	03/21/19 15:04	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	03/21/19 15:04	MN
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	03/21/19 15:04	MN
Styrene	ug/L	<0.19	1.0	0.19	03/21/19 15:04	MN
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	03/21/19 15:04	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	03/21/19 15:04	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	03/21/19 15:04	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	03/21/19 15:04	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	03/21/19 15:04	
Toluene	ug/L	<0.083	0.50	0.083	03/21/19 15:04	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	03/21/19 15:04	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	03/21/19 15:04	MN
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	03/21/19 15:04	
Trichloroethene	ug/L	<0.15	0.40	0.15	03/21/19 15:04	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	03/21/19 15:04	
Vinyl acetate	ug/L	<1.1	10.0	1.1	03/21/19 15:04	
Vinyl chloride	ug/L	<0.092	0.20	0.092	03/21/19 15:04	
Xylene (Total)	ug/L	<0.31	1.5	0.31	03/21/19 15:04	
1,2-Dichloroethane-d4 (S)	%	108	75-136		03/21/19 15:04	
4-Bromofluorobenzene (S)	%	98	75-125		03/21/19 15:04	
Toluene-d8 (S)	%	97	75-125		03/21/19 15:04	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467607

LABORATORY CONTROL SAMPLE: 3216577

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	20.4	102	68-141	
1,1,1-Trichloroethane	ug/L	20	22.6	113	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	18.4	92	73-125	
1,1,2-Trichloroethane	ug/L	20	19.6	98	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	22.4	112	69-132	
1,1-Dichloroethane	ug/L	20	22.9	115	73-125	
1,1-Dichloroethene	ug/L	20	21.0	105	71-126	
1,1-Dichloropropene	ug/L	20	23.4	117	73-126	
1,2,3-Trichlorobenzene	ug/L	20	17.9	90	72-126	
1,2,3-Trichloropropane	ug/L	20	19.2	96	75-126	
1,2,4-Trichlorobenzene	ug/L	20	16.2	81	71-134	
1,2,4-Trimethylbenzene	ug/L	20	17.0	85	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	42.6	85	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	18.4	92	75-129	
1,2-Dichlorobenzene	ug/L	20	18.4	92	75-129	
1,2-Dichloroethane	ug/L	20	20.2	101	75-125	
1,2-Dichloroethene (Total)	ug/L	40	44.0	110	74-125	N2
1,2-Dichloropropane	ug/L	20	21.6	108	75-125	
1,3,5-Trimethylbenzene	ug/L	20	17.2	86	75-127	
1,3-Dichlorobenzene	ug/L	20	18.0	90	75-126	
1,3-Dichloropropane	ug/L	20	18.8	94	75-125	
1,4-Dichlorobenzene	ug/L	20	18.0	90	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	383	96	72-129	
2,2,4-Trimethylpentane	ug/L	20	20.4	102	72-128	N2
2,2-Dichloropropane	ug/L	20	22.3	111	65-138	
2-Butanone (MEK)	ug/L	100	122	122	59-144	
2-Chlorotoluene	ug/L	20	18.4	92	75-127	
2-Hexanone	ug/L	100	89.0	89	73-134	
4-Chlorotoluene	ug/L	20	18.2	91	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	105	105	62-141	
Acetone	ug/L	100	114	114	60-137	
Acrolein	ug/L	200	280	140	60-141	
Acrylonitrile	ug/L	200	219	110	75-129	
Benzene	ug/L	20	20.1	100	73-125	
Bromobenzene	ug/L	20	17.5	88	73-125	
Bromochloromethane	ug/L	20	20.5	103	75-135	
Bromodichloromethane	ug/L	20	23.2	116	75-125	
Bromoform	ug/L	20	20.6	103	67-136	
Bromomethane	ug/L	20	18.3	91	30-150	
Carbon disulfide	ug/L	20	22.9	114	47-137	
Carbon tetrachloride	ug/L	20	23.1	115	75-125	
Chlorobenzene	ug/L	20	18.8	94	75-125	
Chloroethane	ug/L	20	23.0	115	63-136	
Chloroform	ug/L	20	21.7	109	73-128	
Chloromethane	ug/L	20	20.7	103	55-130	
cis-1,2-Dichloroethene	ug/L	20	21.3	106	75-125	
cis-1,3-Dichloropropene	ug/L	20	21.3	106	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467607

LABORATORY CONTROL SAMPLE: 3216577

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	21.0	105	75-125	
Dibromomethane	ug/L	20	19.8	99	75-125	
Dichlorodifluoromethane	ug/L	20	24.4	122	63-132	
Dichlorofluoromethane	ug/L	20	22.7	114	68-127	N2
Diisopropyl ether	ug/L	20	21.6	108	71-131	
Ethyl-tert-butyl ether	ug/L	20	21.2	106	75-125	
Ethylbenzene	ug/L	20	18.9	94	75-125	
Hexachloro-1,3-butadiene	ug/L	20	17.9	89	72-134	
Isopropylbenzene (Cumene)	ug/L	20	17.4	87	75-125	
m&p-Xylene	ug/L	40	37.6	94	75-126	
Methyl-tert-butyl ether	ug/L	20	21.4	107	75-125	
Methylene Chloride	ug/L	20	21.3	107	70-125	
n-Butylbenzene	ug/L	20	17.4	87	75-126	
n-Propylbenzene	ug/L	20	18.0	90	73-127	
Naphthalene	ug/L	20	15.7	78	63-128	
o-Xylene	ug/L	20	18.2	91	75-128	
p-Isopropyltoluene	ug/L	20	18.0	90	75-125	
sec-Butylbenzene	ug/L	20	16.8	84	75-126	
Styrene	ug/L	20	17.6	88	75-125	
tert-Amylmethyl ether	ug/L	20	19.9	99	75-125	
tert-Butyl Alcohol	ug/L	200	206	103	75-130	
tert-Butylbenzene	ug/L	20	18.0	90	75-131	
Tetrachloroethene	ug/L	20	18.1	90	74-125	
Tetrahydrofuran	ug/L	200	184	92	64-138	
Toluene	ug/L	20	18.3	91	74-125	
trans-1,2-Dichloroethene	ug/L	20	22.8	114	68-128	
trans-1,3-Dichloropropene	ug/L	20	20.2	101	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	40.7	81	60-127	
Trichloroethene	ug/L	20	21.4	107	75-127	
Trichlorofluoromethane	ug/L	20	22.9	115	72-133	
Vinyl acetate	ug/L	20	19.0	95	61-129	
Vinyl chloride	ug/L	20	21.7	109	75-128	
Xylene (Total)	ug/L	60	55.9	93	75-125	
1,2-Dichloroethane-d4 (S)	%			102	75-136	
4-Bromofluorobenzene (S)	%			95	75-125	
Toluene-d8 (S)	%			93	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3216737 3216738

Parameter	Units	10467660001		MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result						
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20	19.5	21.0	97	105	75-140	7	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20	22.1	23.7	110	119	74-136	7	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20	17.7	19.1	89	96	66-134	8	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20	17.3	18.7	87	94	75-126	8	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467607

Parameter	Units	10467660001		3216737		3216738		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	24.2	25.9	121	130	65-146	7	30		
1,1-Dichloroethane	ug/L	<0.17	20	20	22.0	23.1	110	115	68-132	5	30		
1,1-Dichloroethene	ug/L	<0.16	20	20	22.6	23.0	113	115	66-139	2	30		
1,1-Dichloropropene	ug/L	<0.20	20	20	23.4	25.5	117	128	67-134	9	30		
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	18.1	20.2	91	101	67-129	11	30		
1,2,3-Trichloropropane	ug/L	<0.26	20	20	17.3	19.2	86	96	69-128	11	30		
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	16.7	18.1	84	91	65-140	8	30		
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	16.8	19.3	84	97	71-133	14	30		
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	40.5	45.1	81	90	54-138	11	30		
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	16.8	18.3	84	92	68-125	9	30		
1,2-Dichlorobenzene	ug/L	<0.14	20	20	17.4	19.9	87	99	74-136	13	30		
1,2-Dichloroethane	ug/L	<0.22	20	20	19.4	20.9	97	105	68-125	7	30		
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	42.4	45.5	106	114	71-126	7	30	N2	
1,2-Dichloropropane	ug/L	<0.16	20	20	20.0	20.9	100	105	67-125	4	30		
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	17.2	19.7	86	98	68-137	13	30		
1,3-Dichlorobenzene	ug/L	<0.16	20	20	16.9	19.9	85	100	75-131	16	30		
1,3-Dichloropropane	ug/L	<0.070	20	20	17.1	18.7	85	93	71-125	9	30		
1,4-Dichlorobenzene	ug/L	<0.17	20	20	17.4	20.0	87	100	74-126	14	30		
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	333	357	83	89	68-125	7	30		
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	23.4	23.3	117	116	54-129	1	30	N2	
2,2-Dichloropropane	ug/L	<0.17	20	20	23.0	25.9	115	129	69-139	12	30		
2-Butanone (MEK)	ug/L	<0.99	100	100	102	114	102	114	54-144	11	30		
2-Chlorotoluene	ug/L	<0.16	20	20	18.0	20.9	90	104	75-134	15	30		
2-Hexanone	ug/L	<0.88	100	100	77.7	85.8	78	86	58-137	10	30		
4-Chlorotoluene	ug/L	<0.13	20	20	17.8	20.4	89	102	72-133	14	30		
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	94.2	103	94	103	60-129	9	30		
Acetone	ug/L	<9.2	100	100	90.6	92.1	91	92	62-132	2	30		
Acrolein	ug/L	<1.2	200	200	299	337	150	169	30-150	12	30	M1	
Acrylonitrile	ug/L	<0.91	200	200	200	214	100	107	68-125	7	30		
Benzene	ug/L	<0.10	20	20	20.4	22.0	102	110	68-125	7	30		
Bromobenzene	ug/L	<0.21	20	20	16.7	18.5	83	92	73-126	10	30		
Bromochloromethane	ug/L	<0.27	20	20	19.4	21.0	97	105	66-143	8	30		
Bromodichloromethane	ug/L	<0.22	20	20	20.8	23.0	104	115	74-125	10	30		
Bromoform	ug/L	<0.80	20	20	19.2	21.6	96	108	64-134	12	30		
Bromomethane	ug/L	<1.8	20	20	17.7	18.5	88	93	30-150	5	30		
Carbon disulfide	ug/L	<0.078	20	20	25.0	24.3	125	122	43-147	3	30		
Carbon tetrachloride	ug/L	<0.19	20	20	23.3	26.0	116	130	71-143	11	30		
Chlorobenzene	ug/L	<0.17	20	20	18.3	19.8	92	99	75-125	8	30		
Chloroethane	ug/L	<0.49	20	20	24.4	25.6	122	128	75-129	5	30		
Chloroform	ug/L	<0.45	20	20	19.5	21.6	97	108	66-132	10	30		
Chloromethane	ug/L	<0.16	20	20	20.4	20.6	102	103	53-137	1	30		
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	19.9	22.4	99	112	67-133	12	30		
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	17.6	20.1	88	100	66-125	13	30		
Dibromochloromethane	ug/L	<0.12	20	20	19.2	21.2	96	106	62-132	10	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467607

Parameter	Units	10467660001		3216737		3216738		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Dibromomethane	ug/L	<0.16	20	20	18.0	19.2	90	96	67-125	6	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	25.0	25.4	125	127	71-142	2	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	22.1	22.7	110	113	70-131	3	30	N2	
Diisopropyl ether	ug/L	<0.13	20	20	20.6	22.0	103	110	63-131	6	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	20.2	21.6	101	108	66-128	7	30		
Ethylbenzene	ug/L	<0.14	20	20	18.5	20.4	93	102	74-126	10	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	19.7	19.8	98	99	68-143	1	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	17.5	20.1	88	101	74-130	14	30		
m&p-Xylene	ug/L	<0.31	40	40	37.2	41.8	93	104	69-132	11	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	20.1	22.4	100	112	65-131	11	30		
Methylene Chloride	ug/L	<0.98	20	20	21.0	22.2	105	111	57-125	5	30		
n-Butylbenzene	ug/L	<0.24	20	20	18.6	19.8	93	99	71-131	7	30		
n-Propylbenzene	ug/L	<0.10	20	20	18.0	20.9	90	104	67-138	15	30		
Naphthalene	ug/L	<0.48	20	20	15.0	17.9	75	90	60-130	17	30		
o-Xylene	ug/L	<0.16	20	20	17.5	19.4	87	97	69-131	10	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	18.4	20.3	92	101	72-133	10	30		
sec-Butylbenzene	ug/L	<0.15	20	20	17.5	18.8	87	94	73-134	7	30		
Styrene	ug/L	<0.19	20	20	16.7	18.2	84	91	72-125	8	30		
tert-Amylmethyl ether	ug/L	<0.11	20	20	19.7	21.8	99	109	67-125	10	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	195	205	98	102	64-137	5	30		
tert-Butylbenzene	ug/L	<0.15	20	20	18.0	20.5	90	102	70-143	13	30		
Tetrachloroethene	ug/L	<0.17	20	20	18.1	20.8	91	104	72-129	14	30		
Tetrahydrofuran	ug/L	<2.2	200	200	168	183	84	91	66-128	8	30		
Toluene	ug/L	<0.083	20	20	18.2	19.4	91	97	73-125	7	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	22.6	23.2	113	116	62-137	3	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	19.0	20.5	95	103	61-136	8	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	38.2	41.4	76	83	45-128	8	30		
Trichloroethene	ug/L	<0.15	20	20	20.8	22.4	104	112	74-132	7	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	22.8	22.7	114	114	75-139	0	30		
Vinyl acetate	ug/L	<1.1	20	20	18.7	19.7	93	99	51-135	6	30		
Vinyl chloride	ug/L	<0.092	20	20	21.7	22.2	108	111	68-146	2	30		
Xylene (Total)	ug/L	<0.31	60	60	54.7	61.2	91	102	67-137	11	30		
1,2-Dichloroethane-d4 (S)	%						104	105	75-136				
4-Bromofluorobenzene (S)	%						95	96	75-125				
Toluene-d8 (S)	%						91	92	75-125				

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467607

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

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

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467607

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467607

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10467607001	W26-GW-032019	EPA 8260B	595025		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt **Client Name:** CH2M Mill **Project #:** **WO#: 10467607**
Courier: Fed Ex UPS USPS Client
 Pace SpeedDee Commercial See Exception

PM: JMG **Due Date: 03/28/19**
CLIENT: UPRR_CH2M

Tracking Number: 4486 7792 707018 7081
Custody Seal on Cooler/Box Present? Yes No **Seals Intact?** Yes No **Biological Tissue Frozen?** Yes No N/A
Packing Material: Bubble Wrap Bubble Bags None Other: PB **Temp Blank?** Yes No
Thermometer: G87A9155100842 G87A9170600254 **Type of Ice:** Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)
 Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:** 1.0, 0.2 °C **Average Corrected Temp (no temp blank only):** °C
Correction Factor: +0.1 **Cooler Temp Corrected w/temp blank:** 1.1, 0.3 °C

USDA Regulated Soil: (N/A, water sample/Other: _____) **Date/Initials of Person Examining Contents:** CG 3/21/19
 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No
If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

		COMMENTS:
Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other		
All containers needing acid/base preservation have been checked?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. Sample # <input type="checkbox"/> NaOH <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No See Exception
Exceptions (VOA) Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Chlorine? <input type="checkbox"/> No <input type="checkbox"/> See Exception
Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. <input checked="" type="checkbox"/> See Exception
Trip Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. Pace Trip Blank Lot # (if purchased): <u>Shared w/ WO</u>
Trip Blank Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** Yes No 10467607
 Person Contacted: Mark Ochsner Date/Time: 06/27/18
 Comments/Resolution: WA certs not required for 8260 2,2,4-TMP or dichlorofluoromethane.

Project Manager Review: _____ **Date:** 03/21/19
 Note: Whenever there is a discrepancy affecting North Carolina samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect co

Labeled by: [Signature]

March 22, 2019

David Hodson
Jacobs
2020 SW 4th Ave
#300
Portland, OR 97201

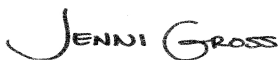
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467608

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 21, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Steve Demus, CH2M Hill
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467608

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467608

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10467608001	No.2-GW-032019	Water	03/20/19 11:20	03/21/19 10:00

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467608

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10467608001	No.2-GW-032019	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467608

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10467608001	No.2-GW-032019					
EPA 8260B	Carbon tetrachloride	49.5	ug/L	0.50	03/21/19 20:38	
EPA 8260B	Chloroform	4.7	ug/L	4.0	03/21/19 20:38	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467608

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 22, 2019

General Information:

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

Hold Time:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Internal Standards:

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

Surrogates:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 595025

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10467660001

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

- MSD (Lab ID: 3216738)
- Acrolein

Additional Comments:

Analyte Comments:

QC Batch: 595025

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3216576)
- 1,2-Dichloroethene (Total)
- Dichlorofluoromethane
- 2,2,4-Trimethylpentane

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467608

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 22, 2019

Analyte Comments:

QC Batch: 595025

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- LCS (Lab ID: 3216577)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3216737)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3216738)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- No.2-GW-032019 (Lab ID: 10467608001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Project No.: 10467608

Sample: No.2-GW-032019 Lab ID: 10467608001 Collected: 03/20/19 11:20 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/21/19 20:38	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/21/19 20:38	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/21/19 20:38	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/21/19 20:38	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/21/19 20:38	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/21/19 20:38	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/21/19 20:38	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/21/19 20:38	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/21/19 20:38	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/21/19 20:38	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/21/19 20:38	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/21/19 20:38	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/21/19 20:38	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/21/19 20:38	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/21/19 20:38	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/21/19 20:38	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/21/19 20:38	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/21/19 20:38	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	1.0	0.12	1		03/21/19 20:38	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/21/19 20:38	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/21/19 20:38	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/21/19 20:38	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/21/19 20:38	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/21/19 20:38	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/21/19 20:38	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/21/19 20:38	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/21/19 20:38	95-49-8	
2-Hexanone	<0.88	ug/L	20.0	0.88	1		03/21/19 20:38	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/21/19 20:38	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/21/19 20:38	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/21/19 20:38	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/21/19 20:38	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/21/19 20:38	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/21/19 20:38	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/21/19 20:38	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/21/19 20:38	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/21/19 20:38	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/21/19 20:38	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/21/19 20:38	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/21/19 20:38	75-15-0	
Carbon tetrachloride	49.5	ug/L	0.50	0.19	1		03/21/19 20:38	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/21/19 20:38	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/21/19 20:38	75-00-3	
Chloroform	4.7	ug/L	4.0	0.45	1		03/21/19 20:38	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/21/19 20:38	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/21/19 20:38	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467608

Sample: No.2-GW-032019 **Lab ID: 10467608001** Collected: 03/20/19 11:20 Received: 03/21/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level									
Analytical Method: EPA 8260B									
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/21/19 20:38	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/21/19 20:38	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/21/19 20:38	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/21/19 20:38	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/21/19 20:38	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/21/19 20:38	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/21/19 20:38	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		03/21/19 20:38	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/21/19 20:38	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/21/19 20:38	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/21/19 20:38	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/21/19 20:38	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/21/19 20:38	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/21/19 20:38	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		03/21/19 20:38	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/21/19 20:38	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/21/19 20:38	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/21/19 20:38	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/21/19 20:38	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/21/19 20:38	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/21/19 20:38	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/21/19 20:38	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/21/19 20:38	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/21/19 20:38	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/21/19 20:38	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/21/19 20:38	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/21/19 20:38	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/21/19 20:38	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/21/19 20:38	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/21/19 20:38	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/21/19 20:38	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/21/19 20:38	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		03/21/19 20:38	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/21/19 20:38	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	101	%	75-136		1		03/21/19 20:38	17060-07-0	
Toluene-d8 (S)	98	%	75-125		1		03/21/19 20:38	2037-26-5	
4-Bromofluorobenzene (S)	98	%	75-125		1		03/21/19 20:38	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467608

QC Batch: 595025

Analysis Method: EPA 8260B

QC Batch Method: EPA 8260B

Analysis Description: 8260 MSV LL Water

Associated Lab Samples: 10467608001

METHOD BLANK: 3216576

Matrix: Water

Associated Lab Samples: 10467608001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	03/21/19 15:04	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	03/21/19 15:04	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	03/21/19 15:04	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	03/21/19 15:04	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	03/21/19 15:04	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	03/21/19 15:04	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	03/21/19 15:04	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	03/21/19 15:04	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	03/21/19 15:04	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	03/21/19 15:04	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	03/21/19 15:04	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	03/21/19 15:04	MN
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	03/21/19 15:04	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	03/21/19 15:04	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	03/21/19 15:04	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	03/21/19 15:04	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	03/21/19 15:04	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	03/21/19 15:04	
1,3,5-Trimethylbenzene	ug/L	<0.12	1.0	0.12	03/21/19 15:04	MN
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/21/19 15:04	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	03/21/19 15:04	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	03/21/19 15:04	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	03/21/19 15:04	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	03/21/19 15:04	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	03/21/19 15:04	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	03/21/19 15:04	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	03/21/19 15:04	
2-Hexanone	ug/L	<0.88	20.0	0.88	03/21/19 15:04	MN
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/21/19 15:04	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	03/21/19 15:04	
Acetone	ug/L	<9.2	20.0	9.2	03/21/19 15:04	
Acrolein	ug/L	<1.2	10.0	1.2	03/21/19 15:04	
Acrylonitrile	ug/L	<0.91	10.0	0.91	03/21/19 15:04	
Benzene	ug/L	<0.10	0.50	0.10	03/21/19 15:04	
Bromobenzene	ug/L	<0.21	0.50	0.21	03/21/19 15:04	
Bromochloromethane	ug/L	<0.27	1.0	0.27	03/21/19 15:04	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	03/21/19 15:04	
Bromoform	ug/L	<0.80	4.0	0.80	03/21/19 15:04	
Bromomethane	ug/L	<1.8	4.0	1.8	03/21/19 15:04	
Carbon disulfide	ug/L	<0.078	1.0	0.078	03/21/19 15:04	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	03/21/19 15:04	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467608

METHOD BLANK: 3216576

Matrix: Water

Associated Lab Samples: 10467608001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	03/21/19 15:04	
Chloroethane	ug/L	<0.49	1.0	0.49	03/21/19 15:04	
Chloroform	ug/L	<0.45	4.0	0.45	03/21/19 15:04	MN
Chloromethane	ug/L	<0.16	4.0	0.16	03/21/19 15:04	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	03/21/19 15:04	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	03/21/19 15:04	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	03/21/19 15:04	
Dibromomethane	ug/L	<0.16	1.0	0.16	03/21/19 15:04	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	03/21/19 15:04	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	03/21/19 15:04	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	03/21/19 15:04	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	03/21/19 15:04	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/21/19 15:04	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	03/21/19 15:04	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	03/21/19 15:04	MN
m&p-Xylene	ug/L	<0.31	1.0	0.31	03/21/19 15:04	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	03/21/19 15:04	
Methylene Chloride	ug/L	<0.98	4.0	0.98	03/21/19 15:04	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	03/21/19 15:04	MN
n-Propylbenzene	ug/L	<0.10	0.50	0.10	03/21/19 15:04	
Naphthalene	ug/L	<0.48	1.0	0.48	03/21/19 15:04	
o-Xylene	ug/L	<0.16	0.50	0.16	03/21/19 15:04	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	03/21/19 15:04	MN
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	03/21/19 15:04	MN
Styrene	ug/L	<0.19	1.0	0.19	03/21/19 15:04	MN
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	03/21/19 15:04	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	03/21/19 15:04	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	03/21/19 15:04	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	03/21/19 15:04	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	03/21/19 15:04	
Toluene	ug/L	<0.083	0.50	0.083	03/21/19 15:04	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	03/21/19 15:04	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	03/21/19 15:04	MN
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	03/21/19 15:04	
Trichloroethene	ug/L	<0.15	0.40	0.15	03/21/19 15:04	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	03/21/19 15:04	
Vinyl acetate	ug/L	<1.1	10.0	1.1	03/21/19 15:04	
Vinyl chloride	ug/L	<0.092	0.20	0.092	03/21/19 15:04	
Xylene (Total)	ug/L	<0.31	1.5	0.31	03/21/19 15:04	
1,2-Dichloroethane-d4 (S)	%	108	75-136		03/21/19 15:04	
4-Bromofluorobenzene (S)	%	98	75-125		03/21/19 15:04	
Toluene-d8 (S)	%	97	75-125		03/21/19 15:04	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467608

LABORATORY CONTROL SAMPLE: 3216577

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	20.4	102	68-141	
1,1,1-Trichloroethane	ug/L	20	22.6	113	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	18.4	92	73-125	
1,1,2-Trichloroethane	ug/L	20	19.6	98	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	22.4	112	69-132	
1,1-Dichloroethane	ug/L	20	22.9	115	73-125	
1,1-Dichloroethene	ug/L	20	21.0	105	71-126	
1,1-Dichloropropene	ug/L	20	23.4	117	73-126	
1,2,3-Trichlorobenzene	ug/L	20	17.9	90	72-126	
1,2,3-Trichloropropane	ug/L	20	19.2	96	75-126	
1,2,4-Trichlorobenzene	ug/L	20	16.2	81	71-134	
1,2,4-Trimethylbenzene	ug/L	20	17.0	85	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	42.6	85	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	18.4	92	75-129	
1,2-Dichlorobenzene	ug/L	20	18.4	92	75-129	
1,2-Dichloroethane	ug/L	20	20.2	101	75-125	
1,2-Dichloroethene (Total)	ug/L	40	44.0	110	74-125	N2
1,2-Dichloropropane	ug/L	20	21.6	108	75-125	
1,3,5-Trimethylbenzene	ug/L	20	17.2	86	75-127	
1,3-Dichlorobenzene	ug/L	20	18.0	90	75-126	
1,3-Dichloropropane	ug/L	20	18.8	94	75-125	
1,4-Dichlorobenzene	ug/L	20	18.0	90	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	383	96	72-129	
2,2,4-Trimethylpentane	ug/L	20	20.4	102	72-128	N2
2,2-Dichloropropane	ug/L	20	22.3	111	65-138	
2-Butanone (MEK)	ug/L	100	122	122	59-144	
2-Chlorotoluene	ug/L	20	18.4	92	75-127	
2-Hexanone	ug/L	100	89.0	89	73-134	
4-Chlorotoluene	ug/L	20	18.2	91	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	105	105	62-141	
Acetone	ug/L	100	114	114	60-137	
Acrolein	ug/L	200	280	140	60-141	
Acrylonitrile	ug/L	200	219	110	75-129	
Benzene	ug/L	20	20.1	100	73-125	
Bromobenzene	ug/L	20	17.5	88	73-125	
Bromochloromethane	ug/L	20	20.5	103	75-135	
Bromodichloromethane	ug/L	20	23.2	116	75-125	
Bromoform	ug/L	20	20.6	103	67-136	
Bromomethane	ug/L	20	18.3	91	30-150	
Carbon disulfide	ug/L	20	22.9	114	47-137	
Carbon tetrachloride	ug/L	20	23.1	115	75-125	
Chlorobenzene	ug/L	20	18.8	94	75-125	
Chloroethane	ug/L	20	23.0	115	63-136	
Chloroform	ug/L	20	21.7	109	73-128	
Chloromethane	ug/L	20	20.7	103	55-130	
cis-1,2-Dichloroethene	ug/L	20	21.3	106	75-125	
cis-1,3-Dichloropropene	ug/L	20	21.3	106	74-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467608

LABORATORY CONTROL SAMPLE: 3216577

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	21.0	105	75-125	
Dibromomethane	ug/L	20	19.8	99	75-125	
Dichlorodifluoromethane	ug/L	20	24.4	122	63-132	
Dichlorofluoromethane	ug/L	20	22.7	114	68-127	N2
Diisopropyl ether	ug/L	20	21.6	108	71-131	
Ethyl-tert-butyl ether	ug/L	20	21.2	106	75-125	
Ethylbenzene	ug/L	20	18.9	94	75-125	
Hexachloro-1,3-butadiene	ug/L	20	17.9	89	72-134	
Isopropylbenzene (Cumene)	ug/L	20	17.4	87	75-125	
m&p-Xylene	ug/L	40	37.6	94	75-126	
Methyl-tert-butyl ether	ug/L	20	21.4	107	75-125	
Methylene Chloride	ug/L	20	21.3	107	70-125	
n-Butylbenzene	ug/L	20	17.4	87	75-126	
n-Propylbenzene	ug/L	20	18.0	90	73-127	
Naphthalene	ug/L	20	15.7	78	63-128	
o-Xylene	ug/L	20	18.2	91	75-128	
p-Isopropyltoluene	ug/L	20	18.0	90	75-125	
sec-Butylbenzene	ug/L	20	16.8	84	75-126	
Styrene	ug/L	20	17.6	88	75-125	
tert-Amylmethyl ether	ug/L	20	19.9	99	75-125	
tert-Butyl Alcohol	ug/L	200	206	103	75-130	
tert-Butylbenzene	ug/L	20	18.0	90	75-131	
Tetrachloroethene	ug/L	20	18.1	90	74-125	
Tetrahydrofuran	ug/L	200	184	92	64-138	
Toluene	ug/L	20	18.3	91	74-125	
trans-1,2-Dichloroethene	ug/L	20	22.8	114	68-128	
trans-1,3-Dichloropropene	ug/L	20	20.2	101	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	40.7	81	60-127	
Trichloroethene	ug/L	20	21.4	107	75-127	
Trichlorofluoromethane	ug/L	20	22.9	115	72-133	
Vinyl acetate	ug/L	20	19.0	95	61-129	
Vinyl chloride	ug/L	20	21.7	109	75-128	
Xylene (Total)	ug/L	60	55.9	93	75-125	
1,2-Dichloroethane-d4 (S)	%			102	75-136	
4-Bromofluorobenzene (S)	%			95	75-125	
Toluene-d8 (S)	%			93	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3216737 3216738

Parameter	Units	10467660001		MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20	19.5	21.0	97	105	75-140	7	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20	22.1	23.7	110	119	74-136	7	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20	17.7	19.1	89	96	66-134	8	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20	17.3	18.7	87	94	75-126	8	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467608

Parameter	Units	10467660001		MS		MSD		MS		MSD		% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec							
MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3216737 3216738																
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	24.2	25.9	121	130	65-146	7	30					
1,1-Dichloroethane	ug/L	<0.17	20	20	22.0	23.1	110	115	68-132	5	30					
1,1-Dichloroethene	ug/L	<0.16	20	20	22.6	23.0	113	115	66-139	2	30					
1,1-Dichloropropene	ug/L	<0.20	20	20	23.4	25.5	117	128	67-134	9	30					
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	18.1	20.2	91	101	67-129	11	30					
1,2,3-Trichloropropane	ug/L	<0.26	20	20	17.3	19.2	86	96	69-128	11	30					
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	16.7	18.1	84	91	65-140	8	30					
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	16.8	19.3	84	97	71-133	14	30					
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	40.5	45.1	81	90	54-138	11	30					
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	16.8	18.3	84	92	68-125	9	30					
1,2-Dichlorobenzene	ug/L	<0.14	20	20	17.4	19.9	87	99	74-136	13	30					
1,2-Dichloroethane	ug/L	<0.22	20	20	19.4	20.9	97	105	68-125	7	30					
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	42.4	45.5	106	114	71-126	7	30	N2				
1,2-Dichloropropane	ug/L	<0.16	20	20	20.0	20.9	100	105	67-125	4	30					
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	17.2	19.7	86	98	68-137	13	30					
1,3-Dichlorobenzene	ug/L	<0.16	20	20	16.9	19.9	85	100	75-131	16	30					
1,3-Dichloropropane	ug/L	<0.070	20	20	17.1	18.7	85	93	71-125	9	30					
1,4-Dichlorobenzene	ug/L	<0.17	20	20	17.4	20.0	87	100	74-126	14	30					
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	333	357	83	89	68-125	7	30					
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	23.4	23.3	117	116	54-129	1	30	N2				
2,2-Dichloropropane	ug/L	<0.17	20	20	23.0	25.9	115	129	69-139	12	30					
2-Butanone (MEK)	ug/L	<0.99	100	100	102	114	102	114	54-144	11	30					
2-Chlorotoluene	ug/L	<0.16	20	20	18.0	20.9	90	104	75-134	15	30					
2-Hexanone	ug/L	<0.88	100	100	77.7	85.8	78	86	58-137	10	30					
4-Chlorotoluene	ug/L	<0.13	20	20	17.8	20.4	89	102	72-133	14	30					
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	94.2	103	94	103	60-129	9	30					
Acetone	ug/L	<9.2	100	100	90.6	92.1	91	92	62-132	2	30					
Acrolein	ug/L	<1.2	200	200	299	337	150	169	30-150	12	30	M1				
Acrylonitrile	ug/L	<0.91	200	200	200	214	100	107	68-125	7	30					
Benzene	ug/L	<0.10	20	20	20.4	22.0	102	110	68-125	7	30					
Bromobenzene	ug/L	<0.21	20	20	16.7	18.5	83	92	73-126	10	30					
Bromochloromethane	ug/L	<0.27	20	20	19.4	21.0	97	105	66-143	8	30					
Bromodichloromethane	ug/L	<0.22	20	20	20.8	23.0	104	115	74-125	10	30					
Bromoform	ug/L	<0.80	20	20	19.2	21.6	96	108	64-134	12	30					
Bromomethane	ug/L	<1.8	20	20	17.7	18.5	88	93	30-150	5	30					
Carbon disulfide	ug/L	<0.078	20	20	25.0	24.3	125	122	43-147	3	30					
Carbon tetrachloride	ug/L	<0.19	20	20	23.3	26.0	116	130	71-143	11	30					
Chlorobenzene	ug/L	<0.17	20	20	18.3	19.8	92	99	75-125	8	30					
Chloroethane	ug/L	<0.49	20	20	24.4	25.6	122	128	75-129	5	30					
Chloroform	ug/L	<0.45	20	20	19.5	21.6	97	108	66-132	10	30					
Chloromethane	ug/L	<0.16	20	20	20.4	20.6	102	103	53-137	1	30					
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	19.9	22.4	99	112	67-133	12	30					
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	17.6	20.1	88	100	66-125	13	30					
Dibromochloromethane	ug/L	<0.12	20	20	19.2	21.2	96	106	62-132	10	30					

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467608

Parameter	Units	10467660001		3216737		3216738		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Dibromomethane	ug/L	<0.16	20	20	18.0	19.2	90	96	67-125	6	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	25.0	25.4	125	127	71-142	2	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	22.1	22.7	110	113	70-131	3	30	N2	
Diisopropyl ether	ug/L	<0.13	20	20	20.6	22.0	103	110	63-131	6	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	20.2	21.6	101	108	66-128	7	30		
Ethylbenzene	ug/L	<0.14	20	20	18.5	20.4	93	102	74-126	10	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	19.7	19.8	98	99	68-143	1	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	17.5	20.1	88	101	74-130	14	30		
m&p-Xylene	ug/L	<0.31	40	40	37.2	41.8	93	104	69-132	11	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	20.1	22.4	100	112	65-131	11	30		
Methylene Chloride	ug/L	<0.98	20	20	21.0	22.2	105	111	57-125	5	30		
n-Butylbenzene	ug/L	<0.24	20	20	18.6	19.8	93	99	71-131	7	30		
n-Propylbenzene	ug/L	<0.10	20	20	18.0	20.9	90	104	67-138	15	30		
Naphthalene	ug/L	<0.48	20	20	15.0	17.9	75	90	60-130	17	30		
o-Xylene	ug/L	<0.16	20	20	17.5	19.4	87	97	69-131	10	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	18.4	20.3	92	101	72-133	10	30		
sec-Butylbenzene	ug/L	<0.15	20	20	17.5	18.8	87	94	73-134	7	30		
Styrene	ug/L	<0.19	20	20	16.7	18.2	84	91	72-125	8	30		
tert-Amylmethyl ether	ug/L	<0.11	20	20	19.7	21.8	99	109	67-125	10	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	195	205	98	102	64-137	5	30		
tert-Butylbenzene	ug/L	<0.15	20	20	18.0	20.5	90	102	70-143	13	30		
Tetrachloroethene	ug/L	<0.17	20	20	18.1	20.8	91	104	72-129	14	30		
Tetrahydrofuran	ug/L	<2.2	200	200	168	183	84	91	66-128	8	30		
Toluene	ug/L	<0.083	20	20	18.2	19.4	91	97	73-125	7	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	22.6	23.2	113	116	62-137	3	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	19.0	20.5	95	103	61-136	8	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	38.2	41.4	76	83	45-128	8	30		
Trichloroethene	ug/L	<0.15	20	20	20.8	22.4	104	112	74-132	7	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	22.8	22.7	114	114	75-139	0	30		
Vinyl acetate	ug/L	<1.1	20	20	18.7	19.7	93	99	51-135	6	30		
Vinyl chloride	ug/L	<0.092	20	20	21.7	22.2	108	111	68-146	2	30		
Xylene (Total)	ug/L	<0.31	60	60	54.7	61.2	91	102	67-137	11	30		
1,2-Dichloroethane-d4 (S)	%						104	105	75-136				
4-Bromofluorobenzene (S)	%						95	96	75-125				
Toluene-d8 (S)	%						91	92	75-125				

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467608

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

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

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467608

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467608

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10467608001	No.2-GW-032019	EPA 8260B	595025		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt **Client Name:** CH2M Hill **Project #:** **WO# : 10467608**
Courier: Fed Ex UPS USPS Client
 Pace SpeeDee Commercial See Exception
Tracking Number: 4486 7792 7076/7081

PM: JMG **Due Date:** 03/28/19
CLIENT: UPRR_CH2M

Custody Seal on Cooler/Box Present? Yes No **Seals Intact?** Yes No **Biological Tissue Frozen?** Yes No N/A
Packing Material: Bubble Wrap Bubble Bags None Other: PB **Temp Blank?** Yes No
Thermometer: G87A9155100842 G87A9170600254 **Type of Ice:** Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)
 Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:** 1.0, 0.2 °C **Average Corrected Temp (no temp blank only):** See Exceptions
Correction Factor: +0.1 **Cooler Temp Corrected w/temp blank:** 1.1, 0.3 °C

USDA Regulated Soil: (N/A, water sample/Other: _____) **Date/Initials of Person Examining Contents:** CG 3/21/19
 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No
If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

	COMMENTS:
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <u>JMG</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <u>032119</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No -Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception
All containers needing acid/base preservation have been checked? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. Sample # <input type="checkbox"/> NaOH <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide) <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No See Exception
Exceptions: <u>(VOA)</u> Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No See Exception
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14.
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): <u>Shared w/ WO</u>

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** Yes No 10467602
 Person Contacted: Mark Ochsner Date/Time: 06/27/18
 Comments/Resolution: WA State certs not required for 8260 2,2,4-TMP or dichlorofluoromethane.

Project Manager Review: JENNI GROSS Date: 03/21/19
 Note: Whenever there is a discrepancy affecting North Carolina hold, incorrect preservative, out of temp, incorrect containers), a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of

Labeled by: [Signature]

April 05, 2019

David Hodson
Jacobs
2020 SW 4th Ave
#300
Portland, OR 97201

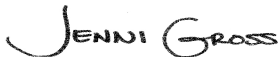
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467822

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 22, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Steve Demus, CH2M Hill
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
 A2LA Certification #: 2926.01
 Alabama Certification #: 40770
 Alaska Contaminated Sites Certification #: 17-009
 Alaska DW Certification #: MN00064
 Arizona Certification #: AZ0014
 Arkansas DW Certification #: MN00064
 Arkansas WW Certification #: 88-0680
 California Certification #: 2929
 CNMI Saipan Certification #: MP0003
 Colorado Certification #: MN00064
 Connecticut Certification #: PH-0256
 EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
 Florida Certification #: E87605
 Georgia Certification #: 959
 Guam EPA Certification #: MN00064
 Hawaii Certification #: MN00064
 Idaho Certification #: MN00064
 Illinois Certification #: 200011
 Indiana Certification #: C-MN-01
 Iowa Certification #: 368
 Kansas Certification #: E-10167
 Kentucky DW Certification #: 90062
 Kentucky WW Certification #: 90062
 Louisiana DEQ Certification #: 03086
 Louisiana DW Certification #: MN00064
 Maine Certification #: MN00064
 Maryland Certification #: 322
 Massachusetts Certification #: M-MN064
 Michigan Certification #: 9909
 Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137
 Minnesota Petrofund Certification #: 1240
 Mississippi Certification #: MN00064
 Missouri Certification #: 10100
 Montana Certification #: CERT0092
 Nebraska Certification #: NE-OS-18-06
 Nevada Certification #: MN00064
 New Hampshire Certification #: 2081
 New Jersey Certification #: MN002
 New York Certification #: 11647
 North Carolina DW Certification #: 27700
 North Carolina WW Certification #: 530
 North Dakota Certification #: R-036
 Ohio DW Certification #: 41244
 Ohio VAP Certification #: CL101
 Oklahoma Certification #: 9507
 Oregon Primary Certification #: MN300001
 Oregon Secondary Certification #: MN200001
 Pennsylvania Certification #: 68-00563
 Puerto Rico Certification #: MN00064
 South Carolina Certification #:74003001
 Tennessee Certification #: TN02818
 Texas Certification #: T104704192
 Utah Certification #: MN00064
 Virginia Certification #: 460163
 Washington Certification #: C486
 West Virginia DEP Certification #: 382
 West Virginia DW Certification #: 9952 C
 Wisconsin Certification #: 999407970
 Wyoming UST Certification #: via A2LA 2926.01

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
 Alaska Certification UST-107
 Montana Certificate #CERT0103
 Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203
 Wisconsin DNR Certification # : 998027470
 WA Department of Ecology Lab ID# C1007

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
 11277CA
 Florida Department of Health (NELAC): E87595
 Illinois Environmental Protection Agency: 0025721
 Kansas Department of Health and Environment (NELAC):
 E-10266
 Louisiana Dept. of Environmental Quality (NELAC/LELAP):
 02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202
 Texas Commission on Env. Quality (NELAC):
 T104704405-09-TX
 U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
 Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10467822001	Lashaw-GW-032119	Water	03/21/19 09:00	03/22/19 08:30
10467822002	Asher-GW-032119	Water	03/21/19 10:15	03/22/19 08:30
10467822003	Atwood-GW-032119	Water	03/21/19 11:10	03/22/19 08:30
10467822004	Atwood Shop-GW-032119	Water	03/21/19 11:15	03/22/19 08:30
10467822005	Thorson-GW-032119	Water	03/21/19 12:00	03/22/19 08:30
10467822006	Stark-GW-032119	Water	03/21/19 12:45	03/22/19 08:30
10467822007	Lang-GW-032119	Water	03/21/19 13:30	03/22/19 08:30
10467822008	Reed-GW-032119	Water	03/21/19 14:00	03/22/19 08:30
10467822009	Marlow-GW-032119	Water	03/21/19 14:30	03/22/19 08:30
10467822010	Randall-GW-032119	Water	03/21/19 15:00	03/22/19 08:30
10467822011	SG1-GW-032119	Water	03/21/19 15:20	03/22/19 08:30
10467822012	SG2-GW-032119	Water	03/21/19 15:25	03/22/19 08:30
10467822013	TB-032119	Water	03/21/19 07:00	03/22/19 08:30
10467822014	TB2-032119	Water	03/21/19 07:15	03/22/19 08:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10467822001	Lashaw-GW-032119	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10467822002	Asher-GW-032119	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10467822003	Atwood-GW-032119	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10467822004	Atwood Shop-GW-032119	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467822

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10467822005	Thorson-GW-032119	EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
		RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
10467822006	Stark-GW-032119	EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
		RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JFP	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
10467822007	Lang-GW-032119	EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
		RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
10467822008	Reed-GW-032119	EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
		RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10467822009	Marlow-GW-032119	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10467822010	Randall-GW-032119	RSK 175	AMC	3	PASI-M
		EPA 6010D	DM	22	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10467822011	SG1-GW-032119	EPA 8260B	DS2	83	PASI-M
10467822012	SG2-GW-032119	EPA 8260B	DS2	83	PASI-M
10467822013	TB-032119	EPA 8260B	DS2	83	PASI-M
10467822014	TB2-032119	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10467822001	Lashaw-GW-032119					
EPA 6010D	Barium, Dissolved	9.4J	ug/L	10.0	03/26/19 12:48	
EPA 6010D	Cadmium, Dissolved	0.86J	ug/L	3.0	03/26/19 12:48	
EPA 6010D	Calcium, Dissolved	26200	ug/L	500	03/26/19 12:48	
EPA 6010D	Cobalt, Dissolved	1.4J	ug/L	10.0	03/26/19 12:48	
EPA 6010D	Copper, Dissolved	7.4J	ug/L	10.0	03/26/19 12:48	
EPA 6010D	Magnesium, Dissolved	12900	ug/L	500	03/26/19 12:48	
EPA 6010D	Manganese, Dissolved	0.25J	ug/L	5.0	03/26/19 12:48	
EPA 6010D	Nickel, Dissolved	2.5J	ug/L	20.0	03/26/19 12:48	
EPA 6010D	Potassium, Dissolved	3760	ug/L	2500	03/26/19 12:48	
EPA 6010D	Sodium, Dissolved	15800	ug/L	1000	03/26/19 12:48	
EPA 6010D	Vanadium, Dissolved	11.1J	ug/L	15.0	03/26/19 12:48	
EPA 6010D	Zinc, Dissolved	30.6	ug/L	20.0	03/26/19 12:48	
SM 2320B	Alkalinity, Total as CaCO3	148	mg/L	5.0	04/01/19 13:09	
SM 2540C	Total Dissolved Solids	198	mg/L	10.0	03/27/19 12:47	
SM 4500-S-2 D	Sulfide, Total	0.0074J	mg/L	0.020	03/26/19 12:22	M1
EPA 300.0	Chloride	1.6	mg/L	1.2	03/23/19 05:07	M1
EPA 300.0	Nitrate as N	2.4	mg/L	0.10	03/23/19 05:07	M1
EPA 300.0	Sulfate	5.4	mg/L	1.2	03/23/19 05:07	M1
EPA 353.2	Nitrogen, NO2 plus NO3	2.5	mg/L	0.50	04/04/19 11:55	
SM 5310C	Total Organic Carbon	0.52J	mg/L	1.0	03/29/19 12:40	
10467822002	Asher-GW-032119					
EPA 6010D	Barium, Dissolved	78.6	ug/L	10.0	03/26/19 12:56	
EPA 6010D	Cadmium, Dissolved	0.66J	ug/L	3.0	03/26/19 12:56	
EPA 6010D	Calcium, Dissolved	62900	ug/L	500	03/26/19 12:56	
EPA 6010D	Chromium, Dissolved	0.81J	ug/L	10.0	03/26/19 12:56	
EPA 6010D	Cobalt, Dissolved	2.0J	ug/L	10.0	03/26/19 12:56	
EPA 6010D	Copper, Dissolved	131	ug/L	10.0	03/26/19 12:56	
EPA 6010D	Iron, Dissolved	4.7J	ug/L	50.0	03/26/19 12:56	
EPA 6010D	Lead, Dissolved	2.0J	ug/L	10.0	03/26/19 12:56	
EPA 6010D	Magnesium, Dissolved	18500	ug/L	500	03/26/19 12:56	
EPA 6010D	Manganese, Dissolved	0.25J	ug/L	5.0	03/26/19 12:56	
EPA 6010D	Nickel, Dissolved	3.3J	ug/L	20.0	03/26/19 12:56	
EPA 6010D	Potassium, Dissolved	1200J	ug/L	2500	03/26/19 12:56	
EPA 6010D	Sodium, Dissolved	20600	ug/L	1000	03/26/19 12:56	
EPA 6010D	Vanadium, Dissolved	10.7J	ug/L	15.0	03/26/19 12:56	
EPA 6010D	Zinc, Dissolved	27.5	ug/L	20.0	03/26/19 12:56	
SM 2320B	Alkalinity, Total as CaCO3	226	mg/L	5.0	04/01/19 13:22	M1
SM 2540C	Total Dissolved Solids	350	mg/L	10.0	03/27/19 12:47	
EPA 300.0	Chloride	6.8	mg/L	1.2	03/22/19 23:26	M1
EPA 300.0	Nitrate as N	6.6	mg/L	0.10	03/22/19 23:26	M1
EPA 300.0	Sulfate	24.2	mg/L	1.2	03/22/19 23:26	M1
EPA 353.2	Nitrogen, NO2 plus NO3	7.1	mg/L	1.0	04/04/19 11:58	M6
SM 5310C	Total Organic Carbon	0.94J	mg/L	1.0	03/29/19 13:22	
10467822003	Atwood-GW-032119					
EPA 6010D	Barium, Dissolved	40.6	ug/L	10.0	03/26/19 13:13	
EPA 6010D	Cadmium, Dissolved	0.86J	ug/L	3.0	03/26/19 13:13	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
10467822003	Atwood-GW-032119					
EPA 6010D	Calcium, Dissolved	26300	ug/L	500	03/26/19 13:13	
EPA 6010D	Copper, Dissolved	8.1J	ug/L	10.0	03/26/19 13:13	
EPA 6010D	Iron, Dissolved	16.0J	ug/L	50.0	03/26/19 13:13	
EPA 6010D	Magnesium, Dissolved	11400	ug/L	500	03/26/19 13:13	
EPA 6010D	Manganese, Dissolved	13.9	ug/L	5.0	03/26/19 13:13	
EPA 6010D	Nickel, Dissolved	2.7J	ug/L	20.0	03/26/19 13:13	
EPA 6010D	Potassium, Dissolved	3780	ug/L	2500	03/26/19 13:13	
EPA 6010D	Sodium, Dissolved	15100	ug/L	1000	03/26/19 13:13	
EPA 6010D	Vanadium, Dissolved	2.2J	ug/L	15.0	03/26/19 13:13	
EPA 6010D	Zinc, Dissolved	32.1	ug/L	20.0	03/26/19 13:13	
SM 2320B	Alkalinity, Total as CaCO3	147	mg/L	5.0	04/01/19 13:35	
SM 2540C	Total Dissolved Solids	210	mg/L	10.0	03/27/19 12:47	
EPA 300.0	Chloride	1.2J	mg/L	1.2	03/23/19 01:01	
EPA 300.0	Nitrate as N	0.14	mg/L	0.10	03/23/19 01:01	
EPA 300.0	Sulfate	3.3	mg/L	1.2	03/23/19 01:01	
EPA 353.2	Nitrogen, NO2 plus NO3	0.15	mg/L	0.10	04/04/19 12:02	
10467822004	Atwood Shop-GW-032119					
EPA 6010D	Aluminum, Dissolved	15.6J	ug/L	200	03/26/19 13:14	
EPA 6010D	Barium, Dissolved	29.7	ug/L	10.0	03/26/19 13:14	
EPA 6010D	Cadmium, Dissolved	0.26J	ug/L	3.0	03/26/19 13:14	
EPA 6010D	Calcium, Dissolved	32600	ug/L	500	03/26/19 13:14	
EPA 6010D	Copper, Dissolved	412	ug/L	10.0	03/26/19 13:14	
EPA 6010D	Iron, Dissolved	237	ug/L	50.0	03/26/19 13:14	
EPA 6010D	Lead, Dissolved	8.0J	ug/L	10.0	03/26/19 13:14	
EPA 6010D	Magnesium, Dissolved	11000	ug/L	500	03/26/19 13:14	
EPA 6010D	Manganese, Dissolved	7.0	ug/L	5.0	03/26/19 13:14	
EPA 6010D	Nickel, Dissolved	3.8J	ug/L	20.0	03/26/19 13:14	
EPA 6010D	Potassium, Dissolved	1500J	ug/L	2500	03/26/19 13:14	
EPA 6010D	Sodium, Dissolved	12800	ug/L	1000	03/26/19 13:14	
EPA 6010D	Vanadium, Dissolved	7.0J	ug/L	15.0	03/26/19 13:14	
EPA 6010D	Zinc, Dissolved	1700	ug/L	20.0	03/26/19 13:14	
SM 2320B	Alkalinity, Total as CaCO3	161	mg/L	5.0	04/01/19 14:11	
SM 2540C	Total Dissolved Solids	205	mg/L	10.0	03/27/19 12:47	
EPA 300.0	Chloride	1.3	mg/L	1.2	03/23/19 01:31	
EPA 300.0	Nitrate as N	0.73	mg/L	0.10	03/23/19 01:31	
EPA 300.0	Sulfate	3.8	mg/L	1.2	03/23/19 01:31	
EPA 353.2	Nitrogen, NO2 plus NO3	0.56	mg/L	0.10	04/04/19 11:40	
SM 5310C	Total Organic Carbon	0.50J	mg/L	1.0	03/29/19 14:18	
10467822005	Thorson-GW-032119					
EPA 6010D	Barium, Dissolved	53.8	ug/L	10.0	03/26/19 13:16	
EPA 6010D	Cadmium, Dissolved	0.59J	ug/L	3.0	03/26/19 13:16	
EPA 6010D	Calcium, Dissolved	24000	ug/L	500	03/26/19 13:16	
EPA 6010D	Cobalt, Dissolved	1.4J	ug/L	10.0	03/26/19 13:16	
EPA 6010D	Iron, Dissolved	1990	ug/L	50.0	03/26/19 13:16	
EPA 6010D	Magnesium, Dissolved	11800	ug/L	500	03/26/19 13:16	
EPA 6010D	Manganese, Dissolved	33.0	ug/L	5.0	03/26/19 13:16	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
10467822005	Thorson-GW-032119					
EPA 6010D	Nickel, Dissolved	1.9J	ug/L	20.0	03/26/19 13:16	
EPA 6010D	Potassium, Dissolved	3850	ug/L	2500	03/26/19 13:16	
EPA 6010D	Sodium, Dissolved	14400	ug/L	1000	03/26/19 13:16	
EPA 6010D	Vanadium, Dissolved	0.42J	ug/L	15.0	03/26/19 13:16	
EPA 6010D	Zinc, Dissolved	22.9	ug/L	20.0	03/26/19 13:16	
SM 2320B	Alkalinity, Total as CaCO3	154	mg/L	5.0	04/01/19 14:15	
SM 2540C	Total Dissolved Solids	196	mg/L	10.0	03/27/19 12:47	
EPA 300.0	Chloride	1.2J	mg/L	1.2	03/23/19 01:46	
EPA 300.0	Sulfate	2.5	mg/L	1.2	03/23/19 01:46	
10467822006	Stark-GW-032119					
EPA 6010D	Barium, Dissolved	35.2	ug/L	10.0	03/26/19 13:18	
EPA 6010D	Cadmium, Dissolved	0.92J	ug/L	3.0	03/26/19 13:18	
EPA 6010D	Calcium, Dissolved	33000	ug/L	500	03/26/19 13:18	
EPA 6010D	Cobalt, Dissolved	1.5J	ug/L	10.0	03/26/19 13:18	
EPA 6010D	Copper, Dissolved	112	ug/L	10.0	03/26/19 13:18	
EPA 6010D	Magnesium, Dissolved	11400	ug/L	500	03/26/19 13:18	
EPA 6010D	Manganese, Dissolved	0.36J	ug/L	5.0	03/26/19 13:18	
EPA 6010D	Nickel, Dissolved	2.9J	ug/L	20.0	03/26/19 13:18	
EPA 6010D	Potassium, Dissolved	1760J	ug/L	2500	03/26/19 13:18	
EPA 6010D	Sodium, Dissolved	17100	ug/L	1000	03/26/19 13:18	
EPA 6010D	Vanadium, Dissolved	6.4J	ug/L	15.0	03/26/19 13:18	
EPA 6010D	Zinc, Dissolved	67.1	ug/L	20.0	03/26/19 13:18	
SM 2320B	Alkalinity, Total as CaCO3	113	mg/L	5.0	04/02/19 09:00	
SM 2540C	Total Dissolved Solids	263	mg/L	10.0	03/28/19 19:48	
EPA 300.0	Chloride	1.3	mg/L	1.2	03/23/19 02:01	M1
EPA 300.0	Nitrate as N	13.7	mg/L	0.50	03/23/19 08:22	M1
EPA 300.0	Sulfate	9.8	mg/L	1.2	03/23/19 02:01	M1
EPA 353.2	Nitrogen, NO2 plus NO3	15.7	mg/L	1.0	04/04/19 14:39	
SM 5310C	Total Organic Carbon	0.58J	mg/L	1.0	03/29/19 15:14	
10467822007	Lang-GW-032119					
EPA 6010D	Barium, Dissolved	18.0	ug/L	10.0	03/26/19 13:30	
EPA 6010D	Calcium, Dissolved	43500	ug/L	500	03/26/19 13:30	
EPA 6010D	Cobalt, Dissolved	0.53J	ug/L	10.0	03/26/19 13:30	
EPA 6010D	Copper, Dissolved	87.0	ug/L	10.0	03/26/19 13:30	
EPA 6010D	Iron, Dissolved	217	ug/L	50.0	03/26/19 13:30	
EPA 6010D	Magnesium, Dissolved	12200	ug/L	500	03/26/19 13:30	
EPA 6010D	Manganese, Dissolved	9.4	ug/L	5.0	03/26/19 13:30	
EPA 6010D	Potassium, Dissolved	1100J	ug/L	2500	03/26/19 13:30	
EPA 6010D	Sodium, Dissolved	17200	ug/L	1000	03/26/19 13:30	
EPA 6010D	Vanadium, Dissolved	5.8J	ug/L	15.0	03/26/19 13:30	
EPA 6010D	Zinc, Dissolved	4.8J	ug/L	20.0	03/26/19 13:30	
SM 2320B	Alkalinity, Total as CaCO3	206	mg/L	5.0	04/01/19 14:18	
SM 2540C	Total Dissolved Solids	244	mg/L	10.0	03/27/19 12:47	
EPA 300.0	Chloride	1.6	mg/L	1.2	03/23/19 03:06	
EPA 300.0	Nitrate as N	0.42	mg/L	0.10	03/23/19 03:06	
EPA 300.0	Sulfate	2.0	mg/L	1.2	03/23/19 03:06	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
10467822007	Lang-GW-032119					
EPA 353.2	Nitrogen, NO2 plus NO3	0.49	mg/L	0.10	04/04/19 11:43	
10467822008	Reed-GW-032119					
EPA 6010D	Barium, Dissolved	46.0	ug/L	10.0	03/26/19 13:32	
EPA 6010D	Cadmium, Dissolved	0.40J	ug/L	3.0	03/26/19 13:32	
EPA 6010D	Calcium, Dissolved	26700	ug/L	500	03/26/19 13:32	
EPA 6010D	Cobalt, Dissolved	0.92J	ug/L	10.0	03/26/19 13:32	
EPA 6010D	Iron, Dissolved	15.7J	ug/L	50.0	03/26/19 13:32	
EPA 6010D	Magnesium, Dissolved	10300	ug/L	500	03/26/19 13:32	
EPA 6010D	Manganese, Dissolved	0.99J	ug/L	5.0	03/26/19 13:32	
EPA 6010D	Nickel, Dissolved	2.9J	ug/L	20.0	03/26/19 13:32	
EPA 6010D	Potassium, Dissolved	3070	ug/L	2500	03/26/19 13:32	
EPA 6010D	Sodium, Dissolved	13300	ug/L	1000	03/26/19 13:32	
EPA 6010D	Vanadium, Dissolved	25.2	ug/L	15.0	03/26/19 13:32	
EPA 6010D	Zinc, Dissolved	8.4J	ug/L	20.0	03/26/19 13:32	
SM 2320B	Alkalinity, Total as CaCO3	142	mg/L	5.0	04/01/19 14:22	
SM 2540C	Total Dissolved Solids	188	mg/L	10.0	03/27/19 12:47	
EPA 300.0	Chloride	1.2	mg/L	1.2	03/23/19 03:21	
EPA 300.0	Nitrate as N	0.24	mg/L	0.10	03/23/19 03:21	
EPA 300.0	Sulfate	6.4	mg/L	1.2	03/23/19 03:21	
EPA 353.2	Nitrogen, NO2 plus NO3	0.27	mg/L	0.10	04/04/19 11:44	
10467822009	Marlow-GW-032119					
EPA 6010D	Barium, Dissolved	31.1	ug/L	10.0	03/26/19 13:33	
EPA 6010D	Cadmium, Dissolved	0.76J	ug/L	3.0	03/26/19 13:33	
EPA 6010D	Calcium, Dissolved	48400	ug/L	500	03/26/19 13:33	
EPA 6010D	Cobalt, Dissolved	1.8J	ug/L	10.0	03/26/19 13:33	
EPA 6010D	Copper, Dissolved	48.5	ug/L	10.0	03/26/19 13:33	
EPA 6010D	Iron, Dissolved	13.2J	ug/L	50.0	03/26/19 13:33	
EPA 6010D	Magnesium, Dissolved	13700	ug/L	500	03/26/19 13:33	
EPA 6010D	Manganese, Dissolved	1.5J	ug/L	5.0	03/26/19 13:33	
EPA 6010D	Nickel, Dissolved	2.1J	ug/L	20.0	03/26/19 13:33	
EPA 6010D	Potassium, Dissolved	1350J	ug/L	2500	03/26/19 13:33	
EPA 6010D	Sodium, Dissolved	12700	ug/L	1000	03/26/19 13:33	
EPA 6010D	Vanadium, Dissolved	8.8J	ug/L	15.0	03/26/19 13:33	
EPA 6010D	Zinc, Dissolved	83.3	ug/L	20.0	03/26/19 13:33	
SM 2320B	Alkalinity, Total as CaCO3	166	mg/L	5.0	04/01/19 14:26	
SM 2540C	Total Dissolved Solids	278	mg/L	10.0	03/27/19 11:29	
EPA 300.0	Chloride	16.6	mg/L	1.2	03/23/19 03:36	
EPA 300.0	Nitrate as N	3.5	mg/L	0.10	03/23/19 03:36	
EPA 300.0	Sulfate	12.5	mg/L	1.2	03/23/19 03:36	
EPA 353.2	Nitrogen, NO2 plus NO3	3.8	mg/L	0.50	04/04/19 12:03	
SM 5310C	Total Organic Carbon	0.67J	mg/L	1.0	03/29/19 16:24	
10467822010	Randall-GW-032119					
EPA 6010D	Barium, Dissolved	22.4	ug/L	10.0	03/26/19 13:35	
EPA 6010D	Calcium, Dissolved	44800	ug/L	500	03/26/19 13:35	
EPA 6010D	Copper, Dissolved	5.8J	ug/L	10.0	03/26/19 13:35	
EPA 6010D	Iron, Dissolved	4.4J	ug/L	50.0	03/26/19 13:35	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10467822010	Randall-GW-032119					
EPA 6010D	Magnesium, Dissolved	13800	ug/L	500	03/26/19 13:35	
EPA 6010D	Manganese, Dissolved	0.54J	ug/L	5.0	03/26/19 13:35	
EPA 6010D	Potassium, Dissolved	1310J	ug/L	2500	03/26/19 13:35	
EPA 6010D	Sodium, Dissolved	13900	ug/L	1000	03/26/19 13:35	
EPA 6010D	Vanadium, Dissolved	5.3J	ug/L	15.0	03/26/19 13:35	
EPA 6010D	Zinc, Dissolved	95.9	ug/L	20.0	03/26/19 13:35	
SM 2320B	Alkalinity, Total as CaCO ₃	194	mg/L	5.0	04/01/19 14:30	
SM 2540C	Total Dissolved Solids	255	mg/L	10.0	03/27/19 11:29	
EPA 300.0	Chloride	4.8	mg/L	1.2	03/23/19 04:52	
EPA 300.0	Nitrate as N	1.8	mg/L	0.10	03/23/19 04:52	
EPA 300.0	Sulfate	7.0	mg/L	1.2	03/23/19 04:52	
EPA 353.2	Nitrogen, NO ₂ plus NO ₃	2.0	mg/L	0.10	04/04/19 11:46	
SM 5310C	Total Organic Carbon	0.48J	mg/L	1.0	03/29/19 16:38	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Method: RSK 175

Description: RSK 175 GCV Headspace

Client: UPRR_CH2M/Jacobs

Date: April 05, 2019

General Information:

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

Hold Time:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Surrogates:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 595684

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10467822001,10467822002

R1: RPD value was outside control limits.

- MSD (Lab ID: 3220363)
 - Ethane
- MSD (Lab ID: 3220365)
 - Ethane
 - Ethene
 - Methane

QC Batch: 596080

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10468644001

R1: RPD value was outside control limits.

- MSD (Lab ID: 3222677)
 - Ethane
 - Ethene

Duplicate Sample:

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

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467822

Method: RSK 175
Description: RSK 175 GCV Headspace
Client: UPRR_CH2M/Jacobs
Date: April 05, 2019

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Method: EPA 6010D

Description: 6010D MET ICP, Dissolved

Client: UPRR_CH2M/Jacobs

Date: April 05, 2019

General Information:

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

Hold Time:

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

Sample Preparation:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Method: EPA 7470A

Description: 7470A Mercury, Dissolved

Client: UPRR_CH2M/Jacobs

Date: April 05, 2019

General Information:

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

Hold Time:

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

Sample Preparation:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: April 05, 2019

General Information:

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

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

- SG1-GW-032119 (Lab ID: 10467822011)
- SG2-GW-032119 (Lab ID: 10467822012)
- TB-032119 (Lab ID: 10467822013)
- TB2-032119 (Lab ID: 10467822014)

Hold Time:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Internal Standards:

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

Surrogates:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 596233

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10468569001

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

- MSD (Lab ID: 3224890)
 - Acrolein
 - m&p-Xylene

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: April 05, 2019

Analyte Comments:

QC Batch: 596233

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3223555)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3223556)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3224889)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3224890)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- SG1-GW-032119 (Lab ID: 10467822011)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- SG2-GW-032119 (Lab ID: 10467822012)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- TB-032119 (Lab ID: 10467822013)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- TB2-032119 (Lab ID: 10467822014)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Method: SM 2320B

Description: 2320B Alkalinity

Client: UPRR_CH2M/Jacobs

Date: April 05, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 596752

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10467822001,10467822002

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

- MS (Lab ID: 3227175)
 - Alkalinity, Total as CaCO₃
- MSD (Lab ID: 3227176)
 - Alkalinity, Total as CaCO₃

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Method: SM 2540C

Description: 2540C Total Dissolved Solids

Client: UPRR_CH2M/Jacobs

Date: April 05, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Duplicate Sample:

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

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Method: SM 4500-S-2 D

Description: 4500S2D Sulfide, Total

Client: UPRR_CH2M/Jacobs

Date: April 05, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 137338

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10467822001,10467822002

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

- MS (Lab ID: 597984)
 - Sulfide, Total
- MS (Lab ID: 597986)
 - Sulfide, Total

QC Batch: 137449

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10467822006

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

- MS (Lab ID: 598536)
 - Sulfide, Total

Duplicate Sample:

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

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Method: EPA 300.0

Description: 300.0 IC Anions

Client: UPRR_CH2M/Jacobs

Date: April 05, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 595233

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s):
10467731008, 10467822002, 10467822006

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

- MS (Lab ID: 3217799)
 - Chloride
 - Nitrate as N
 - Sulfate
- MS (Lab ID: 3217801)
 - Chloride
 - Nitrate as N
 - Sulfate
- MS (Lab ID: 3217803)
 - Chloride
 - Nitrate as N
 - Sulfate
- MSD (Lab ID: 3217800)
 - Chloride
 - Nitrate as N
 - Sulfate
- MSD (Lab ID: 3217802)
 - Chloride
 - Nitrate as N
 - Sulfate
- MSD (Lab ID: 3217804)
 - Chloride
 - Nitrate as N
 - Sulfate

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Method: EPA 300.0

Description: 300.0 IC Anions

Client: UPRR_CH2M/Jacobs

Date: April 05, 2019

QC Batch: 595234

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10467717001,10467822001

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

- MS (Lab ID: 3217807)
 - Chloride
 - Nitrate as N
 - Sulfate
- MS (Lab ID: 3217809)
 - Chloride
 - Nitrate as N
 - Sulfate
- MSD (Lab ID: 3217808)
 - Chloride
 - Nitrate as N
 - Sulfate
- MSD (Lab ID: 3217810)
 - Chloride
 - Nitrate as N
 - Sulfate

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Method: EPA 353.2

Description: 353.2 Nitrate + Nitrite

Client: UPRR_CH2M/Jacobs

Date: April 05, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 597595

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10467822001,10467822002

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

- MSD (Lab ID: 3231498)
 - Nitrogen, NO2 plus NO3

Additional Comments:

Analyte Comments:

QC Batch: 597634

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 3231611)
 - Nitrogen, NO2 plus NO3
- MS (Lab ID: 3231613)
 - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 3231612)
 - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 3231614)
 - Nitrogen, NO2 plus NO3

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Method: EPA 410.4

Description: 410.4 COD

Client: UPRR_CH2M/Jacobs

Date: April 05, 2019

General Information:

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

Hold Time:

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

Sample Preparation:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 597820

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10467822006,10468801001

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

- MS (Lab ID: 3232552)
 - Chemical Oxygen Demand

R1: RPD value was outside control limits.

- MSD (Lab ID: 3232553)
 - Chemical Oxygen Demand

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Method: SM 5310C

Description: 5310C TOC

Client: UPRR_CH2M/Jacobs

Date: April 05, 2019

General Information:

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

Hold Time:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Sample: **Lashaw-GW-032119** Lab ID: **10467822001** Collected: 03/21/19 09:00 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace		Analytical Method: RSK 175							
Methane	<4.9	ug/L	10.0	4.9	1		03/26/19 11:42	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/26/19 11:42	74-84-0	R1
Ethene	<2.9	ug/L	10.0	2.9	1		03/26/19 11:42	74-85-1	
6010D MET ICP, Dissolved		Analytical Method: EPA 6010D Preparation Method: EPA 3010							
Aluminum, Dissolved	<15.5	ug/L	200	15.5	1	03/25/19 06:11	03/26/19 12:48	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/25/19 06:11	03/26/19 12:48	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/25/19 06:11	03/26/19 12:48	7440-38-2	
Barium, Dissolved	9.4J	ug/L	10.0	0.18	1	03/25/19 06:11	03/26/19 12:48	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/25/19 06:11	03/26/19 12:48	7440-41-7	
Cadmium, Dissolved	0.86J	ug/L	3.0	0.26	1	03/25/19 06:11	03/26/19 12:48	7440-43-9	
Calcium, Dissolved	26200	ug/L	500	13.9	1	03/25/19 06:11	03/26/19 12:48	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/25/19 06:11	03/26/19 12:48	7440-47-3	
Cobalt, Dissolved	1.4J	ug/L	10.0	0.50	1	03/25/19 06:11	03/26/19 12:48	7440-48-4	
Copper, Dissolved	7.4J	ug/L	10.0	1.2	1	03/25/19 06:11	03/26/19 12:48	7440-50-8	
Iron, Dissolved	<4.3	ug/L	50.0	4.3	1	03/25/19 06:11	03/26/19 12:48	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/25/19 06:11	03/26/19 12:48	7439-92-1	
Magnesium, Dissolved	12900	ug/L	500	9.8	1	03/25/19 06:11	03/26/19 12:48	7439-95-4	
Manganese, Dissolved	0.25J	ug/L	5.0	0.22	1	03/25/19 06:11	03/26/19 12:48	7439-96-5	
Nickel, Dissolved	2.5J	ug/L	20.0	1.1	1	03/25/19 06:11	03/26/19 12:48	7440-02-0	
Potassium, Dissolved	3760	ug/L	2500	310	1	03/25/19 06:11	03/26/19 12:48	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/25/19 06:11	03/26/19 12:48	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/25/19 06:11	03/26/19 12:48	7440-22-4	
Sodium, Dissolved	15800	ug/L	1000	21.5	1	03/25/19 06:11	03/26/19 12:48	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/25/19 06:11	03/26/19 12:48	7440-28-0	
Vanadium, Dissolved	11.1J	ug/L	15.0	0.29	1	03/25/19 06:11	03/26/19 12:48	7440-62-2	
Zinc, Dissolved	30.6	ug/L	20.0	2.5	1	03/25/19 06:11	03/26/19 12:48	7440-66-6	
7470A Mercury, Dissolved		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/25/19 09:05	03/26/19 14:36	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	148	mg/L	5.0	1.0	1		04/01/19 13:09		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	198	mg/L	10.0	5.0	1		03/27/19 12:47		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	0.0074J	mg/L	0.020	0.0054	1		03/26/19 12:22	18496-25-8	M1
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	1.6	mg/L	1.2	0.28	1		03/23/19 05:07	16887-00-6	M1
Nitrate as N	2.4	mg/L	0.10	0.015	1		03/23/19 05:07	14797-55-8	M1
Sulfate	5.4	mg/L	1.2	0.19	1		03/23/19 05:07	14808-79-8	M1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Sample: Lashaw-GW-032119 **Lab ID: 10467822001** Collected: 03/21/19 09:00 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	2.5	mg/L	0.50	0.088	5		04/04/19 11:55		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	04/01/19 12:04	04/01/19 16:28		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	0.52J	mg/L	1.0	0.39	1		03/29/19 12:40	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Sample: Asher-GW-032119 **Lab ID: 10467822002** Collected: 03/21/19 10:15 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		03/26/19 15:01	74-82-8	R1
Ethane	<3.0	ug/L	10.0	3.0	1		03/26/19 15:01	74-84-0	R1
Ethene	<2.9	ug/L	10.0	2.9	1		03/26/19 15:01	74-85-1	R1
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Aluminum, Dissolved	<15.5	ug/L	200	15.5	1	03/25/19 06:11	03/26/19 12:56	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/25/19 06:11	03/26/19 12:56	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/25/19 06:11	03/26/19 12:56	7440-38-2	
Barium, Dissolved	78.6	ug/L	10.0	0.18	1	03/25/19 06:11	03/26/19 12:56	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/25/19 06:11	03/26/19 12:56	7440-41-7	
Cadmium, Dissolved	0.66J	ug/L	3.0	0.26	1	03/25/19 06:11	03/26/19 12:56	7440-43-9	
Calcium, Dissolved	62900	ug/L	500	13.9	1	03/25/19 06:11	03/26/19 12:56	7440-70-2	
Chromium, Dissolved	0.81J	ug/L	10.0	0.49	1	03/25/19 06:11	03/26/19 12:56	7440-47-3	
Cobalt, Dissolved	2.0J	ug/L	10.0	0.50	1	03/25/19 06:11	03/26/19 12:56	7440-48-4	
Copper, Dissolved	131	ug/L	10.0	1.2	1	03/25/19 06:11	03/26/19 12:56	7440-50-8	
Iron, Dissolved	4.7J	ug/L	50.0	4.3	1	03/25/19 06:11	03/26/19 12:56	7439-89-6	
Lead, Dissolved	2.0J	ug/L	10.0	2.0	1	03/25/19 06:11	03/26/19 12:56	7439-92-1	
Magnesium, Dissolved	18500	ug/L	500	9.8	1	03/25/19 06:11	03/26/19 12:56	7439-95-4	
Manganese, Dissolved	0.25J	ug/L	5.0	0.22	1	03/25/19 06:11	03/26/19 12:56	7439-96-5	
Nickel, Dissolved	3.3J	ug/L	20.0	1.1	1	03/25/19 06:11	03/26/19 12:56	7440-02-0	
Potassium, Dissolved	1200J	ug/L	2500	310	1	03/25/19 06:11	03/26/19 12:56	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/25/19 06:11	03/26/19 12:56	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/25/19 06:11	03/26/19 12:56	7440-22-4	
Sodium, Dissolved	20600	ug/L	1000	21.5	1	03/25/19 06:11	03/26/19 12:56	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/25/19 06:11	03/26/19 12:56	7440-28-0	
Vanadium, Dissolved	10.7J	ug/L	15.0	0.29	1	03/25/19 06:11	03/26/19 12:56	7440-62-2	
Zinc, Dissolved	27.5	ug/L	20.0	2.5	1	03/25/19 06:11	03/26/19 12:56	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/25/19 09:05	03/26/19 14:42	7439-97-6	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	226	mg/L	5.0	1.0	1		04/01/19 13:22		M1
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	350	mg/L	10.0	5.0	1		03/27/19 12:47		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/26/19 12:25	18496-25-8	M1
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	6.8	mg/L	1.2	0.28	1		03/22/19 23:26	16887-00-6	M1
Nitrate as N	6.6	mg/L	0.10	0.015	1		03/22/19 23:26	14797-55-8	M1
Sulfate	24.2	mg/L	1.2	0.19	1		03/22/19 23:26	14808-79-8	M1

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Sample: Asher-GW-032119 **Lab ID: 10467822002** Collected: 03/21/19 10:15 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	7.1	mg/L	1.0	0.18	10		04/04/19 11:58		M6
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	04/01/19 12:04	04/01/19 16:28		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	0.94J	mg/L	1.0	0.39	1		03/29/19 13:22	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Sample: Atwood-GW-032119 **Lab ID: 10467822003** Collected: 03/21/19 11:10 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		03/27/19 16:45	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/27/19 16:45	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/27/19 16:45	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Aluminum, Dissolved	<15.5	ug/L	200	15.5	1	03/25/19 06:11	03/26/19 13:13	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/25/19 06:11	03/26/19 13:13	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/25/19 06:11	03/26/19 13:13	7440-38-2	
Barium, Dissolved	40.6	ug/L	10.0	0.18	1	03/25/19 06:11	03/26/19 13:13	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/25/19 06:11	03/26/19 13:13	7440-41-7	
Cadmium, Dissolved	0.86J	ug/L	3.0	0.26	1	03/25/19 06:11	03/26/19 13:13	7440-43-9	
Calcium, Dissolved	26300	ug/L	500	13.9	1	03/25/19 06:11	03/26/19 13:13	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/25/19 06:11	03/26/19 13:13	7440-47-3	
Cobalt, Dissolved	<0.50	ug/L	10.0	0.50	1	03/25/19 06:11	03/26/19 13:13	7440-48-4	
Copper, Dissolved	8.1J	ug/L	10.0	1.2	1	03/25/19 06:11	03/26/19 13:13	7440-50-8	
Iron, Dissolved	16.0J	ug/L	50.0	4.3	1	03/25/19 06:11	03/26/19 13:13	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/25/19 06:11	03/26/19 13:13	7439-92-1	
Magnesium, Dissolved	11400	ug/L	500	9.8	1	03/25/19 06:11	03/26/19 13:13	7439-95-4	
Manganese, Dissolved	13.9	ug/L	5.0	0.22	1	03/25/19 06:11	03/26/19 13:13	7439-96-5	
Nickel, Dissolved	2.7J	ug/L	20.0	1.1	1	03/25/19 06:11	03/26/19 13:13	7440-02-0	
Potassium, Dissolved	3780	ug/L	2500	310	1	03/25/19 06:11	03/26/19 13:13	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/25/19 06:11	03/26/19 13:13	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/25/19 06:11	03/26/19 13:13	7440-22-4	
Sodium, Dissolved	15100	ug/L	1000	21.5	1	03/25/19 06:11	03/26/19 13:13	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/25/19 06:11	03/26/19 13:13	7440-28-0	
Vanadium, Dissolved	2.2J	ug/L	15.0	0.29	1	03/25/19 06:11	03/26/19 13:13	7440-62-2	
Zinc, Dissolved	32.1	ug/L	20.0	2.5	1	03/25/19 06:11	03/26/19 13:13	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/25/19 09:05	03/26/19 14:49	7439-97-6	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	147	mg/L	5.0	1.0	1		04/01/19 13:35		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	210	mg/L	10.0	5.0	1		03/27/19 12:47		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/26/19 12:55	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	1.2J	mg/L	1.2	0.28	1		03/23/19 01:01	16887-00-6	
Nitrate as N	0.14	mg/L	0.10	0.015	1		03/23/19 01:01	14797-55-8	
Sulfate	3.3	mg/L	1.2	0.19	1		03/23/19 01:01	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Sample: Atwood-GW-032119 **Lab ID: 10467822003** Collected: 03/21/19 11:10 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	0.15	mg/L	0.10	0.018	1		04/04/19 12:02		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	04/01/19 12:04	04/01/19 16:35		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	<0.39	mg/L	1.0	0.39	1		03/29/19 14:04	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Sample: Atwood Shop-GW-032119 **Lab ID: 10467822004** Collected: 03/21/19 11:15 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace		Analytical Method: RSK 175							
Methane	<4.9	ug/L	10.0	4.9	1		03/27/19 16:52	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/27/19 16:52	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/27/19 16:52	74-85-1	
6010D MET ICP, Dissolved		Analytical Method: EPA 6010D Preparation Method: EPA 3010							
Aluminum, Dissolved	15.6J	ug/L	200	15.5	1	03/25/19 06:11	03/26/19 13:14	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/25/19 06:11	03/26/19 13:14	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/25/19 06:11	03/26/19 13:14	7440-38-2	
Barium, Dissolved	29.7	ug/L	10.0	0.18	1	03/25/19 06:11	03/26/19 13:14	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/25/19 06:11	03/26/19 13:14	7440-41-7	
Cadmium, Dissolved	0.26J	ug/L	3.0	0.26	1	03/25/19 06:11	03/26/19 13:14	7440-43-9	
Calcium, Dissolved	32600	ug/L	500	13.9	1	03/25/19 06:11	03/26/19 13:14	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/25/19 06:11	03/26/19 13:14	7440-47-3	
Cobalt, Dissolved	<0.50	ug/L	10.0	0.50	1	03/25/19 06:11	03/26/19 13:14	7440-48-4	
Copper, Dissolved	412	ug/L	10.0	1.2	1	03/25/19 06:11	03/26/19 13:14	7440-50-8	
Iron, Dissolved	237	ug/L	50.0	4.3	1	03/25/19 06:11	03/26/19 13:14	7439-89-6	
Lead, Dissolved	8.0J	ug/L	10.0	2.0	1	03/25/19 06:11	03/26/19 13:14	7439-92-1	
Magnesium, Dissolved	11000	ug/L	500	9.8	1	03/25/19 06:11	03/26/19 13:14	7439-95-4	
Manganese, Dissolved	7.0	ug/L	5.0	0.22	1	03/25/19 06:11	03/26/19 13:14	7439-96-5	
Nickel, Dissolved	3.8J	ug/L	20.0	1.1	1	03/25/19 06:11	03/26/19 13:14	7440-02-0	
Potassium, Dissolved	1500J	ug/L	2500	310	1	03/25/19 06:11	03/26/19 13:14	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/25/19 06:11	03/26/19 13:14	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/25/19 06:11	03/26/19 13:14	7440-22-4	
Sodium, Dissolved	12800	ug/L	1000	21.5	1	03/25/19 06:11	03/26/19 13:14	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/25/19 06:11	03/26/19 13:14	7440-28-0	
Vanadium, Dissolved	7.0J	ug/L	15.0	0.29	1	03/25/19 06:11	03/26/19 13:14	7440-62-2	
Zinc, Dissolved	1700	ug/L	20.0	2.5	1	03/25/19 06:11	03/26/19 13:14	7440-66-6	
7470A Mercury, Dissolved		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/25/19 09:05	03/26/19 14:55	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO ₃	161	mg/L	5.0	1.0	1		04/01/19 14:11		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	205	mg/L	10.0	5.0	1		03/27/19 12:47		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/26/19 12:57	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	1.3	mg/L	1.2	0.28	1		03/23/19 01:31	16887-00-6	
Nitrate as N	0.73	mg/L	0.10	0.015	1		03/23/19 01:31	14797-55-8	
Sulfate	3.8	mg/L	1.2	0.19	1		03/23/19 01:31	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Sample: Atwood Shop-GW-032119 Lab ID: 10467822004 Collected: 03/21/19 11:15 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	0.56	mg/L	0.10	0.018	1		04/04/19 11:40		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	04/01/19 12:04	04/01/19 16:35		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	0.50J	mg/L	1.0	0.39	1		03/29/19 14:18	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Sample: Thorson-GW-032119 **Lab ID: 10467822005** Collected: 03/21/19 12:00 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace		Analytical Method: RSK 175							
Methane	<4.9	ug/L	10.0	4.9	1		03/27/19 17:28	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/27/19 17:28	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/27/19 17:28	74-85-1	
6010D MET ICP, Dissolved		Analytical Method: EPA 6010D Preparation Method: EPA 3010							
Aluminum, Dissolved	<15.5	ug/L	200	15.5	1	03/25/19 06:11	03/26/19 13:16	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/25/19 06:11	03/26/19 13:16	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/25/19 06:11	03/26/19 13:16	7440-38-2	
Barium, Dissolved	53.8	ug/L	10.0	0.18	1	03/25/19 06:11	03/26/19 13:16	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/25/19 06:11	03/26/19 13:16	7440-41-7	
Cadmium, Dissolved	0.59J	ug/L	3.0	0.26	1	03/25/19 06:11	03/26/19 13:16	7440-43-9	
Calcium, Dissolved	24000	ug/L	500	13.9	1	03/25/19 06:11	03/26/19 13:16	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/25/19 06:11	03/26/19 13:16	7440-47-3	
Cobalt, Dissolved	1.4J	ug/L	10.0	0.50	1	03/25/19 06:11	03/26/19 13:16	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/25/19 06:11	03/26/19 13:16	7440-50-8	
Iron, Dissolved	1990	ug/L	50.0	4.3	1	03/25/19 06:11	03/26/19 13:16	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/25/19 06:11	03/26/19 13:16	7439-92-1	
Magnesium, Dissolved	11800	ug/L	500	9.8	1	03/25/19 06:11	03/26/19 13:16	7439-95-4	
Manganese, Dissolved	33.0	ug/L	5.0	0.22	1	03/25/19 06:11	03/26/19 13:16	7439-96-5	
Nickel, Dissolved	1.9J	ug/L	20.0	1.1	1	03/25/19 06:11	03/26/19 13:16	7440-02-0	
Potassium, Dissolved	3850	ug/L	2500	310	1	03/25/19 06:11	03/26/19 13:16	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/25/19 06:11	03/26/19 13:16	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/25/19 06:11	03/26/19 13:16	7440-22-4	
Sodium, Dissolved	14400	ug/L	1000	21.5	1	03/25/19 06:11	03/26/19 13:16	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/25/19 06:11	03/26/19 13:16	7440-28-0	
Vanadium, Dissolved	0.42J	ug/L	15.0	0.29	1	03/25/19 06:11	03/26/19 13:16	7440-62-2	
Zinc, Dissolved	22.9	ug/L	20.0	2.5	1	03/25/19 06:11	03/26/19 13:16	7440-66-6	
7470A Mercury, Dissolved		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/25/19 09:05	03/26/19 14:57	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO ₃	154	mg/L	5.0	1.0	1		04/01/19 14:15		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	196	mg/L	10.0	5.0	1		03/27/19 12:47		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/26/19 12:59	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	1.2J	mg/L	1.2	0.28	1		03/23/19 01:46	16887-00-6	
Nitrate as N	<0.015	mg/L	0.10	0.015	1		03/23/19 01:46	14797-55-8	
Sulfate	2.5	mg/L	1.2	0.19	1		03/23/19 01:46	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Sample: Thorson-GW-032119 **Lab ID: 10467822005** Collected: 03/21/19 12:00 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	<0.018	mg/L	0.10	0.018	1		04/04/19 11:42		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	04/01/19 12:04	04/01/19 16:36		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	<0.39	mg/L	1.0	0.39	1		03/29/19 14:32	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Sample: Stark-GW-032119 **Lab ID: 10467822006** Collected: 03/21/19 12:45 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace		Analytical Method: RSK 175							
Methane	<4.9	ug/L	10.0	4.9	1		03/28/19 16:29	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/28/19 16:29	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/28/19 16:29	74-85-1	
6010D MET ICP, Dissolved		Analytical Method: EPA 6010D Preparation Method: EPA 3010							
Aluminum, Dissolved	<15.5	ug/L	200	15.5	1	03/25/19 06:11	03/26/19 13:18	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/25/19 06:11	03/26/19 13:18	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/25/19 06:11	03/26/19 13:18	7440-38-2	
Barium, Dissolved	35.2	ug/L	10.0	0.18	1	03/25/19 06:11	03/26/19 13:18	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/25/19 06:11	03/26/19 13:18	7440-41-7	
Cadmium, Dissolved	0.92J	ug/L	3.0	0.26	1	03/25/19 06:11	03/26/19 13:18	7440-43-9	
Calcium, Dissolved	33000	ug/L	500	13.9	1	03/25/19 06:11	03/26/19 13:18	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/25/19 06:11	03/26/19 13:18	7440-47-3	
Cobalt, Dissolved	1.5J	ug/L	10.0	0.50	1	03/25/19 06:11	03/26/19 13:18	7440-48-4	
Copper, Dissolved	112	ug/L	10.0	1.2	1	03/25/19 06:11	03/26/19 13:18	7440-50-8	
Iron, Dissolved	<4.3	ug/L	50.0	4.3	1	03/25/19 06:11	03/26/19 13:18	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/25/19 06:11	03/26/19 13:18	7439-92-1	
Magnesium, Dissolved	11400	ug/L	500	9.8	1	03/25/19 06:11	03/26/19 13:18	7439-95-4	
Manganese, Dissolved	0.36J	ug/L	5.0	0.22	1	03/25/19 06:11	03/26/19 13:18	7439-96-5	
Nickel, Dissolved	2.9J	ug/L	20.0	1.1	1	03/25/19 06:11	03/26/19 13:18	7440-02-0	
Potassium, Dissolved	1760J	ug/L	2500	310	1	03/25/19 06:11	03/26/19 13:18	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/25/19 06:11	03/26/19 13:18	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/25/19 06:11	03/26/19 13:18	7440-22-4	
Sodium, Dissolved	17100	ug/L	1000	21.5	1	03/25/19 06:11	03/26/19 13:18	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/25/19 06:11	03/26/19 13:18	7440-28-0	
Vanadium, Dissolved	6.4J	ug/L	15.0	0.29	1	03/25/19 06:11	03/26/19 13:18	7440-62-2	
Zinc, Dissolved	67.1	ug/L	20.0	2.5	1	03/25/19 06:11	03/26/19 13:18	7440-66-6	
7470A Mercury, Dissolved		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/25/19 09:05	03/26/19 14:59	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO ₃	113	mg/L	5.0	2.0	1		04/02/19 09:00		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	263	mg/L	10.0	5.0	1		03/28/19 19:48		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/27/19 10:48	18496-25-8	M1
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	1.3	mg/L	1.2	0.28	1		03/23/19 02:01	16887-00-6	M1
Nitrate as N	13.7	mg/L	0.50	0.073	5		03/23/19 08:22	14797-55-8	M1
Sulfate	9.8	mg/L	1.2	0.19	1		03/23/19 02:01	14808-79-8	M1

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Sample: Stark-GW-032119 **Lab ID: 10467822006** Collected: 03/21/19 12:45 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	15.7	mg/L	1.0	0.18	10		04/04/19 14:39		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	04/05/19 11:42	04/05/19 13:19		M1,R1
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	0.58J	mg/L	1.0	0.39	1		03/29/19 15:14	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Sample: Lang-GW-032119 **Lab ID: 10467822007** Collected: 03/21/19 13:30 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		03/27/19 17:36	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/27/19 17:36	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/27/19 17:36	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Aluminum, Dissolved	<15.5	ug/L	200	15.5	1	03/25/19 06:11	03/26/19 13:30	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/25/19 06:11	03/26/19 13:30	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/25/19 06:11	03/26/19 13:30	7440-38-2	
Barium, Dissolved	18.0	ug/L	10.0	0.18	1	03/25/19 06:11	03/26/19 13:30	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/25/19 06:11	03/26/19 13:30	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	03/25/19 06:11	03/26/19 13:30	7440-43-9	
Calcium, Dissolved	43500	ug/L	500	13.9	1	03/25/19 06:11	03/26/19 13:30	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/25/19 06:11	03/26/19 13:30	7440-47-3	
Cobalt, Dissolved	0.53J	ug/L	10.0	0.50	1	03/25/19 06:11	03/26/19 13:30	7440-48-4	
Copper, Dissolved	87.0	ug/L	10.0	1.2	1	03/25/19 06:11	03/26/19 13:30	7440-50-8	
Iron, Dissolved	217	ug/L	50.0	4.3	1	03/25/19 06:11	03/26/19 13:30	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/25/19 06:11	03/26/19 13:30	7439-92-1	
Magnesium, Dissolved	12200	ug/L	500	9.8	1	03/25/19 06:11	03/26/19 13:30	7439-95-4	
Manganese, Dissolved	9.4	ug/L	5.0	0.22	1	03/25/19 06:11	03/26/19 13:30	7439-96-5	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	03/25/19 06:11	03/26/19 13:30	7440-02-0	
Potassium, Dissolved	1100J	ug/L	2500	310	1	03/25/19 06:11	03/26/19 13:30	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/25/19 06:11	03/26/19 13:30	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/25/19 06:11	03/26/19 13:30	7440-22-4	
Sodium, Dissolved	17200	ug/L	1000	21.5	1	03/25/19 06:11	03/26/19 13:30	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/25/19 06:11	03/26/19 13:30	7440-28-0	
Vanadium, Dissolved	5.8J	ug/L	15.0	0.29	1	03/25/19 06:11	03/26/19 13:30	7440-62-2	
Zinc, Dissolved	4.8J	ug/L	20.0	2.5	1	03/25/19 06:11	03/26/19 13:30	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/25/19 09:05	03/26/19 15:05	7439-97-6	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	206	mg/L	5.0	1.0	1		04/01/19 14:18		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	244	mg/L	10.0	5.0	1		03/27/19 12:47		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/26/19 13:01	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	1.6	mg/L	1.2	0.28	1		03/23/19 03:06	16887-00-6	
Nitrate as N	0.42	mg/L	0.10	0.015	1		03/23/19 03:06	14797-55-8	
Sulfate	2.0	mg/L	1.2	0.19	1		03/23/19 03:06	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Sample: Lang-GW-032119 **Lab ID: 10467822007** Collected: 03/21/19 13:30 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite									
Analytical Method: EPA 353.2									
Nitrogen, NO ₂ plus NO ₃	0.49	mg/L	0.10	0.018	1		04/04/19 11:43		
410.4 COD									
Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	04/01/19 12:04	04/01/19 16:36		
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	<0.39	mg/L	1.0	0.39	1		03/29/19 15:56	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Sample: Reed-GW-032119 **Lab ID: 10467822008** Collected: 03/21/19 14:00 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace		Analytical Method: RSK 175							
Methane	<4.9	ug/L	10.0	4.9	1		03/27/19 17:14	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/27/19 17:14	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/27/19 17:14	74-85-1	
6010D MET ICP, Dissolved		Analytical Method: EPA 6010D Preparation Method: EPA 3010							
Aluminum, Dissolved	<15.5	ug/L	200	15.5	1	03/25/19 06:11	03/26/19 13:32	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/25/19 06:11	03/26/19 13:32	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/25/19 06:11	03/26/19 13:32	7440-38-2	
Barium, Dissolved	46.0	ug/L	10.0	0.18	1	03/25/19 06:11	03/26/19 13:32	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/25/19 06:11	03/26/19 13:32	7440-41-7	
Cadmium, Dissolved	0.40J	ug/L	3.0	0.26	1	03/25/19 06:11	03/26/19 13:32	7440-43-9	
Calcium, Dissolved	26700	ug/L	500	13.9	1	03/25/19 06:11	03/26/19 13:32	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/25/19 06:11	03/26/19 13:32	7440-47-3	
Cobalt, Dissolved	0.92J	ug/L	10.0	0.50	1	03/25/19 06:11	03/26/19 13:32	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	03/25/19 06:11	03/26/19 13:32	7440-50-8	
Iron, Dissolved	15.7J	ug/L	50.0	4.3	1	03/25/19 06:11	03/26/19 13:32	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/25/19 06:11	03/26/19 13:32	7439-92-1	
Magnesium, Dissolved	10300	ug/L	500	9.8	1	03/25/19 06:11	03/26/19 13:32	7439-95-4	
Manganese, Dissolved	0.99J	ug/L	5.0	0.22	1	03/25/19 06:11	03/26/19 13:32	7439-96-5	
Nickel, Dissolved	2.9J	ug/L	20.0	1.1	1	03/25/19 06:11	03/26/19 13:32	7440-02-0	
Potassium, Dissolved	3070	ug/L	2500	310	1	03/25/19 06:11	03/26/19 13:32	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/25/19 06:11	03/26/19 13:32	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/25/19 06:11	03/26/19 13:32	7440-22-4	
Sodium, Dissolved	13300	ug/L	1000	21.5	1	03/25/19 06:11	03/26/19 13:32	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/25/19 06:11	03/26/19 13:32	7440-28-0	
Vanadium, Dissolved	25.2	ug/L	15.0	0.29	1	03/25/19 06:11	03/26/19 13:32	7440-62-2	
Zinc, Dissolved	8.4J	ug/L	20.0	2.5	1	03/25/19 06:11	03/26/19 13:32	7440-66-6	
7470A Mercury, Dissolved		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/25/19 09:05	03/26/19 15:07	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	142	mg/L	5.0	1.0	1		04/01/19 14:22		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	188	mg/L	10.0	5.0	1		03/27/19 12:47		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/26/19 13:13	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	1.2	mg/L	1.2	0.28	1		03/23/19 03:21	16887-00-6	
Nitrate as N	0.24	mg/L	0.10	0.015	1		03/23/19 03:21	14797-55-8	
Sulfate	6.4	mg/L	1.2	0.19	1		03/23/19 03:21	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Sample: Reed-GW-032119 **Lab ID: 10467822008** Collected: 03/21/19 14:00 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	0.27	mg/L	0.10	0.018	1		04/04/19 11:44		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	04/01/19 12:04	04/01/19 16:36		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	<0.39	mg/L	1.0	0.39	1		03/29/19 16:09	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Sample: Marlow-GW-032119 **Lab ID: 10467822009** Collected: 03/21/19 14:30 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace		Analytical Method: RSK 175							
Methane	<4.9	ug/L	10.0	4.9	1		03/27/19 16:38	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/27/19 16:38	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/27/19 16:38	74-85-1	
6010D MET ICP, Dissolved		Analytical Method: EPA 6010D Preparation Method: EPA 3010							
Aluminum, Dissolved	<15.5	ug/L	200	15.5	1	03/25/19 06:11	03/26/19 13:33	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/25/19 06:11	03/26/19 13:33	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/25/19 06:11	03/26/19 13:33	7440-38-2	
Barium, Dissolved	31.1	ug/L	10.0	0.18	1	03/25/19 06:11	03/26/19 13:33	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/25/19 06:11	03/26/19 13:33	7440-41-7	
Cadmium, Dissolved	0.76J	ug/L	3.0	0.26	1	03/25/19 06:11	03/26/19 13:33	7440-43-9	
Calcium, Dissolved	48400	ug/L	500	13.9	1	03/25/19 06:11	03/26/19 13:33	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/25/19 06:11	03/26/19 13:33	7440-47-3	
Cobalt, Dissolved	1.8J	ug/L	10.0	0.50	1	03/25/19 06:11	03/26/19 13:33	7440-48-4	
Copper, Dissolved	48.5	ug/L	10.0	1.2	1	03/25/19 06:11	03/26/19 13:33	7440-50-8	
Iron, Dissolved	13.2J	ug/L	50.0	4.3	1	03/25/19 06:11	03/26/19 13:33	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/25/19 06:11	03/26/19 13:33	7439-92-1	
Magnesium, Dissolved	13700	ug/L	500	9.8	1	03/25/19 06:11	03/26/19 13:33	7439-95-4	
Manganese, Dissolved	1.5J	ug/L	5.0	0.22	1	03/25/19 06:11	03/26/19 13:33	7439-96-5	
Nickel, Dissolved	2.1J	ug/L	20.0	1.1	1	03/25/19 06:11	03/26/19 13:33	7440-02-0	
Potassium, Dissolved	1350J	ug/L	2500	310	1	03/25/19 06:11	03/26/19 13:33	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/25/19 06:11	03/26/19 13:33	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/25/19 06:11	03/26/19 13:33	7440-22-4	
Sodium, Dissolved	12700	ug/L	1000	21.5	1	03/25/19 06:11	03/26/19 13:33	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/25/19 06:11	03/26/19 13:33	7440-28-0	
Vanadium, Dissolved	8.8J	ug/L	15.0	0.29	1	03/25/19 06:11	03/26/19 13:33	7440-62-2	
Zinc, Dissolved	83.3	ug/L	20.0	2.5	1	03/25/19 06:11	03/26/19 13:33	7440-66-6	
7470A Mercury, Dissolved		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/25/19 09:05	03/26/19 15:09	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO ₃	166	mg/L	5.0	1.0	1		04/01/19 14:26		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	278	mg/L	10.0	5.0	1		03/27/19 11:29		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/26/19 13:14	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	16.6	mg/L	1.2	0.28	1		03/23/19 03:36	16887-00-6	
Nitrate as N	3.5	mg/L	0.10	0.015	1		03/23/19 03:36	14797-55-8	
Sulfate	12.5	mg/L	1.2	0.19	1		03/23/19 03:36	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Sample: Marlow-GW-032119 **Lab ID: 10467822009** Collected: 03/21/19 14:30 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	3.8	mg/L	0.50	0.088	5		04/04/19 12:03		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	04/01/19 12:04	04/01/19 16:37		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	0.67J	mg/L	1.0	0.39	1		03/29/19 16:24	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Sample: Randall-GW-032119 **Lab ID: 10467822010** Collected: 03/21/19 15:00 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		03/27/19 16:30	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		03/27/19 16:30	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		03/27/19 16:30	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Aluminum, Dissolved	<15.5	ug/L	200	15.5	1	03/25/19 06:11	03/26/19 13:35	7429-90-5	
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	03/25/19 06:11	03/26/19 13:35	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	03/25/19 06:11	03/26/19 13:35	7440-38-2	
Barium, Dissolved	22.4	ug/L	10.0	0.18	1	03/25/19 06:11	03/26/19 13:35	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	03/25/19 06:11	03/26/19 13:35	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	03/25/19 06:11	03/26/19 13:35	7440-43-9	
Calcium, Dissolved	44800	ug/L	500	13.9	1	03/25/19 06:11	03/26/19 13:35	7440-70-2	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	03/25/19 06:11	03/26/19 13:35	7440-47-3	
Cobalt, Dissolved	<0.50	ug/L	10.0	0.50	1	03/25/19 06:11	03/26/19 13:35	7440-48-4	
Copper, Dissolved	5.8J	ug/L	10.0	1.2	1	03/25/19 06:11	03/26/19 13:35	7440-50-8	
Iron, Dissolved	4.4J	ug/L	50.0	4.3	1	03/25/19 06:11	03/26/19 13:35	7439-89-6	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	03/25/19 06:11	03/26/19 13:35	7439-92-1	
Magnesium, Dissolved	13800	ug/L	500	9.8	1	03/25/19 06:11	03/26/19 13:35	7439-95-4	
Manganese, Dissolved	0.54J	ug/L	5.0	0.22	1	03/25/19 06:11	03/26/19 13:35	7439-96-5	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	03/25/19 06:11	03/26/19 13:35	7440-02-0	
Potassium, Dissolved	1310J	ug/L	2500	310	1	03/25/19 06:11	03/26/19 13:35	7440-09-7	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	03/25/19 06:11	03/26/19 13:35	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	03/25/19 06:11	03/26/19 13:35	7440-22-4	
Sodium, Dissolved	13900	ug/L	1000	21.5	1	03/25/19 06:11	03/26/19 13:35	7440-23-5	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	03/25/19 06:11	03/26/19 13:35	7440-28-0	
Vanadium, Dissolved	5.3J	ug/L	15.0	0.29	1	03/25/19 06:11	03/26/19 13:35	7440-62-2	
Zinc, Dissolved	95.9	ug/L	20.0	2.5	1	03/25/19 06:11	03/26/19 13:35	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	03/25/19 09:05	03/26/19 15:11	7439-97-6	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	194	mg/L	5.0	1.0	1		04/01/19 14:30		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	255	mg/L	10.0	5.0	1		03/27/19 11:29		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		03/26/19 13:15	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	4.8	mg/L	1.2	0.28	1		03/23/19 04:52	16887-00-6	
Nitrate as N	1.8	mg/L	0.10	0.015	1		03/23/19 04:52	14797-55-8	
Sulfate	7.0	mg/L	1.2	0.19	1		03/23/19 04:52	14808-79-8	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Sample: Randall-GW-032119 **Lab ID: 10467822010** Collected: 03/21/19 15:00 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrate + Nitrite	Analytical Method: EPA 353.2								
Nitrogen, NO ₂ plus NO ₃	2.0	mg/L	0.10	0.018	1		04/04/19 11:46		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	04/01/19 12:04	04/01/19 16:37		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	0.48J	mg/L	1.0	0.39	1		03/29/19 16:38	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467822

Sample: **SG1-GW-032119** Lab ID: **10467822011** Collected: 03/21/19 15:20 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/28/19 12:26	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/28/19 12:26	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 12:26	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/28/19 12:26	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/28/19 12:26	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 12:26	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/28/19 12:26	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		03/28/19 12:26	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 12:26	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/28/19 12:26	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/28/19 12:26	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/28/19 12:26	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/28/19 12:26	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/28/19 12:26	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 12:26	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/28/19 12:26	107-06-2	L2
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/28/19 12:26	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/28/19 12:26	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		03/28/19 12:26	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/28/19 12:26	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/28/19 12:26	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 12:26	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/28/19 12:26	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/28/19 12:26	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/28/19 12:26	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/28/19 12:26	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/28/19 12:26	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		03/28/19 12:26	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/28/19 12:26	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/28/19 12:26	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/28/19 12:26	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/28/19 12:26	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/28/19 12:26	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/28/19 12:26	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 12:26	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/28/19 12:26	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/28/19 12:26	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/28/19 12:26	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/28/19 12:26	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/28/19 12:26	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/28/19 12:26	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 12:26	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/28/19 12:26	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/28/19 12:26	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/28/19 12:26	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/28/19 12:26	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467822

Sample: **SG1-GW-032119** Lab ID: **10467822011** Collected: 03/21/19 15:20 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/28/19 12:26	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/28/19 12:26	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/28/19 12:26	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/28/19 12:26	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/28/19 12:26	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 12:26	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/28/19 12:26	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		03/28/19 12:26	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/28/19 12:26	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/28/19 12:26	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/28/19 12:26	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/28/19 12:26	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/28/19 12:26	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/28/19 12:26	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		03/28/19 12:26	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/28/19 12:26	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/28/19 12:26	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/28/19 12:26	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/28/19 12:26	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/28/19 12:26	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/28/19 12:26	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/28/19 12:26	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/28/19 12:26	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/28/19 12:26	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/28/19 12:26	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/28/19 12:26	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/28/19 12:26	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/28/19 12:26	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/28/19 12:26	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/28/19 12:26	75-65-0	
tert-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/28/19 12:26	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/28/19 12:26	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		03/28/19 12:26	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/28/19 12:26	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	103	%	75-136		1		03/28/19 12:26	17060-07-0	
Toluene-d8 (S)	108	%	75-125		1		03/28/19 12:26	2037-26-5	
4-Bromofluorobenzene (S)	102	%	75-125		1		03/28/19 12:26	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Project No.: 10467822

Sample: **SG2-GW-032119** Lab ID: **10467822012** Collected: 03/21/19 15:25 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/28/19 12:49	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/28/19 12:49	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 12:49	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/28/19 12:49	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/28/19 12:49	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 12:49	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/28/19 12:49	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		03/28/19 12:49	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 12:49	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/28/19 12:49	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/28/19 12:49	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/28/19 12:49	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/28/19 12:49	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/28/19 12:49	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 12:49	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/28/19 12:49	107-06-2	L2
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/28/19 12:49	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/28/19 12:49	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		03/28/19 12:49	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/28/19 12:49	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/28/19 12:49	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 12:49	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/28/19 12:49	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/28/19 12:49	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/28/19 12:49	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/28/19 12:49	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/28/19 12:49	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		03/28/19 12:49	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/28/19 12:49	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/28/19 12:49	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/28/19 12:49	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/28/19 12:49	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/28/19 12:49	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/28/19 12:49	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 12:49	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/28/19 12:49	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/28/19 12:49	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/28/19 12:49	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/28/19 12:49	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/28/19 12:49	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/28/19 12:49	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 12:49	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/28/19 12:49	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/28/19 12:49	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/28/19 12:49	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/28/19 12:49	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Sample: SG2-GW-032119 **Lab ID: 10467822012** Collected: 03/21/19 15:25 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/28/19 12:49	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/28/19 12:49	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/28/19 12:49	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/28/19 12:49	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/28/19 12:49	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 12:49	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/28/19 12:49	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		03/28/19 12:49	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/28/19 12:49	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/28/19 12:49	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/28/19 12:49	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/28/19 12:49	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/28/19 12:49	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/28/19 12:49	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		03/28/19 12:49	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/28/19 12:49	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/28/19 12:49	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/28/19 12:49	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/28/19 12:49	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/28/19 12:49	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/28/19 12:49	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/28/19 12:49	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/28/19 12:49	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/28/19 12:49	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/28/19 12:49	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/28/19 12:49	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/28/19 12:49	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/28/19 12:49	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/28/19 12:49	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/28/19 12:49	75-65-0	
tert-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/28/19 12:49	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/28/19 12:49	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		03/28/19 12:49	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/28/19 12:49	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	104	%	75-136		1		03/28/19 12:49	17060-07-0	
Toluene-d8 (S)	109	%	75-125		1		03/28/19 12:49	2037-26-5	
4-Bromofluorobenzene (S)	100	%	75-125		1		03/28/19 12:49	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Sample: TB-032119 **Lab ID: 10467822013** Collected: 03/21/19 07:00 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/28/19 15:59	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/28/19 15:59	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 15:59	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/28/19 15:59	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/28/19 15:59	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 15:59	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/28/19 15:59	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		03/28/19 15:59	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 15:59	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/28/19 15:59	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/28/19 15:59	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/28/19 15:59	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/28/19 15:59	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/28/19 15:59	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 15:59	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/28/19 15:59	107-06-2	L2
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/28/19 15:59	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/28/19 15:59	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		03/28/19 15:59	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/28/19 15:59	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/28/19 15:59	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 15:59	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/28/19 15:59	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/28/19 15:59	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/28/19 15:59	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/28/19 15:59	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/28/19 15:59	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		03/28/19 15:59	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/28/19 15:59	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/28/19 15:59	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/28/19 15:59	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/28/19 15:59	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/28/19 15:59	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/28/19 15:59	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 15:59	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/28/19 15:59	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/28/19 15:59	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/28/19 15:59	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/28/19 15:59	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/28/19 15:59	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/28/19 15:59	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 15:59	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/28/19 15:59	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/28/19 15:59	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/28/19 15:59	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/28/19 15:59	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Sample: TB-032119 **Lab ID: 10467822013** Collected: 03/21/19 07:00 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/28/19 15:59	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/28/19 15:59	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/28/19 15:59	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/28/19 15:59	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/28/19 15:59	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 15:59	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/28/19 15:59	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		03/28/19 15:59	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/28/19 15:59	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/28/19 15:59	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/28/19 15:59	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/28/19 15:59	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/28/19 15:59	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/28/19 15:59	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		03/28/19 15:59	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/28/19 15:59	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/28/19 15:59	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/28/19 15:59	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/28/19 15:59	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/28/19 15:59	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/28/19 15:59	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/28/19 15:59	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/28/19 15:59	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/28/19 15:59	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/28/19 15:59	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/28/19 15:59	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/28/19 15:59	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/28/19 15:59	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/28/19 15:59	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/28/19 15:59	75-65-0	
tert-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/28/19 15:59	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/28/19 15:59	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		03/28/19 15:59	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/28/19 15:59	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%	75-136		1		03/28/19 15:59	17060-07-0	
Toluene-d8 (S)	108	%	75-125		1		03/28/19 15:59	2037-26-5	
4-Bromofluorobenzene (S)	98	%	75-125		1		03/28/19 15:59	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Project No.: 10467822

Sample: **TB2-032119** Lab ID: **10467822014** Collected: 03/21/19 07:15 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/28/19 15:35	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/28/19 15:35	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 15:35	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/28/19 15:35	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/28/19 15:35	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 15:35	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/28/19 15:35	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		03/28/19 15:35	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 15:35	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/28/19 15:35	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/28/19 15:35	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/28/19 15:35	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/28/19 15:35	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/28/19 15:35	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 15:35	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/28/19 15:35	107-06-2	L2
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/28/19 15:35	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/28/19 15:35	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		03/28/19 15:35	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/28/19 15:35	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/28/19 15:35	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 15:35	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/28/19 15:35	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/28/19 15:35	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/28/19 15:35	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/28/19 15:35	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/28/19 15:35	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		03/28/19 15:35	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/28/19 15:35	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/28/19 15:35	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/28/19 15:35	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/28/19 15:35	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/28/19 15:35	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/28/19 15:35	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 15:35	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/28/19 15:35	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/28/19 15:35	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/28/19 15:35	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/28/19 15:35	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/28/19 15:35	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/28/19 15:35	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 15:35	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/28/19 15:35	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/28/19 15:35	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/28/19 15:35	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/28/19 15:35	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Sample: TB2-032119 **Lab ID: 10467822014** Collected: 03/21/19 07:15 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/28/19 15:35	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/28/19 15:35	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/28/19 15:35	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/28/19 15:35	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/28/19 15:35	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 15:35	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/28/19 15:35	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		03/28/19 15:35	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/28/19 15:35	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/28/19 15:35	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/28/19 15:35	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/28/19 15:35	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/28/19 15:35	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/28/19 15:35	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		03/28/19 15:35	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/28/19 15:35	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/28/19 15:35	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/28/19 15:35	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/28/19 15:35	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/28/19 15:35	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/28/19 15:35	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/28/19 15:35	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/28/19 15:35	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/28/19 15:35	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/28/19 15:35	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/28/19 15:35	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/28/19 15:35	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/28/19 15:35	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/28/19 15:35	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/28/19 15:35	75-65-0	
tert-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/28/19 15:35	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/28/19 15:35	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		03/28/19 15:35	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/28/19 15:35	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%	75-136		1		03/28/19 15:35	17060-07-0	
Toluene-d8 (S)	108	%	75-125		1		03/28/19 15:35	2037-26-5	
4-Bromofluorobenzene (S)	99	%	75-125		1		03/28/19 15:35	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467822

QC Batch: 595684 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 GCV HEADSPACE
Associated Lab Samples: 10467822001, 10467822002

METHOD BLANK: 3220359 Matrix: Water
Associated Lab Samples: 10467822001, 10467822002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	03/26/19 08:04	
Ethene	ug/L	<2.9	10.0	2.9	03/26/19 08:04	
Methane	ug/L	<4.9	10.0	4.9	03/26/19 08:04	

LABORATORY CONTROL SAMPLE & LCSD: 3220360

Parameter	Units	3220361				% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qualifiers
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec						
Ethane	ug/L	114	105	107	92	94	85-115	2	20		
Ethene	ug/L	106	97.8	99.7	92	94	85-115	2	20		
Methane	ug/L	60.7	55.9	56.6	92	93	85-115	1	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3220362

Parameter	Units	10467822001 Result	3220363				% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
			MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Ethane	ug/L	<3.0	114	114	86.7	107	76	94	30-150	21	20	R1
Ethene	ug/L	<2.9	106	106	81.5	99.5	77	94	30-150	20	20	
Methane	ug/L	<4.9	60.7	60.7	45.8	56.0	72	89	30-150	20	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3220364

Parameter	Units	10467822002 Result	3220365				% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
			MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Ethane	ug/L	<3.0	114	114	83.6	105	74	92	30-150	23	20	R1
Ethene	ug/L	<2.9	106	106	78.0	96.7	73	91	30-150	22	20	R1
Methane	ug/L	<4.9	60.7	60.7	43.6	54.0	68	85	30-150	21	20	R1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

QC Batch: 596080 Analysis Method: RSK 175
 QC Batch Method: RSK 175 Analysis Description: RSK 175 GCV HEADSPACE
 Associated Lab Samples: 10467822003, 10467822004, 10467822005, 10467822007, 10467822008, 10467822009, 10467822010

METHOD BLANK: 3222673 Matrix: Water
 Associated Lab Samples: 10467822003, 10467822004, 10467822005, 10467822007, 10467822008, 10467822009, 10467822010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	03/27/19 10:29	
Ethene	ug/L	<2.9	10.0	2.9	03/27/19 10:29	
Methane	ug/L	<4.9	10.0	4.9	03/27/19 10:29	

LABORATORY CONTROL SAMPLE & LCSD: 3222674 3222675

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	99.2	101	87	89	85-115	2	20	
Ethene	ug/L	106	92.7	94.4	87	89	85-115	2	20	
Methane	ug/L	60.7	53.6	54.3	88	89	85-115	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222676 3222677

Parameter	Units	10468644001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Ethane	ug/L	<3.0	114	114	69.7	110	61	96	30-150	44	20	R1
Ethene	ug/L	<2.9	106	106	68.4	102	64	96	30-150	39	20	R1
Methane	ug/L	<4.9	60.7	60.7	51.9	57.8	83	93	30-150	11	20	

SAMPLE DUPLICATE: 3224314

Parameter	Units	10467822008 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<3.0	<3.0		20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	<4.9	<4.9		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

QC Batch: 596386	Analysis Method: RSK 175
QC Batch Method: RSK 175	Analysis Description: RSK 175 GCV HEADSPACE
Associated Lab Samples: 10467822006	

METHOD BLANK: 3224308 Matrix: Water

Associated Lab Samples: 10467822006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	03/28/19 10:41	
Ethene	ug/L	<2.9	10.0	2.9	03/28/19 10:41	
Methane	ug/L	<4.9	10.0	4.9	03/28/19 10:41	

LABORATORY CONTROL SAMPLE & LCSD: 3224309 3224310

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	102	104	90	91	85-115	1	20	
Ethene	ug/L	106	95.8	97.2	90	92	85-115	1	20	
Methane	ug/L	60.7	54.2	54.9	89	91	85-115	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3224649 3224650

Parameter	Units	10467822006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Ethane	ug/L	<3.0	114	114	91.4	89.9	80	79	30-150	2	20	
Ethene	ug/L	<2.9	106	106	85.6	84.1	81	79	30-150	2	20	
Methane	ug/L	<4.9	60.7	60.7	48.7	47.6	78	76	30-150	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467822

QC Batch: 595291 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10467822001, 10467822002, 10467822003, 10467822004, 10467822005, 10467822006, 10467822007, 10467822008, 10467822009, 10467822010

METHOD BLANK: 3218240 Matrix: Water
Associated Lab Samples: 10467822001, 10467822002, 10467822003, 10467822004, 10467822005, 10467822006, 10467822007, 10467822008, 10467822009, 10467822010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.078	0.20	0.078	03/26/19 14:32	

LABORATORY CONTROL SAMPLE: 3218241

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.9	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3218242 3218243

Parameter	Units	10467822001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.078	5	5	5.3	5.5	106	109	80-120	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3218244 3218245

Parameter	Units	10467822002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.078	5	5	5.5	5.3	111	106	80-120	4	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3218246 3218247

Parameter	Units	10467822006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.078	5	5	5.8	5.9	115	118	80-120	3	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

QC Batch: 595282 Analysis Method: EPA 6010D
 QC Batch Method: EPA 3010 Analysis Description: 6010D Water Dissolved
 Associated Lab Samples: 10467822001, 10467822002, 10467822003, 10467822004, 10467822005, 10467822006, 10467822007, 10467822008, 10467822009, 10467822010

METHOD BLANK: 3218184 Matrix: Water
 Associated Lab Samples: 10467822001, 10467822002, 10467822003, 10467822004, 10467822005, 10467822006, 10467822007, 10467822008, 10467822009, 10467822010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	<15.5	200	15.5	03/26/19 12:45	
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	03/26/19 12:45	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	03/26/19 12:45	
Barium, Dissolved	ug/L	<0.18	10.0	0.18	03/26/19 12:45	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	03/26/19 12:45	
Cadmium, Dissolved	ug/L	<0.26	3.0	0.26	03/26/19 12:45	
Calcium, Dissolved	ug/L	13.9J	500	13.9	03/26/19 12:45	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	03/26/19 12:45	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	03/26/19 12:45	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	03/26/19 12:45	
Iron, Dissolved	ug/L	<4.3	50.0	4.3	03/26/19 12:45	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	03/26/19 12:45	
Magnesium, Dissolved	ug/L	<9.8	500	9.8	03/26/19 12:45	
Manganese, Dissolved	ug/L	<0.22	5.0	0.22	03/26/19 12:45	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	03/26/19 12:45	
Potassium, Dissolved	ug/L	<310	2500	310	03/26/19 12:45	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	03/26/19 12:45	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	03/26/19 12:45	
Sodium, Dissolved	ug/L	<21.5	1000	21.5	03/26/19 12:45	
Thallium, Dissolved	ug/L	<4.3	20.0	4.3	03/26/19 12:45	
Vanadium, Dissolved	ug/L	<0.29	15.0	0.29	03/26/19 12:45	
Zinc, Dissolved	ug/L	<2.5	20.0	2.5	03/26/19 12:45	

LABORATORY CONTROL SAMPLE: 3218185

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	20000	21400	107	80-120	
Antimony, Dissolved	ug/L	1000	1040	104	80-120	
Arsenic, Dissolved	ug/L	1000	1020	102	80-120	
Barium, Dissolved	ug/L	1000	1050	105	80-120	
Beryllium, Dissolved	ug/L	1000	1060	106	80-120	
Cadmium, Dissolved	ug/L	1000	1050	105	80-120	
Calcium, Dissolved	ug/L	20000	19700	98	80-120	
Chromium, Dissolved	ug/L	1000	1030	103	80-120	
Cobalt, Dissolved	ug/L	1000	1030	103	80-120	
Copper, Dissolved	ug/L	1000	995	99	80-120	
Iron, Dissolved	ug/L	20000	20200	101	80-120	
Lead, Dissolved	ug/L	1000	1030	103	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

LABORATORY CONTROL SAMPLE: 3218185

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Magnesium, Dissolved	ug/L	20000	20000	100	80-120	
Manganese, Dissolved	ug/L	1000	1050	105	80-120	
Nickel, Dissolved	ug/L	1000	1020	102	80-120	
Potassium, Dissolved	ug/L	20000	20100	100	80-120	
Selenium, Dissolved	ug/L	1000	1090	109	80-120	
Silver, Dissolved	ug/L	500	524	105	80-120	
Sodium, Dissolved	ug/L	20000	20200	101	80-120	
Thallium, Dissolved	ug/L	1000	1040	104	80-120	
Vanadium, Dissolved	ug/L	1000	1030	103	80-120	
Zinc, Dissolved	ug/L	1000	1030	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3218186 3218187

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10467822001 Result	Spike Conc.	Spike Conc.	MS Result								
Aluminum, Dissolved	ug/L	<15.5	20000	20000	21400	21200	107	106	75-125	1	20		
Antimony, Dissolved	ug/L	<7.0	1000	1000	1030	1040	102	103	75-125	1	20		
Arsenic, Dissolved	ug/L	<3.8	1000	1000	1000	1020	100	101	75-125	1	20		
Barium, Dissolved	ug/L	9.4J	1000	1000	1030	1060	102	105	75-125	3	20		
Beryllium, Dissolved	ug/L	<0.12	1000	1000	1050	1060	105	106	75-125	1	20		
Cadmium, Dissolved	ug/L	0.86J	1000	1000	1040	1040	104	104	75-125	0	20		
Calcium, Dissolved	ug/L	26200	20000	20000	46200	45900	100	98	75-125	1	20		
Chromium, Dissolved	ug/L	<0.49	1000	1000	1010	1020	101	102	75-125	1	20		
Cobalt, Dissolved	ug/L	1.4J	1000	1000	997	1000	100	100	75-125	1	20		
Copper, Dissolved	ug/L	7.4J	1000	1000	997	997	99	99	75-125	0	20		
Iron, Dissolved	ug/L	<4.3	20000	20000	19800	20100	99	100	75-125	1	20		
Lead, Dissolved	ug/L	<2.0	1000	1000	1010	1010	100	101	75-125	1	20		
Magnesium, Dissolved	ug/L	12900	20000	20000	33200	32700	101	99	75-125	2	20		
Manganese, Dissolved	ug/L	0.25J	1000	1000	1040	1030	104	103	75-125	1	20		
Nickel, Dissolved	ug/L	2.5J	1000	1000	990	1000	99	100	75-125	1	20		
Potassium, Dissolved	ug/L	3760	20000	20000	24300	24600	103	104	75-125	1	20		
Selenium, Dissolved	ug/L	<5.8	1000	1000	1060	1080	106	108	75-125	1	20		
Silver, Dissolved	ug/L	<0.38	500	500	519	522	104	104	75-125	1	20		
Sodium, Dissolved	ug/L	15800	20000	20000	36000	35400	101	98	75-125	2	20		
Thallium, Dissolved	ug/L	<4.3	1000	1000	1020	1030	102	103	75-125	1	20		
Vanadium, Dissolved	ug/L	11.1J	1000	1000	1020	1030	101	102	75-125	1	20		
Zinc, Dissolved	ug/L	30.6	1000	1000	1020	1040	99	101	75-125	1	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3218188 3218189

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10467822002 Result	Spike Conc.	Spike Conc.	MS Result								
Aluminum, Dissolved	ug/L	<15.5	20000	20000	21600	21900	108	109	75-125	1	20		
Antimony, Dissolved	ug/L	<7.0	1000	1000	1030	1040	103	104	75-125	1	20		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3218188												3218189	
Parameter	Units	10467822002 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
			Spike Conc.	Spike Conc.									
Arsenic, Dissolved	ug/L	<3.8	1000	1000	1020	1030	102	103	75-125	1	20		
Barium, Dissolved	ug/L	78.6	1000	1000	1100	1130	102	105	75-125	2	20		
Beryllium, Dissolved	ug/L	<0.12	1000	1000	1060	1070	106	107	75-125	1	20		
Cadmium, Dissolved	ug/L	0.66J	1000	1000	1050	1060	105	106	75-125	0	20		
Calcium, Dissolved	ug/L	62900	20000	20000	82100	83800	96	104	75-125	2	20		
Chromium, Dissolved	ug/L	0.81J	1000	1000	1020	1020	101	102	75-125	1	20		
Cobalt, Dissolved	ug/L	2.0J	1000	1000	1000	1010	100	101	75-125	1	20		
Copper, Dissolved	ug/L	131	1000	1000	1140	1160	101	103	75-125	2	20		
Iron, Dissolved	ug/L	4.7J	20000	20000	20100	20200	101	101	75-125	1	20		
Lead, Dissolved	ug/L	2.0J	1000	1000	1010	1020	101	101	75-125	1	20		
Magnesium, Dissolved	ug/L	18500	20000	20000	39200	39700	104	106	75-125	1	20		
Manganese, Dissolved	ug/L	0.25J	1000	1000	1040	1060	104	106	75-125	2	20		
Nickel, Dissolved	ug/L	3.3J	1000	1000	995	1000	99	100	75-125	1	20		
Potassium, Dissolved	ug/L	1200J	20000	20000	21900	22600	104	107	75-125	3	20		
Selenium, Dissolved	ug/L	<5.8	1000	1000	1090	1090	109	109	75-125	0	20		
Silver, Dissolved	ug/L	<0.38	500	500	528	528	106	106	75-125	0	20		
Sodium, Dissolved	ug/L	20600	20000	20000	40800	41800	101	106	75-125	2	20		
Thallium, Dissolved	ug/L	<4.3	1000	1000	1020	1030	102	103	75-125	1	20		
Vanadium, Dissolved	ug/L	10.7J	1000	1000	1030	1040	102	103	75-125	1	20		
Zinc, Dissolved	ug/L	27.5	1000	1000	1030	1040	100	101	75-125	1	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3218190												3218191	
Parameter	Units	10467822006 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
			Spike Conc.	Spike Conc.									
Aluminum, Dissolved	ug/L	<15.5	20000	20000	22000	21200	110	106	75-125	4	20		
Antimony, Dissolved	ug/L	<7.0	1000	1000	1050	1030	105	103	75-125	3	20		
Arsenic, Dissolved	ug/L	<3.8	1000	1000	1040	1010	104	101	75-125	3	20		
Barium, Dissolved	ug/L	35.2	1000	1000	1090	1080	105	105	75-125	0	20		
Beryllium, Dissolved	ug/L	<0.12	1000	1000	1090	1050	109	105	75-125	3	20		
Cadmium, Dissolved	ug/L	0.92J	1000	1000	1080	1040	108	104	75-125	3	20		
Calcium, Dissolved	ug/L	33000	20000	20000	54700	53700	108	104	75-125	2	20		
Chromium, Dissolved	ug/L	<0.49	1000	1000	1050	1020	105	101	75-125	3	20		
Cobalt, Dissolved	ug/L	1.5J	1000	1000	1030	999	103	100	75-125	3	20		
Copper, Dissolved	ug/L	112	1000	1000	1160	1110	104	100	75-125	4	20		
Iron, Dissolved	ug/L	<4.3	20000	20000	20800	20000	104	100	75-125	4	20		
Lead, Dissolved	ug/L	<2.0	1000	1000	1040	1010	104	101	75-125	3	20		
Magnesium, Dissolved	ug/L	11400	20000	20000	32300	31800	104	102	75-125	2	20		
Manganese, Dissolved	ug/L	0.36J	1000	1000	1080	1040	108	104	75-125	3	20		
Nickel, Dissolved	ug/L	2.9J	1000	1000	1030	996	103	99	75-125	3	20		
Potassium, Dissolved	ug/L	1760J	20000	20000	23400	22700	108	105	75-125	3	20		
Selenium, Dissolved	ug/L	<5.8	1000	1000	1100	1070	110	107	75-125	3	20		
Silver, Dissolved	ug/L	<0.38	500	500	537	522	107	104	75-125	3	20		
Sodium, Dissolved	ug/L	17100	20000	20000	39000	37500	109	102	75-125	4	20		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Parameter	Units	10467822006		3218190		3218191		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Thallium, Dissolved	ug/L	<4.3	1000	1000	1060	1030	106	102	75-125	3	20			
Vanadium, Dissolved	ug/L	6.4J	1000	1000	1050	1020	105	102	75-125	3	20			
Zinc, Dissolved	ug/L	67.1	1000	1000	1100	1070	104	100	75-125	3	20			

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

QC Batch: 596233 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10467822011, 10467822012, 10467822013, 10467822014

METHOD BLANK: 3223555 Matrix: Water
Associated Lab Samples: 10467822011, 10467822012, 10467822013, 10467822014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	03/28/19 10:27	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	03/28/19 10:27	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	03/28/19 10:27	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	03/28/19 10:27	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	03/28/19 10:27	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	03/28/19 10:27	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	03/28/19 10:27	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	03/28/19 10:27	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	03/28/19 10:27	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	03/28/19 10:27	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	03/28/19 10:27	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	03/28/19 10:27	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	03/28/19 10:27	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	03/28/19 10:27	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	03/28/19 10:27	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	03/28/19 10:27	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	03/28/19 10:27	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	03/28/19 10:27	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	03/28/19 10:27	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/28/19 10:27	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	03/28/19 10:27	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	03/28/19 10:27	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	03/28/19 10:27	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	03/28/19 10:27	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	03/28/19 10:27	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	03/28/19 10:27	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	03/28/19 10:27	
2-Hexanone	ug/L	<0.88	5.0	0.88	03/28/19 10:27	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/28/19 10:27	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	03/28/19 10:27	
Acetone	ug/L	<9.2	20.0	9.2	03/28/19 10:27	
Acrolein	ug/L	<1.2	10.0	1.2	03/28/19 10:27	
Acrylonitrile	ug/L	<0.91	10.0	0.91	03/28/19 10:27	
Benzene	ug/L	<0.10	0.50	0.10	03/28/19 10:27	
Bromobenzene	ug/L	<0.21	0.50	0.21	03/28/19 10:27	
Bromochloromethane	ug/L	<0.27	1.0	0.27	03/28/19 10:27	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	03/28/19 10:27	
Bromoform	ug/L	<0.80	4.0	0.80	03/28/19 10:27	
Bromomethane	ug/L	<1.8	4.0	1.8	03/28/19 10:27	
Carbon disulfide	ug/L	<0.078	1.0	0.078	03/28/19 10:27	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	03/28/19 10:27	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

METHOD BLANK: 3223555

Matrix: Water

Associated Lab Samples: 10467822011, 10467822012, 10467822013, 10467822014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	03/28/19 10:27	
Chloroethane	ug/L	<0.49	1.0	0.49	03/28/19 10:27	
Chloroform	ug/L	<0.45	4.0	0.45	03/28/19 10:27	
Chloromethane	ug/L	<0.16	4.0	0.16	03/28/19 10:27	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	03/28/19 10:27	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	03/28/19 10:27	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	03/28/19 10:27	
Dibromomethane	ug/L	<0.16	1.0	0.16	03/28/19 10:27	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	03/28/19 10:27	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	03/28/19 10:27	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	03/28/19 10:27	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	03/28/19 10:27	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/28/19 10:27	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	03/28/19 10:27	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	03/28/19 10:27	
m&p-Xylene	ug/L	<0.31	1.0	0.31	03/28/19 10:27	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	03/28/19 10:27	
Methylene Chloride	ug/L	<0.98	4.0	0.98	03/28/19 10:27	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	03/28/19 10:27	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	03/28/19 10:27	
Naphthalene	ug/L	<0.48	1.0	0.48	03/28/19 10:27	
o-Xylene	ug/L	<0.16	0.50	0.16	03/28/19 10:27	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	03/28/19 10:27	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	03/28/19 10:27	
Styrene	ug/L	<0.19	1.0	0.19	03/28/19 10:27	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	03/28/19 10:27	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	03/28/19 10:27	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	03/28/19 10:27	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	03/28/19 10:27	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	03/28/19 10:27	
Toluene	ug/L	<0.083	0.50	0.083	03/28/19 10:27	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	03/28/19 10:27	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	03/28/19 10:27	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	03/28/19 10:27	
Trichloroethene	ug/L	<0.15	0.40	0.15	03/28/19 10:27	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	03/28/19 10:27	
Vinyl acetate	ug/L	<1.1	10.0	1.1	03/28/19 10:27	
Vinyl chloride	ug/L	<0.092	0.20	0.092	03/28/19 10:27	
Xylene (Total)	ug/L	<0.31	1.5	0.31	03/28/19 10:27	
1,2-Dichloroethane-d4 (S)	%	105	75-136		03/28/19 10:27	
4-Bromofluorobenzene (S)	%	100	75-125		03/28/19 10:27	
Toluene-d8 (S)	%	107	75-125		03/28/19 10:27	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

LABORATORY CONTROL SAMPLE: 3223556

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.8	99	68-141	
1,1,1-Trichloroethane	ug/L	20	16.4	82	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	20.2	101	73-125	
1,1,2-Trichloroethane	ug/L	20	20.4	102	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	17.0	85	69-132	
1,1-Dichloroethane	ug/L	20	16.5	82	73-125	
1,1-Dichloroethene	ug/L	20	16.7	84	71-126	
1,1-Dichloropropene	ug/L	20	15.7	79	73-126	
1,2,3-Trichlorobenzene	ug/L	20	20.5	102	72-126	
1,2,3-Trichloropropane	ug/L	20	19.8	99	75-126	
1,2,4-Trichlorobenzene	ug/L	20	20.7	103	71-134	
1,2,4-Trimethylbenzene	ug/L	20	20.8	104	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	45.5	91	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	20.3	101	75-129	
1,2-Dichlorobenzene	ug/L	20	21.2	106	75-129	
1,2-Dichloroethane	ug/L	20	14.3	71	75-125	L2
1,2-Dichloroethene (Total)	ug/L	40	33.0	82	74-125	N2
1,2-Dichloropropane	ug/L	20	18.7	93	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.9	104	75-127	
1,3-Dichlorobenzene	ug/L	20	21.2	106	75-126	
1,3-Dichloropropane	ug/L	20	19.6	98	75-125	
1,4-Dichlorobenzene	ug/L	20	20.1	101	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	438	109	72-129	
2,2,4-Trimethylpentane	ug/L	20	16.5	82	72-128	N2
2,2-Dichloropropane	ug/L	20	17.3	86	65-138	
2-Butanone (MEK)	ug/L	100	78.9	79	59-144	
2-Chlorotoluene	ug/L	20	22.0	110	75-127	
2-Hexanone	ug/L	100	101	101	73-134	
4-Chlorotoluene	ug/L	20	22.5	112	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	92.3	92	62-141	
Acetone	ug/L	100	121	121	60-137	
Acrolein	ug/L	200	170	85	60-141	
Acrylonitrile	ug/L	200	156	78	75-129	
Benzene	ug/L	20	16.5	82	73-125	
Bromobenzene	ug/L	20	20.1	101	73-125	
Bromochloromethane	ug/L	20	16.3	82	75-135	
Bromodichloromethane	ug/L	20	19.0	95	75-125	
Bromoform	ug/L	20	20.3	101	67-136	
Bromomethane	ug/L	20	14.4	72	30-150	
Carbon disulfide	ug/L	20	16.5	82	47-137	
Carbon tetrachloride	ug/L	20	17.0	85	75-125	
Chlorobenzene	ug/L	20	19.1	96	75-125	
Chloroethane	ug/L	20	17.7	89	63-136	
Chloroform	ug/L	20	16.5	83	73-128	
Chloromethane	ug/L	20	16.1	81	55-130	
cis-1,2-Dichloroethene	ug/L	20	16.5	83	75-125	
cis-1,3-Dichloropropene	ug/L	20	18.4	92	74-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

LABORATORY CONTROL SAMPLE: 3223556

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	19.3	96	75-125	
Dibromomethane	ug/L	20	18.8	94	75-125	
Dichlorodifluoromethane	ug/L	20	19.1	95	63-132	
Dichlorofluoromethane	ug/L	20	16.9	84	68-127	N2
Diisopropyl ether	ug/L	20	15.5	78	71-131	
Ethyl-tert-butyl ether	ug/L	20	16.0	80	75-125	
Ethylbenzene	ug/L	20	20.4	102	75-125	
Hexachloro-1,3-butadiene	ug/L	20	19.9	100	72-134	
Isopropylbenzene (Cumene)	ug/L	20	20.6	103	75-125	
m&p-Xylene	ug/L	40	46.6	116	75-126	
Methyl-tert-butyl ether	ug/L	20	16.2	81	75-125	
Methylene Chloride	ug/L	20	16.8	84	70-125	
n-Butylbenzene	ug/L	20	21.2	106	75-126	
n-Propylbenzene	ug/L	20	23.0	115	73-127	
Naphthalene	ug/L	20	20.2	101	63-128	
o-Xylene	ug/L	20	20.8	104	75-128	
p-Isopropyltoluene	ug/L	20	21.1	105	75-125	
sec-Butylbenzene	ug/L	20	21.6	108	75-126	
Styrene	ug/L	20	19.9	99	75-125	
tert-Amylmethyl ether	ug/L	20	15.2	76	75-125	
tert-Butyl Alcohol	ug/L	200	193	97	75-130	
tert-Butylbenzene	ug/L	20	21.1	105	75-131	
Tetrachloroethene	ug/L	20	20.4	102	74-125	
Tetrahydrofuran	ug/L	200	192	96	64-138	
Toluene	ug/L	20	18.9	94	74-125	
trans-1,2-Dichloroethene	ug/L	20	16.5	82	68-128	
trans-1,3-Dichloropropene	ug/L	20	20.4	102	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	49.1	98	60-127	
Trichloroethene	ug/L	20	19.9	100	75-127	
Trichlorofluoromethane	ug/L	20	18.3	91	72-133	
Vinyl acetate	ug/L	20	15.3	76	61-129	
Vinyl chloride	ug/L	20	17.2	86	75-128	
Xylene (Total)	ug/L	60	67.4	112	75-125	
1,2-Dichloroethane-d4 (S)	%			89	75-136	
4-Bromofluorobenzene (S)	%			100	75-125	
Toluene-d8 (S)	%			103	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3224889 3224890

Parameter	Units	MS 10468569001		MSD 3224890		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Result	Spike Conc.	Result								
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	19.9	21.5	99	107	75-140	8	30		
1,1,1-Trichloroethane	ug/L	ND	20	20	18.0	21.4	90	107	74-136	17	30		
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	20.7	22.1	104	110	66-134	6	30		
1,1,2-Trichloroethane	ug/L	ND	20	20	20.4	21.7	102	109	75-126	6	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3224889		3224890									
Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		10468569001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
1,1,2-Trichlorotrifluoroethane	ug/L	ND	20	20	20.3	23.2	101	116	65-146	14	30		
1,1-Dichloroethane	ug/L	ND	20	20	18.9	20.9	94	105	68-132	10	30		
1,1-Dichloroethene	ug/L	ND	20	20	19.3	22.0	97	110	66-139	13	30		
1,1-Dichloropropene	ug/L	ND	20	20	18.2	21.3	91	106	67-134	15	30		
1,2,3-Trichlorobenzene	ug/L	ND	20	20	21.7	22.9	108	114	67-129	5	30		
1,2,3-Trichloropropane	ug/L	ND	20	20	20.4	21.1	102	106	69-128	4	30		
1,2,4-Trichlorobenzene	ug/L	ND	20	20	22.5	23.8	113	119	65-140	5	30		
1,2,4-Trimethylbenzene	ug/L	ND	20	20	21.7	24.1	109	120	71-133	10	30		
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	49.3	53.9	99	108	54-138	9	30		
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	19.5	21.5	98	108	68-125	10	30		
1,2-Dichlorobenzene	ug/L	ND	20	20	22.0	24.1	110	120	74-136	9	30		
1,2-Dichloroethane	ug/L	ND	20	20	14.0	18.4	70	92	68-125	27	30		
1,2-Dichloroethene (Total)	ug/L	ND	40	40	37.4	41.7	94	104	71-126	11	30	N2	
1,2-Dichloropropane	ug/L	ND	20	20	18.4	19.4	92	97	67-125	5	30		
1,3,5-Trimethylbenzene	ug/L	ND	20	20	21.9	23.9	110	120	68-137	9	30		
1,3-Dichlorobenzene	ug/L	ND	20	20	22.1	24.4	111	122	75-131	10	30		
1,3-Dichloropropane	ug/L	ND	20	20	20.2	20.9	101	104	71-125	4	30		
1,4-Dichlorobenzene	ug/L	ND	20	20	20.6	22.6	103	113	74-126	9	30		
1,4-Dioxane (p-Dioxane)	ug/L	ND	400	400	409	420	102	105	68-125	3	30		
2,2,4-Trimethylpentane	ug/L	ND	20	20	19.6	20.1	98	101	54-129	3	30	N2	
2,2-Dichloropropane	ug/L	ND	20	20	19.3	22.2	97	111	69-139	14	30		
2-Butanone (MEK)	ug/L	ND	100	100	69.9	82.7	70	83	54-144	17	30		
2-Chlorotoluene	ug/L	ND	20	20	22.7	25.3	114	126	75-134	11	30		
2-Hexanone	ug/L	ND	100	100	95.9	104	96	104	58-137	8	30		
4-Chlorotoluene	ug/L	ND	20	20	23.3	25.5	116	127	72-133	9	30		
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	96.0	106	96	106	60-129	9	30		
Acetone	ug/L	ND	100	100	76.1	79.5	76	80	62-132	4	30		
Acrolein	ug/L	ND	200	200	270	305	135	152	30-150	12	30	M1	
Acrylonitrile	ug/L	ND	200	200	173	194	87	97	68-125	11	30		
Benzene	ug/L	ND	20	20	16.6	20.4	83	102	68-125	21	30		
Bromobenzene	ug/L	ND	20	20	21.4	22.0	107	110	73-126	3	30		
Bromochloromethane	ug/L	ND	20	20	18.1	20.1	90	100	66-143	10	30		
Bromodichloromethane	ug/L	ND	20	20	18.8	19.9	94	99	74-125	6	30		
Bromoform	ug/L	ND	20	20	19.6	21.3	98	107	64-134	8	30		
Bromomethane	ug/L	ND	20	20	14.5	16.8	73	84	30-150	15	30		
Carbon disulfide	ug/L	ND	20	20	20.7	21.0	103	105	43-147	2	30		
Carbon tetrachloride	ug/L	ND	20	20	18.7	22.4	93	112	71-143	18	30		
Chlorobenzene	ug/L	ND	20	20	19.6	20.9	98	105	75-125	7	30		
Chloroethane	ug/L	ND	20	20	16.7	20.7	84	104	75-129	21	30		
Chloroform	ug/L	ND	20	20	17.1	19.4	85	97	66-132	13	30		
Chloromethane	ug/L	ND	20	20	16.6	20.2	83	101	53-137	20	30		
cis-1,2-Dichloroethene	ug/L	ND	20	20	18.4	20.1	92	101	67-133	9	30		
cis-1,3-Dichloropropene	ug/L	ND	20	20	17.1	17.6	86	88	66-125	3	30		
Dibromochloromethane	ug/L	ND	20	20	19.5	20.4	97	102	62-132	4	30		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Parameter	Units	10468569001		3224889		3224890		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Dibromomethane	ug/L	ND	20	20	18.2	19.5	91	98	67-125	7	30		
Dichlorodifluoromethane	ug/L	ND	20	20	19.1	22.9	95	114	71-142	18	30		
Dichlorofluoromethane	ug/L	ND	20	20	17.2	20.4	86	102	70-131	17	30	N2	
Diisopropyl ether	ug/L	ND	20	20	18.0	19.6	90	98	63-131	8	30		
Ethyl-tert-butyl ether	ug/L	ND	20	20	17.7	20.1	88	101	66-128	13	30		
Ethylbenzene	ug/L	ND	20	20	21.0	23.4	105	117	74-126	11	30		
Hexachloro-1,3-butadiene	ug/L	ND	20	20	23.8	20.9	119	104	68-143	13	30		
Isopropylbenzene (Cumene)	ug/L	ND	20	20	21.9	24.2	109	121	74-130	10	30		
m&p-Xylene	ug/L	ND	40	40	47.5	53.3	119	133	69-132	12	30	M1	
Methyl-tert-butyl ether	ug/L	ND	20	20	18.3	20.6	92	103	65-131	12	30		
Methylene Chloride	ug/L	ND	20	20	19.1	20.2	96	101	57-125	6	30		
n-Butylbenzene	ug/L	ND	20	20	23.7	23.9	118	120	71-131	1	30		
n-Propylbenzene	ug/L	ND	20	20	24.7	27.3	123	137	67-138	10	30		
Naphthalene	ug/L	ND	20	20	22.1	24.9	111	124	60-130	12	30		
o-Xylene	ug/L	ND	20	20	20.9	23.3	105	116	69-131	11	30		
p-Isopropyltoluene	ug/L	ND	20	20	22.7	24.2	114	121	72-133	6	30		
sec-Butylbenzene	ug/L	ND	20	20	23.4	24.4	117	122	73-134	4	30		
Styrene	ug/L	ND	20	20	20.6	22.2	103	111	72-125	7	30		
tert-Amylmethyl ether	ug/L	ND	20	20	15.2	19.9	76	99	67-125	26	30		
tert-Butyl Alcohol	ug/L	ND	200	200	209	204	104	102	64-137	2	30		
tert-Butylbenzene	ug/L	ND	20	20	22.5	24.4	112	122	70-143	8	30		
Tetrachloroethene	ug/L	ND	20	20	21.1	23.5	106	118	72-129	11	30		
Tetrahydrofuran	ug/L	ND	200	200	172	192	86	96	66-128	11	30		
Toluene	ug/L	ND	20	20	19.7	21.0	98	104	73-125	6	30		
trans-1,2-Dichloroethene	ug/L	ND	20	20	19.0	21.5	95	108	62-137	12	30		
trans-1,3-Dichloropropene	ug/L	ND	20	20	21.1	21.4	106	107	61-136	1	30		
trans-1,4-Dichloro-2-butene	ug/L	ND	50	50	50.8	55.8	102	112	45-128	9	30		
Trichloroethene	ug/L	ND	20	20	20.7	19.7	103	99	74-132	4	30		
Trichlorofluoromethane	ug/L	ND	20	20	19.4	23.1	97	116	75-139	17	30		
Vinyl acetate	ug/L	ND	20	20	17.4	19.9	87	99	51-135	13	30		
Vinyl chloride	ug/L	ND	20	20	18.0	21.2	90	106	68-146	17	30		
Xylene (Total)	ug/L	ND	60	60	68.4	76.6	114	128	67-137	11	30	MS	
1,2-Dichloroethane-d4 (S)	%						85	105	75-136				
4-Bromofluorobenzene (S)	%						102	98	75-125				
Toluene-d8 (S)	%						103	101	75-125				

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

QC Batch: 596752 Analysis Method: SM 2320B
 QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
 Associated Lab Samples: 10467822001, 10467822002, 10467822003, 10467822004, 10467822005, 10467822007, 10467822008, 10467822009, 10467822010

METHOD BLANK: 3227170 Matrix: Water
 Associated Lab Samples: 10467822001, 10467822002, 10467822003, 10467822004, 10467822005, 10467822007, 10467822008, 10467822009, 10467822010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.0	5.0	1.0	04/01/19 11:16	

LABORATORY CONTROL SAMPLE & LCSD: 3227171 3227172

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	42.7	43.3	107	108	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3227173 3227174

Parameter	Units	10467822001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	148	40	40	187	190	97	105	80-120	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3227175 3227176

Parameter	Units	10467822002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	226	40	40	277	279	127	134	80-120	1	20 M1	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467822

QC Batch: 597011 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10467822006

METHOD BLANK: 3228384 Matrix: Water
Associated Lab Samples: 10467822006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<2.0	5.0	2.0	04/02/19 08:47	

LABORATORY CONTROL SAMPLE & LCSD: 3228385 3228386

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	42.9	43.0	107	107	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3228387 3228388

Parameter	Units	10467822006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	113	40	40	155	156	105	109	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3228389 3228390

Parameter	Units	10467285038 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	219	40	40	260	266	100	116	80-120	2	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

QC Batch: 595958	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 10467822009, 10467822010	

METHOD BLANK: 3222190 Matrix: Water

Associated Lab Samples: 10467822009, 10467822010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	03/27/19 11:29	

LABORATORY CONTROL SAMPLE: 3222191

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	976	98	80-120	

SAMPLE DUPLICATE: 3222192

Parameter	Units	10467543001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1050	1040	1	5	

SAMPLE DUPLICATE: 3222193

Parameter	Units	10467602001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	230	231	0	5	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

QC Batch: 595959

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 10467822001, 10467822002, 10467822003, 10467822004, 10467822005, 10467822007, 10467822008

METHOD BLANK: 3222194

Matrix: Water

Associated Lab Samples: 10467822001, 10467822002, 10467822003, 10467822004, 10467822005, 10467822007, 10467822008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	03/27/19 12:47	

LABORATORY CONTROL SAMPLE: 3222195

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1040	104	80-120	

SAMPLE DUPLICATE: 3222196

Parameter	Units	10467822001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	198	204	3	5	

SAMPLE DUPLICATE: 3222197

Parameter	Units	10467822002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	350	363	4	5	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

QC Batch: 596248

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 10467822006

METHOD BLANK: 3223661

Matrix: Water

Associated Lab Samples: 10467822006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	03/28/19 19:48	

LABORATORY CONTROL SAMPLE: 3223662

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	964	96	80-120	

SAMPLE DUPLICATE: 3223663

Parameter	Units	10467822006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	263	257	2	5	

SAMPLE DUPLICATE: 3223664

Parameter	Units	10468314010 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	682	700	3	5	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

QC Batch:	137338	Analysis Method:	SM 4500-S-2 D
QC Batch Method:	SM 4500-S-2 D	Analysis Description:	4500S2D Sulfide, Total
Associated Lab Samples:	10467822001, 10467822002, 10467822003, 10467822004, 10467822005, 10467822007, 10467822008, 10467822009, 10467822010		

METHOD BLANK:	597969	Matrix:	Water
Associated Lab Samples:	10467822001, 10467822002, 10467822003, 10467822004, 10467822005, 10467822007, 10467822008, 10467822009, 10467822010		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	03/26/19 11:23	

LABORATORY CONTROL SAMPLE: 597970						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.2	0.18	90	90-110	

MATRIX SPIKE SAMPLE: 597984							
Parameter	Units	10467822001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.0074J	0.2	0.098	45	75-125	M1

MATRIX SPIKE SAMPLE: 597986							
Parameter	Units	10467822002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.2	0.076	36	75-125	M1

SAMPLE DUPLICATE: 597983						
Parameter	Units	10467822001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.0074J	0.0066J		20	

SAMPLE DUPLICATE: 597985						
Parameter	Units	10467822002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

QC Batch: 137449

Analysis Method: SM 4500-S-2 D

QC Batch Method: SM 4500-S-2 D

Analysis Description: 4500S2D Sulfide, Total

Associated Lab Samples: 10467822006

METHOD BLANK: 598533

Matrix: Water

Associated Lab Samples: 10467822006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	03/27/19 10:42	

LABORATORY CONTROL SAMPLE: 598534

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.2	0.18	91	90-110	

MATRIX SPIKE SAMPLE: 598536

Parameter	Units	10467822006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.2	0.089	44	75-125	M1

SAMPLE DUPLICATE: 598535

Parameter	Units	10467822006 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

QC Batch: 595233 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Associated Lab Samples: 10467822002, 10467822003, 10467822004, 10467822005, 10467822006, 10467822007, 10467822008, 10467822009, 10467822010

METHOD BLANK: 3217797 Matrix: Water
 Associated Lab Samples: 10467822002, 10467822003, 10467822004, 10467822005, 10467822006, 10467822007, 10467822008, 10467822009, 10467822010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.28	1.2	0.28	03/22/19 18:50	
Nitrate as N	mg/L	<0.015	0.10	0.015	03/22/19 18:50	
Sulfate	mg/L	<0.19	1.2	0.19	03/22/19 18:50	

LABORATORY CONTROL SAMPLE: 3217798

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	11.8	94	90-110	
Nitrate as N	mg/L	1	0.90	90	90-110	
Sulfate	mg/L	12.5	11.9	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3217799 3217800

Parameter	Units	10467731008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		
										RPD	RPD	Qual
Chloride	mg/L	136	62.5	62.5	184	183	78	77	90-110	0	20	M1
Nitrate as N	mg/L	<0.015	1	1	0.83	0.82	83	82	90-110	0	20	M1
Sulfate	mg/L	0.51J	12.5	12.5	10.9	10.9	83	83	90-110	0	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3217801 3217802

Parameter	Units	10467822002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		
										RPD	RPD	Qual
Chloride	mg/L	6.8	12.5	12.5	16.4	16.4	77	77	90-110	0	20	M1
Nitrate as N	mg/L	6.6	1	1	6.3	6.3	-35	-36	90-110	0	20	M1
Sulfate	mg/L	24.2	12.5	12.5	30.7	30.7	52	52	90-110	0	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3217803 3217804

Parameter	Units	10467822006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		
										RPD	RPD	Qual
Chloride	mg/L	1.3	12.5	12.5	11.8	11.8	85	84	90-110	0	20	M1
Nitrate as N	mg/L	13.7	5	5	17.7	17.5	81	78	90-110	1	20	M1
Sulfate	mg/L	9.8	12.5	12.5	19.1	19.0	75	74	90-110	1	20	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467822

QC Batch: 595234 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10467822001

METHOD BLANK: 3217805 Matrix: Water
Associated Lab Samples: 10467822001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.28	1.2	0.28	03/23/19 04:37	
Nitrate as N	mg/L	<0.015	0.10	0.015	03/23/19 04:37	
Sulfate	mg/L	<0.19	1.2	0.19	03/23/19 04:37	

LABORATORY CONTROL SAMPLE: 3217806

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	13.1	105	90-110	
Nitrate as N	mg/L	1	0.96	96	90-110	
Sulfate	mg/L	12.5	12.9	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3217807 3217808

Parameter	Units	10467717001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result	MSD Result						
Chloride	mg/L	0.52J	12.5	12.5	11.1	11.1	85	84	90-110	1	20	M1
Nitrate as N	mg/L	0.12	1	1	0.91	0.91	80	79	90-110	1	20	M1
Sulfate	mg/L	39.1	12.5	12.5	43.6	42.3	35	26	90-110	3	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3217809 3217810

Parameter	Units	10467822001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result	MSD Result						
Chloride	mg/L	1.6	12.5	12.5	12.0	12.0	84	84	90-110	0	20	M1
Nitrate as N	mg/L	2.4	1	1	2.8	2.9	43	44	90-110	0	20	M1
Sulfate	mg/L	5.4	12.5	12.5	15.3	15.4	79	80	90-110	1	20	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

QC Batch: 597595 Analysis Method: EPA 353.2
 QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
 Associated Lab Samples: 10467822001, 10467822002, 10467822003, 10467822004, 10467822005, 10467822007, 10467822008, 10467822009, 10467822010

METHOD BLANK: 3231493 Matrix: Water
 Associated Lab Samples: 10467822001, 10467822002, 10467822003, 10467822004, 10467822005, 10467822007, 10467822008, 10467822009, 10467822010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	04/04/19 11:47	FS

LABORATORY CONTROL SAMPLE: 3231494

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3231495 3231496

Parameter	Units	10467822001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	2.5	5	5	7.8	8.0	107	110	90-110	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3231497 3231498

Parameter	Units	10467822002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	7.1	10	10	17.5	19.0	104	119	90-110	8	20	M6

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467822

QC Batch: 597634 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10467822006

METHOD BLANK: 3231609 Matrix: Water
Associated Lab Samples: 10467822006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	04/04/19 14:01	FS

LABORATORY CONTROL SAMPLE: 3231610

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.92	92	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3231611 3231612

Parameter	Units	3231611		3231612		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10467822006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Nitrogen, NO2 plus NO3	mg/L	15.7	10	10	26.1	25.6	104	99	90-110	2	20 E

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3231613 3231614

Parameter	Units	3231613		3231614		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10468811001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Nitrogen, NO2 plus NO3	mg/L	0.99	1	1	2.0	2.0	103	106	90-110	1	20 E,FS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

QC Batch: 596803 Analysis Method: EPA 410.4
 QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
 Associated Lab Samples: 10467822001, 10467822002, 10467822003, 10467822004, 10467822005, 10467822007, 10467822008, 10467822009, 10467822010

METHOD BLANK: 3227321 Matrix: Water
 Associated Lab Samples: 10467822001, 10467822002, 10467822003, 10467822004, 10467822005, 10467822007, 10467822008, 10467822009, 10467822010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	04/01/19 16:27	

LABORATORY CONTROL SAMPLE: 3227322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	297	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3227323 3227324

Parameter	Units	10467822001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<17.0	250	250	240	239	96	96	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3227325 3227326

Parameter	Units	10467822002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<17.0	250	250	239	236	95	94	90-110	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

QC Batch: 597820 Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
Associated Lab Samples: 10467822006

METHOD BLANK: 3232550 Matrix: Water
Associated Lab Samples: 10467822006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	04/05/19 13:19	

LABORATORY CONTROL SAMPLE: 3232551

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	294	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3232552 3232553

Parameter	Units	10467822006 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Max		Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	
Chemical Oxygen Demand	mg/L	<17.0	250	250	386	282	151	110	90-110	31	20	M1,R1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3232554 3232555

Parameter	Units	10468801001 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Max		Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	
Chemical Oxygen Demand	mg/L	<50000 ug/L	250	250	263	260	97	96	90-110	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

QC Batch:	163249	Analysis Method:	SM 5310C
QC Batch Method:	SM 5310C	Analysis Description:	5310C TOC
Associated Lab Samples:	10467822001, 10467822002, 10467822003, 10467822004, 10467822005, 10467822006, 10467822007, 10467822008, 10467822009, 10467822010		

METHOD BLANK:	643413	Matrix:	Water
Associated Lab Samples:	10467822001, 10467822002, 10467822003, 10467822004, 10467822005, 10467822006, 10467822007, 10467822008, 10467822009, 10467822010		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.39	1.0	0.39	03/29/19 09:38	

LABORATORY CONTROL SAMPLE: 643414

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.7	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 643415 643416

Parameter	Units	10467822001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	0.52J	25	25	25.5	25.5	100	100	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 643417 643418

Parameter	Units	10467822002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	0.94J	25	25	25.4	26.2	98	101	80-120	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 643419 643420

Parameter	Units	10467822006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	0.58J	25	25	26.6	26.2	104	103	80-120	1	20	

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

PASI-N Pace Analytical Services - New Orleans

PASI-V Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

E Analyte concentration exceeded the calibration range. The reported result is estimated.

FS The sample was filtered in the laboratory prior to analysis.

L2 Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

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

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

MS Analyte recovery in the matrix spike was outside QC limits for one or more of the constituent analytes used in the calculated result.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

R1 RPD value was outside control limits.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

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

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10467822001	Lashaw-GW-032119	RSK 175	595684		
10467822002	Asher-GW-032119	RSK 175	595684		
10467822003	Atwood-GW-032119	RSK 175	596080		
10467822004	Atwood Shop-GW-032119	RSK 175	596080		
10467822005	Thorson-GW-032119	RSK 175	596080		
10467822006	Stark-GW-032119	RSK 175	596386		
10467822007	Lang-GW-032119	RSK 175	596080		
10467822008	Reed-GW-032119	RSK 175	596080		
10467822009	Marlow-GW-032119	RSK 175	596080		
10467822010	Randall-GW-032119	RSK 175	596080		
10467822001	Lashaw-GW-032119	EPA 3010	595282	EPA 6010D	595576
10467822002	Asher-GW-032119	EPA 3010	595282	EPA 6010D	595576
10467822003	Atwood-GW-032119	EPA 3010	595282	EPA 6010D	595576
10467822004	Atwood Shop-GW-032119	EPA 3010	595282	EPA 6010D	595576
10467822005	Thorson-GW-032119	EPA 3010	595282	EPA 6010D	595576
10467822006	Stark-GW-032119	EPA 3010	595282	EPA 6010D	595576
10467822007	Lang-GW-032119	EPA 3010	595282	EPA 6010D	595576
10467822008	Reed-GW-032119	EPA 3010	595282	EPA 6010D	595576
10467822009	Marlow-GW-032119	EPA 3010	595282	EPA 6010D	595576
10467822010	Randall-GW-032119	EPA 3010	595282	EPA 6010D	595576
10467822001	Lashaw-GW-032119	EPA 7470A	595291	EPA 7470A	595521
10467822002	Asher-GW-032119	EPA 7470A	595291	EPA 7470A	595521
10467822003	Atwood-GW-032119	EPA 7470A	595291	EPA 7470A	595521
10467822004	Atwood Shop-GW-032119	EPA 7470A	595291	EPA 7470A	595521
10467822005	Thorson-GW-032119	EPA 7470A	595291	EPA 7470A	595521
10467822006	Stark-GW-032119	EPA 7470A	595291	EPA 7470A	595521
10467822007	Lang-GW-032119	EPA 7470A	595291	EPA 7470A	595521
10467822008	Reed-GW-032119	EPA 7470A	595291	EPA 7470A	595521
10467822009	Marlow-GW-032119	EPA 7470A	595291	EPA 7470A	595521
10467822010	Randall-GW-032119	EPA 7470A	595291	EPA 7470A	595521
10467822011	SG1-GW-032119	EPA 8260B	596233		
10467822012	SG2-GW-032119	EPA 8260B	596233		
10467822013	TB-032119	EPA 8260B	596233		
10467822014	TB2-032119	EPA 8260B	596233		
10467822001	Lashaw-GW-032119	SM 2320B	596752		
10467822002	Asher-GW-032119	SM 2320B	596752		
10467822003	Atwood-GW-032119	SM 2320B	596752		
10467822004	Atwood Shop-GW-032119	SM 2320B	596752		
10467822005	Thorson-GW-032119	SM 2320B	596752		
10467822006	Stark-GW-032119	SM 2320B	597011		
10467822007	Lang-GW-032119	SM 2320B	596752		
10467822008	Reed-GW-032119	SM 2320B	596752		
10467822009	Marlow-GW-032119	SM 2320B	596752		
10467822010	Randall-GW-032119	SM 2320B	596752		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467822

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10467822001	Lashaw-GW-032119	SM 2540C	595959		
10467822002	Asher-GW-032119	SM 2540C	595959		
10467822003	Atwood-GW-032119	SM 2540C	595959		
10467822004	Atwood Shop-GW-032119	SM 2540C	595959		
10467822005	Thorson-GW-032119	SM 2540C	595959		
10467822006	Stark-GW-032119	SM 2540C	596248		
10467822007	Lang-GW-032119	SM 2540C	595959		
10467822008	Reed-GW-032119	SM 2540C	595959		
10467822009	Marlow-GW-032119	SM 2540C	595958		
10467822010	Randall-GW-032119	SM 2540C	595958		
10467822001	Lashaw-GW-032119	SM 4500-S-2 D	137338		
10467822002	Asher-GW-032119	SM 4500-S-2 D	137338		
10467822003	Atwood-GW-032119	SM 4500-S-2 D	137338		
10467822004	Atwood Shop-GW-032119	SM 4500-S-2 D	137338		
10467822005	Thorson-GW-032119	SM 4500-S-2 D	137338		
10467822006	Stark-GW-032119	SM 4500-S-2 D	137449		
10467822007	Lang-GW-032119	SM 4500-S-2 D	137338		
10467822008	Reed-GW-032119	SM 4500-S-2 D	137338		
10467822009	Marlow-GW-032119	SM 4500-S-2 D	137338		
10467822010	Randall-GW-032119	SM 4500-S-2 D	137338		
10467822001	Lashaw-GW-032119	EPA 300.0	595234		
10467822002	Asher-GW-032119	EPA 300.0	595233		
10467822003	Atwood-GW-032119	EPA 300.0	595233		
10467822004	Atwood Shop-GW-032119	EPA 300.0	595233		
10467822005	Thorson-GW-032119	EPA 300.0	595233		
10467822006	Stark-GW-032119	EPA 300.0	595233		
10467822007	Lang-GW-032119	EPA 300.0	595233		
10467822008	Reed-GW-032119	EPA 300.0	595233		
10467822009	Marlow-GW-032119	EPA 300.0	595233		
10467822010	Randall-GW-032119	EPA 300.0	595233		
10467822001	Lashaw-GW-032119	EPA 353.2	597595		
10467822002	Asher-GW-032119	EPA 353.2	597595		
10467822003	Atwood-GW-032119	EPA 353.2	597595		
10467822004	Atwood Shop-GW-032119	EPA 353.2	597595		
10467822005	Thorson-GW-032119	EPA 353.2	597595		
10467822006	Stark-GW-032119	EPA 353.2	597634		
10467822007	Lang-GW-032119	EPA 353.2	597595		
10467822008	Reed-GW-032119	EPA 353.2	597595		
10467822009	Marlow-GW-032119	EPA 353.2	597595		
10467822010	Randall-GW-032119	EPA 353.2	597595		
10467822001	Lashaw-GW-032119	EPA 410.4	596803	EPA 410.4	597127
10467822002	Asher-GW-032119	EPA 410.4	596803	EPA 410.4	597127
10467822003	Atwood-GW-032119	EPA 410.4	596803	EPA 410.4	597127

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467822

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10467822004	Atwood Shop-GW-032119	EPA 410.4	596803	EPA 410.4	597127
10467822005	Thorson-GW-032119	EPA 410.4	596803	EPA 410.4	597127
10467822006	Stark-GW-032119	EPA 410.4	597820	EPA 410.4	597940
10467822007	Lang-GW-032119	EPA 410.4	596803	EPA 410.4	597127
10467822008	Reed-GW-032119	EPA 410.4	596803	EPA 410.4	597127
10467822009	Marlow-GW-032119	EPA 410.4	596803	EPA 410.4	597127
10467822010	Randall-GW-032119	EPA 410.4	596803	EPA 410.4	597127
10467822001	Lashaw-GW-032119	SM 5310C	163249		
10467822002	Asher-GW-032119	SM 5310C	163249		
10467822003	Atwood-GW-032119	SM 5310C	163249		
10467822004	Atwood Shop-GW-032119	SM 5310C	163249		
10467822005	Thorson-GW-032119	SM 5310C	163249		
10467822006	Stark-GW-032119	SM 5310C	163249		
10467822007	Lang-GW-032119	SM 5310C	163249		
10467822008	Reed-GW-032119	SM 5310C	163249		
10467822009	Marlow-GW-032119	SM 5310C	163249		
10467822010	Randall-GW-032119	SM 5310C	163249		

REPORT OF LABORATORY ANALYSIS

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Sample Condition
Upon Receipt

Client Name:
Cham Hill

Project #: **WO# : 10467822**
 PM: JMG Due Date: 04/05/19
 CLIENT: UPRR_CH2M

Courier: Fed Ex UPS USPS Client
 Pace SpeeDee Commercial See Exception

Tracking Number: 7928 9392 2337/2322/2311/2344

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

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

Thermometer: G87A9155100842 G87A9170600254 Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: 0.6, 0.4, 1.2, 0.6 °C Average Corrected Temp See Exceptions
 (no temp blank only):

Correction Factor: True Cooler Temp Corrected w/temp blank: 0.6, 0.4, 1.2, 0.6 °C

USDA Regulated Soil: (N/A, water sample/Other: _____) Date/Initials of Person Examining Contents: FE 3/22/19
 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No
 Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No
 If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

		COMMENTS:
Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time?	<input type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: See Exception <input type="checkbox"/>
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other		
All containers needing acid/base preservation have been checked?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ <input checked="" type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate <u>3/3</u> <u>3/3</u> <u>2-17-10 1/1</u> <u>1/1</u>
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No See Exception <input type="checkbox"/>
Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. See Exception <input checked="" type="checkbox"/>
Trip Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. Pace Trip Blank Lot # (if purchased): <u>199048</u>
Trip Blank Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: Mark Ochsner Date/Time: 06/27/18 Field Data Required? Yes No

Comments/Resolution: Wa certs not required for 8260 2,2,4-TMP, dichlorofluoromethane, RSK or sulfide.

Project Manager Review: JENNI GROSS Date: 03/22/19

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

Labeled by: _____

Sample Condition Upon Receipt

Client Name: Pace WA Project #: _____

WO# : 12122772



Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

Tracking Number: _____

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

Optional: Proj. Due Date: _____ Proj. Name: _____

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

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

Cooler Temp Read °C: 0.8 Cooler Temp Corrected °C: 1.1 Biological Tissue Frozen? Yes No NA
 Temp should be above freezing to 6°C Correction Factor: 0.3 Date and Initials of Person Examining Contents: 3/22/19 DC

Comments: RH 3/25/19

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

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? Yes No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

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

Project Manager Review: Katie Richards Date: 3/25/2019

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



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

Sample Condition Upon F

WO#: 2099331

PM: CMM Due Date: 04/05/19
CLIENT: PASI-MINN

Proj. _____

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

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

Custody Seals intact: Yes No

Thermometer Used:
 Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 03-23-19 AD

Temp must be measured from Temperature blank when present

Comments:

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

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

March 29, 2019

David Hodson
Jacobs
2020 SW 4th Ave
#300
Portland, OR 97201

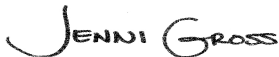
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467825

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 22, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Steve Demus, CH2M Hill
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467825

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #:74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467825

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10467825001	Lashaw-GW-032119	Water	03/21/19 09:00	03/22/19 08:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467825

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10467825001	Lashaw-GW-032119	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467825

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10467825001	Lashaw-GW-032119					
EPA 8260B	Carbon tetrachloride	0.77	ug/L	0.50	03/27/19 19:56	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467825

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

General Information:

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

Hold Time:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Internal Standards:

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

Surrogates:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 596124

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s):
10467825001,10467831001,10467835001

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

- MSD (Lab ID: 3222883)
 - Acrolein

Additional Comments:

Analyte Comments:

QC Batch: 596124

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3222880)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467825

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

Analyte Comments:

QC Batch: 596124

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3222880)
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3222881)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- Lashaw-GW-032119 (Lab ID: 10467825001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3222882)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3222884)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3222886)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3222883)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3222885)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3222887)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Project No.: 10467825

Sample: Lashaw-GW-032119 Lab ID: 10467825001 Collected: 03/21/19 09:00 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/27/19 19:56	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/27/19 19:56	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/27/19 19:56	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/27/19 19:56	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/27/19 19:56	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/27/19 19:56	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/27/19 19:56	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		03/27/19 19:56	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/27/19 19:56	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/27/19 19:56	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/27/19 19:56	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/27/19 19:56	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/27/19 19:56	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/27/19 19:56	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/27/19 19:56	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/27/19 19:56	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/27/19 19:56	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/27/19 19:56	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		03/27/19 19:56	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/27/19 19:56	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/27/19 19:56	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/27/19 19:56	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/27/19 19:56	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/27/19 19:56	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/27/19 19:56	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/27/19 19:56	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/27/19 19:56	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		03/27/19 19:56	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/27/19 19:56	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/27/19 19:56	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/27/19 19:56	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/27/19 19:56	107-02-8	M1
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/27/19 19:56	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/27/19 19:56	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/27/19 19:56	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/27/19 19:56	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/27/19 19:56	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/27/19 19:56	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/27/19 19:56	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/27/19 19:56	75-15-0	
Carbon tetrachloride	0.77	ug/L	0.50	0.19	1		03/27/19 19:56	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/27/19 19:56	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/27/19 19:56	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/27/19 19:56	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/27/19 19:56	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/27/19 19:56	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467825

Sample: Lashaw-GW-032119 Lab ID: 10467825001 Collected: 03/21/19 09:00 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/27/19 19:56	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/27/19 19:56	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/27/19 19:56	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/27/19 19:56	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/27/19 19:56	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/27/19 19:56	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/27/19 19:56	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		03/27/19 19:56	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/27/19 19:56	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/27/19 19:56	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/27/19 19:56	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/27/19 19:56	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/27/19 19:56	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/27/19 19:56	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		03/27/19 19:56	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/27/19 19:56	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/27/19 19:56	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/27/19 19:56	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/27/19 19:56	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/27/19 19:56	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/27/19 19:56	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/27/19 19:56	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/27/19 19:56	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/27/19 19:56	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/27/19 19:56	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/27/19 19:56	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/27/19 19:56	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/27/19 19:56	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/27/19 19:56	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/27/19 19:56	75-65-0	
tert-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/27/19 19:56	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/27/19 19:56	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		03/27/19 19:56	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/27/19 19:56	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%	75-136		1		03/27/19 19:56	17060-07-0	
Toluene-d8 (S)	107	%	75-125		1		03/27/19 19:56	2037-26-5	
4-Bromofluorobenzene (S)	101	%	75-125		1		03/27/19 19:56	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467825

QC Batch: 596124

Analysis Method: EPA 8260B

QC Batch Method: EPA 8260B

Analysis Description: 8260 MSV LL Water

Associated Lab Samples: 10467825001

METHOD BLANK: 3222880

Matrix: Water

Associated Lab Samples: 10467825001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	03/27/19 19:09	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	03/27/19 19:09	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	03/27/19 19:09	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	03/27/19 19:09	MN
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	03/27/19 19:09	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	03/27/19 19:09	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	03/27/19 19:09	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	03/27/19 19:09	MN
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	03/27/19 19:09	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	03/27/19 19:09	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	03/27/19 19:09	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	03/27/19 19:09	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	03/27/19 19:09	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	03/27/19 19:09	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	03/27/19 19:09	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	03/27/19 19:09	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	03/27/19 19:09	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	03/27/19 19:09	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	03/27/19 19:09	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	03/27/19 19:09	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
2-Hexanone	ug/L	<0.88	5.0	0.88	03/27/19 19:09	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/27/19 19:09	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	03/27/19 19:09	
Acetone	ug/L	<9.2	20.0	9.2	03/27/19 19:09	
Acrolein	ug/L	<1.2	10.0	1.2	03/27/19 19:09	
Acrylonitrile	ug/L	<0.91	10.0	0.91	03/27/19 19:09	
Benzene	ug/L	<0.10	0.50	0.10	03/27/19 19:09	
Bromobenzene	ug/L	<0.21	0.50	0.21	03/27/19 19:09	
Bromochloromethane	ug/L	<0.27	1.0	0.27	03/27/19 19:09	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	03/27/19 19:09	
Bromoform	ug/L	<0.80	4.0	0.80	03/27/19 19:09	
Bromomethane	ug/L	<1.8	4.0	1.8	03/27/19 19:09	
Carbon disulfide	ug/L	<0.078	1.0	0.078	03/27/19 19:09	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	03/27/19 19:09	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467825

METHOD BLANK: 3222880

Matrix: Water

Associated Lab Samples: 10467825001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
Chloroethane	ug/L	<0.49	1.0	0.49	03/27/19 19:09	
Chloroform	ug/L	<0.45	4.0	0.45	03/27/19 19:09	MN
Chloromethane	ug/L	<0.16	4.0	0.16	03/27/19 19:09	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	03/27/19 19:09	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	03/27/19 19:09	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	03/27/19 19:09	
Dibromomethane	ug/L	<0.16	1.0	0.16	03/27/19 19:09	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	03/27/19 19:09	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	03/27/19 19:09	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	03/27/19 19:09	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/27/19 19:09	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	03/27/19 19:09	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
m&p-Xylene	ug/L	<0.31	1.0	0.31	03/27/19 19:09	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
Methylene Chloride	ug/L	<0.98	4.0	0.98	03/27/19 19:09	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	03/27/19 19:09	MN
n-Propylbenzene	ug/L	<0.10	0.50	0.10	03/27/19 19:09	
Naphthalene	ug/L	<0.48	1.0	0.48	03/27/19 19:09	
o-Xylene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	03/27/19 19:09	MN
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	03/27/19 19:09	
Styrene	ug/L	<0.19	1.0	0.19	03/27/19 19:09	MN
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	03/27/19 19:09	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	03/27/19 19:09	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	03/27/19 19:09	MN
Tetrachloroethene	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	03/27/19 19:09	
Toluene	ug/L	<0.083	0.50	0.083	03/27/19 19:09	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	03/27/19 19:09	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	03/27/19 19:09	
Trichloroethene	ug/L	<0.15	0.40	0.15	03/27/19 19:09	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	03/27/19 19:09	
Vinyl acetate	ug/L	<1.1	10.0	1.1	03/27/19 19:09	
Vinyl chloride	ug/L	<0.092	0.20	0.092	03/27/19 19:09	
Xylene (Total)	ug/L	<0.31	1.5	0.31	03/27/19 19:09	
1,2-Dichloroethane-d4 (S)	%	104	75-136		03/27/19 19:09	
4-Bromofluorobenzene (S)	%	101	75-125		03/27/19 19:09	
Toluene-d8 (S)	%	105	75-125		03/27/19 19:09	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467825

LABORATORY CONTROL SAMPLE: 3222881

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.6	98	68-141	
1,1,1-Trichloroethane	ug/L	20	19.0	95	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	20.3	101	73-125	
1,1,2-Trichloroethane	ug/L	20	20.4	102	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	19.8	99	69-132	
1,1-Dichloroethane	ug/L	20	19.8	99	73-125	
1,1-Dichloroethene	ug/L	20	19.4	97	71-126	
1,1-Dichloropropene	ug/L	20	19.5	98	73-126	
1,2,3-Trichlorobenzene	ug/L	20	20.9	105	72-126	
1,2,3-Trichloropropane	ug/L	20	21.4	107	75-126	
1,2,4-Trichlorobenzene	ug/L	20	21.0	105	71-134	
1,2,4-Trimethylbenzene	ug/L	20	20.5	103	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	53.5	107	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	20.4	102	75-129	
1,2-Dichlorobenzene	ug/L	20	21.0	105	75-129	
1,2-Dichloroethane	ug/L	20	18.6	93	75-125	
1,2-Dichloroethene (Total)	ug/L	40	38.5	96	74-125	N2
1,2-Dichloropropane	ug/L	20	19.1	96	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.4	102	75-127	
1,3-Dichlorobenzene	ug/L	20	21.0	105	75-126	
1,3-Dichloropropane	ug/L	20	20.3	101	75-125	
1,4-Dichlorobenzene	ug/L	20	19.6	98	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	407	102	72-129	
2,2,4-Trimethylpentane	ug/L	20	18.0	90	72-128	N2
2,2-Dichloropropane	ug/L	20	19.6	98	65-138	
2-Butanone (MEK)	ug/L	100	95.9	96	59-144	
2-Chlorotoluene	ug/L	20	20.9	105	75-127	
2-Hexanone	ug/L	100	105	105	73-134	
4-Chlorotoluene	ug/L	20	21.7	109	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	104	104	62-141	
Acetone	ug/L	100	95.6	96	60-137	
Acrolein	ug/L	200	217	109	60-141	
Acrylonitrile	ug/L	200	202	101	75-129	
Benzene	ug/L	20	19.5	98	73-125	
Bromobenzene	ug/L	20	20.3	102	73-125	
Bromochloromethane	ug/L	20	19.1	95	75-135	
Bromodichloromethane	ug/L	20	19.5	97	75-125	
Bromoform	ug/L	20	21.6	108	67-136	
Bromomethane	ug/L	20	18.4	92	30-150	
Carbon disulfide	ug/L	20	20.8	104	47-137	
Carbon tetrachloride	ug/L	20	20.0	100	75-125	
Chlorobenzene	ug/L	20	19.4	97	75-125	
Chloroethane	ug/L	20	20.8	104	63-136	
Chloroform	ug/L	20	18.5	93	73-128	
Chloromethane	ug/L	20	20.4	102	55-130	
cis-1,2-Dichloroethene	ug/L	20	19.2	96	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.3	96	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467825

LABORATORY CONTROL SAMPLE: 3222881

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	19.3	97	75-125	
Dibromomethane	ug/L	20	20.7	103	75-125	
Dichlorodifluoromethane	ug/L	20	20.8	104	63-132	
Dichlorofluoromethane	ug/L	20	19.7	98	68-127	N2
Diisopropyl ether	ug/L	20	18.5	92	71-131	
Ethyl-tert-butyl ether	ug/L	20	19.0	95	75-125	
Ethylbenzene	ug/L	20	19.8	99	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.4	102	72-134	
Isopropylbenzene (Cumene)	ug/L	20	20.3	101	75-125	
m&p-Xylene	ug/L	40	45.3	113	75-126	
Methyl-tert-butyl ether	ug/L	20	19.3	97	75-125	
Methylene Chloride	ug/L	20	19.7	99	70-125	
n-Butylbenzene	ug/L	20	20.6	103	75-126	
n-Propylbenzene	ug/L	20	22.1	110	73-127	
Naphthalene	ug/L	20	21.9	109	63-128	
o-Xylene	ug/L	20	20.2	101	75-128	
p-Isopropyltoluene	ug/L	20	20.7	103	75-125	
sec-Butylbenzene	ug/L	20	20.5	102	75-126	
Styrene	ug/L	20	19.7	99	75-125	
tert-Amylmethyl ether	ug/L	20	19.4	97	75-125	
tert-Butyl Alcohol	ug/L	200	203	101	75-130	
tert-Butylbenzene	ug/L	20	20.2	101	75-131	
Tetrachloroethene	ug/L	20	20.3	102	74-125	
Tetrahydrofuran	ug/L	200	190	95	64-138	
Toluene	ug/L	20	18.2	91	74-125	
trans-1,2-Dichloroethene	ug/L	20	19.3	96	68-128	
trans-1,3-Dichloropropene	ug/L	20	20.7	103	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	52.1	104	60-127	
Trichloroethene	ug/L	20	19.7	99	75-127	
Trichlorofluoromethane	ug/L	20	21.2	106	72-133	
Vinyl acetate	ug/L	20	18.6	93	61-129	
Vinyl chloride	ug/L	20	20.9	104	75-128	
Xylene (Total)	ug/L	60	65.5	109	75-125	
1,2-Dichloroethane-d4 (S)	%			104	75-136	
4-Bromofluorobenzene (S)	%			99	75-125	
Toluene-d8 (S)	%			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222882 3222883

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10467825001	Spike Conc.	Spike Conc.	Result								
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	18.8	20.3	94	102	75-140	8	30		
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20.5	20.6	102	103	74-136	1	30		
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	17.5	20.4	88	102	66-134	15	30		
1,1,2-Trichloroethane	ug/L	<0.18	20	20	18.5	20.7	93	103	75-126	11	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467825

Parameter	Units	10467825001		3222882		3222883		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	22.1	23.0	110	115	65-146	4	30		
1,1-Dichloroethane	ug/L	<0.17	20	20	21.8	20.3	109	102	68-132	7	30		
1,1-Dichloroethene	ug/L	<0.16	20	20	21.5	21.0	108	105	66-139	2	30		
1,1-Dichloropropene	ug/L	<0.20	20	20	20.8	20.6	104	103	67-134	1	30		
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	19.8	22.5	99	113	67-129	13	30		
1,2,3-Trichloropropane	ug/L	<0.26	20	20	17.6	20.8	88	104	69-128	17	30		
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	20.8	23.2	104	116	65-140	11	30		
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	20.0	22.9	100	114	71-133	14	30		
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	43.0	54.0	86	108	54-138	23	30		
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	18.7	20.2	93	101	68-125	8	30		
1,2-Dichlorobenzene	ug/L	<0.14	20	20	20.0	22.9	100	114	74-136	13	30		
1,2-Dichloroethane	ug/L	<0.22	20	20	17.0	18.0	85	90	68-125	6	30		
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	44.2	39.7	110	99	71-126	11	30	N2	
1,2-Dichloropropane	ug/L	<0.16	20	20	17.9	19.2	89	96	67-125	7	30		
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	20.3	22.8	102	114	68-137	11	30		
1,3-Dichlorobenzene	ug/L	<0.16	20	20	20.3	23.1	102	115	75-131	13	30		
1,3-Dichloropropane	ug/L	<0.070	20	20	19.1	20.1	95	100	71-125	5	30		
1,4-Dichlorobenzene	ug/L	<0.17	20	20	18.9	21.4	94	107	74-126	12	30		
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	345	412	86	103	68-125	18	30		
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	22.8	20.5	114	102	54-129	11	30	N2	
2,2-Dichloropropane	ug/L	<0.17	20	20	22.7	21.8	113	109	69-139	4	30		
2-Butanone (MEK)	ug/L	<0.99	100	100	71.3	86.4	71	86	54-144	19	30		
2-Chlorotoluene	ug/L	<0.16	20	20	20.7	23.5	103	118	75-134	13	30		
2-Hexanone	ug/L	<0.88	100	100	89.0	103	89	103	58-137	14	30		
4-Chlorotoluene	ug/L	<0.13	20	20	21.0	24.4	105	122	72-133	15	30		
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	87.3	103	87	103	60-129	17	30		
Acetone	ug/L	<9.2	100	100	71.0	76.9	71	77	62-132	8	30		
Acrolein	ug/L	<1.2	200	200	279	304	140	152	30-150	9	30	M1	
Acrylonitrile	ug/L	<0.91	200	200	190	201	95	100	68-125	5	30		
Benzene	ug/L	<0.10	20	20	19.2	20.1	96	100	68-125	4	30		
Bromobenzene	ug/L	<0.21	20	20	19.2	21.2	96	106	73-126	10	30		
Bromochloromethane	ug/L	<0.27	20	20	20.6	19.2	103	96	66-143	7	30		
Bromodichloromethane	ug/L	<0.22	20	20	18.2	19.8	91	99	74-125	8	30		
Bromoform	ug/L	<0.80	20	20	18.1	21.3	91	107	64-134	16	30		
Bromomethane	ug/L	<1.8	20	20	18.1	18.3	90	92	30-150	1	30		
Carbon disulfide	ug/L	<0.078	20	20	22.7	20.9	114	105	43-147	8	30		
Carbon tetrachloride	ug/L	0.77	20	20	22.7	22.3	110	108	71-143	2	30		
Chlorobenzene	ug/L	<0.17	20	20	18.5	20.0	93	100	75-125	8	30		
Chloroethane	ug/L	<0.49	20	20	20.8	21.6	104	108	75-129	4	30		
Chloroform	ug/L	<0.45	20	20	18.8	18.7	94	93	66-132	1	30		
Chloromethane	ug/L	<0.16	20	20	20.9	21.1	104	106	53-137	1	30		
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	21.4	19.4	107	97	67-133	10	30		
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	16.6	17.5	83	87	66-125	5	30		
Dibromochloromethane	ug/L	<0.12	20	20	18.3	19.8	92	99	62-132	8	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467825

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222882												3222883	
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual	
		10467825001 Result	Spike Conc.	Spike Conc.	MS Conc.								
Dibromomethane	ug/L	<0.16	20	20	18.2	20.8	91	104	67-125	13	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	24.2	24.4	121	122	71-142	1	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	21.6	21.6	108	108	70-131	0	30	N2	
Diisopropyl ether	ug/L	<0.13	20	20	19.0	19.4	95	97	63-131	2	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	19.3	19.6	97	98	66-128	2	30		
Ethylbenzene	ug/L	<0.14	20	20	20.0	21.7	100	109	74-126	8	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	25.2	21.8	126	109	68-143	14	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20.9	22.9	104	115	74-130	9	30		
m&p-Xylene	ug/L	<0.31	40	40	45.6	50.4	114	126	69-132	10	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.4	19.8	97	99	65-131	2	30		
Methylene Chloride	ug/L	<0.98	20	20	20.1	19.5	100	98	57-125	3	30		
n-Butylbenzene	ug/L	<0.24	20	20	22.1	23.1	111	116	71-131	4	30		
n-Propylbenzene	ug/L	<0.10	20	20	22.8	25.3	114	127	67-138	11	30		
Naphthalene	ug/L	<0.48	20	20	18.7	23.6	93	118	60-130	23	30		
o-Xylene	ug/L	<0.16	20	20	19.9	22.0	100	110	69-131	10	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	22.1	23.1	110	116	72-133	5	30		
sec-Butylbenzene	ug/L	<0.15	20	20	22.2	23.3	111	117	73-134	5	30		
Styrene	ug/L	<0.19	20	20	19.2	21.1	96	106	72-125	10	30		
tert-Amylmethyl ether	ug/L	<0.11	20	20	17.4	19.8	87	99	67-125	13	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	192	198	96	99	64-137	3	30		
tert-Butylbenzene	ug/L	<0.15	20	20	21.5	22.7	107	113	70-143	5	30		
Tetrachloroethene	ug/L	<0.17	20	20	19.8	22.9	99	114	72-129	14	30		
Tetrahydrofuran	ug/L	<2.2	200	200	174	190	87	95	66-128	8	30		
Toluene	ug/L	<0.083	20	20	18.3	19.3	91	96	73-125	5	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	22.8	20.3	114	101	62-137	12	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	19.8	21.0	99	105	61-136	5	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	45.7	52.4	91	105	45-128	14	30		
Trichloroethene	ug/L	<0.15	20	20	20.3	20.6	102	103	74-132	1	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	24.3	24.4	122	122	75-139	0	30		
Vinyl acetate	ug/L	<1.1	20	20	18.5	19.2	92	96	51-135	4	30		
Vinyl chloride	ug/L	<0.092	20	20	23.5	22.8	118	114	68-146	3	30		
Xylene (Total)	ug/L	<0.31	60	60	65.6	72.4	109	121	67-137	10	30		
1,2-Dichloroethane-d4 (S)	%						105	103	75-136				
4-Bromofluorobenzene (S)	%						101	99	75-125				
Toluene-d8 (S)	%						101	99	75-125				

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222884												3222885	
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual	
		10467831001 Result	Spike Conc.	Spike Conc.	MS Conc.								
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20.0	21.0	100	105	75-140	5	30		
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20.1	20.5	101	103	74-136	2	30		
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20.0	21.6	100	108	66-134	8	30		
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20.2	20.7	101	103	75-126	2	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467825

Parameter	Units	10467831001		3222884		3222885		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	21.6	23.1	108	116	65-146	7	30		
1,1-Dichloroethane	ug/L	<0.17	20	20	19.7	20.7	99	104	68-132	5	30		
1,1-Dichloroethene	ug/L	<0.16	20	20	20.3	20.0	102	100	66-139	2	30		
1,1-Dichloropropene	ug/L	<0.20	20	20	20.1	21.7	100	109	67-134	8	30		
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	22.4	23.9	112	119	67-129	6	30		
1,2,3-Trichloropropane	ug/L	<0.26	20	20	20.8	21.7	104	108	69-128	4	30		
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	22.1	24.2	110	121	65-140	9	30		
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	21.5	23.1	107	115	71-133	7	30		
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	52.3	57.8	105	116	54-138	10	30		
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	20.4	20.6	102	103	68-125	1	30		
1,2-Dichlorobenzene	ug/L	<0.14	20	20	21.6	23.6	108	118	74-136	9	30		
1,2-Dichloroethane	ug/L	<0.22	20	20	17.7	18.6	89	93	68-125	5	30		
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	39.4	39.8	99	99	71-126	1	30	N2	
1,2-Dichloropropane	ug/L	<0.16	20	20	19.4	19.3	97	96	67-125	1	30		
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	21.4	23.2	107	116	68-137	8	30		
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.1	23.5	105	117	75-131	11	30		
1,3-Dichloropropane	ug/L	<0.070	20	20	19.9	20.9	99	105	71-125	5	30		
1,4-Dichlorobenzene	ug/L	<0.17	20	20	19.9	22.0	99	110	74-126	10	30		
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	376	401	94	100	68-125	6	30		
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	21.7	21.4	108	107	54-129	1	30	N2	
2,2-Dichloropropane	ug/L	<0.17	20	20	20.7	21.7	104	108	69-139	5	30		
2-Butanone (MEK)	ug/L	<0.99	100	100	83.1	86.9	83	87	54-144	4	30		
2-Chlorotoluene	ug/L	<0.16	20	20	22.0	24.1	110	121	75-134	9	30		
2-Hexanone	ug/L	<0.88	100	100	101	105	101	105	58-137	4	30		
4-Chlorotoluene	ug/L	<0.13	20	20	22.7	24.7	114	124	72-133	8	30		
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	102	106	102	106	60-129	4	30		
Acetone	ug/L	<9.2	100	100	74.8	78.7	75	79	62-132	5	30		
Acrolein	ug/L	<1.2	200	200	284	297	142	148	30-150	4	30		
Acrylonitrile	ug/L	<0.91	200	200	187	198	93	99	68-125	6	30		
Benzene	ug/L	<0.10	20	20	19.4	20.3	97	102	68-125	5	30		
Bromobenzene	ug/L	<0.21	20	20	20.4	22.1	102	111	73-126	8	30		
Bromochloromethane	ug/L	<0.27	20	20	19.2	19.3	96	97	66-143	0	30		
Bromodichloromethane	ug/L	<0.22	20	20	19.1	19.2	96	96	74-125	0	30		
Bromoform	ug/L	<0.80	20	20	20.9	22.2	104	111	64-134	6	30		
Bromomethane	ug/L	<1.8	20	20	17.4	18.0	87	90	30-150	3	30		
Carbon disulfide	ug/L	<0.078	20	20	21.8	20.6	109	103	43-147	6	30		
Carbon tetrachloride	ug/L	<0.19	20	20	21.0	22.2	105	111	71-143	6	30		
Chlorobenzene	ug/L	<0.17	20	20	19.7	20.8	99	104	75-125	5	30		
Chloroethane	ug/L	<0.49	20	20	21.3	21.5	107	107	75-129	1	30		
Chloroform	ug/L	<0.45	20	20	18.0	19.0	90	95	66-132	5	30		
Chloromethane	ug/L	<0.16	20	20	19.7	20.9	99	105	53-137	6	30		
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	19.2	19.8	96	99	67-133	3	30		
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	17.4	17.2	87	86	66-125	1	30		
Dibromochloromethane	ug/L	<0.12	20	20	19.3	20.1	96	101	62-132	4	30		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467825

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222884												3222885	
Parameter	Units	10467831001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
Dibromomethane	ug/L	<0.16	20	20	19.8	19.9	99	100	67-125	1	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	23.4	23.7	117	118	71-142	1	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	20.6	21.1	103	105	70-131	2	30 N2		
Diisopropyl ether	ug/L	<0.13	20	20	18.6	19.4	93	97	63-131	4	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	19.1	20.2	95	101	66-128	5	30		
Ethylbenzene	ug/L	<0.14	20	20	21.0	22.6	105	113	74-126	7	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	23.4	22.3	117	111	68-143	5	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	21.4	23.7	107	118	74-130	10	30		
m&p-Xylene	ug/L	<0.31	40	40	48.2	51.7	120	129	69-132	7	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.5	20.1	98	100	65-131	3	30		
Methylene Chloride	ug/L	<0.98	20	20	18.8	19.3	94	96	57-125	3	30		
n-Butylbenzene	ug/L	<0.24	20	20	22.6	23.4	113	117	71-131	3	30		
n-Propylbenzene	ug/L	<0.10	20	20	23.7	26.2	119	131	67-138	10	30		
Naphthalene	ug/L	<0.48	20	20	21.7	24.3	108	122	60-130	11	30		
o-Xylene	ug/L	<0.16	20	20	20.9	22.3	104	112	69-131	7	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	22.3	23.7	111	118	72-133	6	30		
sec-Butylbenzene	ug/L	<0.15	20	20	22.5	23.8	113	119	73-134	6	30		
Styrene	ug/L	<0.19	20	20	20.2	21.6	101	108	72-125	7	30		
tert-Amylmethyl ether	ug/L	<0.11	20	20	19.2	20.3	96	101	67-125	6	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	188	201	94	100	64-137	7	30		
tert-Butylbenzene	ug/L	<0.15	20	20	21.9	23.7	109	119	70-143	8	30		
Tetrachloroethene	ug/L	<0.17	20	20	21.7	23.6	108	118	72-129	9	30		
Tetrahydrofuran	ug/L	<2.2	200	200	185	198	92	99	66-128	7	30		
Toluene	ug/L	<0.083	20	20	19.4	20.3	97	101	73-125	4	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	20.3	20.0	101	100	62-137	1	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	20.8	21.7	104	108	61-136	4	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	50.7	54.3	101	109	45-128	7	30		
Trichloroethene	ug/L	<0.15	20	20	20.2	22.0	101	110	74-132	8	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	23.1	23.9	115	120	75-139	4	30		
Vinyl acetate	ug/L	<1.1	20	20	18.8	19.8	94	99	51-135	5	30		
Vinyl chloride	ug/L	<0.092	20	20	22.2	22.6	111	113	68-146	2	30		
Xylene (Total)	ug/L	<0.31	60	60	69.1	74.0	115	123	67-137	7	30		
1,2-Dichloroethane-d4 (S)	%						103	105	75-136				
4-Bromofluorobenzene (S)	%						101	103	75-125				
Toluene-d8 (S)	%						101	101	75-125				

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222886												3222887	
Parameter	Units	10467835001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	19.1	20.8	95	104	75-140	9	30		
1,1,1-Trichloroethane	ug/L	<0.14	20	20	19.7	20.7	99	103	74-136	5	30		
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20.4	20.8	102	104	66-134	2	30		
1,1,2-Trichloroethane	ug/L	<0.18	20	20	19.1	20.4	96	102	75-126	7	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467825

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3222886		3222887								
Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	Max RPD	Qual
		10467835001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	21.0	22.8	105	114	65-146	8	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	19.7	20.5	98	103	68-132	4	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	19.8	20.9	99	104	66-139	5	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	19.9	20.8	99	104	67-134	5	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	21.6	23.9	108	120	67-129	10	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	20.1	20.7	101	103	69-128	3	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	21.5	23.7	108	119	65-140	10	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	20.3	22.9	102	114	71-133	12	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	53.5	56.2	107	112	54-138	5	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	19.8	21.0	99	105	68-125	6	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	21.0	23.9	105	120	74-136	13	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	17.6	18.1	88	90	68-125	3	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	38.5	39.9	96	100	71-126	4	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	18.9	19.6	95	98	67-125	3	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	20.4	22.9	102	115	68-137	12	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.3	23.8	107	119	75-131	11	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	19.6	20.1	98	101	71-125	3	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	19.9	22.3	99	111	74-126	11	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	386	416	96	104	68-125	7	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	20.6	19.8	103	99	54-129	4	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	20.8	21.4	104	107	69-139	3	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	84.0	81.4	84	81	54-144	3	30	
2-Chlorotoluene	ug/L	<0.16	20	20	21.5	24.0	107	120	75-134	11	30	
2-Hexanone	ug/L	<0.88	100	100	101	101	101	101	58-137	0	30	
4-Chlorotoluene	ug/L	<0.13	20	20	21.9	24.3	110	121	72-133	10	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	99.9	101	100	101	60-129	1	30	
Acetone	ug/L	<9.2	100	100	70.2	76.7	70	77	62-132	9	30	
Acrolein	ug/L	<1.2	200	200	282	289	141	145	30-150	3	30	
Acrylonitrile	ug/L	<0.91	200	200	184	192	92	96	68-125	4	30	
Benzene	ug/L	<0.10	20	20	19.1	19.7	96	99	68-125	3	30	
Bromobenzene	ug/L	<0.21	20	20	20.5	22.2	102	111	73-126	8	30	
Bromochloromethane	ug/L	<0.27	20	20	18.6	19.3	93	96	66-143	3	30	
Bromodichloromethane	ug/L	<0.22	20	20	18.8	19.7	94	99	74-125	5	30	
Bromoform	ug/L	<0.80	20	20	20.4	21.4	102	107	64-134	5	30	
Bromomethane	ug/L	<1.8	20	20	16.9	17.3	85	86	30-150	2	30	
Carbon disulfide	ug/L	<0.078	20	20	21.0	20.5	105	103	43-147	2	30	
Carbon tetrachloride	ug/L	<0.19	20	20	20.6	22.2	103	111	71-143	8	30	
Chlorobenzene	ug/L	<0.17	20	20	19.2	20.5	96	103	75-125	7	30	
Chloroethane	ug/L	<0.49	20	20	20.7	20.2	104	101	75-129	2	30	
Chloroform	ug/L	<0.45	20	20	17.5	18.4	88	92	66-132	5	30	
Chloromethane	ug/L	<0.16	20	20	19.5	19.8	98	99	53-137	2	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	18.7	19.5	94	98	67-133	4	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	17.1	17.6	86	88	66-125	3	30	
Dibromochloromethane	ug/L	<0.12	20	20	18.8	20.0	94	100	62-132	6	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467825

Parameter	Units	3222886		3222887		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		10467835001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Dibromomethane	ug/L	<0.16	20	20	19.9	20.5	99	103	67-125	3	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	21.8	23.0	109	115	71-142	5	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	19.7	20.2	98	101	70-131	3	30	N2	
Diisopropyl ether	ug/L	<0.13	20	20	17.8	19.0	89	95	63-131	6	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	18.5	19.7	93	99	66-128	6	30		
Ethylbenzene	ug/L	<0.14	20	20	20.1	22.0	101	110	74-126	9	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	22.7	22.0	113	110	68-143	3	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20.7	23.3	103	117	74-130	12	30		
m&p-Xylene	ug/L	<0.31	40	40	46.4	51.7	116	129	69-132	11	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.1	19.8	95	99	65-131	4	30		
Methylene Chloride	ug/L	<0.98	20	20	18.6	19.2	92	95	57-125	3	30		
n-Butylbenzene	ug/L	<0.24	20	20	21.9	22.7	110	113	71-131	3	30		
n-Propylbenzene	ug/L	<0.10	20	20	23.0	25.5	115	127	67-138	10	30		
Naphthalene	ug/L	<0.48	20	20	21.8	24.0	109	120	60-130	10	30		
o-Xylene	ug/L	<0.16	20	20	20.1	22.7	101	113	69-131	12	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	21.7	23.5	109	118	72-133	8	30		
sec-Butylbenzene	ug/L	<0.15	20	20	21.6	23.5	108	117	73-134	8	30		
Styrene	ug/L	<0.19	20	20	19.4	21.1	97	106	72-125	9	30		
tert-Amylmethyl ether	ug/L	<0.11	20	20	18.7	19.5	93	97	67-125	4	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	183	196	92	98	64-137	7	30		
tert-Butylbenzene	ug/L	<0.15	20	20	21.3	23.4	106	117	70-143	10	30		
Tetrachloroethene	ug/L	<0.17	20	20	21.0	22.9	105	114	72-129	9	30		
Tetrahydrofuran	ug/L	<2.2	200	200	183	192	92	96	66-128	5	30		
Toluene	ug/L	<0.083	20	20	18.6	19.4	93	97	73-125	4	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	19.7	20.4	99	102	62-137	3	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	20.5	20.7	103	103	61-136	1	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	50.5	51.7	101	103	45-128	2	30		
Trichloroethene	ug/L	<0.15	20	20	19.9	20.8	99	104	74-132	5	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	22.4	23.7	112	119	75-139	6	30		
Vinyl acetate	ug/L	<1.1	20	20	18.4	18.7	92	93	51-135	2	30		
Vinyl chloride	ug/L	<0.092	20	20	21.3	21.6	107	108	68-146	1	30		
Xylene (Total)	ug/L	<0.31	60	60	66.5	74.4	111	124	67-137	11	30		
1,2-Dichloroethane-d4 (S)	%						104	105	75-136				
4-Bromofluorobenzene (S)	%						100	99	75-125				
Toluene-d8 (S)	%						100	99	75-125				

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467825

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

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

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467825

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467825

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10467825001	Lashaw-GW-032119	EPA 8260B	596124		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt Client Name: Ch2M Hill Project #: **WO# : 10467825**
 Courier: Fed Ex UPS USPS Client
 Pace SpeeDee Commercial See Exception
 Tracking Number: 7978 9397 2337/2322/2311/2344
 Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A
 Packing Material: Bubble Wrap Bubble Bags None Other: _____ Temp Blank? Yes No
 Thermometer: G87A9155100842 G87A9170600254 Type of Ice: Wet Blue None Dry Melted
 Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: 0.6, 4.4, 1.2, 0.6 °C Average Corrected Temp See Exceptions
 (no temp blank only):
 Correction Factor: True Cooler Temp Corrected w/temp blank: 0.6, 4.4, 1.2, 0.6 °C °C

USDA Regulated Soil: (N/A, water sample/Other: _____) Date/Initials of Person Examining Contents: FE 3/22/19
 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No
 Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No
 If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

		COMMENTS:
Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time?	<input type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other		
All containers needing acid/base preservation have been checked?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. Sample # <input type="checkbox"/> NaOH <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exception
Exceptions: <u>VOA</u> , Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exception
Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception
Trip Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. <u>82660 w/ 10467825</u>
Trip Blank Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): <u>199048</u>

CLIENT NOTIFICATION/RESOLUTION Field Data Required? Yes No
 Person Contacted: Mark Ochsner Date/Time: 06/27/18
 Comments/Resolution: WA certs not required for 8260 2,2,4-TMP or dichlorofluoromethane.

Project Manager Review: JENNI GROSS Date: 03/22/19
 Note: Whenever there is a discrepancy affecting North Carolina samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

March 29, 2019

David Hodson
Jacobs
2020 SW 4th Ave
#300
Portland, OR 97201

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467826

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 22, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Steve Demus, CH2M Hill
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467826

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #:74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467826

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10467826001	Marlow-GW-032119	Water	03/21/19 14:30	03/22/19 08:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467826

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10467826001	Marlow-GW-032119	EPA 8260B	DS2	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467826

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10467826001	Marlow-GW-032119					
EPA 8260B	Carbon tetrachloride	104	ug/L	2.5	03/28/19 18:21	
EPA 8260B	Chloroform	7.6	ug/L	4.0	03/28/19 13:13	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467826

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

General Information:

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

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

- Marlow-GW-032119 (Lab ID: 10467826001)

Hold Time:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Internal Standards:

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

Surrogates:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 596233

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10468569001

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

- MSD (Lab ID: 3224890)
 - Acrolein
 - m&p-Xylene

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467826

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

Analyte Comments:

QC Batch: 596233

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3223555)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3223556)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3224889)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3224890)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- Marlow-GW-032119 (Lab ID: 10467826001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467826

Sample: Marlow-GW-032119 Lab ID: 10467826001 Collected: 03/21/19 14:30 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/28/19 13:13	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/28/19 13:13	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 13:13	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/28/19 13:13	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/28/19 13:13	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 13:13	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/28/19 13:13	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		03/28/19 13:13	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 13:13	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/28/19 13:13	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/28/19 13:13	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/28/19 13:13	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/28/19 13:13	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/28/19 13:13	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 13:13	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/28/19 13:13	107-06-2	L2
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/28/19 13:13	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/28/19 13:13	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		03/28/19 13:13	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/28/19 13:13	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/28/19 13:13	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 13:13	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/28/19 13:13	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/28/19 13:13	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/28/19 13:13	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/28/19 13:13	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/28/19 13:13	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		03/28/19 13:13	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/28/19 13:13	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/28/19 13:13	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/28/19 13:13	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/28/19 13:13	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/28/19 13:13	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/28/19 13:13	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 13:13	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/28/19 13:13	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/28/19 13:13	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/28/19 13:13	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/28/19 13:13	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/28/19 13:13	75-15-0	
Carbon tetrachloride	104	ug/L	2.5	0.94	5		03/28/19 18:21	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 13:13	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/28/19 13:13	75-00-3	
Chloroform	7.6	ug/L	4.0	0.45	1		03/28/19 13:13	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/28/19 13:13	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/28/19 13:13	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467826

Sample: Marlow-GW-032119 Lab ID: 10467826001 Collected: 03/21/19 14:30 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/28/19 13:13	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/28/19 13:13	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/28/19 13:13	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/28/19 13:13	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/28/19 13:13	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 13:13	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/28/19 13:13	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		03/28/19 13:13	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/28/19 13:13	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/28/19 13:13	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/28/19 13:13	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/28/19 13:13	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/28/19 13:13	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/28/19 13:13	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		03/28/19 13:13	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/28/19 13:13	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/28/19 13:13	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/28/19 13:13	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/28/19 13:13	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/28/19 13:13	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/28/19 13:13	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/28/19 13:13	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/28/19 13:13	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/28/19 13:13	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/28/19 13:13	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/28/19 13:13	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/28/19 13:13	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/28/19 13:13	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/28/19 13:13	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/28/19 13:13	75-65-0	
tert-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/28/19 13:13	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/28/19 13:13	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		03/28/19 13:13	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/28/19 13:13	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%	75-136		1		03/28/19 13:13	17060-07-0	
Toluene-d8 (S)	110	%	75-125		1		03/28/19 13:13	2037-26-5	
4-Bromofluorobenzene (S)	104	%	75-125		1		03/28/19 13:13	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467826

QC Batch: 596233

Analysis Method: EPA 8260B

QC Batch Method: EPA 8260B

Analysis Description: 8260 MSV LL Water

Associated Lab Samples: 10467826001

METHOD BLANK: 3223555

Matrix: Water

Associated Lab Samples: 10467826001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	03/28/19 10:27	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	03/28/19 10:27	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	03/28/19 10:27	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	03/28/19 10:27	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	03/28/19 10:27	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	03/28/19 10:27	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	03/28/19 10:27	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	03/28/19 10:27	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	03/28/19 10:27	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	03/28/19 10:27	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	03/28/19 10:27	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	03/28/19 10:27	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	03/28/19 10:27	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	03/28/19 10:27	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	03/28/19 10:27	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	03/28/19 10:27	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	03/28/19 10:27	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	03/28/19 10:27	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	03/28/19 10:27	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/28/19 10:27	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	03/28/19 10:27	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	03/28/19 10:27	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	03/28/19 10:27	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	03/28/19 10:27	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	03/28/19 10:27	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	03/28/19 10:27	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	03/28/19 10:27	
2-Hexanone	ug/L	<0.88	5.0	0.88	03/28/19 10:27	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/28/19 10:27	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	03/28/19 10:27	
Acetone	ug/L	<9.2	20.0	9.2	03/28/19 10:27	
Acrolein	ug/L	<1.2	10.0	1.2	03/28/19 10:27	
Acrylonitrile	ug/L	<0.91	10.0	0.91	03/28/19 10:27	
Benzene	ug/L	<0.10	0.50	0.10	03/28/19 10:27	
Bromobenzene	ug/L	<0.21	0.50	0.21	03/28/19 10:27	
Bromochloromethane	ug/L	<0.27	1.0	0.27	03/28/19 10:27	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	03/28/19 10:27	
Bromoform	ug/L	<0.80	4.0	0.80	03/28/19 10:27	
Bromomethane	ug/L	<1.8	4.0	1.8	03/28/19 10:27	
Carbon disulfide	ug/L	<0.078	1.0	0.078	03/28/19 10:27	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	03/28/19 10:27	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467826

METHOD BLANK: 3223555

Matrix: Water

Associated Lab Samples: 10467826001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	03/28/19 10:27	
Chloroethane	ug/L	<0.49	1.0	0.49	03/28/19 10:27	
Chloroform	ug/L	<0.45	4.0	0.45	03/28/19 10:27	
Chloromethane	ug/L	<0.16	4.0	0.16	03/28/19 10:27	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	03/28/19 10:27	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	03/28/19 10:27	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	03/28/19 10:27	
Dibromomethane	ug/L	<0.16	1.0	0.16	03/28/19 10:27	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	03/28/19 10:27	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	03/28/19 10:27	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	03/28/19 10:27	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	03/28/19 10:27	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/28/19 10:27	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	03/28/19 10:27	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	03/28/19 10:27	
m&p-Xylene	ug/L	<0.31	1.0	0.31	03/28/19 10:27	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	03/28/19 10:27	
Methylene Chloride	ug/L	<0.98	4.0	0.98	03/28/19 10:27	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	03/28/19 10:27	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	03/28/19 10:27	
Naphthalene	ug/L	<0.48	1.0	0.48	03/28/19 10:27	
o-Xylene	ug/L	<0.16	0.50	0.16	03/28/19 10:27	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	03/28/19 10:27	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	03/28/19 10:27	
Styrene	ug/L	<0.19	1.0	0.19	03/28/19 10:27	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	03/28/19 10:27	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	03/28/19 10:27	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	03/28/19 10:27	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	03/28/19 10:27	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	03/28/19 10:27	
Toluene	ug/L	<0.083	0.50	0.083	03/28/19 10:27	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	03/28/19 10:27	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	03/28/19 10:27	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	03/28/19 10:27	
Trichloroethene	ug/L	<0.15	0.40	0.15	03/28/19 10:27	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	03/28/19 10:27	
Vinyl acetate	ug/L	<1.1	10.0	1.1	03/28/19 10:27	
Vinyl chloride	ug/L	<0.092	0.20	0.092	03/28/19 10:27	
Xylene (Total)	ug/L	<0.31	1.5	0.31	03/28/19 10:27	
1,2-Dichloroethane-d4 (S)	%	105	75-136		03/28/19 10:27	
4-Bromofluorobenzene (S)	%	100	75-125		03/28/19 10:27	
Toluene-d8 (S)	%	107	75-125		03/28/19 10:27	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467826

LABORATORY CONTROL SAMPLE: 3223556

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.8	99	68-141	
1,1,1-Trichloroethane	ug/L	20	16.4	82	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	20.2	101	73-125	
1,1,2-Trichloroethane	ug/L	20	20.4	102	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	17.0	85	69-132	
1,1-Dichloroethane	ug/L	20	16.5	82	73-125	
1,1-Dichloroethene	ug/L	20	16.7	84	71-126	
1,1-Dichloropropene	ug/L	20	15.7	79	73-126	
1,2,3-Trichlorobenzene	ug/L	20	20.5	102	72-126	
1,2,3-Trichloropropane	ug/L	20	19.8	99	75-126	
1,2,4-Trichlorobenzene	ug/L	20	20.7	103	71-134	
1,2,4-Trimethylbenzene	ug/L	20	20.8	104	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	45.5	91	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	20.3	101	75-129	
1,2-Dichlorobenzene	ug/L	20	21.2	106	75-129	
1,2-Dichloroethane	ug/L	20	14.3	71	75-125	L2
1,2-Dichloroethene (Total)	ug/L	40	33.0	82	74-125	N2
1,2-Dichloropropane	ug/L	20	18.7	93	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.9	104	75-127	
1,3-Dichlorobenzene	ug/L	20	21.2	106	75-126	
1,3-Dichloropropane	ug/L	20	19.6	98	75-125	
1,4-Dichlorobenzene	ug/L	20	20.1	101	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	438	109	72-129	
2,2,4-Trimethylpentane	ug/L	20	16.5	82	72-128	N2
2,2-Dichloropropane	ug/L	20	17.3	86	65-138	
2-Butanone (MEK)	ug/L	100	78.9	79	59-144	
2-Chlorotoluene	ug/L	20	22.0	110	75-127	
2-Hexanone	ug/L	100	101	101	73-134	
4-Chlorotoluene	ug/L	20	22.5	112	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	92.3	92	62-141	
Acetone	ug/L	100	121	121	60-137	
Acrolein	ug/L	200	170	85	60-141	
Acrylonitrile	ug/L	200	156	78	75-129	
Benzene	ug/L	20	16.5	82	73-125	
Bromobenzene	ug/L	20	20.1	101	73-125	
Bromochloromethane	ug/L	20	16.3	82	75-135	
Bromodichloromethane	ug/L	20	19.0	95	75-125	
Bromoform	ug/L	20	20.3	101	67-136	
Bromomethane	ug/L	20	14.4	72	30-150	
Carbon disulfide	ug/L	20	16.5	82	47-137	
Carbon tetrachloride	ug/L	20	17.0	85	75-125	
Chlorobenzene	ug/L	20	19.1	96	75-125	
Chloroethane	ug/L	20	17.7	89	63-136	
Chloroform	ug/L	20	16.5	83	73-128	
Chloromethane	ug/L	20	16.1	81	55-130	
cis-1,2-Dichloroethene	ug/L	20	16.5	83	75-125	
cis-1,3-Dichloropropene	ug/L	20	18.4	92	74-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467826

LABORATORY CONTROL SAMPLE: 3223556

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	19.3	96	75-125	
Dibromomethane	ug/L	20	18.8	94	75-125	
Dichlorodifluoromethane	ug/L	20	19.1	95	63-132	
Dichlorofluoromethane	ug/L	20	16.9	84	68-127	N2
Diisopropyl ether	ug/L	20	15.5	78	71-131	
Ethyl-tert-butyl ether	ug/L	20	16.0	80	75-125	
Ethylbenzene	ug/L	20	20.4	102	75-125	
Hexachloro-1,3-butadiene	ug/L	20	19.9	100	72-134	
Isopropylbenzene (Cumene)	ug/L	20	20.6	103	75-125	
m&p-Xylene	ug/L	40	46.6	116	75-126	
Methyl-tert-butyl ether	ug/L	20	16.2	81	75-125	
Methylene Chloride	ug/L	20	16.8	84	70-125	
n-Butylbenzene	ug/L	20	21.2	106	75-126	
n-Propylbenzene	ug/L	20	23.0	115	73-127	
Naphthalene	ug/L	20	20.2	101	63-128	
o-Xylene	ug/L	20	20.8	104	75-128	
p-Isopropyltoluene	ug/L	20	21.1	105	75-125	
sec-Butylbenzene	ug/L	20	21.6	108	75-126	
Styrene	ug/L	20	19.9	99	75-125	
tert-Amylmethyl ether	ug/L	20	15.2	76	75-125	
tert-Butyl Alcohol	ug/L	200	193	97	75-130	
tert-Butylbenzene	ug/L	20	21.1	105	75-131	
Tetrachloroethene	ug/L	20	20.4	102	74-125	
Tetrahydrofuran	ug/L	200	192	96	64-138	
Toluene	ug/L	20	18.9	94	74-125	
trans-1,2-Dichloroethene	ug/L	20	16.5	82	68-128	
trans-1,3-Dichloropropene	ug/L	20	20.4	102	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	49.1	98	60-127	
Trichloroethene	ug/L	20	19.9	100	75-127	
Trichlorofluoromethane	ug/L	20	18.3	91	72-133	
Vinyl acetate	ug/L	20	15.3	76	61-129	
Vinyl chloride	ug/L	20	17.2	86	75-128	
Xylene (Total)	ug/L	60	67.4	112	75-125	
1,2-Dichloroethane-d4 (S)	%			89	75-136	
4-Bromofluorobenzene (S)	%			100	75-125	
Toluene-d8 (S)	%			103	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3224889 3224890

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Result	Spike Conc.	Result						
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	19.9	21.5	99	107	75-140	8	30
1,1,1-Trichloroethane	ug/L	ND	20	20	18.0	21.4	90	107	74-136	17	30
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	20.7	22.1	104	110	66-134	6	30
1,1,2-Trichloroethane	ug/L	ND	20	20	20.4	21.7	102	109	75-126	6	30

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467826

Parameter	Units	10468569001		3224889		3224890		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
1,1,2-Trichlorotrifluoroethane	ug/L	ND	20	20	20.3	23.2	101	116	65-146	14	30		
1,1-Dichloroethane	ug/L	ND	20	20	18.9	20.9	94	105	68-132	10	30		
1,1-Dichloroethene	ug/L	ND	20	20	19.3	22.0	97	110	66-139	13	30		
1,1-Dichloropropene	ug/L	ND	20	20	18.2	21.3	91	106	67-134	15	30		
1,2,3-Trichlorobenzene	ug/L	ND	20	20	21.7	22.9	108	114	67-129	5	30		
1,2,3-Trichloropropane	ug/L	ND	20	20	20.4	21.1	102	106	69-128	4	30		
1,2,4-Trichlorobenzene	ug/L	ND	20	20	22.5	23.8	113	119	65-140	5	30		
1,2,4-Trimethylbenzene	ug/L	ND	20	20	21.7	24.1	109	120	71-133	10	30		
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	49.3	53.9	99	108	54-138	9	30		
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	19.5	21.5	98	108	68-125	10	30		
1,2-Dichlorobenzene	ug/L	ND	20	20	22.0	24.1	110	120	74-136	9	30		
1,2-Dichloroethane	ug/L	ND	20	20	14.0	18.4	70	92	68-125	27	30		
1,2-Dichloroethene (Total)	ug/L	ND	40	40	37.4	41.7	94	104	71-126	11	30	N2	
1,2-Dichloropropane	ug/L	ND	20	20	18.4	19.4	92	97	67-125	5	30		
1,3,5-Trimethylbenzene	ug/L	ND	20	20	21.9	23.9	110	120	68-137	9	30		
1,3-Dichlorobenzene	ug/L	ND	20	20	22.1	24.4	111	122	75-131	10	30		
1,3-Dichloropropane	ug/L	ND	20	20	20.2	20.9	101	104	71-125	4	30		
1,4-Dichlorobenzene	ug/L	ND	20	20	20.6	22.6	103	113	74-126	9	30		
1,4-Dioxane (p-Dioxane)	ug/L	ND	400	400	409	420	102	105	68-125	3	30		
2,2,4-Trimethylpentane	ug/L	ND	20	20	19.6	20.1	98	101	54-129	3	30	N2	
2,2-Dichloropropane	ug/L	ND	20	20	19.3	22.2	97	111	69-139	14	30		
2-Butanone (MEK)	ug/L	ND	100	100	69.9	82.7	70	83	54-144	17	30		
2-Chlorotoluene	ug/L	ND	20	20	22.7	25.3	114	126	75-134	11	30		
2-Hexanone	ug/L	ND	100	100	95.9	104	96	104	58-137	8	30		
4-Chlorotoluene	ug/L	ND	20	20	23.3	25.5	116	127	72-133	9	30		
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	96.0	106	96	106	60-129	9	30		
Acetone	ug/L	ND	100	100	76.1	79.5	76	80	62-132	4	30		
Acrolein	ug/L	ND	200	200	270	305	135	152	30-150	12	30	M1	
Acrylonitrile	ug/L	ND	200	200	173	194	87	97	68-125	11	30		
Benzene	ug/L	ND	20	20	16.6	20.4	83	102	68-125	21	30		
Bromobenzene	ug/L	ND	20	20	21.4	22.0	107	110	73-126	3	30		
Bromochloromethane	ug/L	ND	20	20	18.1	20.1	90	100	66-143	10	30		
Bromodichloromethane	ug/L	ND	20	20	18.8	19.9	94	99	74-125	6	30		
Bromoform	ug/L	ND	20	20	19.6	21.3	98	107	64-134	8	30		
Bromomethane	ug/L	ND	20	20	14.5	16.8	73	84	30-150	15	30		
Carbon disulfide	ug/L	ND	20	20	20.7	21.0	103	105	43-147	2	30		
Carbon tetrachloride	ug/L	ND	20	20	18.7	22.4	93	112	71-143	18	30		
Chlorobenzene	ug/L	ND	20	20	19.6	20.9	98	105	75-125	7	30		
Chloroethane	ug/L	ND	20	20	16.7	20.7	84	104	75-129	21	30		
Chloroform	ug/L	ND	20	20	17.1	19.4	85	97	66-132	13	30		
Chloromethane	ug/L	ND	20	20	16.6	20.2	83	101	53-137	20	30		
cis-1,2-Dichloroethene	ug/L	ND	20	20	18.4	20.1	92	101	67-133	9	30		
cis-1,3-Dichloropropene	ug/L	ND	20	20	17.1	17.6	86	88	66-125	3	30		
Dibromochloromethane	ug/L	ND	20	20	19.5	20.4	97	102	62-132	4	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467826

Parameter	Units	10468569001		3224889		3224890		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Dibromomethane	ug/L	ND	20	20	18.2	19.5	91	98	67-125	7	30		
Dichlorodifluoromethane	ug/L	ND	20	20	19.1	22.9	95	114	71-142	18	30		
Dichlorofluoromethane	ug/L	ND	20	20	17.2	20.4	86	102	70-131	17	30	N2	
Diisopropyl ether	ug/L	ND	20	20	18.0	19.6	90	98	63-131	8	30		
Ethyl-tert-butyl ether	ug/L	ND	20	20	17.7	20.1	88	101	66-128	13	30		
Ethylbenzene	ug/L	ND	20	20	21.0	23.4	105	117	74-126	11	30		
Hexachloro-1,3-butadiene	ug/L	ND	20	20	23.8	20.9	119	104	68-143	13	30		
Isopropylbenzene (Cumene)	ug/L	ND	20	20	21.9	24.2	109	121	74-130	10	30		
m&p-Xylene	ug/L	ND	40	40	47.5	53.3	119	133	69-132	12	30	M1	
Methyl-tert-butyl ether	ug/L	ND	20	20	18.3	20.6	92	103	65-131	12	30		
Methylene Chloride	ug/L	ND	20	20	19.1	20.2	96	101	57-125	6	30		
n-Butylbenzene	ug/L	ND	20	20	23.7	23.9	118	120	71-131	1	30		
n-Propylbenzene	ug/L	ND	20	20	24.7	27.3	123	137	67-138	10	30		
Naphthalene	ug/L	ND	20	20	22.1	24.9	111	124	60-130	12	30		
o-Xylene	ug/L	ND	20	20	20.9	23.3	105	116	69-131	11	30		
p-Isopropyltoluene	ug/L	ND	20	20	22.7	24.2	114	121	72-133	6	30		
sec-Butylbenzene	ug/L	ND	20	20	23.4	24.4	117	122	73-134	4	30		
Styrene	ug/L	ND	20	20	20.6	22.2	103	111	72-125	7	30		
tert-Amylmethyl ether	ug/L	ND	20	20	15.2	19.9	76	99	67-125	26	30		
tert-Butyl Alcohol	ug/L	ND	200	200	209	204	104	102	64-137	2	30		
tert-Butylbenzene	ug/L	ND	20	20	22.5	24.4	112	122	70-143	8	30		
Tetrachloroethene	ug/L	ND	20	20	21.1	23.5	106	118	72-129	11	30		
Tetrahydrofuran	ug/L	ND	200	200	172	192	86	96	66-128	11	30		
Toluene	ug/L	ND	20	20	19.7	21.0	98	104	73-125	6	30		
trans-1,2-Dichloroethene	ug/L	ND	20	20	19.0	21.5	95	108	62-137	12	30		
trans-1,3-Dichloropropene	ug/L	ND	20	20	21.1	21.4	106	107	61-136	1	30		
trans-1,4-Dichloro-2-butene	ug/L	ND	50	50	50.8	55.8	102	112	45-128	9	30		
Trichloroethene	ug/L	ND	20	20	20.7	19.7	103	99	74-132	4	30		
Trichlorofluoromethane	ug/L	ND	20	20	19.4	23.1	97	116	75-139	17	30		
Vinyl acetate	ug/L	ND	20	20	17.4	19.9	87	99	51-135	13	30		
Vinyl chloride	ug/L	ND	20	20	18.0	21.2	90	106	68-146	17	30		
Xylene (Total)	ug/L	ND	60	60	68.4	76.6	114	128	67-137	11	30	MS	
1,2-Dichloroethane-d4 (S)	%						85	105	75-136				
4-Bromofluorobenzene (S)	%						102	98	75-125				
Toluene-d8 (S)	%						103	101	75-125				

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467826

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

L2 Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

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

MS Analyte recovery in the matrix spike was outside QC limits for one or more of the constituent analytes used in the calculated result.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467826

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467826

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10467826001	Marlow-GW-032119	EPA 8260B	596233		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: Ch2M Hill

WO#: 10467826

PM: JMG Due Date: 04/05/19
CLIENT: UPRR_CH2M

Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception

Tracking Number: 7978 9397 2337/2322/2311/2344

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

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

Thermometer: G87A9155100842 G87A9170600254 Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: <u>06, 4.4, 1.2, 0.6</u> °C	Average Corrected Temp (no temp blank only): <input type="checkbox"/>
Correction Factor: <u>Time</u>	Cooler Temp Corrected w/temp blank: <u>0.6, 4.4, 1.2, 0.6</u> °C	See Exceptions <input type="checkbox"/>

USDA Regulated Soil: (N/A, water sample/Other: _____) Date/Initials of Person Examining Contents: JE 3/22/19
 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No
 Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No
 If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

	COMMENTS:
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	
All containers needing acid/base preservation have been checked? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. Sample # <input type="checkbox"/> NaOH <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide) <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No
Exceptions (VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exception
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. <u>SHARED w/ WO: 10467822</u>
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): <u>199048</u>

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: Mark Ochsner Date/Time: 06/27/18 Field Data Required? Yes No
 Comments/Resolution: WA certs not required for 8260 2,2,4-TMP or dichlorofluoromethane.

Project Manager Review: JENNI GROSS Date: 03/22/19

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

Labeled by: _____

March 29, 2019

David Hodson
Jacobs
2020 SW 4th Ave
#300
Portland, OR 97201

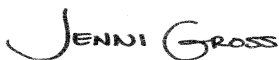
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467827

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 22, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Steve Demus, CH2M Hill
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467827

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #:74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467827

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10467827001	Randall-GW-032119	Water	03/21/19 15:00	03/22/19 08:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467827

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10467827001	Randall-GW-032119	EPA 8260B	DS2	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467827

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10467827001	Randall-GW-032119					
EPA 8260B	Carbon tetrachloride	182	ug/L	2.5	03/28/19 19:08	
EPA 8260B	Chloroform	8.0	ug/L	4.0	03/28/19 13:36	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467827

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

General Information:

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

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

- Randall-GW-032119 (Lab ID: 10467827001)

Hold Time:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Internal Standards:

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

Surrogates:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 596233

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10468569001

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

- MSD (Lab ID: 3224890)
 - Acrolein
 - m&p-Xylene

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467827

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

Analyte Comments:

QC Batch: 596233

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3223555)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3223556)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3224889)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3224890)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- Randall-GW-032119 (Lab ID: 10467827001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467827

Sample: Randall-GW-032119 **Lab ID: 10467827001** Collected: 03/21/19 15:00 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/28/19 13:36	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/28/19 13:36	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 13:36	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/28/19 13:36	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/28/19 13:36	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 13:36	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/28/19 13:36	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		03/28/19 13:36	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 13:36	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/28/19 13:36	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/28/19 13:36	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/28/19 13:36	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/28/19 13:36	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/28/19 13:36	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 13:36	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/28/19 13:36	107-06-2	L2
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/28/19 13:36	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/28/19 13:36	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		03/28/19 13:36	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/28/19 13:36	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/28/19 13:36	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 13:36	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/28/19 13:36	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/28/19 13:36	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/28/19 13:36	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/28/19 13:36	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/28/19 13:36	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		03/28/19 13:36	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/28/19 13:36	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/28/19 13:36	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/28/19 13:36	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/28/19 13:36	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/28/19 13:36	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/28/19 13:36	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 13:36	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/28/19 13:36	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/28/19 13:36	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/28/19 13:36	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/28/19 13:36	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/28/19 13:36	75-15-0	
Carbon tetrachloride	182	ug/L	2.5	0.94	5		03/28/19 19:08	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 13:36	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/28/19 13:36	75-00-3	
Chloroform	8.0	ug/L	4.0	0.45	1		03/28/19 13:36	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/28/19 13:36	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/28/19 13:36	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467827

Sample: Randall-GW-032119 **Lab ID: 10467827001** Collected: 03/21/19 15:00 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/28/19 13:36	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/28/19 13:36	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/28/19 13:36	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/28/19 13:36	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/28/19 13:36	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 13:36	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/28/19 13:36	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		03/28/19 13:36	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/28/19 13:36	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/28/19 13:36	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/28/19 13:36	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/28/19 13:36	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/28/19 13:36	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/28/19 13:36	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		03/28/19 13:36	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/28/19 13:36	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/28/19 13:36	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/28/19 13:36	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/28/19 13:36	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/28/19 13:36	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/28/19 13:36	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/28/19 13:36	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/28/19 13:36	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/28/19 13:36	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/28/19 13:36	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/28/19 13:36	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/28/19 13:36	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/28/19 13:36	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/28/19 13:36	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/28/19 13:36	75-65-0	
tert-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/28/19 13:36	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/28/19 13:36	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		03/28/19 13:36	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/28/19 13:36	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	103	%	75-136		1		03/28/19 13:36	17060-07-0	
Toluene-d8 (S)	109	%	75-125		1		03/28/19 13:36	2037-26-5	
4-Bromofluorobenzene (S)	100	%	75-125		1		03/28/19 13:36	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467827

QC Batch: 596233

Analysis Method: EPA 8260B

QC Batch Method: EPA 8260B

Analysis Description: 8260 MSV LL Water

Associated Lab Samples: 10467827001

METHOD BLANK: 3223555

Matrix: Water

Associated Lab Samples: 10467827001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	03/28/19 10:27	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	03/28/19 10:27	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	03/28/19 10:27	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	03/28/19 10:27	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	03/28/19 10:27	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	03/28/19 10:27	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	03/28/19 10:27	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	03/28/19 10:27	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	03/28/19 10:27	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	03/28/19 10:27	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	03/28/19 10:27	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	03/28/19 10:27	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	03/28/19 10:27	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	03/28/19 10:27	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	03/28/19 10:27	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	03/28/19 10:27	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	03/28/19 10:27	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	03/28/19 10:27	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	03/28/19 10:27	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/28/19 10:27	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	03/28/19 10:27	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	03/28/19 10:27	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	03/28/19 10:27	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	03/28/19 10:27	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	03/28/19 10:27	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	03/28/19 10:27	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	03/28/19 10:27	
2-Hexanone	ug/L	<0.88	5.0	0.88	03/28/19 10:27	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/28/19 10:27	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	03/28/19 10:27	
Acetone	ug/L	<9.2	20.0	9.2	03/28/19 10:27	
Acrolein	ug/L	<1.2	10.0	1.2	03/28/19 10:27	
Acrylonitrile	ug/L	<0.91	10.0	0.91	03/28/19 10:27	
Benzene	ug/L	<0.10	0.50	0.10	03/28/19 10:27	
Bromobenzene	ug/L	<0.21	0.50	0.21	03/28/19 10:27	
Bromochloromethane	ug/L	<0.27	1.0	0.27	03/28/19 10:27	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	03/28/19 10:27	
Bromoform	ug/L	<0.80	4.0	0.80	03/28/19 10:27	
Bromomethane	ug/L	<1.8	4.0	1.8	03/28/19 10:27	
Carbon disulfide	ug/L	<0.078	1.0	0.078	03/28/19 10:27	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	03/28/19 10:27	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467827

METHOD BLANK: 3223555

Matrix: Water

Associated Lab Samples: 10467827001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	03/28/19 10:27	
Chloroethane	ug/L	<0.49	1.0	0.49	03/28/19 10:27	
Chloroform	ug/L	<0.45	4.0	0.45	03/28/19 10:27	
Chloromethane	ug/L	<0.16	4.0	0.16	03/28/19 10:27	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	03/28/19 10:27	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	03/28/19 10:27	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	03/28/19 10:27	
Dibromomethane	ug/L	<0.16	1.0	0.16	03/28/19 10:27	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	03/28/19 10:27	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	03/28/19 10:27	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	03/28/19 10:27	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	03/28/19 10:27	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/28/19 10:27	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	03/28/19 10:27	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	03/28/19 10:27	
m&p-Xylene	ug/L	<0.31	1.0	0.31	03/28/19 10:27	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	03/28/19 10:27	
Methylene Chloride	ug/L	<0.98	4.0	0.98	03/28/19 10:27	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	03/28/19 10:27	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	03/28/19 10:27	
Naphthalene	ug/L	<0.48	1.0	0.48	03/28/19 10:27	
o-Xylene	ug/L	<0.16	0.50	0.16	03/28/19 10:27	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	03/28/19 10:27	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	03/28/19 10:27	
Styrene	ug/L	<0.19	1.0	0.19	03/28/19 10:27	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	03/28/19 10:27	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	03/28/19 10:27	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	03/28/19 10:27	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	03/28/19 10:27	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	03/28/19 10:27	
Toluene	ug/L	<0.083	0.50	0.083	03/28/19 10:27	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	03/28/19 10:27	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	03/28/19 10:27	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	03/28/19 10:27	
Trichloroethene	ug/L	<0.15	0.40	0.15	03/28/19 10:27	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	03/28/19 10:27	
Vinyl acetate	ug/L	<1.1	10.0	1.1	03/28/19 10:27	
Vinyl chloride	ug/L	<0.092	0.20	0.092	03/28/19 10:27	
Xylene (Total)	ug/L	<0.31	1.5	0.31	03/28/19 10:27	
1,2-Dichloroethane-d4 (S)	%	105	75-136		03/28/19 10:27	
4-Bromofluorobenzene (S)	%	100	75-125		03/28/19 10:27	
Toluene-d8 (S)	%	107	75-125		03/28/19 10:27	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467827

LABORATORY CONTROL SAMPLE: 3223556

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.8	99	68-141	
1,1,1-Trichloroethane	ug/L	20	16.4	82	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	20.2	101	73-125	
1,1,2-Trichloroethane	ug/L	20	20.4	102	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	17.0	85	69-132	
1,1-Dichloroethane	ug/L	20	16.5	82	73-125	
1,1-Dichloroethene	ug/L	20	16.7	84	71-126	
1,1-Dichloropropene	ug/L	20	15.7	79	73-126	
1,2,3-Trichlorobenzene	ug/L	20	20.5	102	72-126	
1,2,3-Trichloropropane	ug/L	20	19.8	99	75-126	
1,2,4-Trichlorobenzene	ug/L	20	20.7	103	71-134	
1,2,4-Trimethylbenzene	ug/L	20	20.8	104	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	45.5	91	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	20.3	101	75-129	
1,2-Dichlorobenzene	ug/L	20	21.2	106	75-129	
1,2-Dichloroethane	ug/L	20	14.3	71	75-125	L2
1,2-Dichloroethene (Total)	ug/L	40	33.0	82	74-125	N2
1,2-Dichloropropane	ug/L	20	18.7	93	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.9	104	75-127	
1,3-Dichlorobenzene	ug/L	20	21.2	106	75-126	
1,3-Dichloropropane	ug/L	20	19.6	98	75-125	
1,4-Dichlorobenzene	ug/L	20	20.1	101	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	438	109	72-129	
2,2,4-Trimethylpentane	ug/L	20	16.5	82	72-128	N2
2,2-Dichloropropane	ug/L	20	17.3	86	65-138	
2-Butanone (MEK)	ug/L	100	78.9	79	59-144	
2-Chlorotoluene	ug/L	20	22.0	110	75-127	
2-Hexanone	ug/L	100	101	101	73-134	
4-Chlorotoluene	ug/L	20	22.5	112	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	92.3	92	62-141	
Acetone	ug/L	100	121	121	60-137	
Acrolein	ug/L	200	170	85	60-141	
Acrylonitrile	ug/L	200	156	78	75-129	
Benzene	ug/L	20	16.5	82	73-125	
Bromobenzene	ug/L	20	20.1	101	73-125	
Bromochloromethane	ug/L	20	16.3	82	75-135	
Bromodichloromethane	ug/L	20	19.0	95	75-125	
Bromoform	ug/L	20	20.3	101	67-136	
Bromomethane	ug/L	20	14.4	72	30-150	
Carbon disulfide	ug/L	20	16.5	82	47-137	
Carbon tetrachloride	ug/L	20	17.0	85	75-125	
Chlorobenzene	ug/L	20	19.1	96	75-125	
Chloroethane	ug/L	20	17.7	89	63-136	
Chloroform	ug/L	20	16.5	83	73-128	
Chloromethane	ug/L	20	16.1	81	55-130	
cis-1,2-Dichloroethene	ug/L	20	16.5	83	75-125	
cis-1,3-Dichloropropene	ug/L	20	18.4	92	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467827

LABORATORY CONTROL SAMPLE: 3223556

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	19.3	96	75-125	
Dibromomethane	ug/L	20	18.8	94	75-125	
Dichlorodifluoromethane	ug/L	20	19.1	95	63-132	
Dichlorofluoromethane	ug/L	20	16.9	84	68-127	N2
Diisopropyl ether	ug/L	20	15.5	78	71-131	
Ethyl-tert-butyl ether	ug/L	20	16.0	80	75-125	
Ethylbenzene	ug/L	20	20.4	102	75-125	
Hexachloro-1,3-butadiene	ug/L	20	19.9	100	72-134	
Isopropylbenzene (Cumene)	ug/L	20	20.6	103	75-125	
m&p-Xylene	ug/L	40	46.6	116	75-126	
Methyl-tert-butyl ether	ug/L	20	16.2	81	75-125	
Methylene Chloride	ug/L	20	16.8	84	70-125	
n-Butylbenzene	ug/L	20	21.2	106	75-126	
n-Propylbenzene	ug/L	20	23.0	115	73-127	
Naphthalene	ug/L	20	20.2	101	63-128	
o-Xylene	ug/L	20	20.8	104	75-128	
p-Isopropyltoluene	ug/L	20	21.1	105	75-125	
sec-Butylbenzene	ug/L	20	21.6	108	75-126	
Styrene	ug/L	20	19.9	99	75-125	
tert-Amylmethyl ether	ug/L	20	15.2	76	75-125	
tert-Butyl Alcohol	ug/L	200	193	97	75-130	
tert-Butylbenzene	ug/L	20	21.1	105	75-131	
Tetrachloroethene	ug/L	20	20.4	102	74-125	
Tetrahydrofuran	ug/L	200	192	96	64-138	
Toluene	ug/L	20	18.9	94	74-125	
trans-1,2-Dichloroethene	ug/L	20	16.5	82	68-128	
trans-1,3-Dichloropropene	ug/L	20	20.4	102	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	49.1	98	60-127	
Trichloroethene	ug/L	20	19.9	100	75-127	
Trichlorofluoromethane	ug/L	20	18.3	91	72-133	
Vinyl acetate	ug/L	20	15.3	76	61-129	
Vinyl chloride	ug/L	20	17.2	86	75-128	
Xylene (Total)	ug/L	60	67.4	112	75-125	
1,2-Dichloroethane-d4 (S)	%			89	75-136	
4-Bromofluorobenzene (S)	%			100	75-125	
Toluene-d8 (S)	%			103	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3224889 3224890

Parameter	Units	MS 10468569001		MSD 3224890		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result								
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	19.9	21.5	99	107	75-140	8	30		
1,1,1-Trichloroethane	ug/L	ND	20	20	18.0	21.4	90	107	74-136	17	30		
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	20.7	22.1	104	110	66-134	6	30		
1,1,2-Trichloroethane	ug/L	ND	20	20	20.4	21.7	102	109	75-126	6	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467827

Parameter	Units	10468569001		3224889		3224890		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
1,1,2-Trichlorotrifluoroethane	ug/L	ND	20	20	20.3	23.2	101	116	65-146	14	30		
1,1-Dichloroethane	ug/L	ND	20	20	18.9	20.9	94	105	68-132	10	30		
1,1-Dichloroethene	ug/L	ND	20	20	19.3	22.0	97	110	66-139	13	30		
1,1-Dichloropropene	ug/L	ND	20	20	18.2	21.3	91	106	67-134	15	30		
1,2,3-Trichlorobenzene	ug/L	ND	20	20	21.7	22.9	108	114	67-129	5	30		
1,2,3-Trichloropropane	ug/L	ND	20	20	20.4	21.1	102	106	69-128	4	30		
1,2,4-Trichlorobenzene	ug/L	ND	20	20	22.5	23.8	113	119	65-140	5	30		
1,2,4-Trimethylbenzene	ug/L	ND	20	20	21.7	24.1	109	120	71-133	10	30		
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	49.3	53.9	99	108	54-138	9	30		
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	19.5	21.5	98	108	68-125	10	30		
1,2-Dichlorobenzene	ug/L	ND	20	20	22.0	24.1	110	120	74-136	9	30		
1,2-Dichloroethane	ug/L	ND	20	20	14.0	18.4	70	92	68-125	27	30		
1,2-Dichloroethene (Total)	ug/L	ND	40	40	37.4	41.7	94	104	71-126	11	30	N2	
1,2-Dichloropropane	ug/L	ND	20	20	18.4	19.4	92	97	67-125	5	30		
1,3,5-Trimethylbenzene	ug/L	ND	20	20	21.9	23.9	110	120	68-137	9	30		
1,3-Dichlorobenzene	ug/L	ND	20	20	22.1	24.4	111	122	75-131	10	30		
1,3-Dichloropropane	ug/L	ND	20	20	20.2	20.9	101	104	71-125	4	30		
1,4-Dichlorobenzene	ug/L	ND	20	20	20.6	22.6	103	113	74-126	9	30		
1,4-Dioxane (p-Dioxane)	ug/L	ND	400	400	409	420	102	105	68-125	3	30		
2,2,4-Trimethylpentane	ug/L	ND	20	20	19.6	20.1	98	101	54-129	3	30	N2	
2,2-Dichloropropane	ug/L	ND	20	20	19.3	22.2	97	111	69-139	14	30		
2-Butanone (MEK)	ug/L	ND	100	100	69.9	82.7	70	83	54-144	17	30		
2-Chlorotoluene	ug/L	ND	20	20	22.7	25.3	114	126	75-134	11	30		
2-Hexanone	ug/L	ND	100	100	95.9	104	96	104	58-137	8	30		
4-Chlorotoluene	ug/L	ND	20	20	23.3	25.5	116	127	72-133	9	30		
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	96.0	106	96	106	60-129	9	30		
Acetone	ug/L	ND	100	100	76.1	79.5	76	80	62-132	4	30		
Acrolein	ug/L	ND	200	200	270	305	135	152	30-150	12	30	M1	
Acrylonitrile	ug/L	ND	200	200	173	194	87	97	68-125	11	30		
Benzene	ug/L	ND	20	20	16.6	20.4	83	102	68-125	21	30		
Bromobenzene	ug/L	ND	20	20	21.4	22.0	107	110	73-126	3	30		
Bromochloromethane	ug/L	ND	20	20	18.1	20.1	90	100	66-143	10	30		
Bromodichloromethane	ug/L	ND	20	20	18.8	19.9	94	99	74-125	6	30		
Bromoform	ug/L	ND	20	20	19.6	21.3	98	107	64-134	8	30		
Bromomethane	ug/L	ND	20	20	14.5	16.8	73	84	30-150	15	30		
Carbon disulfide	ug/L	ND	20	20	20.7	21.0	103	105	43-147	2	30		
Carbon tetrachloride	ug/L	ND	20	20	18.7	22.4	93	112	71-143	18	30		
Chlorobenzene	ug/L	ND	20	20	19.6	20.9	98	105	75-125	7	30		
Chloroethane	ug/L	ND	20	20	16.7	20.7	84	104	75-129	21	30		
Chloroform	ug/L	ND	20	20	17.1	19.4	85	97	66-132	13	30		
Chloromethane	ug/L	ND	20	20	16.6	20.2	83	101	53-137	20	30		
cis-1,2-Dichloroethene	ug/L	ND	20	20	18.4	20.1	92	101	67-133	9	30		
cis-1,3-Dichloropropene	ug/L	ND	20	20	17.1	17.6	86	88	66-125	3	30		
Dibromochloromethane	ug/L	ND	20	20	19.5	20.4	97	102	62-132	4	30		

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467827

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3224889												3224890	
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10468569001 Result	Spike Conc.	Spike Conc.	MS Conc.								
Dibromomethane	ug/L	ND	20	20	18.2	19.5	91	98	67-125	7	30		
Dichlorodifluoromethane	ug/L	ND	20	20	19.1	22.9	95	114	71-142	18	30		
Dichlorofluoromethane	ug/L	ND	20	20	17.2	20.4	86	102	70-131	17	30	N2	
Diisopropyl ether	ug/L	ND	20	20	18.0	19.6	90	98	63-131	8	30		
Ethyl-tert-butyl ether	ug/L	ND	20	20	17.7	20.1	88	101	66-128	13	30		
Ethylbenzene	ug/L	ND	20	20	21.0	23.4	105	117	74-126	11	30		
Hexachloro-1,3-butadiene	ug/L	ND	20	20	23.8	20.9	119	104	68-143	13	30		
Isopropylbenzene (Cumene)	ug/L	ND	20	20	21.9	24.2	109	121	74-130	10	30		
m&p-Xylene	ug/L	ND	40	40	47.5	53.3	119	133	69-132	12	30	M1	
Methyl-tert-butyl ether	ug/L	ND	20	20	18.3	20.6	92	103	65-131	12	30		
Methylene Chloride	ug/L	ND	20	20	19.1	20.2	96	101	57-125	6	30		
n-Butylbenzene	ug/L	ND	20	20	23.7	23.9	118	120	71-131	1	30		
n-Propylbenzene	ug/L	ND	20	20	24.7	27.3	123	137	67-138	10	30		
Naphthalene	ug/L	ND	20	20	22.1	24.9	111	124	60-130	12	30		
o-Xylene	ug/L	ND	20	20	20.9	23.3	105	116	69-131	11	30		
p-Isopropyltoluene	ug/L	ND	20	20	22.7	24.2	114	121	72-133	6	30		
sec-Butylbenzene	ug/L	ND	20	20	23.4	24.4	117	122	73-134	4	30		
Styrene	ug/L	ND	20	20	20.6	22.2	103	111	72-125	7	30		
tert-Amylmethyl ether	ug/L	ND	20	20	15.2	19.9	76	99	67-125	26	30		
tert-Butyl Alcohol	ug/L	ND	200	200	209	204	104	102	64-137	2	30		
tert-Butylbenzene	ug/L	ND	20	20	22.5	24.4	112	122	70-143	8	30		
Tetrachloroethene	ug/L	ND	20	20	21.1	23.5	106	118	72-129	11	30		
Tetrahydrofuran	ug/L	ND	200	200	172	192	86	96	66-128	11	30		
Toluene	ug/L	ND	20	20	19.7	21.0	98	104	73-125	6	30		
trans-1,2-Dichloroethene	ug/L	ND	20	20	19.0	21.5	95	108	62-137	12	30		
trans-1,3-Dichloropropene	ug/L	ND	20	20	21.1	21.4	106	107	61-136	1	30		
trans-1,4-Dichloro-2-butene	ug/L	ND	50	50	50.8	55.8	102	112	45-128	9	30		
Trichloroethene	ug/L	ND	20	20	20.7	19.7	103	99	74-132	4	30		
Trichlorofluoromethane	ug/L	ND	20	20	19.4	23.1	97	116	75-139	17	30		
Vinyl acetate	ug/L	ND	20	20	17.4	19.9	87	99	51-135	13	30		
Vinyl chloride	ug/L	ND	20	20	18.0	21.2	90	106	68-146	17	30		
Xylene (Total)	ug/L	ND	60	60	68.4	76.6	114	128	67-137	11	30	MS	
1,2-Dichloroethane-d4 (S)	%						85	105	75-136				
4-Bromofluorobenzene (S)	%						102	98	75-125				
Toluene-d8 (S)	%						103	101	75-125				

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467827

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

L2 Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

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

MS Analyte recovery in the matrix spike was outside QC limits for one or more of the constituent analytes used in the calculated result.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467827

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467827

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10467827001	Randall-GW-032119	EPA 8260B	596233		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: Chm Hill

Project #: **WO# : 10467827**
 PM: JMG Due Date: 04/05/19
 CLIENT: UPRR_CH2M

Courier: Fed Ex UPS USPS Client
 Pace SpeeDee Commercial See Exception

Tracking Number: 7028 9397 2332/2322/2311/2344

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

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

Thermometer: G87A9155100842 G87A9170600254 Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: <u>0.6, 4.4, 1.2, 0.6</u> °C	Average Corrected Temp (no temp blank only): _____ °C	See Exceptions <input type="checkbox"/>
Correction Factor: <u>Time</u>	Cooler Temp Corrected w/temp blank: <u>0.6, 4.4, 1.2, 0.6</u> °C		

USDA Regulated Soil: (N/A, water sample/Other: _____) Date/Initials of Person Examining Contents: FE 3/22/19

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

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

	COMMENTS:
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: _____ See Exception <input type="checkbox"/>
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other _____	
All containers needing acid/base preservation have been checked? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. Sample # _____ <input type="checkbox"/> NaOH <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide) <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No See Exception <input type="checkbox"/>
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No See Exception <input type="checkbox"/>
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. See Exception <input type="checkbox"/>
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. <u>SHADED w/ WO: 10467827</u>
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): <u>199048</u>

CLIENT NOTIFICATION/RESOLUTION
 Person Contacted: Mark Ochsner Date/Time: 06/27/18 Field Data Required? Yes No

Comments/Resolution: Wa certs not required for 8260 2,2,4-TMP or dichlorofluoromethane.

Project Manager Review: JENNI GROSS Date: 03/22/19

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

Labeled by: _____

March 29, 2019

David Hodson
Jacobs
2020 SW 4th Ave
#300
Portland, OR 97201

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467828

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 22, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Steve Demus, CH2M Hill
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467828

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467828

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10467828001	Reed-GW-032119	Water	03/21/19 14:00	03/22/19 08:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467828

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10467828001	Reed-GW-032119	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467828

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

General Information:

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

Hold Time:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Internal Standards:

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

Surrogates:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 596124

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s):
10467825001,10467831001,10467835001

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

- MSD (Lab ID: 3222883)
 - Acrolein

Additional Comments:

Analyte Comments:

QC Batch: 596124

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3222880)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467828

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

Analyte Comments:

QC Batch: 596124

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3222880)
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3222881)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3222882)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3222884)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3222886)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3222883)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3222885)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3222887)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- Reed-GW-032119 (Lab ID: 10467828001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467828

Sample: Reed-GW-032119 **Lab ID: 10467828001** Collected: 03/21/19 14:00 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/27/19 22:43	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/27/19 22:43	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/27/19 22:43	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/27/19 22:43	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/27/19 22:43	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/27/19 22:43	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/27/19 22:43	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		03/27/19 22:43	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/27/19 22:43	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/27/19 22:43	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/27/19 22:43	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/27/19 22:43	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/27/19 22:43	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/27/19 22:43	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/27/19 22:43	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/27/19 22:43	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/27/19 22:43	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/27/19 22:43	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		03/27/19 22:43	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/27/19 22:43	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/27/19 22:43	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/27/19 22:43	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/27/19 22:43	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/27/19 22:43	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/27/19 22:43	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/27/19 22:43	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/27/19 22:43	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		03/27/19 22:43	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/27/19 22:43	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/27/19 22:43	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/27/19 22:43	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/27/19 22:43	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/27/19 22:43	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/27/19 22:43	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/27/19 22:43	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/27/19 22:43	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/27/19 22:43	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/27/19 22:43	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/27/19 22:43	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/27/19 22:43	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/27/19 22:43	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/27/19 22:43	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/27/19 22:43	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/27/19 22:43	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/27/19 22:43	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/27/19 22:43	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467828

Sample: Reed-GW-032119 **Lab ID: 10467828001** Collected: 03/21/19 14:00 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/27/19 22:43	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/27/19 22:43	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/27/19 22:43	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/27/19 22:43	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/27/19 22:43	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/27/19 22:43	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/27/19 22:43	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		03/27/19 22:43	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/27/19 22:43	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/27/19 22:43	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/27/19 22:43	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/27/19 22:43	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/27/19 22:43	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/27/19 22:43	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		03/27/19 22:43	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/27/19 22:43	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/27/19 22:43	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/27/19 22:43	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/27/19 22:43	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/27/19 22:43	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/27/19 22:43	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/27/19 22:43	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/27/19 22:43	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/27/19 22:43	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/27/19 22:43	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/27/19 22:43	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/27/19 22:43	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/27/19 22:43	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/27/19 22:43	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/27/19 22:43	75-65-0	
tert-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/27/19 22:43	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/27/19 22:43	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		03/27/19 22:43	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/27/19 22:43	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	103	%	75-136		1		03/27/19 22:43	17060-07-0	
Toluene-d8 (S)	109	%	75-125		1		03/27/19 22:43	2037-26-5	
4-Bromofluorobenzene (S)	103	%	75-125		1		03/27/19 22:43	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467828

QC Batch: 596124

Analysis Method: EPA 8260B

QC Batch Method: EPA 8260B

Analysis Description: 8260 MSV LL Water

Associated Lab Samples: 10467828001

METHOD BLANK: 3222880

Matrix: Water

Associated Lab Samples: 10467828001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	03/27/19 19:09	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	03/27/19 19:09	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	03/27/19 19:09	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	03/27/19 19:09	MN
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	03/27/19 19:09	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	03/27/19 19:09	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	03/27/19 19:09	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	03/27/19 19:09	MN
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	03/27/19 19:09	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	03/27/19 19:09	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	03/27/19 19:09	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	03/27/19 19:09	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	03/27/19 19:09	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	03/27/19 19:09	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	03/27/19 19:09	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	03/27/19 19:09	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	03/27/19 19:09	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	03/27/19 19:09	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	03/27/19 19:09	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	03/27/19 19:09	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
2-Hexanone	ug/L	<0.88	5.0	0.88	03/27/19 19:09	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/27/19 19:09	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	03/27/19 19:09	
Acetone	ug/L	<9.2	20.0	9.2	03/27/19 19:09	
Acrolein	ug/L	<1.2	10.0	1.2	03/27/19 19:09	
Acrylonitrile	ug/L	<0.91	10.0	0.91	03/27/19 19:09	
Benzene	ug/L	<0.10	0.50	0.10	03/27/19 19:09	
Bromobenzene	ug/L	<0.21	0.50	0.21	03/27/19 19:09	
Bromochloromethane	ug/L	<0.27	1.0	0.27	03/27/19 19:09	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	03/27/19 19:09	
Bromoform	ug/L	<0.80	4.0	0.80	03/27/19 19:09	
Bromomethane	ug/L	<1.8	4.0	1.8	03/27/19 19:09	
Carbon disulfide	ug/L	<0.078	1.0	0.078	03/27/19 19:09	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	03/27/19 19:09	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467828

METHOD BLANK: 3222880

Matrix: Water

Associated Lab Samples: 10467828001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
Chloroethane	ug/L	<0.49	1.0	0.49	03/27/19 19:09	
Chloroform	ug/L	<0.45	4.0	0.45	03/27/19 19:09	MN
Chloromethane	ug/L	<0.16	4.0	0.16	03/27/19 19:09	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	03/27/19 19:09	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	03/27/19 19:09	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	03/27/19 19:09	
Dibromomethane	ug/L	<0.16	1.0	0.16	03/27/19 19:09	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	03/27/19 19:09	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	03/27/19 19:09	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	03/27/19 19:09	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/27/19 19:09	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	03/27/19 19:09	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
m&p-Xylene	ug/L	<0.31	1.0	0.31	03/27/19 19:09	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
Methylene Chloride	ug/L	<0.98	4.0	0.98	03/27/19 19:09	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	03/27/19 19:09	MN
n-Propylbenzene	ug/L	<0.10	0.50	0.10	03/27/19 19:09	
Naphthalene	ug/L	<0.48	1.0	0.48	03/27/19 19:09	
o-Xylene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	03/27/19 19:09	MN
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	03/27/19 19:09	
Styrene	ug/L	<0.19	1.0	0.19	03/27/19 19:09	MN
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	03/27/19 19:09	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	03/27/19 19:09	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	03/27/19 19:09	MN
Tetrachloroethene	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	03/27/19 19:09	
Toluene	ug/L	<0.083	0.50	0.083	03/27/19 19:09	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	03/27/19 19:09	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	03/27/19 19:09	
Trichloroethene	ug/L	<0.15	0.40	0.15	03/27/19 19:09	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	03/27/19 19:09	
Vinyl acetate	ug/L	<1.1	10.0	1.1	03/27/19 19:09	
Vinyl chloride	ug/L	<0.092	0.20	0.092	03/27/19 19:09	
Xylene (Total)	ug/L	<0.31	1.5	0.31	03/27/19 19:09	
1,2-Dichloroethane-d4 (S)	%	104	75-136		03/27/19 19:09	
4-Bromofluorobenzene (S)	%	101	75-125		03/27/19 19:09	
Toluene-d8 (S)	%	105	75-125		03/27/19 19:09	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467828

LABORATORY CONTROL SAMPLE: 3222881

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.6	98	68-141	
1,1,1-Trichloroethane	ug/L	20	19.0	95	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	20.3	101	73-125	
1,1,2-Trichloroethane	ug/L	20	20.4	102	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	19.8	99	69-132	
1,1-Dichloroethane	ug/L	20	19.8	99	73-125	
1,1-Dichloroethene	ug/L	20	19.4	97	71-126	
1,1-Dichloropropene	ug/L	20	19.5	98	73-126	
1,2,3-Trichlorobenzene	ug/L	20	20.9	105	72-126	
1,2,3-Trichloropropane	ug/L	20	21.4	107	75-126	
1,2,4-Trichlorobenzene	ug/L	20	21.0	105	71-134	
1,2,4-Trimethylbenzene	ug/L	20	20.5	103	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	53.5	107	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	20.4	102	75-129	
1,2-Dichlorobenzene	ug/L	20	21.0	105	75-129	
1,2-Dichloroethane	ug/L	20	18.6	93	75-125	
1,2-Dichloroethene (Total)	ug/L	40	38.5	96	74-125	N2
1,2-Dichloropropane	ug/L	20	19.1	96	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.4	102	75-127	
1,3-Dichlorobenzene	ug/L	20	21.0	105	75-126	
1,3-Dichloropropane	ug/L	20	20.3	101	75-125	
1,4-Dichlorobenzene	ug/L	20	19.6	98	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	407	102	72-129	
2,2,4-Trimethylpentane	ug/L	20	18.0	90	72-128	N2
2,2-Dichloropropane	ug/L	20	19.6	98	65-138	
2-Butanone (MEK)	ug/L	100	95.9	96	59-144	
2-Chlorotoluene	ug/L	20	20.9	105	75-127	
2-Hexanone	ug/L	100	105	105	73-134	
4-Chlorotoluene	ug/L	20	21.7	109	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	104	104	62-141	
Acetone	ug/L	100	95.6	96	60-137	
Acrolein	ug/L	200	217	109	60-141	
Acrylonitrile	ug/L	200	202	101	75-129	
Benzene	ug/L	20	19.5	98	73-125	
Bromobenzene	ug/L	20	20.3	102	73-125	
Bromochloromethane	ug/L	20	19.1	95	75-135	
Bromodichloromethane	ug/L	20	19.5	97	75-125	
Bromoform	ug/L	20	21.6	108	67-136	
Bromomethane	ug/L	20	18.4	92	30-150	
Carbon disulfide	ug/L	20	20.8	104	47-137	
Carbon tetrachloride	ug/L	20	20.0	100	75-125	
Chlorobenzene	ug/L	20	19.4	97	75-125	
Chloroethane	ug/L	20	20.8	104	63-136	
Chloroform	ug/L	20	18.5	93	73-128	
Chloromethane	ug/L	20	20.4	102	55-130	
cis-1,2-Dichloroethene	ug/L	20	19.2	96	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.3	96	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467828

LABORATORY CONTROL SAMPLE: 3222881

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	19.3	97	75-125	
Dibromomethane	ug/L	20	20.7	103	75-125	
Dichlorodifluoromethane	ug/L	20	20.8	104	63-132	
Dichlorofluoromethane	ug/L	20	19.7	98	68-127	N2
Diisopropyl ether	ug/L	20	18.5	92	71-131	
Ethyl-tert-butyl ether	ug/L	20	19.0	95	75-125	
Ethylbenzene	ug/L	20	19.8	99	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.4	102	72-134	
Isopropylbenzene (Cumene)	ug/L	20	20.3	101	75-125	
m&p-Xylene	ug/L	40	45.3	113	75-126	
Methyl-tert-butyl ether	ug/L	20	19.3	97	75-125	
Methylene Chloride	ug/L	20	19.7	99	70-125	
n-Butylbenzene	ug/L	20	20.6	103	75-126	
n-Propylbenzene	ug/L	20	22.1	110	73-127	
Naphthalene	ug/L	20	21.9	109	63-128	
o-Xylene	ug/L	20	20.2	101	75-128	
p-Isopropyltoluene	ug/L	20	20.7	103	75-125	
sec-Butylbenzene	ug/L	20	20.5	102	75-126	
Styrene	ug/L	20	19.7	99	75-125	
tert-Amylmethyl ether	ug/L	20	19.4	97	75-125	
tert-Butyl Alcohol	ug/L	200	203	101	75-130	
tert-Butylbenzene	ug/L	20	20.2	101	75-131	
Tetrachloroethene	ug/L	20	20.3	102	74-125	
Tetrahydrofuran	ug/L	200	190	95	64-138	
Toluene	ug/L	20	18.2	91	74-125	
trans-1,2-Dichloroethene	ug/L	20	19.3	96	68-128	
trans-1,3-Dichloropropene	ug/L	20	20.7	103	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	52.1	104	60-127	
Trichloroethene	ug/L	20	19.7	99	75-127	
Trichlorofluoromethane	ug/L	20	21.2	106	72-133	
Vinyl acetate	ug/L	20	18.6	93	61-129	
Vinyl chloride	ug/L	20	20.9	104	75-128	
Xylene (Total)	ug/L	60	65.5	109	75-125	
1,2-Dichloroethane-d4 (S)	%			104	75-136	
4-Bromofluorobenzene (S)	%			99	75-125	
Toluene-d8 (S)	%			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222882 3222883

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10467825001 Result	Spike Conc.	Spike Conc.	MS Result						
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	18.8	20.3	94	102	75-140	8	30
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20.5	20.6	102	103	74-136	1	30
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	17.5	20.4	88	102	66-134	15	30
1,1,2-Trichloroethane	ug/L	<0.18	20	20	18.5	20.7	93	103	75-126	11	30

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467828

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3222882		3222883								
Parameter	Units	MS		MSD		MS	MSD	MS	MSD	% Rec	Limits	Max
		10467825001	Spike	Spike	Result							
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	22.1	23.0	110	115	65-146	4	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	21.8	20.3	109	102	68-132	7	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	21.5	21.0	108	105	66-139	2	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	20.8	20.6	104	103	67-134	1	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	19.8	22.5	99	113	67-129	13	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	17.6	20.8	88	104	69-128	17	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	20.8	23.2	104	116	65-140	11	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	20.0	22.9	100	114	71-133	14	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	43.0	54.0	86	108	54-138	23	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	18.7	20.2	93	101	68-125	8	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	20.0	22.9	100	114	74-136	13	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	17.0	18.0	85	90	68-125	6	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	44.2	39.7	110	99	71-126	11	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	17.9	19.2	89	96	67-125	7	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	20.3	22.8	102	114	68-137	11	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	20.3	23.1	102	115	75-131	13	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	19.1	20.1	95	100	71-125	5	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	18.9	21.4	94	107	74-126	12	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	345	412	86	103	68-125	18	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	22.8	20.5	114	102	54-129	11	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	22.7	21.8	113	109	69-139	4	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	71.3	86.4	71	86	54-144	19	30	
2-Chlorotoluene	ug/L	<0.16	20	20	20.7	23.5	103	118	75-134	13	30	
2-Hexanone	ug/L	<0.88	100	100	89.0	103	89	103	58-137	14	30	
4-Chlorotoluene	ug/L	<0.13	20	20	21.0	24.4	105	122	72-133	15	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	87.3	103	87	103	60-129	17	30	
Acetone	ug/L	<9.2	100	100	71.0	76.9	71	77	62-132	8	30	
Acrolein	ug/L	<1.2	200	200	279	304	140	152	30-150	9	30	M1
Acrylonitrile	ug/L	<0.91	200	200	190	201	95	100	68-125	5	30	
Benzene	ug/L	<0.10	20	20	19.2	20.1	96	100	68-125	4	30	
Bromobenzene	ug/L	<0.21	20	20	19.2	21.2	96	106	73-126	10	30	
Bromochloromethane	ug/L	<0.27	20	20	20.6	19.2	103	96	66-143	7	30	
Bromodichloromethane	ug/L	<0.22	20	20	18.2	19.8	91	99	74-125	8	30	
Bromoform	ug/L	<0.80	20	20	18.1	21.3	91	107	64-134	16	30	
Bromomethane	ug/L	<1.8	20	20	18.1	18.3	90	92	30-150	1	30	
Carbon disulfide	ug/L	<0.078	20	20	22.7	20.9	114	105	43-147	8	30	
Carbon tetrachloride	ug/L	0.77	20	20	22.7	22.3	110	108	71-143	2	30	
Chlorobenzene	ug/L	<0.17	20	20	18.5	20.0	93	100	75-125	8	30	
Chloroethane	ug/L	<0.49	20	20	20.8	21.6	104	108	75-129	4	30	
Chloroform	ug/L	<0.45	20	20	18.8	18.7	94	93	66-132	1	30	
Chloromethane	ug/L	<0.16	20	20	20.9	21.1	104	106	53-137	1	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	21.4	19.4	107	97	67-133	10	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	16.6	17.5	83	87	66-125	5	30	
Dibromochloromethane	ug/L	<0.12	20	20	18.3	19.8	92	99	62-132	8	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467828

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222882												3222883	
Parameter	Units	10467825001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
Dibromomethane	ug/L	<0.16	20	20	18.2	20.8	91	104	67-125	13	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	24.2	24.4	121	122	71-142	1	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	21.6	21.6	108	108	70-131	0	30 N2		
Diisopropyl ether	ug/L	<0.13	20	20	19.0	19.4	95	97	63-131	2	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	19.3	19.6	97	98	66-128	2	30		
Ethylbenzene	ug/L	<0.14	20	20	20.0	21.7	100	109	74-126	8	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	25.2	21.8	126	109	68-143	14	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20.9	22.9	104	115	74-130	9	30		
m&p-Xylene	ug/L	<0.31	40	40	45.6	50.4	114	126	69-132	10	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.4	19.8	97	99	65-131	2	30		
Methylene Chloride	ug/L	<0.98	20	20	20.1	19.5	100	98	57-125	3	30		
n-Butylbenzene	ug/L	<0.24	20	20	22.1	23.1	111	116	71-131	4	30		
n-Propylbenzene	ug/L	<0.10	20	20	22.8	25.3	114	127	67-138	11	30		
Naphthalene	ug/L	<0.48	20	20	18.7	23.6	93	118	60-130	23	30		
o-Xylene	ug/L	<0.16	20	20	19.9	22.0	100	110	69-131	10	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	22.1	23.1	110	116	72-133	5	30		
sec-Butylbenzene	ug/L	<0.15	20	20	22.2	23.3	111	117	73-134	5	30		
Styrene	ug/L	<0.19	20	20	19.2	21.1	96	106	72-125	10	30		
tert-Amylmethyl ether	ug/L	<0.11	20	20	17.4	19.8	87	99	67-125	13	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	192	198	96	99	64-137	3	30		
tert-Butylbenzene	ug/L	<0.15	20	20	21.5	22.7	107	113	70-143	5	30		
Tetrachloroethene	ug/L	<0.17	20	20	19.8	22.9	99	114	72-129	14	30		
Tetrahydrofuran	ug/L	<2.2	200	200	174	190	87	95	66-128	8	30		
Toluene	ug/L	<0.083	20	20	18.3	19.3	91	96	73-125	5	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	22.8	20.3	114	101	62-137	12	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	19.8	21.0	99	105	61-136	5	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	45.7	52.4	91	105	45-128	14	30		
Trichloroethene	ug/L	<0.15	20	20	20.3	20.6	102	103	74-132	1	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	24.3	24.4	122	122	75-139	0	30		
Vinyl acetate	ug/L	<1.1	20	20	18.5	19.2	92	96	51-135	4	30		
Vinyl chloride	ug/L	<0.092	20	20	23.5	22.8	118	114	68-146	3	30		
Xylene (Total)	ug/L	<0.31	60	60	65.6	72.4	109	121	67-137	10	30		
1,2-Dichloroethane-d4 (S)	%						105	103	75-136				
4-Bromofluorobenzene (S)	%						101	99	75-125				
Toluene-d8 (S)	%						101	99	75-125				

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222884												3222885	
Parameter	Units	10467831001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20.0	21.0	100	105	75-140	5	30		
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20.1	20.5	101	103	74-136	2	30		
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20.0	21.6	100	108	66-134	8	30		
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20.2	20.7	101	103	75-126	2	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467828

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3222884		3222885									
Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		10467831001	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	21.6	23.1	108	116	65-146	7	30		
1,1-Dichloroethane	ug/L	<0.17	20	20	19.7	20.7	99	104	68-132	5	30		
1,1-Dichloroethene	ug/L	<0.16	20	20	20.3	20.0	102	100	66-139	2	30		
1,1-Dichloropropene	ug/L	<0.20	20	20	20.1	21.7	100	109	67-134	8	30		
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	22.4	23.9	112	119	67-129	6	30		
1,2,3-Trichloropropane	ug/L	<0.26	20	20	20.8	21.7	104	108	69-128	4	30		
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	22.1	24.2	110	121	65-140	9	30		
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	21.5	23.1	107	115	71-133	7	30		
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	52.3	57.8	105	116	54-138	10	30		
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	20.4	20.6	102	103	68-125	1	30		
1,2-Dichlorobenzene	ug/L	<0.14	20	20	21.6	23.6	108	118	74-136	9	30		
1,2-Dichloroethane	ug/L	<0.22	20	20	17.7	18.6	89	93	68-125	5	30		
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	39.4	39.8	99	99	71-126	1	30	N2	
1,2-Dichloropropane	ug/L	<0.16	20	20	19.4	19.3	97	96	67-125	1	30		
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	21.4	23.2	107	116	68-137	8	30		
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.1	23.5	105	117	75-131	11	30		
1,3-Dichloropropane	ug/L	<0.070	20	20	19.9	20.9	99	105	71-125	5	30		
1,4-Dichlorobenzene	ug/L	<0.17	20	20	19.9	22.0	99	110	74-126	10	30		
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	376	401	94	100	68-125	6	30		
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	21.7	21.4	108	107	54-129	1	30	N2	
2,2-Dichloropropane	ug/L	<0.17	20	20	20.7	21.7	104	108	69-139	5	30		
2-Butanone (MEK)	ug/L	<0.99	100	100	83.1	86.9	83	87	54-144	4	30		
2-Chlorotoluene	ug/L	<0.16	20	20	22.0	24.1	110	121	75-134	9	30		
2-Hexanone	ug/L	<0.88	100	100	101	105	101	105	58-137	4	30		
4-Chlorotoluene	ug/L	<0.13	20	20	22.7	24.7	114	124	72-133	8	30		
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	102	106	102	106	60-129	4	30		
Acetone	ug/L	<9.2	100	100	74.8	78.7	75	79	62-132	5	30		
Acrolein	ug/L	<1.2	200	200	284	297	142	148	30-150	4	30		
Acrylonitrile	ug/L	<0.91	200	200	187	198	93	99	68-125	6	30		
Benzene	ug/L	<0.10	20	20	19.4	20.3	97	102	68-125	5	30		
Bromobenzene	ug/L	<0.21	20	20	20.4	22.1	102	111	73-126	8	30		
Bromochloromethane	ug/L	<0.27	20	20	19.2	19.3	96	97	66-143	0	30		
Bromodichloromethane	ug/L	<0.22	20	20	19.1	19.2	96	96	74-125	0	30		
Bromoform	ug/L	<0.80	20	20	20.9	22.2	104	111	64-134	6	30		
Bromomethane	ug/L	<1.8	20	20	17.4	18.0	87	90	30-150	3	30		
Carbon disulfide	ug/L	<0.078	20	20	21.8	20.6	109	103	43-147	6	30		
Carbon tetrachloride	ug/L	<0.19	20	20	21.0	22.2	105	111	71-143	6	30		
Chlorobenzene	ug/L	<0.17	20	20	19.7	20.8	99	104	75-125	5	30		
Chloroethane	ug/L	<0.49	20	20	21.3	21.5	107	107	75-129	1	30		
Chloroform	ug/L	<0.45	20	20	18.0	19.0	90	95	66-132	5	30		
Chloromethane	ug/L	<0.16	20	20	19.7	20.9	99	105	53-137	6	30		
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	19.2	19.8	96	99	67-133	3	30		
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	17.4	17.2	87	86	66-125	1	30		
Dibromochloromethane	ug/L	<0.12	20	20	19.3	20.1	96	101	62-132	4	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467828

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222884												3222885	
Parameter	Units	10467831001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max		Qual	
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD		
Dibromomethane	ug/L	<0.16	20	20	19.8	19.9	99	100	67-125	1	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	23.4	23.7	117	118	71-142	1	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	20.6	21.1	103	105	70-131	2	30	N2	
Diisopropyl ether	ug/L	<0.13	20	20	18.6	19.4	93	97	63-131	4	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	19.1	20.2	95	101	66-128	5	30		
Ethylbenzene	ug/L	<0.14	20	20	21.0	22.6	105	113	74-126	7	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	23.4	22.3	117	111	68-143	5	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	21.4	23.7	107	118	74-130	10	30		
m&p-Xylene	ug/L	<0.31	40	40	48.2	51.7	120	129	69-132	7	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.5	20.1	98	100	65-131	3	30		
Methylene Chloride	ug/L	<0.98	20	20	18.8	19.3	94	96	57-125	3	30		
n-Butylbenzene	ug/L	<0.24	20	20	22.6	23.4	113	117	71-131	3	30		
n-Propylbenzene	ug/L	<0.10	20	20	23.7	26.2	119	131	67-138	10	30		
Naphthalene	ug/L	<0.48	20	20	21.7	24.3	108	122	60-130	11	30		
o-Xylene	ug/L	<0.16	20	20	20.9	22.3	104	112	69-131	7	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	22.3	23.7	111	118	72-133	6	30		
sec-Butylbenzene	ug/L	<0.15	20	20	22.5	23.8	113	119	73-134	6	30		
Styrene	ug/L	<0.19	20	20	20.2	21.6	101	108	72-125	7	30		
tert-Amylmethyl ether	ug/L	<0.11	20	20	19.2	20.3	96	101	67-125	6	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	188	201	94	100	64-137	7	30		
tert-Butylbenzene	ug/L	<0.15	20	20	21.9	23.7	109	119	70-143	8	30		
Tetrachloroethene	ug/L	<0.17	20	20	21.7	23.6	108	118	72-129	9	30		
Tetrahydrofuran	ug/L	<2.2	200	200	185	198	92	99	66-128	7	30		
Toluene	ug/L	<0.083	20	20	19.4	20.3	97	101	73-125	4	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	20.3	20.0	101	100	62-137	1	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	20.8	21.7	104	108	61-136	4	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	50.7	54.3	101	109	45-128	7	30		
Trichloroethene	ug/L	<0.15	20	20	20.2	22.0	101	110	74-132	8	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	23.1	23.9	115	120	75-139	4	30		
Vinyl acetate	ug/L	<1.1	20	20	18.8	19.8	94	99	51-135	5	30		
Vinyl chloride	ug/L	<0.092	20	20	22.2	22.6	111	113	68-146	2	30		
Xylene (Total)	ug/L	<0.31	60	60	69.1	74.0	115	123	67-137	7	30		
1,2-Dichloroethane-d4 (S)	%						103	105	75-136				
4-Bromofluorobenzene (S)	%						101	103	75-125				
Toluene-d8 (S)	%						101	101	75-125				

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222886												3222887	
Parameter	Units	10467835001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max		Qual	
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD		
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	19.1	20.8	95	104	75-140	9	30		
1,1,1-Trichloroethane	ug/L	<0.14	20	20	19.7	20.7	99	103	74-136	5	30		
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20.4	20.8	102	104	66-134	2	30		
1,1,2-Trichloroethane	ug/L	<0.18	20	20	19.1	20.4	96	102	75-126	7	30		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467828

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3222886		3222887									
Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		10467835001	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	21.0	22.8	105	114	65-146	8	30		
1,1-Dichloroethane	ug/L	<0.17	20	20	19.7	20.5	98	103	68-132	4	30		
1,1-Dichloroethene	ug/L	<0.16	20	20	19.8	20.9	99	104	66-139	5	30		
1,1-Dichloropropene	ug/L	<0.20	20	20	19.9	20.8	99	104	67-134	5	30		
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	21.6	23.9	108	120	67-129	10	30		
1,2,3-Trichloropropane	ug/L	<0.26	20	20	20.1	20.7	101	103	69-128	3	30		
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	21.5	23.7	108	119	65-140	10	30		
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	20.3	22.9	102	114	71-133	12	30		
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	53.5	56.2	107	112	54-138	5	30		
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	19.8	21.0	99	105	68-125	6	30		
1,2-Dichlorobenzene	ug/L	<0.14	20	20	21.0	23.9	105	120	74-136	13	30		
1,2-Dichloroethane	ug/L	<0.22	20	20	17.6	18.1	88	90	68-125	3	30		
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	38.5	39.9	96	100	71-126	4	30	N2	
1,2-Dichloropropane	ug/L	<0.16	20	20	18.9	19.6	95	98	67-125	3	30		
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	20.4	22.9	102	115	68-137	12	30		
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.3	23.8	107	119	75-131	11	30		
1,3-Dichloropropane	ug/L	<0.070	20	20	19.6	20.1	98	101	71-125	3	30		
1,4-Dichlorobenzene	ug/L	<0.17	20	20	19.9	22.3	99	111	74-126	11	30		
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	386	416	96	104	68-125	7	30		
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	20.6	19.8	103	99	54-129	4	30	N2	
2,2-Dichloropropane	ug/L	<0.17	20	20	20.8	21.4	104	107	69-139	3	30		
2-Butanone (MEK)	ug/L	<0.99	100	100	84.0	81.4	84	81	54-144	3	30		
2-Chlorotoluene	ug/L	<0.16	20	20	21.5	24.0	107	120	75-134	11	30		
2-Hexanone	ug/L	<0.88	100	100	101	101	101	101	58-137	0	30		
4-Chlorotoluene	ug/L	<0.13	20	20	21.9	24.3	110	121	72-133	10	30		
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	99.9	101	100	101	60-129	1	30		
Acetone	ug/L	<9.2	100	100	70.2	76.7	70	77	62-132	9	30		
Acrolein	ug/L	<1.2	200	200	282	289	141	145	30-150	3	30		
Acrylonitrile	ug/L	<0.91	200	200	184	192	92	96	68-125	4	30		
Benzene	ug/L	<0.10	20	20	19.1	19.7	96	99	68-125	3	30		
Bromobenzene	ug/L	<0.21	20	20	20.5	22.2	102	111	73-126	8	30		
Bromochloromethane	ug/L	<0.27	20	20	18.6	19.3	93	96	66-143	3	30		
Bromodichloromethane	ug/L	<0.22	20	20	18.8	19.7	94	99	74-125	5	30		
Bromoform	ug/L	<0.80	20	20	20.4	21.4	102	107	64-134	5	30		
Bromomethane	ug/L	<1.8	20	20	16.9	17.3	85	86	30-150	2	30		
Carbon disulfide	ug/L	<0.078	20	20	21.0	20.5	105	103	43-147	2	30		
Carbon tetrachloride	ug/L	<0.19	20	20	20.6	22.2	103	111	71-143	8	30		
Chlorobenzene	ug/L	<0.17	20	20	19.2	20.5	96	103	75-125	7	30		
Chloroethane	ug/L	<0.49	20	20	20.7	20.2	104	101	75-129	2	30		
Chloroform	ug/L	<0.45	20	20	17.5	18.4	88	92	66-132	5	30		
Chloromethane	ug/L	<0.16	20	20	19.5	19.8	98	99	53-137	2	30		
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	18.7	19.5	94	98	67-133	4	30		
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	17.1	17.6	86	88	66-125	3	30		
Dibromochloromethane	ug/L	<0.12	20	20	18.8	20.0	94	100	62-132	6	30		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467828

Parameter	Units	3222886		3222887		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		10467835001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Dibromomethane	ug/L	<0.16	20	20	19.9	20.5	99	103	67-125	3	30	
Dichlorodifluoromethane	ug/L	<0.23	20	20	21.8	23.0	109	115	71-142	5	30	
Dichlorofluoromethane	ug/L	<0.14	20	20	19.7	20.2	98	101	70-131	3	30	N2
Diisopropyl ether	ug/L	<0.13	20	20	17.8	19.0	89	95	63-131	6	30	
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	18.5	19.7	93	99	66-128	6	30	
Ethylbenzene	ug/L	<0.14	20	20	20.1	22.0	101	110	74-126	9	30	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	22.7	22.0	113	110	68-143	3	30	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20.7	23.3	103	117	74-130	12	30	
m&p-Xylene	ug/L	<0.31	40	40	46.4	51.7	116	129	69-132	11	30	
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.1	19.8	95	99	65-131	4	30	
Methylene Chloride	ug/L	<0.98	20	20	18.6	19.2	92	95	57-125	3	30	
n-Butylbenzene	ug/L	<0.24	20	20	21.9	22.7	110	113	71-131	3	30	
n-Propylbenzene	ug/L	<0.10	20	20	23.0	25.5	115	127	67-138	10	30	
Naphthalene	ug/L	<0.48	20	20	21.8	24.0	109	120	60-130	10	30	
o-Xylene	ug/L	<0.16	20	20	20.1	22.7	101	113	69-131	12	30	
p-Isopropyltoluene	ug/L	<0.15	20	20	21.7	23.5	109	118	72-133	8	30	
sec-Butylbenzene	ug/L	<0.15	20	20	21.6	23.5	108	117	73-134	8	30	
Styrene	ug/L	<0.19	20	20	19.4	21.1	97	106	72-125	9	30	
tert-Amylmethyl ether	ug/L	<0.11	20	20	18.7	19.5	93	97	67-125	4	30	
tert-Butyl Alcohol	ug/L	<1.2	200	200	183	196	92	98	64-137	7	30	
tert-Butylbenzene	ug/L	<0.15	20	20	21.3	23.4	106	117	70-143	10	30	
Tetrachloroethene	ug/L	<0.17	20	20	21.0	22.9	105	114	72-129	9	30	
Tetrahydrofuran	ug/L	<2.2	200	200	183	192	92	96	66-128	5	30	
Toluene	ug/L	<0.083	20	20	18.6	19.4	93	97	73-125	4	30	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	19.7	20.4	99	102	62-137	3	30	
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	20.5	20.7	103	103	61-136	1	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	50.5	51.7	101	103	45-128	2	30	
Trichloroethene	ug/L	<0.15	20	20	19.9	20.8	99	104	74-132	5	30	
Trichlorofluoromethane	ug/L	<0.23	20	20	22.4	23.7	112	119	75-139	6	30	
Vinyl acetate	ug/L	<1.1	20	20	18.4	18.7	92	93	51-135	2	30	
Vinyl chloride	ug/L	<0.092	20	20	21.3	21.6	107	108	68-146	1	30	
Xylene (Total)	ug/L	<0.31	60	60	66.5	74.4	111	124	67-137	11	30	
1,2-Dichloroethane-d4 (S)	%						104	105	75-136			
4-Bromofluorobenzene (S)	%						100	99	75-125			
Toluene-d8 (S)	%						100	99	75-125			

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467828

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

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

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467828

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467828

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10467828001	Reed-GW-032119	EPA 8260B	596124		

REPORT OF LABORATORY ANALYSIS

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WO#: 10467828



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

ITEM #	SAMPLE ID <small>One Character per box. (A-Z, 0-9 / , , -) Sample Ids must be unique</small>	MATRIX CODE <small>(see valid codes to left)</small>	SAMPLE TYPE <small>(C=GRAB C=COMP)</small>	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Analyses Test <small>Low Level VOCs by 8260 6010/7470 TAL Dissolved Metals*</small>	Requested Analysis Filtered (Y/N)																										
				DATE	TIME			Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other		Y	N	Y	N	Y	N	Y	N																			
1	Reed-GW-032119	W	G	03/21/19	1400	-	3																																		
2																																									
3																																									
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10																																									
11																																									
12																																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS				
Short hold analyses are in bold	Natalie Dandy	03/21/19	17:00	<i>EJ Pace</i>	3/21/19	08:30	0-6	Y	Y	Y	
*Field filtered by client	JACOBS						R-P				
							1.7				
							0.6				

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on Ice (Y/N)	Custody Sealed (Y/N)	Cooler (Y/N)	Samples intact (Y/N)
PRINT Name of SAMPLER: Natalie Dandy	SIGNATURE of SAMPLER: <i>Natalie Dandy</i>					
	DATE Signed: 03/21/19					

Sample Condition Upon Receipt

Client Name: Ch2m Hill Project #: _____

WO#: 10467828
 PM: JMG Due Date: 04/05/19
 CLIENT: UPRR_CH2M

Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception

Tracking Number: 7478 9397 2337/2322/2311/2344

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

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

Thermometer: G87A9155100842 G87A9170600254 Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: 0.6, 4.4, 1.7, 0.6 °C Average Corrected Temp (no temp blank only): _____ °C See Exceptions

Correction Factor: Time Cooler Temp Corrected w/temp blank: 0.6, 4.4, 1.7, 0.6 °C

USDA Regulated Soil: (N/A, water sample/Other: _____) Date/Initials of Person Examining Contents: JE 3/22/19

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

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

	COMMENTS:
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: _____ See Exception <input type="checkbox"/>
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	
All containers needing acid/base preservation have been checked? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. Sample # _____ <input type="checkbox"/> NaOH <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide) <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No See Exception <input type="checkbox"/>
Exceptions (VOA) Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No See Exception <input type="checkbox"/>
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. See Exception <input type="checkbox"/>
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. <u>SHARED w/ wo: 10467822</u>
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): <u>194048</u>

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: Mark Ochsner Date/Time: 06/27/18 Field Data Required? Yes No

Comments/Resolution: WA certs not required for 8260 2,2,4-TMP or dichlorofluoromethane.

Project Manager Review: JENNI GROSS Date: 03/22/19

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

Labelled by: EOT

March 29, 2019

David Hodson
Jacobs
2020 SW 4th Ave
#300
Portland, OR 97201

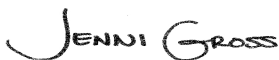
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467830

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 22, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Steve Demus, CH2M Hill
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467830

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467830

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10467830001	Lang-GW-032119	Water	03/21/19 13:30	03/22/19 08:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467830

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10467830001	Lang-GW-032119	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467830

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

General Information:

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

Hold Time:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Internal Standards:

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

Surrogates:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 596124

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s):
10467825001,10467831001,10467835001

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

- MSD (Lab ID: 3222883)
 - Acrolein

Additional Comments:

Analyte Comments:

QC Batch: 596124

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3222880)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467830

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

Analyte Comments:

QC Batch: 596124

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3222880)
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3222881)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- Lang-GW-032119 (Lab ID: 10467830001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3222882)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3222884)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3222886)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3222883)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3222885)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3222887)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Project No.: 10467830

Sample: Lang-GW-032119 Lab ID: 10467830001 Collected: 03/21/19 13:30 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/27/19 23:06	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/27/19 23:06	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/27/19 23:06	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/27/19 23:06	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/27/19 23:06	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/27/19 23:06	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/27/19 23:06	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		03/27/19 23:06	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/27/19 23:06	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/27/19 23:06	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/27/19 23:06	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/27/19 23:06	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/27/19 23:06	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/27/19 23:06	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/27/19 23:06	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/27/19 23:06	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/27/19 23:06	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/27/19 23:06	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		03/27/19 23:06	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/27/19 23:06	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/27/19 23:06	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/27/19 23:06	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/27/19 23:06	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/27/19 23:06	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/27/19 23:06	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/27/19 23:06	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/27/19 23:06	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		03/27/19 23:06	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/27/19 23:06	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/27/19 23:06	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/27/19 23:06	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/27/19 23:06	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/27/19 23:06	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/27/19 23:06	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/27/19 23:06	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/27/19 23:06	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/27/19 23:06	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/27/19 23:06	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/27/19 23:06	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/27/19 23:06	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/27/19 23:06	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/27/19 23:06	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/27/19 23:06	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/27/19 23:06	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/27/19 23:06	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/27/19 23:06	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467830

Sample: Lang-GW-032119 **Lab ID: 10467830001** Collected: 03/21/19 13:30 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/27/19 23:06	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/27/19 23:06	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/27/19 23:06	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/27/19 23:06	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/27/19 23:06	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/27/19 23:06	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/27/19 23:06	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		03/27/19 23:06	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/27/19 23:06	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/27/19 23:06	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/27/19 23:06	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/27/19 23:06	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/27/19 23:06	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/27/19 23:06	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		03/27/19 23:06	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/27/19 23:06	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/27/19 23:06	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/27/19 23:06	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/27/19 23:06	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/27/19 23:06	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/27/19 23:06	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/27/19 23:06	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/27/19 23:06	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/27/19 23:06	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/27/19 23:06	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/27/19 23:06	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/27/19 23:06	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/27/19 23:06	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/27/19 23:06	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/27/19 23:06	75-65-0	
tert-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/27/19 23:06	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/27/19 23:06	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		03/27/19 23:06	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/27/19 23:06	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%	75-136		1		03/27/19 23:06	17060-07-0	
Toluene-d8 (S)	109	%	75-125		1		03/27/19 23:06	2037-26-5	
4-Bromofluorobenzene (S)	100	%	75-125		1		03/27/19 23:06	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467830

QC Batch: 596124

Analysis Method: EPA 8260B

QC Batch Method: EPA 8260B

Analysis Description: 8260 MSV LL Water

Associated Lab Samples: 10467830001

METHOD BLANK: 3222880

Matrix: Water

Associated Lab Samples: 10467830001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	03/27/19 19:09	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	03/27/19 19:09	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	03/27/19 19:09	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	03/27/19 19:09	MN
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	03/27/19 19:09	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	03/27/19 19:09	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	03/27/19 19:09	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	03/27/19 19:09	MN
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	03/27/19 19:09	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	03/27/19 19:09	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	03/27/19 19:09	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	03/27/19 19:09	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	03/27/19 19:09	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	03/27/19 19:09	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	03/27/19 19:09	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	03/27/19 19:09	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	03/27/19 19:09	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	03/27/19 19:09	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	03/27/19 19:09	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	03/27/19 19:09	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
2-Hexanone	ug/L	<0.88	5.0	0.88	03/27/19 19:09	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/27/19 19:09	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	03/27/19 19:09	
Acetone	ug/L	<9.2	20.0	9.2	03/27/19 19:09	
Acrolein	ug/L	<1.2	10.0	1.2	03/27/19 19:09	
Acrylonitrile	ug/L	<0.91	10.0	0.91	03/27/19 19:09	
Benzene	ug/L	<0.10	0.50	0.10	03/27/19 19:09	
Bromobenzene	ug/L	<0.21	0.50	0.21	03/27/19 19:09	
Bromochloromethane	ug/L	<0.27	1.0	0.27	03/27/19 19:09	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	03/27/19 19:09	
Bromoform	ug/L	<0.80	4.0	0.80	03/27/19 19:09	
Bromomethane	ug/L	<1.8	4.0	1.8	03/27/19 19:09	
Carbon disulfide	ug/L	<0.078	1.0	0.078	03/27/19 19:09	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	03/27/19 19:09	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467830

METHOD BLANK: 3222880

Matrix: Water

Associated Lab Samples: 10467830001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
Chloroethane	ug/L	<0.49	1.0	0.49	03/27/19 19:09	
Chloroform	ug/L	<0.45	4.0	0.45	03/27/19 19:09	MN
Chloromethane	ug/L	<0.16	4.0	0.16	03/27/19 19:09	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	03/27/19 19:09	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	03/27/19 19:09	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	03/27/19 19:09	
Dibromomethane	ug/L	<0.16	1.0	0.16	03/27/19 19:09	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	03/27/19 19:09	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	03/27/19 19:09	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	03/27/19 19:09	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/27/19 19:09	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	03/27/19 19:09	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
m&p-Xylene	ug/L	<0.31	1.0	0.31	03/27/19 19:09	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
Methylene Chloride	ug/L	<0.98	4.0	0.98	03/27/19 19:09	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	03/27/19 19:09	MN
n-Propylbenzene	ug/L	<0.10	0.50	0.10	03/27/19 19:09	
Naphthalene	ug/L	<0.48	1.0	0.48	03/27/19 19:09	
o-Xylene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	03/27/19 19:09	MN
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	03/27/19 19:09	
Styrene	ug/L	<0.19	1.0	0.19	03/27/19 19:09	MN
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	03/27/19 19:09	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	03/27/19 19:09	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	03/27/19 19:09	MN
Tetrachloroethene	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	03/27/19 19:09	
Toluene	ug/L	<0.083	0.50	0.083	03/27/19 19:09	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	03/27/19 19:09	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	03/27/19 19:09	
Trichloroethene	ug/L	<0.15	0.40	0.15	03/27/19 19:09	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	03/27/19 19:09	
Vinyl acetate	ug/L	<1.1	10.0	1.1	03/27/19 19:09	
Vinyl chloride	ug/L	<0.092	0.20	0.092	03/27/19 19:09	
Xylene (Total)	ug/L	<0.31	1.5	0.31	03/27/19 19:09	
1,2-Dichloroethane-d4 (S)	%	104	75-136		03/27/19 19:09	
4-Bromofluorobenzene (S)	%	101	75-125		03/27/19 19:09	
Toluene-d8 (S)	%	105	75-125		03/27/19 19:09	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467830

LABORATORY CONTROL SAMPLE: 3222881

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.6	98	68-141	
1,1,1-Trichloroethane	ug/L	20	19.0	95	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	20.3	101	73-125	
1,1,2-Trichloroethane	ug/L	20	20.4	102	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	19.8	99	69-132	
1,1-Dichloroethane	ug/L	20	19.8	99	73-125	
1,1-Dichloroethene	ug/L	20	19.4	97	71-126	
1,1-Dichloropropene	ug/L	20	19.5	98	73-126	
1,2,3-Trichlorobenzene	ug/L	20	20.9	105	72-126	
1,2,3-Trichloropropane	ug/L	20	21.4	107	75-126	
1,2,4-Trichlorobenzene	ug/L	20	21.0	105	71-134	
1,2,4-Trimethylbenzene	ug/L	20	20.5	103	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	53.5	107	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	20.4	102	75-129	
1,2-Dichlorobenzene	ug/L	20	21.0	105	75-129	
1,2-Dichloroethane	ug/L	20	18.6	93	75-125	
1,2-Dichloroethene (Total)	ug/L	40	38.5	96	74-125	N2
1,2-Dichloropropane	ug/L	20	19.1	96	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.4	102	75-127	
1,3-Dichlorobenzene	ug/L	20	21.0	105	75-126	
1,3-Dichloropropane	ug/L	20	20.3	101	75-125	
1,4-Dichlorobenzene	ug/L	20	19.6	98	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	407	102	72-129	
2,2,4-Trimethylpentane	ug/L	20	18.0	90	72-128	N2
2,2-Dichloropropane	ug/L	20	19.6	98	65-138	
2-Butanone (MEK)	ug/L	100	95.9	96	59-144	
2-Chlorotoluene	ug/L	20	20.9	105	75-127	
2-Hexanone	ug/L	100	105	105	73-134	
4-Chlorotoluene	ug/L	20	21.7	109	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	104	104	62-141	
Acetone	ug/L	100	95.6	96	60-137	
Acrolein	ug/L	200	217	109	60-141	
Acrylonitrile	ug/L	200	202	101	75-129	
Benzene	ug/L	20	19.5	98	73-125	
Bromobenzene	ug/L	20	20.3	102	73-125	
Bromochloromethane	ug/L	20	19.1	95	75-135	
Bromodichloromethane	ug/L	20	19.5	97	75-125	
Bromoform	ug/L	20	21.6	108	67-136	
Bromomethane	ug/L	20	18.4	92	30-150	
Carbon disulfide	ug/L	20	20.8	104	47-137	
Carbon tetrachloride	ug/L	20	20.0	100	75-125	
Chlorobenzene	ug/L	20	19.4	97	75-125	
Chloroethane	ug/L	20	20.8	104	63-136	
Chloroform	ug/L	20	18.5	93	73-128	
Chloromethane	ug/L	20	20.4	102	55-130	
cis-1,2-Dichloroethene	ug/L	20	19.2	96	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.3	96	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467830

LABORATORY CONTROL SAMPLE: 3222881

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	19.3	97	75-125	
Dibromomethane	ug/L	20	20.7	103	75-125	
Dichlorodifluoromethane	ug/L	20	20.8	104	63-132	
Dichlorofluoromethane	ug/L	20	19.7	98	68-127	N2
Diisopropyl ether	ug/L	20	18.5	92	71-131	
Ethyl-tert-butyl ether	ug/L	20	19.0	95	75-125	
Ethylbenzene	ug/L	20	19.8	99	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.4	102	72-134	
Isopropylbenzene (Cumene)	ug/L	20	20.3	101	75-125	
m&p-Xylene	ug/L	40	45.3	113	75-126	
Methyl-tert-butyl ether	ug/L	20	19.3	97	75-125	
Methylene Chloride	ug/L	20	19.7	99	70-125	
n-Butylbenzene	ug/L	20	20.6	103	75-126	
n-Propylbenzene	ug/L	20	22.1	110	73-127	
Naphthalene	ug/L	20	21.9	109	63-128	
o-Xylene	ug/L	20	20.2	101	75-128	
p-Isopropyltoluene	ug/L	20	20.7	103	75-125	
sec-Butylbenzene	ug/L	20	20.5	102	75-126	
Styrene	ug/L	20	19.7	99	75-125	
tert-Amylmethyl ether	ug/L	20	19.4	97	75-125	
tert-Butyl Alcohol	ug/L	200	203	101	75-130	
tert-Butylbenzene	ug/L	20	20.2	101	75-131	
Tetrachloroethene	ug/L	20	20.3	102	74-125	
Tetrahydrofuran	ug/L	200	190	95	64-138	
Toluene	ug/L	20	18.2	91	74-125	
trans-1,2-Dichloroethene	ug/L	20	19.3	96	68-128	
trans-1,3-Dichloropropene	ug/L	20	20.7	103	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	52.1	104	60-127	
Trichloroethene	ug/L	20	19.7	99	75-127	
Trichlorofluoromethane	ug/L	20	21.2	106	72-133	
Vinyl acetate	ug/L	20	18.6	93	61-129	
Vinyl chloride	ug/L	20	20.9	104	75-128	
Xylene (Total)	ug/L	60	65.5	109	75-125	
1,2-Dichloroethane-d4 (S)	%			104	75-136	
4-Bromofluorobenzene (S)	%			99	75-125	
Toluene-d8 (S)	%			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222882 3222883

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10467825001 Result	Spike Conc.	Spike Conc.	MS Result						
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	18.8	20.3	94	102	75-140	8	30
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20.5	20.6	102	103	74-136	1	30
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	17.5	20.4	88	102	66-134	15	30
1,1,2-Trichloroethane	ug/L	<0.18	20	20	18.5	20.7	93	103	75-126	11	30

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467830

Parameter	Units	10467825001		3222882		3222883		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	22.1	23.0	110	115	65-146	4	30		
1,1-Dichloroethane	ug/L	<0.17	20	20	21.8	20.3	109	102	68-132	7	30		
1,1-Dichloroethene	ug/L	<0.16	20	20	21.5	21.0	108	105	66-139	2	30		
1,1-Dichloropropene	ug/L	<0.20	20	20	20.8	20.6	104	103	67-134	1	30		
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	19.8	22.5	99	113	67-129	13	30		
1,2,3-Trichloropropane	ug/L	<0.26	20	20	17.6	20.8	88	104	69-128	17	30		
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	20.8	23.2	104	116	65-140	11	30		
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	20.0	22.9	100	114	71-133	14	30		
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	43.0	54.0	86	108	54-138	23	30		
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	18.7	20.2	93	101	68-125	8	30		
1,2-Dichlorobenzene	ug/L	<0.14	20	20	20.0	22.9	100	114	74-136	13	30		
1,2-Dichloroethane	ug/L	<0.22	20	20	17.0	18.0	85	90	68-125	6	30		
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	44.2	39.7	110	99	71-126	11	30	N2	
1,2-Dichloropropane	ug/L	<0.16	20	20	17.9	19.2	89	96	67-125	7	30		
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	20.3	22.8	102	114	68-137	11	30		
1,3-Dichlorobenzene	ug/L	<0.16	20	20	20.3	23.1	102	115	75-131	13	30		
1,3-Dichloropropane	ug/L	<0.070	20	20	19.1	20.1	95	100	71-125	5	30		
1,4-Dichlorobenzene	ug/L	<0.17	20	20	18.9	21.4	94	107	74-126	12	30		
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	345	412	86	103	68-125	18	30		
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	22.8	20.5	114	102	54-129	11	30	N2	
2,2-Dichloropropane	ug/L	<0.17	20	20	22.7	21.8	113	109	69-139	4	30		
2-Butanone (MEK)	ug/L	<0.99	100	100	71.3	86.4	71	86	54-144	19	30		
2-Chlorotoluene	ug/L	<0.16	20	20	20.7	23.5	103	118	75-134	13	30		
2-Hexanone	ug/L	<0.88	100	100	89.0	103	89	103	58-137	14	30		
4-Chlorotoluene	ug/L	<0.13	20	20	21.0	24.4	105	122	72-133	15	30		
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	87.3	103	87	103	60-129	17	30		
Acetone	ug/L	<9.2	100	100	71.0	76.9	71	77	62-132	8	30		
Acrolein	ug/L	<1.2	200	200	279	304	140	152	30-150	9	30	M1	
Acrylonitrile	ug/L	<0.91	200	200	190	201	95	100	68-125	5	30		
Benzene	ug/L	<0.10	20	20	19.2	20.1	96	100	68-125	4	30		
Bromobenzene	ug/L	<0.21	20	20	19.2	21.2	96	106	73-126	10	30		
Bromochloromethane	ug/L	<0.27	20	20	20.6	19.2	103	96	66-143	7	30		
Bromodichloromethane	ug/L	<0.22	20	20	18.2	19.8	91	99	74-125	8	30		
Bromoform	ug/L	<0.80	20	20	18.1	21.3	91	107	64-134	16	30		
Bromomethane	ug/L	<1.8	20	20	18.1	18.3	90	92	30-150	1	30		
Carbon disulfide	ug/L	<0.078	20	20	22.7	20.9	114	105	43-147	8	30		
Carbon tetrachloride	ug/L	0.77	20	20	22.7	22.3	110	108	71-143	2	30		
Chlorobenzene	ug/L	<0.17	20	20	18.5	20.0	93	100	75-125	8	30		
Chloroethane	ug/L	<0.49	20	20	20.8	21.6	104	108	75-129	4	30		
Chloroform	ug/L	<0.45	20	20	18.8	18.7	94	93	66-132	1	30		
Chloromethane	ug/L	<0.16	20	20	20.9	21.1	104	106	53-137	1	30		
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	21.4	19.4	107	97	67-133	10	30		
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	16.6	17.5	83	87	66-125	5	30		
Dibromochloromethane	ug/L	<0.12	20	20	18.3	19.8	92	99	62-132	8	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467830

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222882												3222883	
Parameter	Units	10467825001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD	Qual	
			Spike Conc.	Spike Conc.									
Dibromomethane	ug/L	<0.16	20	20	18.2	20.8	91	104	67-125	13	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	24.2	24.4	121	122	71-142	1	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	21.6	21.6	108	108	70-131	0	30	N2	
Diisopropyl ether	ug/L	<0.13	20	20	19.0	19.4	95	97	63-131	2	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	19.3	19.6	97	98	66-128	2	30		
Ethylbenzene	ug/L	<0.14	20	20	20.0	21.7	100	109	74-126	8	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	25.2	21.8	126	109	68-143	14	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20.9	22.9	104	115	74-130	9	30		
m&p-Xylene	ug/L	<0.31	40	40	45.6	50.4	114	126	69-132	10	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.4	19.8	97	99	65-131	2	30		
Methylene Chloride	ug/L	<0.98	20	20	20.1	19.5	100	98	57-125	3	30		
n-Butylbenzene	ug/L	<0.24	20	20	22.1	23.1	111	116	71-131	4	30		
n-Propylbenzene	ug/L	<0.10	20	20	22.8	25.3	114	127	67-138	11	30		
Naphthalene	ug/L	<0.48	20	20	18.7	23.6	93	118	60-130	23	30		
o-Xylene	ug/L	<0.16	20	20	19.9	22.0	100	110	69-131	10	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	22.1	23.1	110	116	72-133	5	30		
sec-Butylbenzene	ug/L	<0.15	20	20	22.2	23.3	111	117	73-134	5	30		
Styrene	ug/L	<0.19	20	20	19.2	21.1	96	106	72-125	10	30		
tert-Amylmethyl ether	ug/L	<0.11	20	20	17.4	19.8	87	99	67-125	13	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	192	198	96	99	64-137	3	30		
tert-Butylbenzene	ug/L	<0.15	20	20	21.5	22.7	107	113	70-143	5	30		
Tetrachloroethene	ug/L	<0.17	20	20	19.8	22.9	99	114	72-129	14	30		
Tetrahydrofuran	ug/L	<2.2	200	200	174	190	87	95	66-128	8	30		
Toluene	ug/L	<0.083	20	20	18.3	19.3	91	96	73-125	5	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	22.8	20.3	114	101	62-137	12	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	19.8	21.0	99	105	61-136	5	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	45.7	52.4	91	105	45-128	14	30		
Trichloroethene	ug/L	<0.15	20	20	20.3	20.6	102	103	74-132	1	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	24.3	24.4	122	122	75-139	0	30		
Vinyl acetate	ug/L	<1.1	20	20	18.5	19.2	92	96	51-135	4	30		
Vinyl chloride	ug/L	<0.092	20	20	23.5	22.8	118	114	68-146	3	30		
Xylene (Total)	ug/L	<0.31	60	60	65.6	72.4	109	121	67-137	10	30		
1,2-Dichloroethane-d4 (S)	%						105	103	75-136				
4-Bromofluorobenzene (S)	%						101	99	75-125				
Toluene-d8 (S)	%						101	99	75-125				

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222884												3222885	
Parameter	Units	10467831001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD	Qual	
			Spike Conc.	Spike Conc.									
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20.0	21.0	100	105	75-140	5	30		
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20.1	20.5	101	103	74-136	2	30		
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20.0	21.6	100	108	66-134	8	30		
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20.2	20.7	101	103	75-126	2	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467830

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222884 3222885												
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		10467831001 Result	Spike Conc.	Spike Conc.	MS Result							
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	21.6	23.1	108	116	65-146	7	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	19.7	20.7	99	104	68-132	5	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	20.3	20.0	102	100	66-139	2	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	20.1	21.7	100	109	67-134	8	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	22.4	23.9	112	119	67-129	6	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	20.8	21.7	104	108	69-128	4	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	22.1	24.2	110	121	65-140	9	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	21.5	23.1	107	115	71-133	7	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	52.3	57.8	105	116	54-138	10	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	20.4	20.6	102	103	68-125	1	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	21.6	23.6	108	118	74-136	9	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	17.7	18.6	89	93	68-125	5	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	39.4	39.8	99	99	71-126	1	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	19.4	19.3	97	96	67-125	1	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	21.4	23.2	107	116	68-137	8	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.1	23.5	105	117	75-131	11	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	19.9	20.9	99	105	71-125	5	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	19.9	22.0	99	110	74-126	10	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	376	401	94	100	68-125	6	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	21.7	21.4	108	107	54-129	1	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	20.7	21.7	104	108	69-139	5	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	83.1	86.9	83	87	54-144	4	30	
2-Chlorotoluene	ug/L	<0.16	20	20	22.0	24.1	110	121	75-134	9	30	
2-Hexanone	ug/L	<0.88	100	100	101	105	101	105	58-137	4	30	
4-Chlorotoluene	ug/L	<0.13	20	20	22.7	24.7	114	124	72-133	8	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	102	106	102	106	60-129	4	30	
Acetone	ug/L	<9.2	100	100	74.8	78.7	75	79	62-132	5	30	
Acrolein	ug/L	<1.2	200	200	284	297	142	148	30-150	4	30	
Acrylonitrile	ug/L	<0.91	200	200	187	198	93	99	68-125	6	30	
Benzene	ug/L	<0.10	20	20	19.4	20.3	97	102	68-125	5	30	
Bromobenzene	ug/L	<0.21	20	20	20.4	22.1	102	111	73-126	8	30	
Bromochloromethane	ug/L	<0.27	20	20	19.2	19.3	96	97	66-143	0	30	
Bromodichloromethane	ug/L	<0.22	20	20	19.1	19.2	96	96	74-125	0	30	
Bromoform	ug/L	<0.80	20	20	20.9	22.2	104	111	64-134	6	30	
Bromomethane	ug/L	<1.8	20	20	17.4	18.0	87	90	30-150	3	30	
Carbon disulfide	ug/L	<0.078	20	20	21.8	20.6	109	103	43-147	6	30	
Carbon tetrachloride	ug/L	<0.19	20	20	21.0	22.2	105	111	71-143	6	30	
Chlorobenzene	ug/L	<0.17	20	20	19.7	20.8	99	104	75-125	5	30	
Chloroethane	ug/L	<0.49	20	20	21.3	21.5	107	107	75-129	1	30	
Chloroform	ug/L	<0.45	20	20	18.0	19.0	90	95	66-132	5	30	
Chloromethane	ug/L	<0.16	20	20	19.7	20.9	99	105	53-137	6	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	19.2	19.8	96	99	67-133	3	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	17.4	17.2	87	86	66-125	1	30	
Dibromochloromethane	ug/L	<0.12	20	20	19.3	20.1	96	101	62-132	4	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467830

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222884												3222885	
Parameter	Units	10467831001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
Dibromomethane	ug/L	<0.16	20	20	19.8	19.9	99	100	67-125	1	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	23.4	23.7	117	118	71-142	1	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	20.6	21.1	103	105	70-131	2	30 N2		
Diisopropyl ether	ug/L	<0.13	20	20	18.6	19.4	93	97	63-131	4	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	19.1	20.2	95	101	66-128	5	30		
Ethylbenzene	ug/L	<0.14	20	20	21.0	22.6	105	113	74-126	7	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	23.4	22.3	117	111	68-143	5	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	21.4	23.7	107	118	74-130	10	30		
m&p-Xylene	ug/L	<0.31	40	40	48.2	51.7	120	129	69-132	7	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.5	20.1	98	100	65-131	3	30		
Methylene Chloride	ug/L	<0.98	20	20	18.8	19.3	94	96	57-125	3	30		
n-Butylbenzene	ug/L	<0.24	20	20	22.6	23.4	113	117	71-131	3	30		
n-Propylbenzene	ug/L	<0.10	20	20	23.7	26.2	119	131	67-138	10	30		
Naphthalene	ug/L	<0.48	20	20	21.7	24.3	108	122	60-130	11	30		
o-Xylene	ug/L	<0.16	20	20	20.9	22.3	104	112	69-131	7	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	22.3	23.7	111	118	72-133	6	30		
sec-Butylbenzene	ug/L	<0.15	20	20	22.5	23.8	113	119	73-134	6	30		
Styrene	ug/L	<0.19	20	20	20.2	21.6	101	108	72-125	7	30		
tert-Amylmethyl ether	ug/L	<0.11	20	20	19.2	20.3	96	101	67-125	6	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	188	201	94	100	64-137	7	30		
tert-Butylbenzene	ug/L	<0.15	20	20	21.9	23.7	109	119	70-143	8	30		
Tetrachloroethene	ug/L	<0.17	20	20	21.7	23.6	108	118	72-129	9	30		
Tetrahydrofuran	ug/L	<2.2	200	200	185	198	92	99	66-128	7	30		
Toluene	ug/L	<0.083	20	20	19.4	20.3	97	101	73-125	4	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	20.3	20.0	101	100	62-137	1	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	20.8	21.7	104	108	61-136	4	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	50.7	54.3	101	109	45-128	7	30		
Trichloroethene	ug/L	<0.15	20	20	20.2	22.0	101	110	74-132	8	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	23.1	23.9	115	120	75-139	4	30		
Vinyl acetate	ug/L	<1.1	20	20	18.8	19.8	94	99	51-135	5	30		
Vinyl chloride	ug/L	<0.092	20	20	22.2	22.6	111	113	68-146	2	30		
Xylene (Total)	ug/L	<0.31	60	60	69.1	74.0	115	123	67-137	7	30		
1,2-Dichloroethane-d4 (S)	%						103	105	75-136				
4-Bromofluorobenzene (S)	%						101	103	75-125				
Toluene-d8 (S)	%						101	101	75-125				

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222886												3222887	
Parameter	Units	10467835001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	19.1	20.8	95	104	75-140	9	30		
1,1,1-Trichloroethane	ug/L	<0.14	20	20	19.7	20.7	99	103	74-136	5	30		
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20.4	20.8	102	104	66-134	2	30		
1,1,2-Trichloroethane	ug/L	<0.18	20	20	19.1	20.4	96	102	75-126	7	30		

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Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467830

Parameter	Units	10467835001		3222886		3222887		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	21.0	22.8	105	114	65-146	8	30		
1,1-Dichloroethane	ug/L	<0.17	20	20	19.7	20.5	98	103	68-132	4	30		
1,1-Dichloroethene	ug/L	<0.16	20	20	19.8	20.9	99	104	66-139	5	30		
1,1-Dichloropropene	ug/L	<0.20	20	20	19.9	20.8	99	104	67-134	5	30		
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	21.6	23.9	108	120	67-129	10	30		
1,2,3-Trichloropropane	ug/L	<0.26	20	20	20.1	20.7	101	103	69-128	3	30		
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	21.5	23.7	108	119	65-140	10	30		
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	20.3	22.9	102	114	71-133	12	30		
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	53.5	56.2	107	112	54-138	5	30		
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	19.8	21.0	99	105	68-125	6	30		
1,2-Dichlorobenzene	ug/L	<0.14	20	20	21.0	23.9	105	120	74-136	13	30		
1,2-Dichloroethane	ug/L	<0.22	20	20	17.6	18.1	88	90	68-125	3	30		
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	38.5	39.9	96	100	71-126	4	30	N2	
1,2-Dichloropropane	ug/L	<0.16	20	20	18.9	19.6	95	98	67-125	3	30		
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	20.4	22.9	102	115	68-137	12	30		
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.3	23.8	107	119	75-131	11	30		
1,3-Dichloropropane	ug/L	<0.070	20	20	19.6	20.1	98	101	71-125	3	30		
1,4-Dichlorobenzene	ug/L	<0.17	20	20	19.9	22.3	99	111	74-126	11	30		
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	386	416	96	104	68-125	7	30		
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	20.6	19.8	103	99	54-129	4	30	N2	
2,2-Dichloropropane	ug/L	<0.17	20	20	20.8	21.4	104	107	69-139	3	30		
2-Butanone (MEK)	ug/L	<0.99	100	100	84.0	81.4	84	81	54-144	3	30		
2-Chlorotoluene	ug/L	<0.16	20	20	21.5	24.0	107	120	75-134	11	30		
2-Hexanone	ug/L	<0.88	100	100	101	101	101	101	58-137	0	30		
4-Chlorotoluene	ug/L	<0.13	20	20	21.9	24.3	110	121	72-133	10	30		
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	99.9	101	100	101	60-129	1	30		
Acetone	ug/L	<9.2	100	100	70.2	76.7	70	77	62-132	9	30		
Acrolein	ug/L	<1.2	200	200	282	289	141	145	30-150	3	30		
Acrylonitrile	ug/L	<0.91	200	200	184	192	92	96	68-125	4	30		
Benzene	ug/L	<0.10	20	20	19.1	19.7	96	99	68-125	3	30		
Bromobenzene	ug/L	<0.21	20	20	20.5	22.2	102	111	73-126	8	30		
Bromochloromethane	ug/L	<0.27	20	20	18.6	19.3	93	96	66-143	3	30		
Bromodichloromethane	ug/L	<0.22	20	20	18.8	19.7	94	99	74-125	5	30		
Bromoform	ug/L	<0.80	20	20	20.4	21.4	102	107	64-134	5	30		
Bromomethane	ug/L	<1.8	20	20	16.9	17.3	85	86	30-150	2	30		
Carbon disulfide	ug/L	<0.078	20	20	21.0	20.5	105	103	43-147	2	30		
Carbon tetrachloride	ug/L	<0.19	20	20	20.6	22.2	103	111	71-143	8	30		
Chlorobenzene	ug/L	<0.17	20	20	19.2	20.5	96	103	75-125	7	30		
Chloroethane	ug/L	<0.49	20	20	20.7	20.2	104	101	75-129	2	30		
Chloroform	ug/L	<0.45	20	20	17.5	18.4	88	92	66-132	5	30		
Chloromethane	ug/L	<0.16	20	20	19.5	19.8	98	99	53-137	2	30		
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	18.7	19.5	94	98	67-133	4	30		
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	17.1	17.6	86	88	66-125	3	30		
Dibromochloromethane	ug/L	<0.12	20	20	18.8	20.0	94	100	62-132	6	30		

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Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467830

Parameter	Units	3222886		3222887		MS % Rec	MSD % Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Dibromomethane	ug/L	<0.16	20	20	19.9	20.5	99	103	67-125	3	30	
Dichlorodifluoromethane	ug/L	<0.23	20	20	21.8	23.0	109	115	71-142	5	30	
Dichlorofluoromethane	ug/L	<0.14	20	20	19.7	20.2	98	101	70-131	3	30	N2
Diisopropyl ether	ug/L	<0.13	20	20	17.8	19.0	89	95	63-131	6	30	
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	18.5	19.7	93	99	66-128	6	30	
Ethylbenzene	ug/L	<0.14	20	20	20.1	22.0	101	110	74-126	9	30	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	22.7	22.0	113	110	68-143	3	30	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20.7	23.3	103	117	74-130	12	30	
m&p-Xylene	ug/L	<0.31	40	40	46.4	51.7	116	129	69-132	11	30	
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.1	19.8	95	99	65-131	4	30	
Methylene Chloride	ug/L	<0.98	20	20	18.6	19.2	92	95	57-125	3	30	
n-Butylbenzene	ug/L	<0.24	20	20	21.9	22.7	110	113	71-131	3	30	
n-Propylbenzene	ug/L	<0.10	20	20	23.0	25.5	115	127	67-138	10	30	
Naphthalene	ug/L	<0.48	20	20	21.8	24.0	109	120	60-130	10	30	
o-Xylene	ug/L	<0.16	20	20	20.1	22.7	101	113	69-131	12	30	
p-Isopropyltoluene	ug/L	<0.15	20	20	21.7	23.5	109	118	72-133	8	30	
sec-Butylbenzene	ug/L	<0.15	20	20	21.6	23.5	108	117	73-134	8	30	
Styrene	ug/L	<0.19	20	20	19.4	21.1	97	106	72-125	9	30	
tert-Amylmethyl ether	ug/L	<0.11	20	20	18.7	19.5	93	97	67-125	4	30	
tert-Butyl Alcohol	ug/L	<1.2	200	200	183	196	92	98	64-137	7	30	
tert-Butylbenzene	ug/L	<0.15	20	20	21.3	23.4	106	117	70-143	10	30	
Tetrachloroethene	ug/L	<0.17	20	20	21.0	22.9	105	114	72-129	9	30	
Tetrahydrofuran	ug/L	<2.2	200	200	183	192	92	96	66-128	5	30	
Toluene	ug/L	<0.083	20	20	18.6	19.4	93	97	73-125	4	30	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	19.7	20.4	99	102	62-137	3	30	
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	20.5	20.7	103	103	61-136	1	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	50.5	51.7	101	103	45-128	2	30	
Trichloroethene	ug/L	<0.15	20	20	19.9	20.8	99	104	74-132	5	30	
Trichlorofluoromethane	ug/L	<0.23	20	20	22.4	23.7	112	119	75-139	6	30	
Vinyl acetate	ug/L	<1.1	20	20	18.4	18.7	92	93	51-135	2	30	
Vinyl chloride	ug/L	<0.092	20	20	21.3	21.6	107	108	68-146	1	30	
Xylene (Total)	ug/L	<0.31	60	60	66.5	74.4	111	124	67-137	11	30	
1,2-Dichloroethane-d4 (S)	%						104	105	75-136			
4-Bromofluorobenzene (S)	%						100	99	75-125			
Toluene-d8 (S)	%						100	99	75-125			

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467830

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

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

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467830

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467830

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10467830001	Lang-GW-032119	EPA 8260B	596124		

REPORT OF LABORATORY ANALYSIS

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Document Name:
Sample Condition Upon Receipt Form
 Document No.:
 F-MN-L-213-rev.25

Document Revised: 06Feb2019
 Page 1 of 1
 Issuing Authority:
 Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name:
CH2M Hill

Project #: **WO# : 10467830**

PM: JMG Due Date: 04/05/19
 CLIENT: UPRR_CH2M

Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception

Tracking Number: 7478 9397 2337/2322/2311/2344

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

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

Thermometer: G87A9155100842 G87A9170600254 Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: 0.6, 4.4, 1.2, 0.6 °C Average Corrected Temp (no temp blank only): See Exceptions

Correction Factor: Time Cooler Temp Corrected w/temp blank: 0.6, 4.4, 1.2, 0.6 °C

USDA Regulated Soil: (N/A, water sample/Other:) Date/Initials of Person Examining Contents: JE 3/22/19
 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No
 If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

		COMMENTS:
Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time?	<input type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other		
All containers needing acid/base preservation have been checked?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/> NaOH <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
Exceptions (VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exception Chlorine? <input type="checkbox"/> No <input type="checkbox"/>
Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception
Trip Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Trip Blank Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. <u>SHARED w/ WO: 10467830</u> Pace Trip Blank Lot # (if purchased): <u>199</u>

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: Mark Ochsner Date/Time: 06/27/18 Field Data Required? Yes No
 Comments/Resolution: WA certs not required for 8260 2,2,4-TMP or dichlorofluoromethane.

Project Manager Review: JENNI GROSS Date: 03/22/19
 Note: Whenever there is a discrepancy affecting North Carolina samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of state, incorrect preservative, out of temp, incorrect container...)

March 29, 2019

David Hodson
Jacobs
2020 SW 4th Ave
#300
Portland, OR 97201

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467831

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 22, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Steve Demus, CH2M Hill
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467831

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #:74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467831

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10467831001	Stark-GW-032119	Water	03/21/19 12:45	03/22/19 08:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467831

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10467831001	Stark-GW-032119	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467831

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

General Information:

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

Hold Time:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Internal Standards:

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

Surrogates:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 596124

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s):
10467825001, 10467831001, 10467835001

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

- MSD (Lab ID: 3222883)
 - Acrolein

Additional Comments:

Analyte Comments:

QC Batch: 596124

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3222880)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467831

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

Analyte Comments:

QC Batch: 596124

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3222880)
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3222881)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3222882)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3222884)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3222886)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3222883)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3222885)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3222887)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- Stark-GW-032119 (Lab ID: 10467831001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467831

Sample: Stark-GW-032119 **Lab ID: 10467831001** Collected: 03/21/19 12:45 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/27/19 20:20	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/27/19 20:20	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/27/19 20:20	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/27/19 20:20	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/27/19 20:20	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/27/19 20:20	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/27/19 20:20	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		03/27/19 20:20	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/27/19 20:20	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/27/19 20:20	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/27/19 20:20	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/27/19 20:20	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/27/19 20:20	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/27/19 20:20	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/27/19 20:20	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/27/19 20:20	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/27/19 20:20	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/27/19 20:20	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		03/27/19 20:20	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/27/19 20:20	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/27/19 20:20	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/27/19 20:20	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/27/19 20:20	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/27/19 20:20	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/27/19 20:20	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/27/19 20:20	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/27/19 20:20	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		03/27/19 20:20	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/27/19 20:20	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/27/19 20:20	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/27/19 20:20	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/27/19 20:20	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/27/19 20:20	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/27/19 20:20	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/27/19 20:20	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/27/19 20:20	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/27/19 20:20	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/27/19 20:20	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/27/19 20:20	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/27/19 20:20	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/27/19 20:20	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/27/19 20:20	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/27/19 20:20	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/27/19 20:20	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/27/19 20:20	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/27/19 20:20	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467831

Sample: Stark-GW-032119 **Lab ID: 10467831001** Collected: 03/21/19 12:45 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/27/19 20:20	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/27/19 20:20	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/27/19 20:20	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/27/19 20:20	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/27/19 20:20	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/27/19 20:20	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/27/19 20:20	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		03/27/19 20:20	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/27/19 20:20	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/27/19 20:20	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/27/19 20:20	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/27/19 20:20	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/27/19 20:20	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/27/19 20:20	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		03/27/19 20:20	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/27/19 20:20	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/27/19 20:20	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/27/19 20:20	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/27/19 20:20	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/27/19 20:20	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/27/19 20:20	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/27/19 20:20	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/27/19 20:20	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/27/19 20:20	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/27/19 20:20	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/27/19 20:20	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/27/19 20:20	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/27/19 20:20	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/27/19 20:20	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/27/19 20:20	75-65-0	
tert-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/27/19 20:20	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/27/19 20:20	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		03/27/19 20:20	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/27/19 20:20	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%	75-136		1		03/27/19 20:20	17060-07-0	
Toluene-d8 (S)	107	%	75-125		1		03/27/19 20:20	2037-26-5	
4-Bromofluorobenzene (S)	100	%	75-125		1		03/27/19 20:20	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467831

QC Batch: 596124 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10467831001

METHOD BLANK: 3222880 Matrix: Water
Associated Lab Samples: 10467831001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	03/27/19 19:09	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	03/27/19 19:09	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	03/27/19 19:09	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	03/27/19 19:09	MN
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	03/27/19 19:09	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	03/27/19 19:09	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	03/27/19 19:09	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	03/27/19 19:09	MN
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	03/27/19 19:09	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	03/27/19 19:09	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	03/27/19 19:09	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	03/27/19 19:09	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	03/27/19 19:09	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	03/27/19 19:09	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	03/27/19 19:09	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	03/27/19 19:09	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	03/27/19 19:09	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	03/27/19 19:09	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	03/27/19 19:09	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	03/27/19 19:09	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
2-Hexanone	ug/L	<0.88	5.0	0.88	03/27/19 19:09	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/27/19 19:09	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	03/27/19 19:09	
Acetone	ug/L	<9.2	20.0	9.2	03/27/19 19:09	
Acrolein	ug/L	<1.2	10.0	1.2	03/27/19 19:09	
Acrylonitrile	ug/L	<0.91	10.0	0.91	03/27/19 19:09	
Benzene	ug/L	<0.10	0.50	0.10	03/27/19 19:09	
Bromobenzene	ug/L	<0.21	0.50	0.21	03/27/19 19:09	
Bromochloromethane	ug/L	<0.27	1.0	0.27	03/27/19 19:09	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	03/27/19 19:09	
Bromoform	ug/L	<0.80	4.0	0.80	03/27/19 19:09	
Bromomethane	ug/L	<1.8	4.0	1.8	03/27/19 19:09	
Carbon disulfide	ug/L	<0.078	1.0	0.078	03/27/19 19:09	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	03/27/19 19:09	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467831

METHOD BLANK: 3222880

Matrix: Water

Associated Lab Samples: 10467831001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
Chloroethane	ug/L	<0.49	1.0	0.49	03/27/19 19:09	
Chloroform	ug/L	<0.45	4.0	0.45	03/27/19 19:09	MN
Chloromethane	ug/L	<0.16	4.0	0.16	03/27/19 19:09	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	03/27/19 19:09	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	03/27/19 19:09	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	03/27/19 19:09	
Dibromomethane	ug/L	<0.16	1.0	0.16	03/27/19 19:09	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	03/27/19 19:09	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	03/27/19 19:09	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	03/27/19 19:09	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/27/19 19:09	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	03/27/19 19:09	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
m&p-Xylene	ug/L	<0.31	1.0	0.31	03/27/19 19:09	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
Methylene Chloride	ug/L	<0.98	4.0	0.98	03/27/19 19:09	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	03/27/19 19:09	MN
n-Propylbenzene	ug/L	<0.10	0.50	0.10	03/27/19 19:09	
Naphthalene	ug/L	<0.48	1.0	0.48	03/27/19 19:09	
o-Xylene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	03/27/19 19:09	MN
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	03/27/19 19:09	
Styrene	ug/L	<0.19	1.0	0.19	03/27/19 19:09	MN
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	03/27/19 19:09	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	03/27/19 19:09	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	03/27/19 19:09	MN
Tetrachloroethene	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	03/27/19 19:09	
Toluene	ug/L	<0.083	0.50	0.083	03/27/19 19:09	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	03/27/19 19:09	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	03/27/19 19:09	
Trichloroethene	ug/L	<0.15	0.40	0.15	03/27/19 19:09	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	03/27/19 19:09	
Vinyl acetate	ug/L	<1.1	10.0	1.1	03/27/19 19:09	
Vinyl chloride	ug/L	<0.092	0.20	0.092	03/27/19 19:09	
Xylene (Total)	ug/L	<0.31	1.5	0.31	03/27/19 19:09	
1,2-Dichloroethane-d4 (S)	%	104	75-136		03/27/19 19:09	
4-Bromofluorobenzene (S)	%	101	75-125		03/27/19 19:09	
Toluene-d8 (S)	%	105	75-125		03/27/19 19:09	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467831

LABORATORY CONTROL SAMPLE: 3222881

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.6	98	68-141	
1,1,1-Trichloroethane	ug/L	20	19.0	95	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	20.3	101	73-125	
1,1,2-Trichloroethane	ug/L	20	20.4	102	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	19.8	99	69-132	
1,1-Dichloroethane	ug/L	20	19.8	99	73-125	
1,1-Dichloroethene	ug/L	20	19.4	97	71-126	
1,1-Dichloropropene	ug/L	20	19.5	98	73-126	
1,2,3-Trichlorobenzene	ug/L	20	20.9	105	72-126	
1,2,3-Trichloropropane	ug/L	20	21.4	107	75-126	
1,2,4-Trichlorobenzene	ug/L	20	21.0	105	71-134	
1,2,4-Trimethylbenzene	ug/L	20	20.5	103	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	53.5	107	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	20.4	102	75-129	
1,2-Dichlorobenzene	ug/L	20	21.0	105	75-129	
1,2-Dichloroethane	ug/L	20	18.6	93	75-125	
1,2-Dichloroethene (Total)	ug/L	40	38.5	96	74-125	N2
1,2-Dichloropropane	ug/L	20	19.1	96	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.4	102	75-127	
1,3-Dichlorobenzene	ug/L	20	21.0	105	75-126	
1,3-Dichloropropane	ug/L	20	20.3	101	75-125	
1,4-Dichlorobenzene	ug/L	20	19.6	98	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	407	102	72-129	
2,2,4-Trimethylpentane	ug/L	20	18.0	90	72-128	N2
2,2-Dichloropropane	ug/L	20	19.6	98	65-138	
2-Butanone (MEK)	ug/L	100	95.9	96	59-144	
2-Chlorotoluene	ug/L	20	20.9	105	75-127	
2-Hexanone	ug/L	100	105	105	73-134	
4-Chlorotoluene	ug/L	20	21.7	109	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	104	104	62-141	
Acetone	ug/L	100	95.6	96	60-137	
Acrolein	ug/L	200	217	109	60-141	
Acrylonitrile	ug/L	200	202	101	75-129	
Benzene	ug/L	20	19.5	98	73-125	
Bromobenzene	ug/L	20	20.3	102	73-125	
Bromochloromethane	ug/L	20	19.1	95	75-135	
Bromodichloromethane	ug/L	20	19.5	97	75-125	
Bromoform	ug/L	20	21.6	108	67-136	
Bromomethane	ug/L	20	18.4	92	30-150	
Carbon disulfide	ug/L	20	20.8	104	47-137	
Carbon tetrachloride	ug/L	20	20.0	100	75-125	
Chlorobenzene	ug/L	20	19.4	97	75-125	
Chloroethane	ug/L	20	20.8	104	63-136	
Chloroform	ug/L	20	18.5	93	73-128	
Chloromethane	ug/L	20	20.4	102	55-130	
cis-1,2-Dichloroethene	ug/L	20	19.2	96	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.3	96	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467831

LABORATORY CONTROL SAMPLE: 3222881

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	19.3	97	75-125	
Dibromomethane	ug/L	20	20.7	103	75-125	
Dichlorodifluoromethane	ug/L	20	20.8	104	63-132	
Dichlorofluoromethane	ug/L	20	19.7	98	68-127	N2
Diisopropyl ether	ug/L	20	18.5	92	71-131	
Ethyl-tert-butyl ether	ug/L	20	19.0	95	75-125	
Ethylbenzene	ug/L	20	19.8	99	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.4	102	72-134	
Isopropylbenzene (Cumene)	ug/L	20	20.3	101	75-125	
m&p-Xylene	ug/L	40	45.3	113	75-126	
Methyl-tert-butyl ether	ug/L	20	19.3	97	75-125	
Methylene Chloride	ug/L	20	19.7	99	70-125	
n-Butylbenzene	ug/L	20	20.6	103	75-126	
n-Propylbenzene	ug/L	20	22.1	110	73-127	
Naphthalene	ug/L	20	21.9	109	63-128	
o-Xylene	ug/L	20	20.2	101	75-128	
p-Isopropyltoluene	ug/L	20	20.7	103	75-125	
sec-Butylbenzene	ug/L	20	20.5	102	75-126	
Styrene	ug/L	20	19.7	99	75-125	
tert-Amylmethyl ether	ug/L	20	19.4	97	75-125	
tert-Butyl Alcohol	ug/L	200	203	101	75-130	
tert-Butylbenzene	ug/L	20	20.2	101	75-131	
Tetrachloroethene	ug/L	20	20.3	102	74-125	
Tetrahydrofuran	ug/L	200	190	95	64-138	
Toluene	ug/L	20	18.2	91	74-125	
trans-1,2-Dichloroethene	ug/L	20	19.3	96	68-128	
trans-1,3-Dichloropropene	ug/L	20	20.7	103	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	52.1	104	60-127	
Trichloroethene	ug/L	20	19.7	99	75-127	
Trichlorofluoromethane	ug/L	20	21.2	106	72-133	
Vinyl acetate	ug/L	20	18.6	93	61-129	
Vinyl chloride	ug/L	20	20.9	104	75-128	
Xylene (Total)	ug/L	60	65.5	109	75-125	
1,2-Dichloroethane-d4 (S)	%			104	75-136	
4-Bromofluorobenzene (S)	%			99	75-125	
Toluene-d8 (S)	%			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222882 3222883

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10467825001 Result	Spike Conc.	Spike Conc.	MS Result						
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	18.8	20.3	94	102	75-140	8	30
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20.5	20.6	102	103	74-136	1	30
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	17.5	20.4	88	102	66-134	15	30
1,1,2-Trichloroethane	ug/L	<0.18	20	20	18.5	20.7	93	103	75-126	11	30

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467831

Parameter	Units	10467825001		MS		MSD		3222882		3222883		Qual
		Result	Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec	Max RPD		
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	22.1	23.0	110	115	65-146	4	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	21.8	20.3	109	102	68-132	7	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	21.5	21.0	108	105	66-139	2	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	20.8	20.6	104	103	67-134	1	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	19.8	22.5	99	113	67-129	13	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	17.6	20.8	88	104	69-128	17	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	20.8	23.2	104	116	65-140	11	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	20.0	22.9	100	114	71-133	14	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	43.0	54.0	86	108	54-138	23	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	18.7	20.2	93	101	68-125	8	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	20.0	22.9	100	114	74-136	13	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	17.0	18.0	85	90	68-125	6	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	44.2	39.7	110	99	71-126	11	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	17.9	19.2	89	96	67-125	7	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	20.3	22.8	102	114	68-137	11	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	20.3	23.1	102	115	75-131	13	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	19.1	20.1	95	100	71-125	5	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	18.9	21.4	94	107	74-126	12	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	345	412	86	103	68-125	18	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	22.8	20.5	114	102	54-129	11	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	22.7	21.8	113	109	69-139	4	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	71.3	86.4	71	86	54-144	19	30	
2-Chlorotoluene	ug/L	<0.16	20	20	20.7	23.5	103	118	75-134	13	30	
2-Hexanone	ug/L	<0.88	100	100	89.0	103	89	103	58-137	14	30	
4-Chlorotoluene	ug/L	<0.13	20	20	21.0	24.4	105	122	72-133	15	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	87.3	103	87	103	60-129	17	30	
Acetone	ug/L	<9.2	100	100	71.0	76.9	71	77	62-132	8	30	
Acrolein	ug/L	<1.2	200	200	279	304	140	152	30-150	9	30	M1
Acrylonitrile	ug/L	<0.91	200	200	190	201	95	100	68-125	5	30	
Benzene	ug/L	<0.10	20	20	19.2	20.1	96	100	68-125	4	30	
Bromobenzene	ug/L	<0.21	20	20	19.2	21.2	96	106	73-126	10	30	
Bromochloromethane	ug/L	<0.27	20	20	20.6	19.2	103	96	66-143	7	30	
Bromodichloromethane	ug/L	<0.22	20	20	18.2	19.8	91	99	74-125	8	30	
Bromoform	ug/L	<0.80	20	20	18.1	21.3	91	107	64-134	16	30	
Bromomethane	ug/L	<1.8	20	20	18.1	18.3	90	92	30-150	1	30	
Carbon disulfide	ug/L	<0.078	20	20	22.7	20.9	114	105	43-147	8	30	
Carbon tetrachloride	ug/L	0.77	20	20	22.7	22.3	110	108	71-143	2	30	
Chlorobenzene	ug/L	<0.17	20	20	18.5	20.0	93	100	75-125	8	30	
Chloroethane	ug/L	<0.49	20	20	20.8	21.6	104	108	75-129	4	30	
Chloroform	ug/L	<0.45	20	20	18.8	18.7	94	93	66-132	1	30	
Chloromethane	ug/L	<0.16	20	20	20.9	21.1	104	106	53-137	1	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	21.4	19.4	107	97	67-133	10	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	16.6	17.5	83	87	66-125	5	30	
Dibromochloromethane	ug/L	<0.12	20	20	18.3	19.8	92	99	62-132	8	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467831

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222882												3222883	
Parameter	Units	10467825001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
Dibromomethane	ug/L	<0.16	20	20	18.2	20.8	91	104	67-125	13	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	24.2	24.4	121	122	71-142	1	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	21.6	21.6	108	108	70-131	0	30 N2		
Diisopropyl ether	ug/L	<0.13	20	20	19.0	19.4	95	97	63-131	2	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	19.3	19.6	97	98	66-128	2	30		
Ethylbenzene	ug/L	<0.14	20	20	20.0	21.7	100	109	74-126	8	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	25.2	21.8	126	109	68-143	14	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20.9	22.9	104	115	74-130	9	30		
m&p-Xylene	ug/L	<0.31	40	40	45.6	50.4	114	126	69-132	10	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.4	19.8	97	99	65-131	2	30		
Methylene Chloride	ug/L	<0.98	20	20	20.1	19.5	100	98	57-125	3	30		
n-Butylbenzene	ug/L	<0.24	20	20	22.1	23.1	111	116	71-131	4	30		
n-Propylbenzene	ug/L	<0.10	20	20	22.8	25.3	114	127	67-138	11	30		
Naphthalene	ug/L	<0.48	20	20	18.7	23.6	93	118	60-130	23	30		
o-Xylene	ug/L	<0.16	20	20	19.9	22.0	100	110	69-131	10	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	22.1	23.1	110	116	72-133	5	30		
sec-Butylbenzene	ug/L	<0.15	20	20	22.2	23.3	111	117	73-134	5	30		
Styrene	ug/L	<0.19	20	20	19.2	21.1	96	106	72-125	10	30		
tert-Amylmethyl ether	ug/L	<0.11	20	20	17.4	19.8	87	99	67-125	13	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	192	198	96	99	64-137	3	30		
tert-Butylbenzene	ug/L	<0.15	20	20	21.5	22.7	107	113	70-143	5	30		
Tetrachloroethene	ug/L	<0.17	20	20	19.8	22.9	99	114	72-129	14	30		
Tetrahydrofuran	ug/L	<2.2	200	200	174	190	87	95	66-128	8	30		
Toluene	ug/L	<0.083	20	20	18.3	19.3	91	96	73-125	5	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	22.8	20.3	114	101	62-137	12	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	19.8	21.0	99	105	61-136	5	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	45.7	52.4	91	105	45-128	14	30		
Trichloroethene	ug/L	<0.15	20	20	20.3	20.6	102	103	74-132	1	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	24.3	24.4	122	122	75-139	0	30		
Vinyl acetate	ug/L	<1.1	20	20	18.5	19.2	92	96	51-135	4	30		
Vinyl chloride	ug/L	<0.092	20	20	23.5	22.8	118	114	68-146	3	30		
Xylene (Total)	ug/L	<0.31	60	60	65.6	72.4	109	121	67-137	10	30		
1,2-Dichloroethane-d4 (S)	%						105	103	75-136				
4-Bromofluorobenzene (S)	%						101	99	75-125				
Toluene-d8 (S)	%						101	99	75-125				

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222884												3222885	
Parameter	Units	10467831001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20.0	21.0	100	105	75-140	5	30		
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20.1	20.5	101	103	74-136	2	30		
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20.0	21.6	100	108	66-134	8	30		
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20.2	20.7	101	103	75-126	2	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467831

Parameter	Units	10467831001		MS		MSD		3222884		3222885		Qual
		Result	Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec	Max RPD		
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	21.6	23.1	108	116	65-146	7	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	19.7	20.7	99	104	68-132	5	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	20.3	20.0	102	100	66-139	2	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	20.1	21.7	100	109	67-134	8	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	22.4	23.9	112	119	67-129	6	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	20.8	21.7	104	108	69-128	4	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	22.1	24.2	110	121	65-140	9	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	21.5	23.1	107	115	71-133	7	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	52.3	57.8	105	116	54-138	10	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	20.4	20.6	102	103	68-125	1	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	21.6	23.6	108	118	74-136	9	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	17.7	18.6	89	93	68-125	5	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	39.4	39.8	99	99	71-126	1	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	19.4	19.3	97	96	67-125	1	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	21.4	23.2	107	116	68-137	8	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.1	23.5	105	117	75-131	11	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	19.9	20.9	99	105	71-125	5	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	19.9	22.0	99	110	74-126	10	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	376	401	94	100	68-125	6	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	21.7	21.4	108	107	54-129	1	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	20.7	21.7	104	108	69-139	5	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	83.1	86.9	83	87	54-144	4	30	
2-Chlorotoluene	ug/L	<0.16	20	20	22.0	24.1	110	121	75-134	9	30	
2-Hexanone	ug/L	<0.88	100	100	101	105	101	105	58-137	4	30	
4-Chlorotoluene	ug/L	<0.13	20	20	22.7	24.7	114	124	72-133	8	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	102	106	102	106	60-129	4	30	
Acetone	ug/L	<9.2	100	100	74.8	78.7	75	79	62-132	5	30	
Acrolein	ug/L	<1.2	200	200	284	297	142	148	30-150	4	30	
Acrylonitrile	ug/L	<0.91	200	200	187	198	93	99	68-125	6	30	
Benzene	ug/L	<0.10	20	20	19.4	20.3	97	102	68-125	5	30	
Bromobenzene	ug/L	<0.21	20	20	20.4	22.1	102	111	73-126	8	30	
Bromochloromethane	ug/L	<0.27	20	20	19.2	19.3	96	97	66-143	0	30	
Bromodichloromethane	ug/L	<0.22	20	20	19.1	19.2	96	96	74-125	0	30	
Bromoform	ug/L	<0.80	20	20	20.9	22.2	104	111	64-134	6	30	
Bromomethane	ug/L	<1.8	20	20	17.4	18.0	87	90	30-150	3	30	
Carbon disulfide	ug/L	<0.078	20	20	21.8	20.6	109	103	43-147	6	30	
Carbon tetrachloride	ug/L	<0.19	20	20	21.0	22.2	105	111	71-143	6	30	
Chlorobenzene	ug/L	<0.17	20	20	19.7	20.8	99	104	75-125	5	30	
Chloroethane	ug/L	<0.49	20	20	21.3	21.5	107	107	75-129	1	30	
Chloroform	ug/L	<0.45	20	20	18.0	19.0	90	95	66-132	5	30	
Chloromethane	ug/L	<0.16	20	20	19.7	20.9	99	105	53-137	6	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	19.2	19.8	96	99	67-133	3	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	17.4	17.2	87	86	66-125	1	30	
Dibromochloromethane	ug/L	<0.12	20	20	19.3	20.1	96	101	62-132	4	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467831

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222884												3222885	
Parameter	Units	10467831001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
Dibromomethane	ug/L	<0.16	20	20	19.8	19.9	99	100	67-125	1	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	23.4	23.7	117	118	71-142	1	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	20.6	21.1	103	105	70-131	2	30 N2		
Diisopropyl ether	ug/L	<0.13	20	20	18.6	19.4	93	97	63-131	4	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	19.1	20.2	95	101	66-128	5	30		
Ethylbenzene	ug/L	<0.14	20	20	21.0	22.6	105	113	74-126	7	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	23.4	22.3	117	111	68-143	5	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	21.4	23.7	107	118	74-130	10	30		
m&p-Xylene	ug/L	<0.31	40	40	48.2	51.7	120	129	69-132	7	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.5	20.1	98	100	65-131	3	30		
Methylene Chloride	ug/L	<0.98	20	20	18.8	19.3	94	96	57-125	3	30		
n-Butylbenzene	ug/L	<0.24	20	20	22.6	23.4	113	117	71-131	3	30		
n-Propylbenzene	ug/L	<0.10	20	20	23.7	26.2	119	131	67-138	10	30		
Naphthalene	ug/L	<0.48	20	20	21.7	24.3	108	122	60-130	11	30		
o-Xylene	ug/L	<0.16	20	20	20.9	22.3	104	112	69-131	7	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	22.3	23.7	111	118	72-133	6	30		
sec-Butylbenzene	ug/L	<0.15	20	20	22.5	23.8	113	119	73-134	6	30		
Styrene	ug/L	<0.19	20	20	20.2	21.6	101	108	72-125	7	30		
tert-Amylmethyl ether	ug/L	<0.11	20	20	19.2	20.3	96	101	67-125	6	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	188	201	94	100	64-137	7	30		
tert-Butylbenzene	ug/L	<0.15	20	20	21.9	23.7	109	119	70-143	8	30		
Tetrachloroethene	ug/L	<0.17	20	20	21.7	23.6	108	118	72-129	9	30		
Tetrahydrofuran	ug/L	<2.2	200	200	185	198	92	99	66-128	7	30		
Toluene	ug/L	<0.083	20	20	19.4	20.3	97	101	73-125	4	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	20.3	20.0	101	100	62-137	1	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	20.8	21.7	104	108	61-136	4	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	50.7	54.3	101	109	45-128	7	30		
Trichloroethene	ug/L	<0.15	20	20	20.2	22.0	101	110	74-132	8	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	23.1	23.9	115	120	75-139	4	30		
Vinyl acetate	ug/L	<1.1	20	20	18.8	19.8	94	99	51-135	5	30		
Vinyl chloride	ug/L	<0.092	20	20	22.2	22.6	111	113	68-146	2	30		
Xylene (Total)	ug/L	<0.31	60	60	69.1	74.0	115	123	67-137	7	30		
1,2-Dichloroethane-d4 (S)	%						103	105	75-136				
4-Bromofluorobenzene (S)	%						101	103	75-125				
Toluene-d8 (S)	%						101	101	75-125				

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222886												3222887	
Parameter	Units	10467835001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	19.1	20.8	95	104	75-140	9	30		
1,1,1-Trichloroethane	ug/L	<0.14	20	20	19.7	20.7	99	103	74-136	5	30		
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20.4	20.8	102	104	66-134	2	30		
1,1,2-Trichloroethane	ug/L	<0.18	20	20	19.1	20.4	96	102	75-126	7	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467831

Parameter	Units	10467835001		3222886		3222887		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	21.0	22.8	105	114	65-146	8	30		
1,1-Dichloroethane	ug/L	<0.17	20	20	19.7	20.5	98	103	68-132	4	30		
1,1-Dichloroethene	ug/L	<0.16	20	20	19.8	20.9	99	104	66-139	5	30		
1,1-Dichloropropene	ug/L	<0.20	20	20	19.9	20.8	99	104	67-134	5	30		
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	21.6	23.9	108	120	67-129	10	30		
1,2,3-Trichloropropane	ug/L	<0.26	20	20	20.1	20.7	101	103	69-128	3	30		
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	21.5	23.7	108	119	65-140	10	30		
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	20.3	22.9	102	114	71-133	12	30		
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	53.5	56.2	107	112	54-138	5	30		
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	19.8	21.0	99	105	68-125	6	30		
1,2-Dichlorobenzene	ug/L	<0.14	20	20	21.0	23.9	105	120	74-136	13	30		
1,2-Dichloroethane	ug/L	<0.22	20	20	17.6	18.1	88	90	68-125	3	30		
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	38.5	39.9	96	100	71-126	4	30	N2	
1,2-Dichloropropane	ug/L	<0.16	20	20	18.9	19.6	95	98	67-125	3	30		
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	20.4	22.9	102	115	68-137	12	30		
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.3	23.8	107	119	75-131	11	30		
1,3-Dichloropropane	ug/L	<0.070	20	20	19.6	20.1	98	101	71-125	3	30		
1,4-Dichlorobenzene	ug/L	<0.17	20	20	19.9	22.3	99	111	74-126	11	30		
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	386	416	96	104	68-125	7	30		
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	20.6	19.8	103	99	54-129	4	30	N2	
2,2-Dichloropropane	ug/L	<0.17	20	20	20.8	21.4	104	107	69-139	3	30		
2-Butanone (MEK)	ug/L	<0.99	100	100	84.0	81.4	84	81	54-144	3	30		
2-Chlorotoluene	ug/L	<0.16	20	20	21.5	24.0	107	120	75-134	11	30		
2-Hexanone	ug/L	<0.88	100	100	101	101	101	101	58-137	0	30		
4-Chlorotoluene	ug/L	<0.13	20	20	21.9	24.3	110	121	72-133	10	30		
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	99.9	101	100	101	60-129	1	30		
Acetone	ug/L	<9.2	100	100	70.2	76.7	70	77	62-132	9	30		
Acrolein	ug/L	<1.2	200	200	282	289	141	145	30-150	3	30		
Acrylonitrile	ug/L	<0.91	200	200	184	192	92	96	68-125	4	30		
Benzene	ug/L	<0.10	20	20	19.1	19.7	96	99	68-125	3	30		
Bromobenzene	ug/L	<0.21	20	20	20.5	22.2	102	111	73-126	8	30		
Bromochloromethane	ug/L	<0.27	20	20	18.6	19.3	93	96	66-143	3	30		
Bromodichloromethane	ug/L	<0.22	20	20	18.8	19.7	94	99	74-125	5	30		
Bromoform	ug/L	<0.80	20	20	20.4	21.4	102	107	64-134	5	30		
Bromomethane	ug/L	<1.8	20	20	16.9	17.3	85	86	30-150	2	30		
Carbon disulfide	ug/L	<0.078	20	20	21.0	20.5	105	103	43-147	2	30		
Carbon tetrachloride	ug/L	<0.19	20	20	20.6	22.2	103	111	71-143	8	30		
Chlorobenzene	ug/L	<0.17	20	20	19.2	20.5	96	103	75-125	7	30		
Chloroethane	ug/L	<0.49	20	20	20.7	20.2	104	101	75-129	2	30		
Chloroform	ug/L	<0.45	20	20	17.5	18.4	88	92	66-132	5	30		
Chloromethane	ug/L	<0.16	20	20	19.5	19.8	98	99	53-137	2	30		
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	18.7	19.5	94	98	67-133	4	30		
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	17.1	17.6	86	88	66-125	3	30		
Dibromochloromethane	ug/L	<0.12	20	20	18.8	20.0	94	100	62-132	6	30		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467831

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222886 3222887												
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		10467835001 Result	Spike Conc.	Spike Conc.	MS Result							
Dibromomethane	ug/L	<0.16	20	20	19.9	20.5	99	103	67-125	3	30	
Dichlorodifluoromethane	ug/L	<0.23	20	20	21.8	23.0	109	115	71-142	5	30	
Dichlorofluoromethane	ug/L	<0.14	20	20	19.7	20.2	98	101	70-131	3	30	N2
Diisopropyl ether	ug/L	<0.13	20	20	17.8	19.0	89	95	63-131	6	30	
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	18.5	19.7	93	99	66-128	6	30	
Ethylbenzene	ug/L	<0.14	20	20	20.1	22.0	101	110	74-126	9	30	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	22.7	22.0	113	110	68-143	3	30	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20.7	23.3	103	117	74-130	12	30	
m&p-Xylene	ug/L	<0.31	40	40	46.4	51.7	116	129	69-132	11	30	
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.1	19.8	95	99	65-131	4	30	
Methylene Chloride	ug/L	<0.98	20	20	18.6	19.2	92	95	57-125	3	30	
n-Butylbenzene	ug/L	<0.24	20	20	21.9	22.7	110	113	71-131	3	30	
n-Propylbenzene	ug/L	<0.10	20	20	23.0	25.5	115	127	67-138	10	30	
Naphthalene	ug/L	<0.48	20	20	21.8	24.0	109	120	60-130	10	30	
o-Xylene	ug/L	<0.16	20	20	20.1	22.7	101	113	69-131	12	30	
p-Isopropyltoluene	ug/L	<0.15	20	20	21.7	23.5	109	118	72-133	8	30	
sec-Butylbenzene	ug/L	<0.15	20	20	21.6	23.5	108	117	73-134	8	30	
Styrene	ug/L	<0.19	20	20	19.4	21.1	97	106	72-125	9	30	
tert-Amylmethyl ether	ug/L	<0.11	20	20	18.7	19.5	93	97	67-125	4	30	
tert-Butyl Alcohol	ug/L	<1.2	200	200	183	196	92	98	64-137	7	30	
tert-Butylbenzene	ug/L	<0.15	20	20	21.3	23.4	106	117	70-143	10	30	
Tetrachloroethene	ug/L	<0.17	20	20	21.0	22.9	105	114	72-129	9	30	
Tetrahydrofuran	ug/L	<2.2	200	200	183	192	92	96	66-128	5	30	
Toluene	ug/L	<0.083	20	20	18.6	19.4	93	97	73-125	4	30	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	19.7	20.4	99	102	62-137	3	30	
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	20.5	20.7	103	103	61-136	1	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	50.5	51.7	101	103	45-128	2	30	
Trichloroethene	ug/L	<0.15	20	20	19.9	20.8	99	104	74-132	5	30	
Trichlorofluoromethane	ug/L	<0.23	20	20	22.4	23.7	112	119	75-139	6	30	
Vinyl acetate	ug/L	<1.1	20	20	18.4	18.7	92	93	51-135	2	30	
Vinyl chloride	ug/L	<0.092	20	20	21.3	21.6	107	108	68-146	1	30	
Xylene (Total)	ug/L	<0.31	60	60	66.5	74.4	111	124	67-137	11	30	
1,2-Dichloroethane-d4 (S)	%						104	105	75-136			
4-Bromofluorobenzene (S)	%						100	99	75-125			
Toluene-d8 (S)	%						100	99	75-125			

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467831

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

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

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467831

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467831

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10467831001	Stark-GW-032119	EPA 8260B	596124		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields

WO#: 10467831



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

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique	MATRIX Drinking Water DW Water WT Waste Water WW Product P Soil/Solid SL Oil OL Wipe WP Air AR Other OT Tissue TS	CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Analyses Test	Requested Analysis Filtered (Y/N)																		
						DATE	TIME			Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other		Y/N	Y	60107470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, Nitrate 300.0	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	4500 Total Phosphorus	8010 Total Iron	MS/MSD Requested					
1	Stark-GW-032119					03/21/19	1245	-	9					X	X																			X	Best
2																																			
3																																			
4																																			
5																																			
6																																			
7																																			
8																																			
9																																			
10																																			
11																																			
12																																			

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Short hold analyses are in bold	Natalie Dandy	3/21/19	1700	Enj pace	3/22/19	0830	0-6 Y Y Y
*Field filtered by client							4.4 1.2 0.6

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on	ice (Y/N)	Custody Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: SAB	SIGNATURE of SAMPLER: SAB						
DATE Signed 3/21/19							

Sample Condition Upon Receipt

Client Name: CH2M Hill

Project #: **WO# : 10467831**
 PM: JMG Due Date: 04/05/19
 CLIENT: UPRR_CH2M

Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception

Tracking Number: 7928 9397 2332/2322/2311/2344

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

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

Thermometer: G87A9155100842 G87A9170600254 Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: <u>06, 44, 17, 0.6</u> °C	Average Corrected Temp (no temp blank only): _____ °C	See Exceptions <input type="checkbox"/>
Correction Factor: <u>True</u>	Cooler Temp Corrected w/temp blank: <u>0.6, 44, 17, 0.6</u> °C		

USDA Regulated Soil: (N/A, water sample/Other: _____) Date/Initials of Person Examining Contents: JE 3/22/19

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

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

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

		COMMENTS:
Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time?	<input type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. if no, write ID/ Date/Time on Container Below: _____ See Exception <input type="checkbox"/>
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other _____		
All containers needing acid/base preservation have been checked?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/> NaOH <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
Exceptions: <u>VOA</u> Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No See Exception <input type="checkbox"/>
Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. See Exception <input type="checkbox"/>
Trip Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. <u>SHARED w/ wo: 10467822</u>
Trip Blank Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): <u>199008</u>

CLIENT NOTIFICATION/RESOLUTION
 Person Contacted: Mark Ochsner Date/Time: 06/27/18 Field Data Required? Yes No
 Comments/Resolution: WA certs not required for 8260 2,2,4-TMP or dichlorofluoromethane.

Project Manager Review: _____ Date: 03/22/19
 Note: Whenever there is a discrepancy affecting North Carolina, is, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of state, incorrect preservative, out of temp, incorrect containers.

Entered by: _____

March 29, 2019

David Hodson
Jacobs
2020 SW 4th Ave
#300
Portland, OR 97201

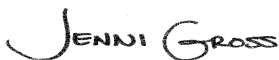
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467832

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 22, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Steve Demus, CH2M Hill
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467832

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467832

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10467832001	Thorson-GW-032119	Water	03/21/19 12:00	03/22/19 08:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467832

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10467832001	Thorson-GW-032119	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467832

Method: EPA 8260B
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: March 29, 2019

General Information:

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

Hold Time:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Internal Standards:

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

Surrogates:

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

Method Blank:

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

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

QC Batch: 596124

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s):
10467825001, 10467831001, 10467835001

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

- MSD (Lab ID: 3222883)
 - Acrolein

Additional Comments:

Analyte Comments:

QC Batch: 596124

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3222880)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467832

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

Analyte Comments:

QC Batch: 596124

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3222880)
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3222881)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3222882)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3222884)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3222886)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3222883)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3222885)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3222887)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- Thorson-GW-032119 (Lab ID: 10467832001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467832

Sample: Thorson-GW-032119 Lab ID: 10467832001 Collected: 03/21/19 12:00 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/27/19 23:30	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/27/19 23:30	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/27/19 23:30	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/27/19 23:30	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/27/19 23:30	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/27/19 23:30	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/27/19 23:30	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		03/27/19 23:30	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/27/19 23:30	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/27/19 23:30	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/27/19 23:30	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/27/19 23:30	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/27/19 23:30	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/27/19 23:30	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/27/19 23:30	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/27/19 23:30	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/27/19 23:30	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/27/19 23:30	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		03/27/19 23:30	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/27/19 23:30	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/27/19 23:30	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/27/19 23:30	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/27/19 23:30	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/27/19 23:30	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/27/19 23:30	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/27/19 23:30	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/27/19 23:30	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		03/27/19 23:30	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/27/19 23:30	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/27/19 23:30	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/27/19 23:30	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/27/19 23:30	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/27/19 23:30	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/27/19 23:30	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/27/19 23:30	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/27/19 23:30	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/27/19 23:30	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/27/19 23:30	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/27/19 23:30	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/27/19 23:30	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/27/19 23:30	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/27/19 23:30	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/27/19 23:30	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/27/19 23:30	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/27/19 23:30	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/27/19 23:30	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467832

Sample: Thorson-GW-032119 **Lab ID: 10467832001** Collected: 03/21/19 12:00 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/27/19 23:30	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/27/19 23:30	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/27/19 23:30	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/27/19 23:30	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/27/19 23:30	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/27/19 23:30	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/27/19 23:30	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		03/27/19 23:30	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/27/19 23:30	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/27/19 23:30	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/27/19 23:30	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/27/19 23:30	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/27/19 23:30	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/27/19 23:30	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		03/27/19 23:30	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/27/19 23:30	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/27/19 23:30	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/27/19 23:30	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/27/19 23:30	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/27/19 23:30	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/27/19 23:30	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/27/19 23:30	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/27/19 23:30	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/27/19 23:30	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/27/19 23:30	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/27/19 23:30	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/27/19 23:30	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/27/19 23:30	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/27/19 23:30	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/27/19 23:30	75-65-0	
tert-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/27/19 23:30	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/27/19 23:30	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		03/27/19 23:30	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/27/19 23:30	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	92	%	75-136		1		03/27/19 23:30	17060-07-0	
Toluene-d8 (S)	109	%	75-125		1		03/27/19 23:30	2037-26-5	
4-Bromofluorobenzene (S)	97	%	75-125		1		03/27/19 23:30	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467832

QC Batch: 596124

Analysis Method: EPA 8260B

QC Batch Method: EPA 8260B

Analysis Description: 8260 MSV LL Water

Associated Lab Samples: 10467832001

METHOD BLANK: 3222880

Matrix: Water

Associated Lab Samples: 10467832001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	03/27/19 19:09	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	03/27/19 19:09	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	03/27/19 19:09	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	03/27/19 19:09	MN
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	03/27/19 19:09	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	03/27/19 19:09	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	03/27/19 19:09	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	03/27/19 19:09	MN
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	03/27/19 19:09	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	03/27/19 19:09	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	03/27/19 19:09	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	03/27/19 19:09	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	03/27/19 19:09	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	03/27/19 19:09	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	03/27/19 19:09	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	03/27/19 19:09	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	03/27/19 19:09	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	03/27/19 19:09	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	03/27/19 19:09	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	03/27/19 19:09	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
2-Hexanone	ug/L	<0.88	5.0	0.88	03/27/19 19:09	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/27/19 19:09	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	03/27/19 19:09	
Acetone	ug/L	<9.2	20.0	9.2	03/27/19 19:09	
Acrolein	ug/L	<1.2	10.0	1.2	03/27/19 19:09	
Acrylonitrile	ug/L	<0.91	10.0	0.91	03/27/19 19:09	
Benzene	ug/L	<0.10	0.50	0.10	03/27/19 19:09	
Bromobenzene	ug/L	<0.21	0.50	0.21	03/27/19 19:09	
Bromochloromethane	ug/L	<0.27	1.0	0.27	03/27/19 19:09	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	03/27/19 19:09	
Bromoform	ug/L	<0.80	4.0	0.80	03/27/19 19:09	
Bromomethane	ug/L	<1.8	4.0	1.8	03/27/19 19:09	
Carbon disulfide	ug/L	<0.078	1.0	0.078	03/27/19 19:09	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	03/27/19 19:09	

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

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467832

METHOD BLANK: 3222880

Matrix: Water

Associated Lab Samples: 10467832001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
Chloroethane	ug/L	<0.49	1.0	0.49	03/27/19 19:09	
Chloroform	ug/L	<0.45	4.0	0.45	03/27/19 19:09	MN
Chloromethane	ug/L	<0.16	4.0	0.16	03/27/19 19:09	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	03/27/19 19:09	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	03/27/19 19:09	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	03/27/19 19:09	
Dibromomethane	ug/L	<0.16	1.0	0.16	03/27/19 19:09	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	03/27/19 19:09	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	03/27/19 19:09	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	03/27/19 19:09	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/27/19 19:09	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	03/27/19 19:09	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
m&p-Xylene	ug/L	<0.31	1.0	0.31	03/27/19 19:09	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
Methylene Chloride	ug/L	<0.98	4.0	0.98	03/27/19 19:09	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	03/27/19 19:09	MN
n-Propylbenzene	ug/L	<0.10	0.50	0.10	03/27/19 19:09	
Naphthalene	ug/L	<0.48	1.0	0.48	03/27/19 19:09	
o-Xylene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	03/27/19 19:09	MN
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	03/27/19 19:09	
Styrene	ug/L	<0.19	1.0	0.19	03/27/19 19:09	MN
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	03/27/19 19:09	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	03/27/19 19:09	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	03/27/19 19:09	MN
Tetrachloroethene	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	03/27/19 19:09	
Toluene	ug/L	<0.083	0.50	0.083	03/27/19 19:09	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	03/27/19 19:09	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	03/27/19 19:09	
Trichloroethene	ug/L	<0.15	0.40	0.15	03/27/19 19:09	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	03/27/19 19:09	
Vinyl acetate	ug/L	<1.1	10.0	1.1	03/27/19 19:09	
Vinyl chloride	ug/L	<0.092	0.20	0.092	03/27/19 19:09	
Xylene (Total)	ug/L	<0.31	1.5	0.31	03/27/19 19:09	
1,2-Dichloroethane-d4 (S)	%	104	75-136		03/27/19 19:09	
4-Bromofluorobenzene (S)	%	101	75-125		03/27/19 19:09	
Toluene-d8 (S)	%	105	75-125		03/27/19 19:09	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467832

LABORATORY CONTROL SAMPLE: 3222881

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.6	98	68-141	
1,1,1-Trichloroethane	ug/L	20	19.0	95	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	20.3	101	73-125	
1,1,2-Trichloroethane	ug/L	20	20.4	102	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	19.8	99	69-132	
1,1-Dichloroethane	ug/L	20	19.8	99	73-125	
1,1-Dichloroethene	ug/L	20	19.4	97	71-126	
1,1-Dichloropropene	ug/L	20	19.5	98	73-126	
1,2,3-Trichlorobenzene	ug/L	20	20.9	105	72-126	
1,2,3-Trichloropropane	ug/L	20	21.4	107	75-126	
1,2,4-Trichlorobenzene	ug/L	20	21.0	105	71-134	
1,2,4-Trimethylbenzene	ug/L	20	20.5	103	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	53.5	107	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	20.4	102	75-129	
1,2-Dichlorobenzene	ug/L	20	21.0	105	75-129	
1,2-Dichloroethane	ug/L	20	18.6	93	75-125	
1,2-Dichloroethene (Total)	ug/L	40	38.5	96	74-125	N2
1,2-Dichloropropane	ug/L	20	19.1	96	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.4	102	75-127	
1,3-Dichlorobenzene	ug/L	20	21.0	105	75-126	
1,3-Dichloropropane	ug/L	20	20.3	101	75-125	
1,4-Dichlorobenzene	ug/L	20	19.6	98	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	407	102	72-129	
2,2,4-Trimethylpentane	ug/L	20	18.0	90	72-128	N2
2,2-Dichloropropane	ug/L	20	19.6	98	65-138	
2-Butanone (MEK)	ug/L	100	95.9	96	59-144	
2-Chlorotoluene	ug/L	20	20.9	105	75-127	
2-Hexanone	ug/L	100	105	105	73-134	
4-Chlorotoluene	ug/L	20	21.7	109	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	104	104	62-141	
Acetone	ug/L	100	95.6	96	60-137	
Acrolein	ug/L	200	217	109	60-141	
Acrylonitrile	ug/L	200	202	101	75-129	
Benzene	ug/L	20	19.5	98	73-125	
Bromobenzene	ug/L	20	20.3	102	73-125	
Bromochloromethane	ug/L	20	19.1	95	75-135	
Bromodichloromethane	ug/L	20	19.5	97	75-125	
Bromoform	ug/L	20	21.6	108	67-136	
Bromomethane	ug/L	20	18.4	92	30-150	
Carbon disulfide	ug/L	20	20.8	104	47-137	
Carbon tetrachloride	ug/L	20	20.0	100	75-125	
Chlorobenzene	ug/L	20	19.4	97	75-125	
Chloroethane	ug/L	20	20.8	104	63-136	
Chloroform	ug/L	20	18.5	93	73-128	
Chloromethane	ug/L	20	20.4	102	55-130	
cis-1,2-Dichloroethene	ug/L	20	19.2	96	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.3	96	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467832

LABORATORY CONTROL SAMPLE: 3222881

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	19.3	97	75-125	
Dibromomethane	ug/L	20	20.7	103	75-125	
Dichlorodifluoromethane	ug/L	20	20.8	104	63-132	
Dichlorofluoromethane	ug/L	20	19.7	98	68-127	N2
Diisopropyl ether	ug/L	20	18.5	92	71-131	
Ethyl-tert-butyl ether	ug/L	20	19.0	95	75-125	
Ethylbenzene	ug/L	20	19.8	99	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.4	102	72-134	
Isopropylbenzene (Cumene)	ug/L	20	20.3	101	75-125	
m&p-Xylene	ug/L	40	45.3	113	75-126	
Methyl-tert-butyl ether	ug/L	20	19.3	97	75-125	
Methylene Chloride	ug/L	20	19.7	99	70-125	
n-Butylbenzene	ug/L	20	20.6	103	75-126	
n-Propylbenzene	ug/L	20	22.1	110	73-127	
Naphthalene	ug/L	20	21.9	109	63-128	
o-Xylene	ug/L	20	20.2	101	75-128	
p-Isopropyltoluene	ug/L	20	20.7	103	75-125	
sec-Butylbenzene	ug/L	20	20.5	102	75-126	
Styrene	ug/L	20	19.7	99	75-125	
tert-Amylmethyl ether	ug/L	20	19.4	97	75-125	
tert-Butyl Alcohol	ug/L	200	203	101	75-130	
tert-Butylbenzene	ug/L	20	20.2	101	75-131	
Tetrachloroethene	ug/L	20	20.3	102	74-125	
Tetrahydrofuran	ug/L	200	190	95	64-138	
Toluene	ug/L	20	18.2	91	74-125	
trans-1,2-Dichloroethene	ug/L	20	19.3	96	68-128	
trans-1,3-Dichloropropene	ug/L	20	20.7	103	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	52.1	104	60-127	
Trichloroethene	ug/L	20	19.7	99	75-127	
Trichlorofluoromethane	ug/L	20	21.2	106	72-133	
Vinyl acetate	ug/L	20	18.6	93	61-129	
Vinyl chloride	ug/L	20	20.9	104	75-128	
Xylene (Total)	ug/L	60	65.5	109	75-125	
1,2-Dichloroethane-d4 (S)	%			104	75-136	
4-Bromofluorobenzene (S)	%			99	75-125	
Toluene-d8 (S)	%			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222882 3222883

Parameter	Units	10467825001		MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	MS Result	MSD Result						
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20	18.8	20.3	94	102	75-140	8	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20	20.5	20.6	102	103	74-136	1	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20	17.5	20.4	88	102	66-134	15	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20	18.5	20.7	93	103	75-126	11	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467832

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3222882		3222883								
Parameter	Units	10467825001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD		
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	22.1	23.0	110	115	65-146	4	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	21.8	20.3	109	102	68-132	7	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	21.5	21.0	108	105	66-139	2	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	20.8	20.6	104	103	67-134	1	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	19.8	22.5	99	113	67-129	13	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	17.6	20.8	88	104	69-128	17	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	20.8	23.2	104	116	65-140	11	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	20.0	22.9	100	114	71-133	14	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	43.0	54.0	86	108	54-138	23	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	18.7	20.2	93	101	68-125	8	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	20.0	22.9	100	114	74-136	13	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	17.0	18.0	85	90	68-125	6	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	44.2	39.7	110	99	71-126	11	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	17.9	19.2	89	96	67-125	7	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	20.3	22.8	102	114	68-137	11	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	20.3	23.1	102	115	75-131	13	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	19.1	20.1	95	100	71-125	5	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	18.9	21.4	94	107	74-126	12	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	345	412	86	103	68-125	18	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	22.8	20.5	114	102	54-129	11	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	22.7	21.8	113	109	69-139	4	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	71.3	86.4	71	86	54-144	19	30	
2-Chlorotoluene	ug/L	<0.16	20	20	20.7	23.5	103	118	75-134	13	30	
2-Hexanone	ug/L	<0.88	100	100	89.0	103	89	103	58-137	14	30	
4-Chlorotoluene	ug/L	<0.13	20	20	21.0	24.4	105	122	72-133	15	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	87.3	103	87	103	60-129	17	30	
Acetone	ug/L	<9.2	100	100	71.0	76.9	71	77	62-132	8	30	
Acrolein	ug/L	<1.2	200	200	279	304	140	152	30-150	9	30	M1
Acrylonitrile	ug/L	<0.91	200	200	190	201	95	100	68-125	5	30	
Benzene	ug/L	<0.10	20	20	19.2	20.1	96	100	68-125	4	30	
Bromobenzene	ug/L	<0.21	20	20	19.2	21.2	96	106	73-126	10	30	
Bromochloromethane	ug/L	<0.27	20	20	20.6	19.2	103	96	66-143	7	30	
Bromodichloromethane	ug/L	<0.22	20	20	18.2	19.8	91	99	74-125	8	30	
Bromoform	ug/L	<0.80	20	20	18.1	21.3	91	107	64-134	16	30	
Bromomethane	ug/L	<1.8	20	20	18.1	18.3	90	92	30-150	1	30	
Carbon disulfide	ug/L	<0.078	20	20	22.7	20.9	114	105	43-147	8	30	
Carbon tetrachloride	ug/L	0.77	20	20	22.7	22.3	110	108	71-143	2	30	
Chlorobenzene	ug/L	<0.17	20	20	18.5	20.0	93	100	75-125	8	30	
Chloroethane	ug/L	<0.49	20	20	20.8	21.6	104	108	75-129	4	30	
Chloroform	ug/L	<0.45	20	20	18.8	18.7	94	93	66-132	1	30	
Chloromethane	ug/L	<0.16	20	20	20.9	21.1	104	106	53-137	1	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	21.4	19.4	107	97	67-133	10	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	16.6	17.5	83	87	66-125	5	30	
Dibromochloromethane	ug/L	<0.12	20	20	18.3	19.8	92	99	62-132	8	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467832

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222882												3222883	
Parameter	Units	10467825001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
Dibromomethane	ug/L	<0.16	20	20	18.2	20.8	91	104	67-125	13	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	24.2	24.4	121	122	71-142	1	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	21.6	21.6	108	108	70-131	0	30 N2		
Diisopropyl ether	ug/L	<0.13	20	20	19.0	19.4	95	97	63-131	2	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	19.3	19.6	97	98	66-128	2	30		
Ethylbenzene	ug/L	<0.14	20	20	20.0	21.7	100	109	74-126	8	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	25.2	21.8	126	109	68-143	14	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20.9	22.9	104	115	74-130	9	30		
m&p-Xylene	ug/L	<0.31	40	40	45.6	50.4	114	126	69-132	10	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.4	19.8	97	99	65-131	2	30		
Methylene Chloride	ug/L	<0.98	20	20	20.1	19.5	100	98	57-125	3	30		
n-Butylbenzene	ug/L	<0.24	20	20	22.1	23.1	111	116	71-131	4	30		
n-Propylbenzene	ug/L	<0.10	20	20	22.8	25.3	114	127	67-138	11	30		
Naphthalene	ug/L	<0.48	20	20	18.7	23.6	93	118	60-130	23	30		
o-Xylene	ug/L	<0.16	20	20	19.9	22.0	100	110	69-131	10	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	22.1	23.1	110	116	72-133	5	30		
sec-Butylbenzene	ug/L	<0.15	20	20	22.2	23.3	111	117	73-134	5	30		
Styrene	ug/L	<0.19	20	20	19.2	21.1	96	106	72-125	10	30		
tert-Amylmethyl ether	ug/L	<0.11	20	20	17.4	19.8	87	99	67-125	13	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	192	198	96	99	64-137	3	30		
tert-Butylbenzene	ug/L	<0.15	20	20	21.5	22.7	107	113	70-143	5	30		
Tetrachloroethene	ug/L	<0.17	20	20	19.8	22.9	99	114	72-129	14	30		
Tetrahydrofuran	ug/L	<2.2	200	200	174	190	87	95	66-128	8	30		
Toluene	ug/L	<0.083	20	20	18.3	19.3	91	96	73-125	5	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	22.8	20.3	114	101	62-137	12	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	19.8	21.0	99	105	61-136	5	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	45.7	52.4	91	105	45-128	14	30		
Trichloroethene	ug/L	<0.15	20	20	20.3	20.6	102	103	74-132	1	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	24.3	24.4	122	122	75-139	0	30		
Vinyl acetate	ug/L	<1.1	20	20	18.5	19.2	92	96	51-135	4	30		
Vinyl chloride	ug/L	<0.092	20	20	23.5	22.8	118	114	68-146	3	30		
Xylene (Total)	ug/L	<0.31	60	60	65.6	72.4	109	121	67-137	10	30		
1,2-Dichloroethane-d4 (S)	%						105	103	75-136				
4-Bromofluorobenzene (S)	%						101	99	75-125				
Toluene-d8 (S)	%						101	99	75-125				

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222884												3222885	
Parameter	Units	10467831001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20.0	21.0	100	105	75-140	5	30		
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20.1	20.5	101	103	74-136	2	30		
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20.0	21.6	100	108	66-134	8	30		
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20.2	20.7	101	103	75-126	2	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467832

Parameter	Units	10467831001		MS		MSD		3222884		3222885		Qual
		Result	Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec	Max RPD		
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	21.6	23.1	108	116	65-146	7	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	19.7	20.7	99	104	68-132	5	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	20.3	20.0	102	100	66-139	2	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	20.1	21.7	100	109	67-134	8	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	22.4	23.9	112	119	67-129	6	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	20.8	21.7	104	108	69-128	4	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	22.1	24.2	110	121	65-140	9	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	21.5	23.1	107	115	71-133	7	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	52.3	57.8	105	116	54-138	10	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	20.4	20.6	102	103	68-125	1	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	21.6	23.6	108	118	74-136	9	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	17.7	18.6	89	93	68-125	5	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	39.4	39.8	99	99	71-126	1	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	19.4	19.3	97	96	67-125	1	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	21.4	23.2	107	116	68-137	8	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.1	23.5	105	117	75-131	11	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	19.9	20.9	99	105	71-125	5	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	19.9	22.0	99	110	74-126	10	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	376	401	94	100	68-125	6	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	21.7	21.4	108	107	54-129	1	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	20.7	21.7	104	108	69-139	5	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	83.1	86.9	83	87	54-144	4	30	
2-Chlorotoluene	ug/L	<0.16	20	20	22.0	24.1	110	121	75-134	9	30	
2-Hexanone	ug/L	<0.88	100	100	101	105	101	105	58-137	4	30	
4-Chlorotoluene	ug/L	<0.13	20	20	22.7	24.7	114	124	72-133	8	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	102	106	102	106	60-129	4	30	
Acetone	ug/L	<9.2	100	100	74.8	78.7	75	79	62-132	5	30	
Acrolein	ug/L	<1.2	200	200	284	297	142	148	30-150	4	30	
Acrylonitrile	ug/L	<0.91	200	200	187	198	93	99	68-125	6	30	
Benzene	ug/L	<0.10	20	20	19.4	20.3	97	102	68-125	5	30	
Bromobenzene	ug/L	<0.21	20	20	20.4	22.1	102	111	73-126	8	30	
Bromochloromethane	ug/L	<0.27	20	20	19.2	19.3	96	97	66-143	0	30	
Bromodichloromethane	ug/L	<0.22	20	20	19.1	19.2	96	96	74-125	0	30	
Bromoform	ug/L	<0.80	20	20	20.9	22.2	104	111	64-134	6	30	
Bromomethane	ug/L	<1.8	20	20	17.4	18.0	87	90	30-150	3	30	
Carbon disulfide	ug/L	<0.078	20	20	21.8	20.6	109	103	43-147	6	30	
Carbon tetrachloride	ug/L	<0.19	20	20	21.0	22.2	105	111	71-143	6	30	
Chlorobenzene	ug/L	<0.17	20	20	19.7	20.8	99	104	75-125	5	30	
Chloroethane	ug/L	<0.49	20	20	21.3	21.5	107	107	75-129	1	30	
Chloroform	ug/L	<0.45	20	20	18.0	19.0	90	95	66-132	5	30	
Chloromethane	ug/L	<0.16	20	20	19.7	20.9	99	105	53-137	6	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	19.2	19.8	96	99	67-133	3	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	17.4	17.2	87	86	66-125	1	30	
Dibromochloromethane	ug/L	<0.12	20	20	19.3	20.1	96	101	62-132	4	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467832

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222884												3222885	
Parameter	Units	10467831001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max		Qual	
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD		
Dibromomethane	ug/L	<0.16	20	20	19.8	19.9	99	100	67-125	1	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	23.4	23.7	117	118	71-142	1	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	20.6	21.1	103	105	70-131	2	30	N2	
Diisopropyl ether	ug/L	<0.13	20	20	18.6	19.4	93	97	63-131	4	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	19.1	20.2	95	101	66-128	5	30		
Ethylbenzene	ug/L	<0.14	20	20	21.0	22.6	105	113	74-126	7	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	23.4	22.3	117	111	68-143	5	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	21.4	23.7	107	118	74-130	10	30		
m&p-Xylene	ug/L	<0.31	40	40	48.2	51.7	120	129	69-132	7	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.5	20.1	98	100	65-131	3	30		
Methylene Chloride	ug/L	<0.98	20	20	18.8	19.3	94	96	57-125	3	30		
n-Butylbenzene	ug/L	<0.24	20	20	22.6	23.4	113	117	71-131	3	30		
n-Propylbenzene	ug/L	<0.10	20	20	23.7	26.2	119	131	67-138	10	30		
Naphthalene	ug/L	<0.48	20	20	21.7	24.3	108	122	60-130	11	30		
o-Xylene	ug/L	<0.16	20	20	20.9	22.3	104	112	69-131	7	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	22.3	23.7	111	118	72-133	6	30		
sec-Butylbenzene	ug/L	<0.15	20	20	22.5	23.8	113	119	73-134	6	30		
Styrene	ug/L	<0.19	20	20	20.2	21.6	101	108	72-125	7	30		
tert-Amylmethyl ether	ug/L	<0.11	20	20	19.2	20.3	96	101	67-125	6	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	188	201	94	100	64-137	7	30		
tert-Butylbenzene	ug/L	<0.15	20	20	21.9	23.7	109	119	70-143	8	30		
Tetrachloroethene	ug/L	<0.17	20	20	21.7	23.6	108	118	72-129	9	30		
Tetrahydrofuran	ug/L	<2.2	200	200	185	198	92	99	66-128	7	30		
Toluene	ug/L	<0.083	20	20	19.4	20.3	97	101	73-125	4	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	20.3	20.0	101	100	62-137	1	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	20.8	21.7	104	108	61-136	4	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	50.7	54.3	101	109	45-128	7	30		
Trichloroethene	ug/L	<0.15	20	20	20.2	22.0	101	110	74-132	8	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	23.1	23.9	115	120	75-139	4	30		
Vinyl acetate	ug/L	<1.1	20	20	18.8	19.8	94	99	51-135	5	30		
Vinyl chloride	ug/L	<0.092	20	20	22.2	22.6	111	113	68-146	2	30		
Xylene (Total)	ug/L	<0.31	60	60	69.1	74.0	115	123	67-137	7	30		
1,2-Dichloroethane-d4 (S)	%						103	105	75-136				
4-Bromofluorobenzene (S)	%						101	103	75-125				
Toluene-d8 (S)	%						101	101	75-125				

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222886												3222887	
Parameter	Units	10467835001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max		Qual	
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD		
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	19.1	20.8	95	104	75-140	9	30		
1,1,1-Trichloroethane	ug/L	<0.14	20	20	19.7	20.7	99	103	74-136	5	30		
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20.4	20.8	102	104	66-134	2	30		
1,1,2-Trichloroethane	ug/L	<0.18	20	20	19.1	20.4	96	102	75-126	7	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467832

Parameter	Units	10467835001		3222886		3222887		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	21.0	22.8	105	114	65-146	8	30		
1,1-Dichloroethane	ug/L	<0.17	20	20	19.7	20.5	98	103	68-132	4	30		
1,1-Dichloroethene	ug/L	<0.16	20	20	19.8	20.9	99	104	66-139	5	30		
1,1-Dichloropropene	ug/L	<0.20	20	20	19.9	20.8	99	104	67-134	5	30		
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	21.6	23.9	108	120	67-129	10	30		
1,2,3-Trichloropropane	ug/L	<0.26	20	20	20.1	20.7	101	103	69-128	3	30		
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	21.5	23.7	108	119	65-140	10	30		
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	20.3	22.9	102	114	71-133	12	30		
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	53.5	56.2	107	112	54-138	5	30		
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	19.8	21.0	99	105	68-125	6	30		
1,2-Dichlorobenzene	ug/L	<0.14	20	20	21.0	23.9	105	120	74-136	13	30		
1,2-Dichloroethane	ug/L	<0.22	20	20	17.6	18.1	88	90	68-125	3	30		
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	38.5	39.9	96	100	71-126	4	30	N2	
1,2-Dichloropropane	ug/L	<0.16	20	20	18.9	19.6	95	98	67-125	3	30		
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	20.4	22.9	102	115	68-137	12	30		
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.3	23.8	107	119	75-131	11	30		
1,3-Dichloropropane	ug/L	<0.070	20	20	19.6	20.1	98	101	71-125	3	30		
1,4-Dichlorobenzene	ug/L	<0.17	20	20	19.9	22.3	99	111	74-126	11	30		
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	386	416	96	104	68-125	7	30		
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	20.6	19.8	103	99	54-129	4	30	N2	
2,2-Dichloropropane	ug/L	<0.17	20	20	20.8	21.4	104	107	69-139	3	30		
2-Butanone (MEK)	ug/L	<0.99	100	100	84.0	81.4	84	81	54-144	3	30		
2-Chlorotoluene	ug/L	<0.16	20	20	21.5	24.0	107	120	75-134	11	30		
2-Hexanone	ug/L	<0.88	100	100	101	101	101	101	58-137	0	30		
4-Chlorotoluene	ug/L	<0.13	20	20	21.9	24.3	110	121	72-133	10	30		
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	99.9	101	100	101	60-129	1	30		
Acetone	ug/L	<9.2	100	100	70.2	76.7	70	77	62-132	9	30		
Acrolein	ug/L	<1.2	200	200	282	289	141	145	30-150	3	30		
Acrylonitrile	ug/L	<0.91	200	200	184	192	92	96	68-125	4	30		
Benzene	ug/L	<0.10	20	20	19.1	19.7	96	99	68-125	3	30		
Bromobenzene	ug/L	<0.21	20	20	20.5	22.2	102	111	73-126	8	30		
Bromochloromethane	ug/L	<0.27	20	20	18.6	19.3	93	96	66-143	3	30		
Bromodichloromethane	ug/L	<0.22	20	20	18.8	19.7	94	99	74-125	5	30		
Bromoform	ug/L	<0.80	20	20	20.4	21.4	102	107	64-134	5	30		
Bromomethane	ug/L	<1.8	20	20	16.9	17.3	85	86	30-150	2	30		
Carbon disulfide	ug/L	<0.078	20	20	21.0	20.5	105	103	43-147	2	30		
Carbon tetrachloride	ug/L	<0.19	20	20	20.6	22.2	103	111	71-143	8	30		
Chlorobenzene	ug/L	<0.17	20	20	19.2	20.5	96	103	75-125	7	30		
Chloroethane	ug/L	<0.49	20	20	20.7	20.2	104	101	75-129	2	30		
Chloroform	ug/L	<0.45	20	20	17.5	18.4	88	92	66-132	5	30		
Chloromethane	ug/L	<0.16	20	20	19.5	19.8	98	99	53-137	2	30		
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	18.7	19.5	94	98	67-133	4	30		
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	17.1	17.6	86	88	66-125	3	30		
Dibromochloromethane	ug/L	<0.12	20	20	18.8	20.0	94	100	62-132	6	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467832

Parameter	Units	3222886		3222887		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		10467835001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Dibromomethane	ug/L	<0.16	20	20	19.9	20.5	99	103	67-125	3	30	
Dichlorodifluoromethane	ug/L	<0.23	20	20	21.8	23.0	109	115	71-142	5	30	
Dichlorofluoromethane	ug/L	<0.14	20	20	19.7	20.2	98	101	70-131	3	30	N2
Diisopropyl ether	ug/L	<0.13	20	20	17.8	19.0	89	95	63-131	6	30	
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	18.5	19.7	93	99	66-128	6	30	
Ethylbenzene	ug/L	<0.14	20	20	20.1	22.0	101	110	74-126	9	30	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	22.7	22.0	113	110	68-143	3	30	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20.7	23.3	103	117	74-130	12	30	
m&p-Xylene	ug/L	<0.31	40	40	46.4	51.7	116	129	69-132	11	30	
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.1	19.8	95	99	65-131	4	30	
Methylene Chloride	ug/L	<0.98	20	20	18.6	19.2	92	95	57-125	3	30	
n-Butylbenzene	ug/L	<0.24	20	20	21.9	22.7	110	113	71-131	3	30	
n-Propylbenzene	ug/L	<0.10	20	20	23.0	25.5	115	127	67-138	10	30	
Naphthalene	ug/L	<0.48	20	20	21.8	24.0	109	120	60-130	10	30	
o-Xylene	ug/L	<0.16	20	20	20.1	22.7	101	113	69-131	12	30	
p-Isopropyltoluene	ug/L	<0.15	20	20	21.7	23.5	109	118	72-133	8	30	
sec-Butylbenzene	ug/L	<0.15	20	20	21.6	23.5	108	117	73-134	8	30	
Styrene	ug/L	<0.19	20	20	19.4	21.1	97	106	72-125	9	30	
tert-Amylmethyl ether	ug/L	<0.11	20	20	18.7	19.5	93	97	67-125	4	30	
tert-Butyl Alcohol	ug/L	<1.2	200	200	183	196	92	98	64-137	7	30	
tert-Butylbenzene	ug/L	<0.15	20	20	21.3	23.4	106	117	70-143	10	30	
Tetrachloroethene	ug/L	<0.17	20	20	21.0	22.9	105	114	72-129	9	30	
Tetrahydrofuran	ug/L	<2.2	200	200	183	192	92	96	66-128	5	30	
Toluene	ug/L	<0.083	20	20	18.6	19.4	93	97	73-125	4	30	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	19.7	20.4	99	102	62-137	3	30	
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	20.5	20.7	103	103	61-136	1	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	50.5	51.7	101	103	45-128	2	30	
Trichloroethene	ug/L	<0.15	20	20	19.9	20.8	99	104	74-132	5	30	
Trichlorofluoromethane	ug/L	<0.23	20	20	22.4	23.7	112	119	75-139	6	30	
Vinyl acetate	ug/L	<1.1	20	20	18.4	18.7	92	93	51-135	2	30	
Vinyl chloride	ug/L	<0.092	20	20	21.3	21.6	107	108	68-146	1	30	
Xylene (Total)	ug/L	<0.31	60	60	66.5	74.4	111	124	67-137	11	30	
1,2-Dichloroethane-d4 (S)	%						104	105	75-136			
4-Bromofluorobenzene (S)	%						100	99	75-125			
Toluene-d8 (S)	%						100	99	75-125			

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467832

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

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

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467832

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467832

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10467832001	Thorson-GW-032119	EPA 8260B	596124		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: Cham Hill Project #: _____

WO#: 10467832

PM: JMG Due Date: 04/05/19
 CLIENT: UPRR_CH2M

Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception

Tracking Number: 9397 2337/2322/2311/2344

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

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

Thermometer: G87A9155100842 G87A9170600254 Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: <u>0.6, 4.4, 1.7, 0.6</u> °C	Average Corrected Temp (no temp blank only): _____ °C
Correction Factor: <u>Time</u>	Cooler Temp Corrected w/temp blank: <u>0.6, 4.4, 1.7, 0.6</u> °C	See Exceptions <input type="checkbox"/>

USDA Regulated Soil: (N/A, water sample/Other: _____) Date/Initials of Person Examining Contents: FE 3/22/19

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

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

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

	COMMENTS:
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No -Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
Containers intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	11. If no, write ID/ Date/Time on Container Below: _____ See Exception <input type="checkbox"/>
All containers needing acid/base preservation have been checked? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. Sample # <input type="checkbox"/> NaOH <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide) <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No
Exceptions: VOA Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No See Exception <input type="checkbox"/>
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. See Exception <input type="checkbox"/>
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. <u>SHARED w/ wo: 10467822</u>
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): <u>199648</u>

CLIENT NOTIFICATION/RESOLUTION
 Person Contacted: Mark Ochsner Date/Time: 06/27/18 Field Data Required? Yes No

Comments/Resolution: WA certs not required for 8260 2,2,4-TMP or dichlorofluoromethane.

Project Manager Review: _____ Date: 03/22/19
 Note: Whenever there is a discrepancy affecting No: JENNI GROSS ice samples, a copy of this form will be sent to the North Carolina DENR Certification Office (i.e. out of role, incorrect preservative, out of temp, incorrect containers).

Labeled by: 605

March 29, 2019

David Hodson
Jacobs
2020 SW 4th Ave
#300
Portland, OR 97201

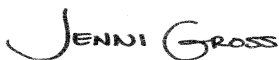
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467833

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 22, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Steve Demus, CH2M Hill
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467833

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #:74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467833

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10467833001	Atwood-GW-032119	Water	03/21/19 11:10	03/22/19 08:30
10467833002	AtwoodShop-GW-032119	Water	03/21/19 11:20	03/22/19 08:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467833

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10467833001	Atwood-GW-032119	EPA 8260B	DS2	83	PASI-M
10467833002	AtwoodShop-GW-032119	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467833

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

General Information:

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

Hold Time:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 596124

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s):
10467825001, 10467831001, 10467835001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 3222883)
 - Acrolein

Additional Comments:

Analyte Comments:

QC Batch: 596124

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- Atwood-GW-032119 (Lab ID: 10467833001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467833

Method: EPA 8260B
Description: 8260B MSV Low Level
Client: UPRR_CH2M/Jacobs
Date: March 29, 2019

Analyte Comments:

QC Batch: 596124

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- Atwood-GW-032119 (Lab ID: 10467833001)
 - 2,2,4-Trimethylpentane
- AtwoodShop-GW-032119 (Lab ID: 10467833002)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- BLANK (Lab ID: 3222880)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3222881)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3222882)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3222884)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3222886)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3222883)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3222885)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3222887)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467833

Sample: **Atwood-GW-032119** Lab ID: **10467833001** Collected: 03/21/19 11:10 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/27/19 23:53	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/27/19 23:53	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/27/19 23:53	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/27/19 23:53	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/27/19 23:53	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/27/19 23:53	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/27/19 23:53	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		03/27/19 23:53	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/27/19 23:53	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/27/19 23:53	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/27/19 23:53	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/27/19 23:53	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/27/19 23:53	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/27/19 23:53	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/27/19 23:53	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/27/19 23:53	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/27/19 23:53	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/27/19 23:53	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		03/27/19 23:53	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/27/19 23:53	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/27/19 23:53	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/27/19 23:53	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/27/19 23:53	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/27/19 23:53	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/27/19 23:53	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/27/19 23:53	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/27/19 23:53	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		03/27/19 23:53	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/27/19 23:53	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/27/19 23:53	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/27/19 23:53	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/27/19 23:53	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/27/19 23:53	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/27/19 23:53	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/27/19 23:53	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/27/19 23:53	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/27/19 23:53	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/27/19 23:53	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/27/19 23:53	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/27/19 23:53	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/27/19 23:53	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/27/19 23:53	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/27/19 23:53	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/27/19 23:53	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/27/19 23:53	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/27/19 23:53	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467833

Sample: Atwood-GW-032119 Lab ID: 10467833001 Collected: 03/21/19 11:10 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/27/19 23:53	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/27/19 23:53	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/27/19 23:53	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/27/19 23:53	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/27/19 23:53	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/27/19 23:53	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/27/19 23:53	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		03/27/19 23:53	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/27/19 23:53	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/27/19 23:53	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/27/19 23:53	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/27/19 23:53	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/27/19 23:53	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/27/19 23:53	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		03/27/19 23:53	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/27/19 23:53	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/27/19 23:53	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/27/19 23:53	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/27/19 23:53	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/27/19 23:53	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/27/19 23:53	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/27/19 23:53	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/27/19 23:53	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/27/19 23:53	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/27/19 23:53	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/27/19 23:53	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/27/19 23:53	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/27/19 23:53	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/27/19 23:53	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/27/19 23:53	75-65-0	
tert-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/27/19 23:53	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/27/19 23:53	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		03/27/19 23:53	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/27/19 23:53	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	91	%	75-136		1		03/27/19 23:53	17060-07-0	
Toluene-d8 (S)	110	%	75-125		1		03/27/19 23:53	2037-26-5	
4-Bromofluorobenzene (S)	100	%	75-125		1		03/27/19 23:53	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10467833

Sample: AtwoodShop-GW-032119 Lab ID: 10467833002 Collected: 03/21/19 11:20 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/28/19 00:17	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/28/19 00:17	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 00:17	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/28/19 00:17	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/28/19 00:17	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/28/19 00:17	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/28/19 00:17	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		03/28/19 00:17	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 00:17	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/28/19 00:17	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/28/19 00:17	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/28/19 00:17	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/28/19 00:17	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/28/19 00:17	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 00:17	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/28/19 00:17	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/28/19 00:17	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/28/19 00:17	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		03/28/19 00:17	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/28/19 00:17	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/28/19 00:17	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 00:17	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/28/19 00:17	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/28/19 00:17	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/28/19 00:17	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/28/19 00:17	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/28/19 00:17	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		03/28/19 00:17	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/28/19 00:17	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/28/19 00:17	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/28/19 00:17	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/28/19 00:17	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/28/19 00:17	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/28/19 00:17	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/28/19 00:17	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/28/19 00:17	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/28/19 00:17	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/28/19 00:17	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/28/19 00:17	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/28/19 00:17	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/28/19 00:17	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/28/19 00:17	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/28/19 00:17	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/28/19 00:17	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/28/19 00:17	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/28/19 00:17	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467833

Sample: AtwoodShop-GW-032119 **Lab ID: 10467833002** Collected: 03/21/19 11:20 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/28/19 00:17	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/28/19 00:17	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/28/19 00:17	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/28/19 00:17	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/28/19 00:17	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/28/19 00:17	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/28/19 00:17	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		03/28/19 00:17	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/28/19 00:17	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/28/19 00:17	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/28/19 00:17	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/28/19 00:17	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/28/19 00:17	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/28/19 00:17	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		03/28/19 00:17	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/28/19 00:17	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/28/19 00:17	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/28/19 00:17	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/28/19 00:17	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/28/19 00:17	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/28/19 00:17	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/28/19 00:17	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/28/19 00:17	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/28/19 00:17	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/28/19 00:17	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/28/19 00:17	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/28/19 00:17	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/28/19 00:17	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/28/19 00:17	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/28/19 00:17	75-65-0	
tert-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/28/19 00:17	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/28/19 00:17	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		03/28/19 00:17	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/28/19 00:17	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	90	%	75-136		1		03/28/19 00:17	17060-07-0	
Toluene-d8 (S)	108	%	75-125		1		03/28/19 00:17	2037-26-5	
4-Bromofluorobenzene (S)	102	%	75-125		1		03/28/19 00:17	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467833

QC Batch: 596124

Analysis Method: EPA 8260B

QC Batch Method: EPA 8260B

Analysis Description: 8260 MSV LL Water

Associated Lab Samples: 10467833001, 10467833002

METHOD BLANK: 3222880

Matrix: Water

Associated Lab Samples: 10467833001, 10467833002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	03/27/19 19:09	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	03/27/19 19:09	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	03/27/19 19:09	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	03/27/19 19:09	MN
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	03/27/19 19:09	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	03/27/19 19:09	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	03/27/19 19:09	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	03/27/19 19:09	MN
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	03/27/19 19:09	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	03/27/19 19:09	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	03/27/19 19:09	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	03/27/19 19:09	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	03/27/19 19:09	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	03/27/19 19:09	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	03/27/19 19:09	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	03/27/19 19:09	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	03/27/19 19:09	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	03/27/19 19:09	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	03/27/19 19:09	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	03/27/19 19:09	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
2-Hexanone	ug/L	<0.88	5.0	0.88	03/27/19 19:09	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/27/19 19:09	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	03/27/19 19:09	
Acetone	ug/L	<9.2	20.0	9.2	03/27/19 19:09	
Acrolein	ug/L	<1.2	10.0	1.2	03/27/19 19:09	
Acrylonitrile	ug/L	<0.91	10.0	0.91	03/27/19 19:09	
Benzene	ug/L	<0.10	0.50	0.10	03/27/19 19:09	
Bromobenzene	ug/L	<0.21	0.50	0.21	03/27/19 19:09	
Bromochloromethane	ug/L	<0.27	1.0	0.27	03/27/19 19:09	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	03/27/19 19:09	
Bromoform	ug/L	<0.80	4.0	0.80	03/27/19 19:09	
Bromomethane	ug/L	<1.8	4.0	1.8	03/27/19 19:09	
Carbon disulfide	ug/L	<0.078	1.0	0.078	03/27/19 19:09	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	03/27/19 19:09	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467833

METHOD BLANK: 3222880

Matrix: Water

Associated Lab Samples: 10467833001, 10467833002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
Chloroethane	ug/L	<0.49	1.0	0.49	03/27/19 19:09	
Chloroform	ug/L	<0.45	4.0	0.45	03/27/19 19:09	MN
Chloromethane	ug/L	<0.16	4.0	0.16	03/27/19 19:09	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	03/27/19 19:09	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	03/27/19 19:09	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	03/27/19 19:09	
Dibromomethane	ug/L	<0.16	1.0	0.16	03/27/19 19:09	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	03/27/19 19:09	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	03/27/19 19:09	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	03/27/19 19:09	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/27/19 19:09	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	03/27/19 19:09	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
m&p-Xylene	ug/L	<0.31	1.0	0.31	03/27/19 19:09	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
Methylene Chloride	ug/L	<0.98	4.0	0.98	03/27/19 19:09	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	03/27/19 19:09	MN
n-Propylbenzene	ug/L	<0.10	0.50	0.10	03/27/19 19:09	
Naphthalene	ug/L	<0.48	1.0	0.48	03/27/19 19:09	
o-Xylene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	03/27/19 19:09	MN
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	03/27/19 19:09	
Styrene	ug/L	<0.19	1.0	0.19	03/27/19 19:09	MN
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	03/27/19 19:09	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	03/27/19 19:09	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	03/27/19 19:09	MN
Tetrachloroethene	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	03/27/19 19:09	
Toluene	ug/L	<0.083	0.50	0.083	03/27/19 19:09	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	03/27/19 19:09	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	03/27/19 19:09	
Trichloroethene	ug/L	<0.15	0.40	0.15	03/27/19 19:09	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	03/27/19 19:09	
Vinyl acetate	ug/L	<1.1	10.0	1.1	03/27/19 19:09	
Vinyl chloride	ug/L	<0.092	0.20	0.092	03/27/19 19:09	
Xylene (Total)	ug/L	<0.31	1.5	0.31	03/27/19 19:09	
1,2-Dichloroethane-d4 (S)	%	104	75-136		03/27/19 19:09	
4-Bromofluorobenzene (S)	%	101	75-125		03/27/19 19:09	
Toluene-d8 (S)	%	105	75-125		03/27/19 19:09	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467833

LABORATORY CONTROL SAMPLE: 3222881

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.6	98	68-141	
1,1,1-Trichloroethane	ug/L	20	19.0	95	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	20.3	101	73-125	
1,1,2-Trichloroethane	ug/L	20	20.4	102	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	19.8	99	69-132	
1,1-Dichloroethane	ug/L	20	19.8	99	73-125	
1,1-Dichloroethene	ug/L	20	19.4	97	71-126	
1,1-Dichloropropene	ug/L	20	19.5	98	73-126	
1,2,3-Trichlorobenzene	ug/L	20	20.9	105	72-126	
1,2,3-Trichloropropane	ug/L	20	21.4	107	75-126	
1,2,4-Trichlorobenzene	ug/L	20	21.0	105	71-134	
1,2,4-Trimethylbenzene	ug/L	20	20.5	103	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	53.5	107	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	20.4	102	75-129	
1,2-Dichlorobenzene	ug/L	20	21.0	105	75-129	
1,2-Dichloroethane	ug/L	20	18.6	93	75-125	
1,2-Dichloroethene (Total)	ug/L	40	38.5	96	74-125	N2
1,2-Dichloropropane	ug/L	20	19.1	96	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.4	102	75-127	
1,3-Dichlorobenzene	ug/L	20	21.0	105	75-126	
1,3-Dichloropropane	ug/L	20	20.3	101	75-125	
1,4-Dichlorobenzene	ug/L	20	19.6	98	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	407	102	72-129	
2,2,4-Trimethylpentane	ug/L	20	18.0	90	72-128	N2
2,2-Dichloropropane	ug/L	20	19.6	98	65-138	
2-Butanone (MEK)	ug/L	100	95.9	96	59-144	
2-Chlorotoluene	ug/L	20	20.9	105	75-127	
2-Hexanone	ug/L	100	105	105	73-134	
4-Chlorotoluene	ug/L	20	21.7	109	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	104	104	62-141	
Acetone	ug/L	100	95.6	96	60-137	
Acrolein	ug/L	200	217	109	60-141	
Acrylonitrile	ug/L	200	202	101	75-129	
Benzene	ug/L	20	19.5	98	73-125	
Bromobenzene	ug/L	20	20.3	102	73-125	
Bromochloromethane	ug/L	20	19.1	95	75-135	
Bromodichloromethane	ug/L	20	19.5	97	75-125	
Bromoform	ug/L	20	21.6	108	67-136	
Bromomethane	ug/L	20	18.4	92	30-150	
Carbon disulfide	ug/L	20	20.8	104	47-137	
Carbon tetrachloride	ug/L	20	20.0	100	75-125	
Chlorobenzene	ug/L	20	19.4	97	75-125	
Chloroethane	ug/L	20	20.8	104	63-136	
Chloroform	ug/L	20	18.5	93	73-128	
Chloromethane	ug/L	20	20.4	102	55-130	
cis-1,2-Dichloroethene	ug/L	20	19.2	96	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.3	96	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467833

LABORATORY CONTROL SAMPLE: 3222881

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	19.3	97	75-125	
Dibromomethane	ug/L	20	20.7	103	75-125	
Dichlorodifluoromethane	ug/L	20	20.8	104	63-132	
Dichlorofluoromethane	ug/L	20	19.7	98	68-127	N2
Diisopropyl ether	ug/L	20	18.5	92	71-131	
Ethyl-tert-butyl ether	ug/L	20	19.0	95	75-125	
Ethylbenzene	ug/L	20	19.8	99	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.4	102	72-134	
Isopropylbenzene (Cumene)	ug/L	20	20.3	101	75-125	
m&p-Xylene	ug/L	40	45.3	113	75-126	
Methyl-tert-butyl ether	ug/L	20	19.3	97	75-125	
Methylene Chloride	ug/L	20	19.7	99	70-125	
n-Butylbenzene	ug/L	20	20.6	103	75-126	
n-Propylbenzene	ug/L	20	22.1	110	73-127	
Naphthalene	ug/L	20	21.9	109	63-128	
o-Xylene	ug/L	20	20.2	101	75-128	
p-Isopropyltoluene	ug/L	20	20.7	103	75-125	
sec-Butylbenzene	ug/L	20	20.5	102	75-126	
Styrene	ug/L	20	19.7	99	75-125	
tert-Amylmethyl ether	ug/L	20	19.4	97	75-125	
tert-Butyl Alcohol	ug/L	200	203	101	75-130	
tert-Butylbenzene	ug/L	20	20.2	101	75-131	
Tetrachloroethene	ug/L	20	20.3	102	74-125	
Tetrahydrofuran	ug/L	200	190	95	64-138	
Toluene	ug/L	20	18.2	91	74-125	
trans-1,2-Dichloroethene	ug/L	20	19.3	96	68-128	
trans-1,3-Dichloropropene	ug/L	20	20.7	103	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	52.1	104	60-127	
Trichloroethene	ug/L	20	19.7	99	75-127	
Trichlorofluoromethane	ug/L	20	21.2	106	72-133	
Vinyl acetate	ug/L	20	18.6	93	61-129	
Vinyl chloride	ug/L	20	20.9	104	75-128	
Xylene (Total)	ug/L	60	65.5	109	75-125	
1,2-Dichloroethane-d4 (S)	%			104	75-136	
4-Bromofluorobenzene (S)	%			99	75-125	
Toluene-d8 (S)	%			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222882 3222883

Parameter	Units	10467825001		MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	MS Result	MSD Result						
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20	18.8	20.3	94	102	75-140	8	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20	20.5	20.6	102	103	74-136	1	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20	17.5	20.4	88	102	66-134	15	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20	18.5	20.7	93	103	75-126	11	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467833

Parameter	Units	10467825001		3222882		3222883		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	22.1	23.0	110	115	65-146	4	30		
1,1-Dichloroethane	ug/L	<0.17	20	20	21.8	20.3	109	102	68-132	7	30		
1,1-Dichloroethene	ug/L	<0.16	20	20	21.5	21.0	108	105	66-139	2	30		
1,1-Dichloropropene	ug/L	<0.20	20	20	20.8	20.6	104	103	67-134	1	30		
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	19.8	22.5	99	113	67-129	13	30		
1,2,3-Trichloropropane	ug/L	<0.26	20	20	17.6	20.8	88	104	69-128	17	30		
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	20.8	23.2	104	116	65-140	11	30		
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	20.0	22.9	100	114	71-133	14	30		
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	43.0	54.0	86	108	54-138	23	30		
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	18.7	20.2	93	101	68-125	8	30		
1,2-Dichlorobenzene	ug/L	<0.14	20	20	20.0	22.9	100	114	74-136	13	30		
1,2-Dichloroethane	ug/L	<0.22	20	20	17.0	18.0	85	90	68-125	6	30		
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	44.2	39.7	110	99	71-126	11	30	N2	
1,2-Dichloropropane	ug/L	<0.16	20	20	17.9	19.2	89	96	67-125	7	30		
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	20.3	22.8	102	114	68-137	11	30		
1,3-Dichlorobenzene	ug/L	<0.16	20	20	20.3	23.1	102	115	75-131	13	30		
1,3-Dichloropropane	ug/L	<0.070	20	20	19.1	20.1	95	100	71-125	5	30		
1,4-Dichlorobenzene	ug/L	<0.17	20	20	18.9	21.4	94	107	74-126	12	30		
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	345	412	86	103	68-125	18	30		
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	22.8	20.5	114	102	54-129	11	30	N2	
2,2-Dichloropropane	ug/L	<0.17	20	20	22.7	21.8	113	109	69-139	4	30		
2-Butanone (MEK)	ug/L	<0.99	100	100	71.3	86.4	71	86	54-144	19	30		
2-Chlorotoluene	ug/L	<0.16	20	20	20.7	23.5	103	118	75-134	13	30		
2-Hexanone	ug/L	<0.88	100	100	89.0	103	89	103	58-137	14	30		
4-Chlorotoluene	ug/L	<0.13	20	20	21.0	24.4	105	122	72-133	15	30		
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	87.3	103	87	103	60-129	17	30		
Acetone	ug/L	<9.2	100	100	71.0	76.9	71	77	62-132	8	30		
Acrolein	ug/L	<1.2	200	200	279	304	140	152	30-150	9	30	M1	
Acrylonitrile	ug/L	<0.91	200	200	190	201	95	100	68-125	5	30		
Benzene	ug/L	<0.10	20	20	19.2	20.1	96	100	68-125	4	30		
Bromobenzene	ug/L	<0.21	20	20	19.2	21.2	96	106	73-126	10	30		
Bromochloromethane	ug/L	<0.27	20	20	20.6	19.2	103	96	66-143	7	30		
Bromodichloromethane	ug/L	<0.22	20	20	18.2	19.8	91	99	74-125	8	30		
Bromoform	ug/L	<0.80	20	20	18.1	21.3	91	107	64-134	16	30		
Bromomethane	ug/L	<1.8	20	20	18.1	18.3	90	92	30-150	1	30		
Carbon disulfide	ug/L	<0.078	20	20	22.7	20.9	114	105	43-147	8	30		
Carbon tetrachloride	ug/L	0.77	20	20	22.7	22.3	110	108	71-143	2	30		
Chlorobenzene	ug/L	<0.17	20	20	18.5	20.0	93	100	75-125	8	30		
Chloroethane	ug/L	<0.49	20	20	20.8	21.6	104	108	75-129	4	30		
Chloroform	ug/L	<0.45	20	20	18.8	18.7	94	93	66-132	1	30		
Chloromethane	ug/L	<0.16	20	20	20.9	21.1	104	106	53-137	1	30		
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	21.4	19.4	107	97	67-133	10	30		
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	16.6	17.5	83	87	66-125	5	30		
Dibromochloromethane	ug/L	<0.12	20	20	18.3	19.8	92	99	62-132	8	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467833

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222882												3222883	
Parameter	Units	10467825001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
Dibromomethane	ug/L	<0.16	20	20	18.2	20.8	91	104	67-125	13	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	24.2	24.4	121	122	71-142	1	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	21.6	21.6	108	108	70-131	0	30 N2		
Diisopropyl ether	ug/L	<0.13	20	20	19.0	19.4	95	97	63-131	2	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	19.3	19.6	97	98	66-128	2	30		
Ethylbenzene	ug/L	<0.14	20	20	20.0	21.7	100	109	74-126	8	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	25.2	21.8	126	109	68-143	14	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20.9	22.9	104	115	74-130	9	30		
m&p-Xylene	ug/L	<0.31	40	40	45.6	50.4	114	126	69-132	10	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.4	19.8	97	99	65-131	2	30		
Methylene Chloride	ug/L	<0.98	20	20	20.1	19.5	100	98	57-125	3	30		
n-Butylbenzene	ug/L	<0.24	20	20	22.1	23.1	111	116	71-131	4	30		
n-Propylbenzene	ug/L	<0.10	20	20	22.8	25.3	114	127	67-138	11	30		
Naphthalene	ug/L	<0.48	20	20	18.7	23.6	93	118	60-130	23	30		
o-Xylene	ug/L	<0.16	20	20	19.9	22.0	100	110	69-131	10	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	22.1	23.1	110	116	72-133	5	30		
sec-Butylbenzene	ug/L	<0.15	20	20	22.2	23.3	111	117	73-134	5	30		
Styrene	ug/L	<0.19	20	20	19.2	21.1	96	106	72-125	10	30		
tert-Amylmethyl ether	ug/L	<0.11	20	20	17.4	19.8	87	99	67-125	13	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	192	198	96	99	64-137	3	30		
tert-Butylbenzene	ug/L	<0.15	20	20	21.5	22.7	107	113	70-143	5	30		
Tetrachloroethene	ug/L	<0.17	20	20	19.8	22.9	99	114	72-129	14	30		
Tetrahydrofuran	ug/L	<2.2	200	200	174	190	87	95	66-128	8	30		
Toluene	ug/L	<0.083	20	20	18.3	19.3	91	96	73-125	5	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	22.8	20.3	114	101	62-137	12	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	19.8	21.0	99	105	61-136	5	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	45.7	52.4	91	105	45-128	14	30		
Trichloroethene	ug/L	<0.15	20	20	20.3	20.6	102	103	74-132	1	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	24.3	24.4	122	122	75-139	0	30		
Vinyl acetate	ug/L	<1.1	20	20	18.5	19.2	92	96	51-135	4	30		
Vinyl chloride	ug/L	<0.092	20	20	23.5	22.8	118	114	68-146	3	30		
Xylene (Total)	ug/L	<0.31	60	60	65.6	72.4	109	121	67-137	10	30		
1,2-Dichloroethane-d4 (S)	%						105	103	75-136				
4-Bromofluorobenzene (S)	%						101	99	75-125				
Toluene-d8 (S)	%						101	99	75-125				

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222884												3222885	
Parameter	Units	10467831001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20.0	21.0	100	105	75-140	5	30		
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20.1	20.5	101	103	74-136	2	30		
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20.0	21.6	100	108	66-134	8	30		
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20.2	20.7	101	103	75-126	2	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467833

Parameter	Units	10467831001		MS		MSD		3222884		3222885		Qual
		Result	Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec	Max RPD		
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	21.6	23.1	108	116	65-146	7	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	19.7	20.7	99	104	68-132	5	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	20.3	20.0	102	100	66-139	2	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	20.1	21.7	100	109	67-134	8	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	22.4	23.9	112	119	67-129	6	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	20.8	21.7	104	108	69-128	4	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	22.1	24.2	110	121	65-140	9	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	21.5	23.1	107	115	71-133	7	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	52.3	57.8	105	116	54-138	10	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	20.4	20.6	102	103	68-125	1	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	21.6	23.6	108	118	74-136	9	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	17.7	18.6	89	93	68-125	5	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	39.4	39.8	99	99	71-126	1	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	19.4	19.3	97	96	67-125	1	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	21.4	23.2	107	116	68-137	8	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.1	23.5	105	117	75-131	11	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	19.9	20.9	99	105	71-125	5	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	19.9	22.0	99	110	74-126	10	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	376	401	94	100	68-125	6	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	21.7	21.4	108	107	54-129	1	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	20.7	21.7	104	108	69-139	5	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	83.1	86.9	83	87	54-144	4	30	
2-Chlorotoluene	ug/L	<0.16	20	20	22.0	24.1	110	121	75-134	9	30	
2-Hexanone	ug/L	<0.88	100	100	101	105	101	105	58-137	4	30	
4-Chlorotoluene	ug/L	<0.13	20	20	22.7	24.7	114	124	72-133	8	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	102	106	102	106	60-129	4	30	
Acetone	ug/L	<9.2	100	100	74.8	78.7	75	79	62-132	5	30	
Acrolein	ug/L	<1.2	200	200	284	297	142	148	30-150	4	30	
Acrylonitrile	ug/L	<0.91	200	200	187	198	93	99	68-125	6	30	
Benzene	ug/L	<0.10	20	20	19.4	20.3	97	102	68-125	5	30	
Bromobenzene	ug/L	<0.21	20	20	20.4	22.1	102	111	73-126	8	30	
Bromochloromethane	ug/L	<0.27	20	20	19.2	19.3	96	97	66-143	0	30	
Bromodichloromethane	ug/L	<0.22	20	20	19.1	19.2	96	96	74-125	0	30	
Bromoform	ug/L	<0.80	20	20	20.9	22.2	104	111	64-134	6	30	
Bromomethane	ug/L	<1.8	20	20	17.4	18.0	87	90	30-150	3	30	
Carbon disulfide	ug/L	<0.078	20	20	21.8	20.6	109	103	43-147	6	30	
Carbon tetrachloride	ug/L	<0.19	20	20	21.0	22.2	105	111	71-143	6	30	
Chlorobenzene	ug/L	<0.17	20	20	19.7	20.8	99	104	75-125	5	30	
Chloroethane	ug/L	<0.49	20	20	21.3	21.5	107	107	75-129	1	30	
Chloroform	ug/L	<0.45	20	20	18.0	19.0	90	95	66-132	5	30	
Chloromethane	ug/L	<0.16	20	20	19.7	20.9	99	105	53-137	6	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	19.2	19.8	96	99	67-133	3	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	17.4	17.2	87	86	66-125	1	30	
Dibromochloromethane	ug/L	<0.12	20	20	19.3	20.1	96	101	62-132	4	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467833

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222884												3222885			
Parameter	Units	10467831001		MS	MSD	MS		MSD		Max		Qual			
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD				
Dibromomethane	ug/L	<0.16	20	20	20	19.8	19.9	99	100	67-125	1	30			
Dichlorodifluoromethane	ug/L	<0.23	20	20	20	23.4	23.7	117	118	71-142	1	30			
Dichlorofluoromethane	ug/L	<0.14	20	20	20	20.6	21.1	103	105	70-131	2	30	N2		
Diisopropyl ether	ug/L	<0.13	20	20	20	18.6	19.4	93	97	63-131	4	30			
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	20	19.1	20.2	95	101	66-128	5	30			
Ethylbenzene	ug/L	<0.14	20	20	20	21.0	22.6	105	113	74-126	7	30			
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	20	23.4	22.3	117	111	68-143	5	30			
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20	21.4	23.7	107	118	74-130	10	30			
m&p-Xylene	ug/L	<0.31	40	40	40	48.2	51.7	120	129	69-132	7	30			
Methyl-tert-butyl ether	ug/L	<0.16	20	20	20	19.5	20.1	98	100	65-131	3	30			
Methylene Chloride	ug/L	<0.98	20	20	20	18.8	19.3	94	96	57-125	3	30			
n-Butylbenzene	ug/L	<0.24	20	20	20	22.6	23.4	113	117	71-131	3	30			
n-Propylbenzene	ug/L	<0.10	20	20	20	23.7	26.2	119	131	67-138	10	30			
Naphthalene	ug/L	<0.48	20	20	20	21.7	24.3	108	122	60-130	11	30			
o-Xylene	ug/L	<0.16	20	20	20	20.9	22.3	104	112	69-131	7	30			
p-Isopropyltoluene	ug/L	<0.15	20	20	20	22.3	23.7	111	118	72-133	6	30			
sec-Butylbenzene	ug/L	<0.15	20	20	20	22.5	23.8	113	119	73-134	6	30			
Styrene	ug/L	<0.19	20	20	20	20.2	21.6	101	108	72-125	7	30			
tert-Amylmethyl ether	ug/L	<0.11	20	20	20	19.2	20.3	96	101	67-125	6	30			
tert-Butyl Alcohol	ug/L	<1.2	200	200	200	188	201	94	100	64-137	7	30			
tert-Butylbenzene	ug/L	<0.15	20	20	20	21.9	23.7	109	119	70-143	8	30			
Tetrachloroethene	ug/L	<0.17	20	20	20	21.7	23.6	108	118	72-129	9	30			
Tetrahydrofuran	ug/L	<2.2	200	200	200	185	198	92	99	66-128	7	30			
Toluene	ug/L	<0.083	20	20	20	19.4	20.3	97	101	73-125	4	30			
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	20	20.3	20.0	101	100	62-137	1	30			
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	20	20.8	21.7	104	108	61-136	4	30			
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	50	50.7	54.3	101	109	45-128	7	30			
Trichloroethene	ug/L	<0.15	20	20	20	20.2	22.0	101	110	74-132	8	30			
Trichlorofluoromethane	ug/L	<0.23	20	20	20	23.1	23.9	115	120	75-139	4	30			
Vinyl acetate	ug/L	<1.1	20	20	20	18.8	19.8	94	99	51-135	5	30			
Vinyl chloride	ug/L	<0.092	20	20	20	22.2	22.6	111	113	68-146	2	30			
Xylene (Total)	ug/L	<0.31	60	60	60	69.1	74.0	115	123	67-137	7	30			
1,2-Dichloroethane-d4 (S)	%							103	105	75-136					
4-Bromofluorobenzene (S)	%							101	103	75-125					
Toluene-d8 (S)	%							101	101	75-125					

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222886												3222887			
Parameter	Units	10467835001		MS	MSD	MS		MSD		Max		Qual			
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD				
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20	19.1	20.8	95	104	75-140	9	30			
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20	19.7	20.7	99	103	74-136	5	30			
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20	20.4	20.8	102	104	66-134	2	30			
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20	19.1	20.4	96	102	75-126	7	30			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467833

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222886 3222887												
Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	Max RPD	Qual
		10467835001	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	21.0	22.8	105	114	65-146	8	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	19.7	20.5	98	103	68-132	4	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	19.8	20.9	99	104	66-139	5	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	19.9	20.8	99	104	67-134	5	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	21.6	23.9	108	120	67-129	10	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	20.1	20.7	101	103	69-128	3	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	21.5	23.7	108	119	65-140	10	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	20.3	22.9	102	114	71-133	12	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	53.5	56.2	107	112	54-138	5	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	19.8	21.0	99	105	68-125	6	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	21.0	23.9	105	120	74-136	13	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	17.6	18.1	88	90	68-125	3	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	38.5	39.9	96	100	71-126	4	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	18.9	19.6	95	98	67-125	3	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	20.4	22.9	102	115	68-137	12	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.3	23.8	107	119	75-131	11	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	19.6	20.1	98	101	71-125	3	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	19.9	22.3	99	111	74-126	11	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	386	416	96	104	68-125	7	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	20.6	19.8	103	99	54-129	4	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	20.8	21.4	104	107	69-139	3	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	84.0	81.4	84	81	54-144	3	30	
2-Chlorotoluene	ug/L	<0.16	20	20	21.5	24.0	107	120	75-134	11	30	
2-Hexanone	ug/L	<0.88	100	100	101	101	101	101	58-137	0	30	
4-Chlorotoluene	ug/L	<0.13	20	20	21.9	24.3	110	121	72-133	10	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	99.9	101	100	101	60-129	1	30	
Acetone	ug/L	<9.2	100	100	70.2	76.7	70	77	62-132	9	30	
Acrolein	ug/L	<1.2	200	200	282	289	141	145	30-150	3	30	
Acrylonitrile	ug/L	<0.91	200	200	184	192	92	96	68-125	4	30	
Benzene	ug/L	<0.10	20	20	19.1	19.7	96	99	68-125	3	30	
Bromobenzene	ug/L	<0.21	20	20	20.5	22.2	102	111	73-126	8	30	
Bromochloromethane	ug/L	<0.27	20	20	18.6	19.3	93	96	66-143	3	30	
Bromodichloromethane	ug/L	<0.22	20	20	18.8	19.7	94	99	74-125	5	30	
Bromoform	ug/L	<0.80	20	20	20.4	21.4	102	107	64-134	5	30	
Bromomethane	ug/L	<1.8	20	20	16.9	17.3	85	86	30-150	2	30	
Carbon disulfide	ug/L	<0.078	20	20	21.0	20.5	105	103	43-147	2	30	
Carbon tetrachloride	ug/L	<0.19	20	20	20.6	22.2	103	111	71-143	8	30	
Chlorobenzene	ug/L	<0.17	20	20	19.2	20.5	96	103	75-125	7	30	
Chloroethane	ug/L	<0.49	20	20	20.7	20.2	104	101	75-129	2	30	
Chloroform	ug/L	<0.45	20	20	17.5	18.4	88	92	66-132	5	30	
Chloromethane	ug/L	<0.16	20	20	19.5	19.8	98	99	53-137	2	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	18.7	19.5	94	98	67-133	4	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	17.1	17.6	86	88	66-125	3	30	
Dibromochloromethane	ug/L	<0.12	20	20	18.8	20.0	94	100	62-132	6	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467833

Parameter	Units	3222886		3222887		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		10467835001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Dibromomethane	ug/L	<0.16	20	20	19.9	20.5	99	103	67-125	3	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	21.8	23.0	109	115	71-142	5	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	19.7	20.2	98	101	70-131	3	30	N2	
Diisopropyl ether	ug/L	<0.13	20	20	17.8	19.0	89	95	63-131	6	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	18.5	19.7	93	99	66-128	6	30		
Ethylbenzene	ug/L	<0.14	20	20	20.1	22.0	101	110	74-126	9	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	22.7	22.0	113	110	68-143	3	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20.7	23.3	103	117	74-130	12	30		
m&p-Xylene	ug/L	<0.31	40	40	46.4	51.7	116	129	69-132	11	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.1	19.8	95	99	65-131	4	30		
Methylene Chloride	ug/L	<0.98	20	20	18.6	19.2	92	95	57-125	3	30		
n-Butylbenzene	ug/L	<0.24	20	20	21.9	22.7	110	113	71-131	3	30		
n-Propylbenzene	ug/L	<0.10	20	20	23.0	25.5	115	127	67-138	10	30		
Naphthalene	ug/L	<0.48	20	20	21.8	24.0	109	120	60-130	10	30		
o-Xylene	ug/L	<0.16	20	20	20.1	22.7	101	113	69-131	12	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	21.7	23.5	109	118	72-133	8	30		
sec-Butylbenzene	ug/L	<0.15	20	20	21.6	23.5	108	117	73-134	8	30		
Styrene	ug/L	<0.19	20	20	19.4	21.1	97	106	72-125	9	30		
tert-Amylmethyl ether	ug/L	<0.11	20	20	18.7	19.5	93	97	67-125	4	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	183	196	92	98	64-137	7	30		
tert-Butylbenzene	ug/L	<0.15	20	20	21.3	23.4	106	117	70-143	10	30		
Tetrachloroethene	ug/L	<0.17	20	20	21.0	22.9	105	114	72-129	9	30		
Tetrahydrofuran	ug/L	<2.2	200	200	183	192	92	96	66-128	5	30		
Toluene	ug/L	<0.083	20	20	18.6	19.4	93	97	73-125	4	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	19.7	20.4	99	102	62-137	3	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	20.5	20.7	103	103	61-136	1	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	50.5	51.7	101	103	45-128	2	30		
Trichloroethene	ug/L	<0.15	20	20	19.9	20.8	99	104	74-132	5	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	22.4	23.7	112	119	75-139	6	30		
Vinyl acetate	ug/L	<1.1	20	20	18.4	18.7	92	93	51-135	2	30		
Vinyl chloride	ug/L	<0.092	20	20	21.3	21.6	107	108	68-146	1	30		
Xylene (Total)	ug/L	<0.31	60	60	66.5	74.4	111	124	67-137	11	30		
1,2-Dichloroethane-d4 (S)	%						104	105	75-136				
4-Bromofluorobenzene (S)	%						100	99	75-125				
Toluene-d8 (S)	%						100	99	75-125				

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467833

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467833

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

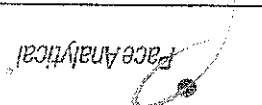
Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467833

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10467833001	Atwood-GW-032119	EPA 8260B	596124		
10467833002	AtwoodShop-GW-032119	EPA 8260B	596124		

REPORT OF LABORATORY ANALYSIS

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Document Name: Sample Condition Upon Receipt Form	Document No.: F-MN-L-213-rev.25	
Document Revised: 06Feb2019	Issuing Authority: Pace Minnesota Quality Office	

Sample Condition Upon Receipt

Client Name: **Cham Hill**

Project #: **MO# : 10467833**

Courier: **Fed Ex**

Tracking Number: **9552 2332/22/2811/254**

Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception

Thermometer: 687A9155100842 687A9170600254 Type of Ice: Wet Blue None Dry Melted

Packing Material: Bubble Wrap Bubble Bags None Other:

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: **06.44/1.808** Cooler Temp Corrected w/temp blank: **06.44/1.806**

Correction Factor: **Time** Average Corrected Temp (no temp blank only): See Exceptions

USDA Regulated Soil: (N/A, water sample/Other:)
 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, HI, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No
 Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No
 Date/Initials of Person Examining Contents: **3/22/19**

Chain of Custody Present and Filled Out?	Chain of Custody Relinquished?	Sampler Name and/or Signature on COC?	Samples Arrived within Hold Time?	Short Hold Time Analysis (<72 hr)?	Rush Turn Around Time Requested?	Sufficient Volume?	Correct Containers Used?	-Pace Containers Used?	Containers Intact?	Field Filtered Volume Received for Dissolved Tests?	Is sufficient information available to reconcile the samples to the COC?	Matrix: <input type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	All containers needing acid/base preservation have been checked?	All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 sulfide, NaOH >12 Cyanide) Exception: VOA Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	HeadSpace in VOA Vials (greater than 6mm)?	Trip Blank Custody Seals Present?	Trip Blank Present?	14. Pace Trip Blank Lot # (if purchased): 199048		
<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	
<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No
<input type="checkbox"/> N/A	<input type="checkbox"/> N/A	<input type="checkbox"/> N/A	<input type="checkbox"/> N/A	<input type="checkbox"/> N/A	<input type="checkbox"/> N/A	<input type="checkbox"/> N/A	<input type="checkbox"/> N/A	<input type="checkbox"/> N/A	<input type="checkbox"/> N/A	<input type="checkbox"/> N/A	<input type="checkbox"/> N/A	<input type="checkbox"/> N/A	<input type="checkbox"/> N/A	<input type="checkbox"/> N/A	<input type="checkbox"/> N/A	<input type="checkbox"/> N/A	<input type="checkbox"/> N/A	<input type="checkbox"/> N/A	<input type="checkbox"/> N/A	<input type="checkbox"/> N/A

Client Notification/Resolution: **Mark Ochsmier** Date/Time: **06/27/18** Field Data Required? Yes No

Person Contacted: **Mark Ochsmier** Comments/Resolution: **WA certs not required for 8260 2,2,4-TMP or dichlorofluoromethane.**

Project Manager Review: _____ Date: **03/22/19** es, a copy of this form will be sent to the North Carolina DEHNR Certification Office (ie out of

Note: Whenever there is a discrepancy affecting North Carolina hold, incorrect preservative, out of temp, incorrect containers);

March 29, 2019

David Hodson
Jacobs
2020 SW 4th Ave
#300
Portland, OR 97201

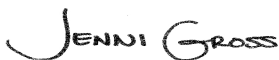
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467835

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 22, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, CH2M Hill
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467835

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #:74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467835

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10467835001	Asher-GW-032119	Water	03/21/19 10:15	03/22/19 08:30

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467835

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10467835001	Asher-GW-032119	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467835

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

General Information:

1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 596124

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s):
10467825001, 10467831001, 10467835001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 3222883)
 - Acrolein

Additional Comments:

Analyte Comments:

QC Batch: 596124

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- Asher-GW-032119 (Lab ID: 10467835001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467835

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: March 29, 2019

Analyte Comments:

QC Batch: 596124

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- Asher-GW-032119 (Lab ID: 10467835001)
 - 2,2,4-Trimethylpentane
- BLANK (Lab ID: 3222880)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3222881)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3222882)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3222884)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3222886)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3222883)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3222885)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3222887)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Project No.: 10467835

Sample: Asher-GW-032119 **Lab ID: 10467835001** Collected: 03/21/19 10:15 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		03/27/19 20:44	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		03/27/19 20:44	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		03/27/19 20:44	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		03/27/19 20:44	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		03/27/19 20:44	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		03/27/19 20:44	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		03/27/19 20:44	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		03/27/19 20:44	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		03/27/19 20:44	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		03/27/19 20:44	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		03/27/19 20:44	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		03/27/19 20:44	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		03/27/19 20:44	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		03/27/19 20:44	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		03/27/19 20:44	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		03/27/19 20:44	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		03/27/19 20:44	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		03/27/19 20:44	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		03/27/19 20:44	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		03/27/19 20:44	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		03/27/19 20:44	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		03/27/19 20:44	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		03/27/19 20:44	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		03/27/19 20:44	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		03/27/19 20:44	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		03/27/19 20:44	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		03/27/19 20:44	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		03/27/19 20:44	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		03/27/19 20:44	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		03/27/19 20:44	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		03/27/19 20:44	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		03/27/19 20:44	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		03/27/19 20:44	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		03/27/19 20:44	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		03/27/19 20:44	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		03/27/19 20:44	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		03/27/19 20:44	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		03/27/19 20:44	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		03/27/19 20:44	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		03/27/19 20:44	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		03/27/19 20:44	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		03/27/19 20:44	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		03/27/19 20:44	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		03/27/19 20:44	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		03/27/19 20:44	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		03/27/19 20:44	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467835

Sample: Asher-GW-032119 Lab ID: 10467835001 Collected: 03/21/19 10:15 Received: 03/22/19 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		03/27/19 20:44	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		03/27/19 20:44	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		03/27/19 20:44	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		03/27/19 20:44	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		03/27/19 20:44	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		03/27/19 20:44	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		03/27/19 20:44	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		03/27/19 20:44	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		03/27/19 20:44	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		03/27/19 20:44	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		03/27/19 20:44	91-20-3	
Styrene	<0.19	ug/L	1.0	0.19	1		03/27/19 20:44	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		03/27/19 20:44	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		03/27/19 20:44	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		03/27/19 20:44	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		03/27/19 20:44	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		03/27/19 20:44	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		03/27/19 20:44	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		03/27/19 20:44	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		03/27/19 20:44	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		03/27/19 20:44	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		03/27/19 20:44	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		03/27/19 20:44	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		03/27/19 20:44	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		03/27/19 20:44	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		03/27/19 20:44	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		03/27/19 20:44	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		03/27/19 20:44	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		03/27/19 20:44	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		03/27/19 20:44	75-65-0	
tert-Butylbenzene	<0.15	ug/L	1.0	0.15	1		03/27/19 20:44	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		03/27/19 20:44	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		03/27/19 20:44	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		03/27/19 20:44	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	104	%	75-136		1		03/27/19 20:44	17060-07-0	
Toluene-d8 (S)	108	%	75-125		1		03/27/19 20:44	2037-26-5	
4-Bromofluorobenzene (S)	101	%	75-125		1		03/27/19 20:44	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467835

QC Batch: 596124

Analysis Method: EPA 8260B

QC Batch Method: EPA 8260B

Analysis Description: 8260 MSV LL Water

Associated Lab Samples: 10467835001

METHOD BLANK: 3222880

Matrix: Water

Associated Lab Samples: 10467835001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	03/27/19 19:09	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	03/27/19 19:09	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	03/27/19 19:09	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	03/27/19 19:09	MN
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	03/27/19 19:09	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	03/27/19 19:09	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	03/27/19 19:09	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	03/27/19 19:09	MN
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	03/27/19 19:09	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	03/27/19 19:09	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	03/27/19 19:09	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	03/27/19 19:09	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	03/27/19 19:09	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	03/27/19 19:09	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	03/27/19 19:09	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	03/27/19 19:09	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	03/27/19 19:09	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	03/27/19 19:09	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	03/27/19 19:09	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	03/27/19 19:09	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
2-Hexanone	ug/L	<0.88	5.0	0.88	03/27/19 19:09	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	03/27/19 19:09	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	03/27/19 19:09	
Acetone	ug/L	<9.2	20.0	9.2	03/27/19 19:09	
Acrolein	ug/L	<1.2	10.0	1.2	03/27/19 19:09	
Acrylonitrile	ug/L	<0.91	10.0	0.91	03/27/19 19:09	
Benzene	ug/L	<0.10	0.50	0.10	03/27/19 19:09	
Bromobenzene	ug/L	<0.21	0.50	0.21	03/27/19 19:09	
Bromochloromethane	ug/L	<0.27	1.0	0.27	03/27/19 19:09	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	03/27/19 19:09	
Bromoform	ug/L	<0.80	4.0	0.80	03/27/19 19:09	
Bromomethane	ug/L	<1.8	4.0	1.8	03/27/19 19:09	
Carbon disulfide	ug/L	<0.078	1.0	0.078	03/27/19 19:09	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	03/27/19 19:09	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467835

METHOD BLANK: 3222880

Matrix: Water

Associated Lab Samples: 10467835001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
Chloroethane	ug/L	<0.49	1.0	0.49	03/27/19 19:09	
Chloroform	ug/L	<0.45	4.0	0.45	03/27/19 19:09	MN
Chloromethane	ug/L	<0.16	4.0	0.16	03/27/19 19:09	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	03/27/19 19:09	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	03/27/19 19:09	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	03/27/19 19:09	
Dibromomethane	ug/L	<0.16	1.0	0.16	03/27/19 19:09	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	03/27/19 19:09	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	03/27/19 19:09	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	03/27/19 19:09	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
Ethylbenzene	ug/L	<0.14	0.50	0.14	03/27/19 19:09	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	03/27/19 19:09	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
m&p-Xylene	ug/L	<0.31	1.0	0.31	03/27/19 19:09	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
Methylene Chloride	ug/L	<0.98	4.0	0.98	03/27/19 19:09	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	03/27/19 19:09	MN
n-Propylbenzene	ug/L	<0.10	0.50	0.10	03/27/19 19:09	
Naphthalene	ug/L	<0.48	1.0	0.48	03/27/19 19:09	
o-Xylene	ug/L	<0.16	0.50	0.16	03/27/19 19:09	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	03/27/19 19:09	MN
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	03/27/19 19:09	
Styrene	ug/L	<0.19	1.0	0.19	03/27/19 19:09	MN
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	03/27/19 19:09	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	03/27/19 19:09	
tert-Butylbenzene	ug/L	<0.15	1.0	0.15	03/27/19 19:09	MN
Tetrachloroethene	ug/L	<0.17	0.50	0.17	03/27/19 19:09	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	03/27/19 19:09	
Toluene	ug/L	<0.083	0.50	0.083	03/27/19 19:09	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	03/27/19 19:09	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	03/27/19 19:09	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	03/27/19 19:09	
Trichloroethene	ug/L	<0.15	0.40	0.15	03/27/19 19:09	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	03/27/19 19:09	
Vinyl acetate	ug/L	<1.1	10.0	1.1	03/27/19 19:09	
Vinyl chloride	ug/L	<0.092	0.20	0.092	03/27/19 19:09	
Xylene (Total)	ug/L	<0.31	1.5	0.31	03/27/19 19:09	
1,2-Dichloroethane-d4 (S)	%	104	75-136		03/27/19 19:09	
4-Bromofluorobenzene (S)	%	101	75-125		03/27/19 19:09	
Toluene-d8 (S)	%	105	75-125		03/27/19 19:09	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467835

LABORATORY CONTROL SAMPLE: 3222881

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.6	98	68-141	
1,1,1-Trichloroethane	ug/L	20	19.0	95	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	20.3	101	73-125	
1,1,2-Trichloroethane	ug/L	20	20.4	102	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	19.8	99	69-132	
1,1-Dichloroethane	ug/L	20	19.8	99	73-125	
1,1-Dichloroethene	ug/L	20	19.4	97	71-126	
1,1-Dichloropropene	ug/L	20	19.5	98	73-126	
1,2,3-Trichlorobenzene	ug/L	20	20.9	105	72-126	
1,2,3-Trichloropropane	ug/L	20	21.4	107	75-126	
1,2,4-Trichlorobenzene	ug/L	20	21.0	105	71-134	
1,2,4-Trimethylbenzene	ug/L	20	20.5	103	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	53.5	107	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	20.4	102	75-129	
1,2-Dichlorobenzene	ug/L	20	21.0	105	75-129	
1,2-Dichloroethane	ug/L	20	18.6	93	75-125	
1,2-Dichloroethene (Total)	ug/L	40	38.5	96	74-125	N2
1,2-Dichloropropane	ug/L	20	19.1	96	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.4	102	75-127	
1,3-Dichlorobenzene	ug/L	20	21.0	105	75-126	
1,3-Dichloropropane	ug/L	20	20.3	101	75-125	
1,4-Dichlorobenzene	ug/L	20	19.6	98	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	407	102	72-129	
2,2,4-Trimethylpentane	ug/L	20	18.0	90	72-128	N2
2,2-Dichloropropane	ug/L	20	19.6	98	65-138	
2-Butanone (MEK)	ug/L	100	95.9	96	59-144	
2-Chlorotoluene	ug/L	20	20.9	105	75-127	
2-Hexanone	ug/L	100	105	105	73-134	
4-Chlorotoluene	ug/L	20	21.7	109	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	104	104	62-141	
Acetone	ug/L	100	95.6	96	60-137	
Acrolein	ug/L	200	217	109	60-141	
Acrylonitrile	ug/L	200	202	101	75-129	
Benzene	ug/L	20	19.5	98	73-125	
Bromobenzene	ug/L	20	20.3	102	73-125	
Bromochloromethane	ug/L	20	19.1	95	75-135	
Bromodichloromethane	ug/L	20	19.5	97	75-125	
Bromoform	ug/L	20	21.6	108	67-136	
Bromomethane	ug/L	20	18.4	92	30-150	
Carbon disulfide	ug/L	20	20.8	104	47-137	
Carbon tetrachloride	ug/L	20	20.0	100	75-125	
Chlorobenzene	ug/L	20	19.4	97	75-125	
Chloroethane	ug/L	20	20.8	104	63-136	
Chloroform	ug/L	20	18.5	93	73-128	
Chloromethane	ug/L	20	20.4	102	55-130	
cis-1,2-Dichloroethene	ug/L	20	19.2	96	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.3	96	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467835

LABORATORY CONTROL SAMPLE: 3222881

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	19.3	97	75-125	
Dibromomethane	ug/L	20	20.7	103	75-125	
Dichlorodifluoromethane	ug/L	20	20.8	104	63-132	
Dichlorofluoromethane	ug/L	20	19.7	98	68-127	N2
Diisopropyl ether	ug/L	20	18.5	92	71-131	
Ethyl-tert-butyl ether	ug/L	20	19.0	95	75-125	
Ethylbenzene	ug/L	20	19.8	99	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.4	102	72-134	
Isopropylbenzene (Cumene)	ug/L	20	20.3	101	75-125	
m&p-Xylene	ug/L	40	45.3	113	75-126	
Methyl-tert-butyl ether	ug/L	20	19.3	97	75-125	
Methylene Chloride	ug/L	20	19.7	99	70-125	
n-Butylbenzene	ug/L	20	20.6	103	75-126	
n-Propylbenzene	ug/L	20	22.1	110	73-127	
Naphthalene	ug/L	20	21.9	109	63-128	
o-Xylene	ug/L	20	20.2	101	75-128	
p-Isopropyltoluene	ug/L	20	20.7	103	75-125	
sec-Butylbenzene	ug/L	20	20.5	102	75-126	
Styrene	ug/L	20	19.7	99	75-125	
tert-Amylmethyl ether	ug/L	20	19.4	97	75-125	
tert-Butyl Alcohol	ug/L	200	203	101	75-130	
tert-Butylbenzene	ug/L	20	20.2	101	75-131	
Tetrachloroethene	ug/L	20	20.3	102	74-125	
Tetrahydrofuran	ug/L	200	190	95	64-138	
Toluene	ug/L	20	18.2	91	74-125	
trans-1,2-Dichloroethene	ug/L	20	19.3	96	68-128	
trans-1,3-Dichloropropene	ug/L	20	20.7	103	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	52.1	104	60-127	
Trichloroethene	ug/L	20	19.7	99	75-127	
Trichlorofluoromethane	ug/L	20	21.2	106	72-133	
Vinyl acetate	ug/L	20	18.6	93	61-129	
Vinyl chloride	ug/L	20	20.9	104	75-128	
Xylene (Total)	ug/L	60	65.5	109	75-125	
1,2-Dichloroethane-d4 (S)	%			104	75-136	
4-Bromofluorobenzene (S)	%			99	75-125	
Toluene-d8 (S)	%			99	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222882 3222883

Parameter	Units	10467825001		MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	MS Result	MSD Result						
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20	18.8	20.3	94	102	75-140	8	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20	20.5	20.6	102	103	74-136	1	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20	17.5	20.4	88	102	66-134	15	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20	18.5	20.7	93	103	75-126	11	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467835

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3222882		3222883								
Parameter	Units	10467825001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD		
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	22.1	23.0	110	115	65-146	4	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	21.8	20.3	109	102	68-132	7	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	21.5	21.0	108	105	66-139	2	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	20.8	20.6	104	103	67-134	1	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	19.8	22.5	99	113	67-129	13	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	17.6	20.8	88	104	69-128	17	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	20.8	23.2	104	116	65-140	11	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	20.0	22.9	100	114	71-133	14	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	43.0	54.0	86	108	54-138	23	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	18.7	20.2	93	101	68-125	8	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	20.0	22.9	100	114	74-136	13	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	17.0	18.0	85	90	68-125	6	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	44.2	39.7	110	99	71-126	11	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	17.9	19.2	89	96	67-125	7	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	20.3	22.8	102	114	68-137	11	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	20.3	23.1	102	115	75-131	13	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	19.1	20.1	95	100	71-125	5	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	18.9	21.4	94	107	74-126	12	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	345	412	86	103	68-125	18	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	22.8	20.5	114	102	54-129	11	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	22.7	21.8	113	109	69-139	4	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	71.3	86.4	71	86	54-144	19	30	
2-Chlorotoluene	ug/L	<0.16	20	20	20.7	23.5	103	118	75-134	13	30	
2-Hexanone	ug/L	<0.88	100	100	89.0	103	89	103	58-137	14	30	
4-Chlorotoluene	ug/L	<0.13	20	20	21.0	24.4	105	122	72-133	15	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	87.3	103	87	103	60-129	17	30	
Acetone	ug/L	<9.2	100	100	71.0	76.9	71	77	62-132	8	30	
Acrolein	ug/L	<1.2	200	200	279	304	140	152	30-150	9	30	M1
Acrylonitrile	ug/L	<0.91	200	200	190	201	95	100	68-125	5	30	
Benzene	ug/L	<0.10	20	20	19.2	20.1	96	100	68-125	4	30	
Bromobenzene	ug/L	<0.21	20	20	19.2	21.2	96	106	73-126	10	30	
Bromochloromethane	ug/L	<0.27	20	20	20.6	19.2	103	96	66-143	7	30	
Bromodichloromethane	ug/L	<0.22	20	20	18.2	19.8	91	99	74-125	8	30	
Bromoform	ug/L	<0.80	20	20	18.1	21.3	91	107	64-134	16	30	
Bromomethane	ug/L	<1.8	20	20	18.1	18.3	90	92	30-150	1	30	
Carbon disulfide	ug/L	<0.078	20	20	22.7	20.9	114	105	43-147	8	30	
Carbon tetrachloride	ug/L	0.77	20	20	22.7	22.3	110	108	71-143	2	30	
Chlorobenzene	ug/L	<0.17	20	20	18.5	20.0	93	100	75-125	8	30	
Chloroethane	ug/L	<0.49	20	20	20.8	21.6	104	108	75-129	4	30	
Chloroform	ug/L	<0.45	20	20	18.8	18.7	94	93	66-132	1	30	
Chloromethane	ug/L	<0.16	20	20	20.9	21.1	104	106	53-137	1	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	21.4	19.4	107	97	67-133	10	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	16.6	17.5	83	87	66-125	5	30	
Dibromochloromethane	ug/L	<0.12	20	20	18.3	19.8	92	99	62-132	8	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467835

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222882												3222883	
Parameter	Units	10467825001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
Dibromomethane	ug/L	<0.16	20	20	18.2	20.8	91	104	67-125	13	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	24.2	24.4	121	122	71-142	1	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	21.6	21.6	108	108	70-131	0	30 N2		
Diisopropyl ether	ug/L	<0.13	20	20	19.0	19.4	95	97	63-131	2	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	19.3	19.6	97	98	66-128	2	30		
Ethylbenzene	ug/L	<0.14	20	20	20.0	21.7	100	109	74-126	8	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	25.2	21.8	126	109	68-143	14	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20.9	22.9	104	115	74-130	9	30		
m&p-Xylene	ug/L	<0.31	40	40	45.6	50.4	114	126	69-132	10	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.4	19.8	97	99	65-131	2	30		
Methylene Chloride	ug/L	<0.98	20	20	20.1	19.5	100	98	57-125	3	30		
n-Butylbenzene	ug/L	<0.24	20	20	22.1	23.1	111	116	71-131	4	30		
n-Propylbenzene	ug/L	<0.10	20	20	22.8	25.3	114	127	67-138	11	30		
Naphthalene	ug/L	<0.48	20	20	18.7	23.6	93	118	60-130	23	30		
o-Xylene	ug/L	<0.16	20	20	19.9	22.0	100	110	69-131	10	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	22.1	23.1	110	116	72-133	5	30		
sec-Butylbenzene	ug/L	<0.15	20	20	22.2	23.3	111	117	73-134	5	30		
Styrene	ug/L	<0.19	20	20	19.2	21.1	96	106	72-125	10	30		
tert-Amylmethyl ether	ug/L	<0.11	20	20	17.4	19.8	87	99	67-125	13	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	192	198	96	99	64-137	3	30		
tert-Butylbenzene	ug/L	<0.15	20	20	21.5	22.7	107	113	70-143	5	30		
Tetrachloroethene	ug/L	<0.17	20	20	19.8	22.9	99	114	72-129	14	30		
Tetrahydrofuran	ug/L	<2.2	200	200	174	190	87	95	66-128	8	30		
Toluene	ug/L	<0.083	20	20	18.3	19.3	91	96	73-125	5	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	22.8	20.3	114	101	62-137	12	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	19.8	21.0	99	105	61-136	5	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	45.7	52.4	91	105	45-128	14	30		
Trichloroethene	ug/L	<0.15	20	20	20.3	20.6	102	103	74-132	1	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	24.3	24.4	122	122	75-139	0	30		
Vinyl acetate	ug/L	<1.1	20	20	18.5	19.2	92	96	51-135	4	30		
Vinyl chloride	ug/L	<0.092	20	20	23.5	22.8	118	114	68-146	3	30		
Xylene (Total)	ug/L	<0.31	60	60	65.6	72.4	109	121	67-137	10	30		
1,2-Dichloroethane-d4 (S)	%						105	103	75-136				
4-Bromofluorobenzene (S)	%						101	99	75-125				
Toluene-d8 (S)	%						101	99	75-125				

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222884												3222885	
Parameter	Units	10467831001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20.0	21.0	100	105	75-140	5	30		
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20.1	20.5	101	103	74-136	2	30		
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20.0	21.6	100	108	66-134	8	30		
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20.2	20.7	101	103	75-126	2	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467835

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3222884		3222885									
Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		10467831001	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	21.6	23.1	108	116	65-146	7	30		
1,1-Dichloroethane	ug/L	<0.17	20	20	19.7	20.7	99	104	68-132	5	30		
1,1-Dichloroethene	ug/L	<0.16	20	20	20.3	20.0	102	100	66-139	2	30		
1,1-Dichloropropene	ug/L	<0.20	20	20	20.1	21.7	100	109	67-134	8	30		
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	22.4	23.9	112	119	67-129	6	30		
1,2,3-Trichloropropane	ug/L	<0.26	20	20	20.8	21.7	104	108	69-128	4	30		
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	22.1	24.2	110	121	65-140	9	30		
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	21.5	23.1	107	115	71-133	7	30		
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	52.3	57.8	105	116	54-138	10	30		
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	20.4	20.6	102	103	68-125	1	30		
1,2-Dichlorobenzene	ug/L	<0.14	20	20	21.6	23.6	108	118	74-136	9	30		
1,2-Dichloroethane	ug/L	<0.22	20	20	17.7	18.6	89	93	68-125	5	30		
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	39.4	39.8	99	99	71-126	1	30	N2	
1,2-Dichloropropane	ug/L	<0.16	20	20	19.4	19.3	97	96	67-125	1	30		
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	21.4	23.2	107	116	68-137	8	30		
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.1	23.5	105	117	75-131	11	30		
1,3-Dichloropropane	ug/L	<0.070	20	20	19.9	20.9	99	105	71-125	5	30		
1,4-Dichlorobenzene	ug/L	<0.17	20	20	19.9	22.0	99	110	74-126	10	30		
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	376	401	94	100	68-125	6	30		
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	21.7	21.4	108	107	54-129	1	30	N2	
2,2-Dichloropropane	ug/L	<0.17	20	20	20.7	21.7	104	108	69-139	5	30		
2-Butanone (MEK)	ug/L	<0.99	100	100	83.1	86.9	83	87	54-144	4	30		
2-Chlorotoluene	ug/L	<0.16	20	20	22.0	24.1	110	121	75-134	9	30		
2-Hexanone	ug/L	<0.88	100	100	101	105	101	105	58-137	4	30		
4-Chlorotoluene	ug/L	<0.13	20	20	22.7	24.7	114	124	72-133	8	30		
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	102	106	102	106	60-129	4	30		
Acetone	ug/L	<9.2	100	100	74.8	78.7	75	79	62-132	5	30		
Acrolein	ug/L	<1.2	200	200	284	297	142	148	30-150	4	30		
Acrylonitrile	ug/L	<0.91	200	200	187	198	93	99	68-125	6	30		
Benzene	ug/L	<0.10	20	20	19.4	20.3	97	102	68-125	5	30		
Bromobenzene	ug/L	<0.21	20	20	20.4	22.1	102	111	73-126	8	30		
Bromochloromethane	ug/L	<0.27	20	20	19.2	19.3	96	97	66-143	0	30		
Bromodichloromethane	ug/L	<0.22	20	20	19.1	19.2	96	96	74-125	0	30		
Bromoform	ug/L	<0.80	20	20	20.9	22.2	104	111	64-134	6	30		
Bromomethane	ug/L	<1.8	20	20	17.4	18.0	87	90	30-150	3	30		
Carbon disulfide	ug/L	<0.078	20	20	21.8	20.6	109	103	43-147	6	30		
Carbon tetrachloride	ug/L	<0.19	20	20	21.0	22.2	105	111	71-143	6	30		
Chlorobenzene	ug/L	<0.17	20	20	19.7	20.8	99	104	75-125	5	30		
Chloroethane	ug/L	<0.49	20	20	21.3	21.5	107	107	75-129	1	30		
Chloroform	ug/L	<0.45	20	20	18.0	19.0	90	95	66-132	5	30		
Chloromethane	ug/L	<0.16	20	20	19.7	20.9	99	105	53-137	6	30		
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	19.2	19.8	96	99	67-133	3	30		
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	17.4	17.2	87	86	66-125	1	30		
Dibromochloromethane	ug/L	<0.12	20	20	19.3	20.1	96	101	62-132	4	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467835

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222884												3222885			
Parameter	Units	10467831001		MS	MSD	MS		MSD		Max		Qual			
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD				
Dibromomethane	ug/L	<0.16	20	20	20	19.8	19.9	99	100	67-125	1	30			
Dichlorodifluoromethane	ug/L	<0.23	20	20	20	23.4	23.7	117	118	71-142	1	30			
Dichlorofluoromethane	ug/L	<0.14	20	20	20	20.6	21.1	103	105	70-131	2	30	N2		
Diisopropyl ether	ug/L	<0.13	20	20	20	18.6	19.4	93	97	63-131	4	30			
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	20	19.1	20.2	95	101	66-128	5	30			
Ethylbenzene	ug/L	<0.14	20	20	20	21.0	22.6	105	113	74-126	7	30			
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	20	23.4	22.3	117	111	68-143	5	30			
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20	21.4	23.7	107	118	74-130	10	30			
m&p-Xylene	ug/L	<0.31	40	40	40	48.2	51.7	120	129	69-132	7	30			
Methyl-tert-butyl ether	ug/L	<0.16	20	20	20	19.5	20.1	98	100	65-131	3	30			
Methylene Chloride	ug/L	<0.98	20	20	20	18.8	19.3	94	96	57-125	3	30			
n-Butylbenzene	ug/L	<0.24	20	20	20	22.6	23.4	113	117	71-131	3	30			
n-Propylbenzene	ug/L	<0.10	20	20	20	23.7	26.2	119	131	67-138	10	30			
Naphthalene	ug/L	<0.48	20	20	20	21.7	24.3	108	122	60-130	11	30			
o-Xylene	ug/L	<0.16	20	20	20	20.9	22.3	104	112	69-131	7	30			
p-Isopropyltoluene	ug/L	<0.15	20	20	20	22.3	23.7	111	118	72-133	6	30			
sec-Butylbenzene	ug/L	<0.15	20	20	20	22.5	23.8	113	119	73-134	6	30			
Styrene	ug/L	<0.19	20	20	20	20.2	21.6	101	108	72-125	7	30			
tert-Amylmethyl ether	ug/L	<0.11	20	20	20	19.2	20.3	96	101	67-125	6	30			
tert-Butyl Alcohol	ug/L	<1.2	200	200	200	188	201	94	100	64-137	7	30			
tert-Butylbenzene	ug/L	<0.15	20	20	20	21.9	23.7	109	119	70-143	8	30			
Tetrachloroethene	ug/L	<0.17	20	20	20	21.7	23.6	108	118	72-129	9	30			
Tetrahydrofuran	ug/L	<2.2	200	200	200	185	198	92	99	66-128	7	30			
Toluene	ug/L	<0.083	20	20	20	19.4	20.3	97	101	73-125	4	30			
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	20	20.3	20.0	101	100	62-137	1	30			
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	20	20.8	21.7	104	108	61-136	4	30			
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	50	50.7	54.3	101	109	45-128	7	30			
Trichloroethene	ug/L	<0.15	20	20	20	20.2	22.0	101	110	74-132	8	30			
Trichlorofluoromethane	ug/L	<0.23	20	20	20	23.1	23.9	115	120	75-139	4	30			
Vinyl acetate	ug/L	<1.1	20	20	20	18.8	19.8	94	99	51-135	5	30			
Vinyl chloride	ug/L	<0.092	20	20	20	22.2	22.6	111	113	68-146	2	30			
Xylene (Total)	ug/L	<0.31	60	60	60	69.1	74.0	115	123	67-137	7	30			
1,2-Dichloroethane-d4 (S)	%							103	105	75-136					
4-Bromofluorobenzene (S)	%							101	103	75-125					
Toluene-d8 (S)	%							101	101	75-125					

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222886												3222887			
Parameter	Units	10467835001		MS	MSD	MS		MSD		Max		Qual			
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD				
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20	19.1	20.8	95	104	75-140	9	30			
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20	19.7	20.7	99	103	74-136	5	30			
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20	20.4	20.8	102	104	66-134	2	30			
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20	19.1	20.4	96	102	75-126	7	30			

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467835

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3222886		3222887								
Parameter	Units	MS		MSD		MS	MSD	MS	MSD	% Rec	Limits	Max
		10467835001	Spike	Spike	MS							
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	21.0	22.8	105	114	65-146	8	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	19.7	20.5	98	103	68-132	4	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	19.8	20.9	99	104	66-139	5	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	19.9	20.8	99	104	67-134	5	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	21.6	23.9	108	120	67-129	10	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	20.1	20.7	101	103	69-128	3	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	21.5	23.7	108	119	65-140	10	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	20.3	22.9	102	114	71-133	12	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	53.5	56.2	107	112	54-138	5	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	19.8	21.0	99	105	68-125	6	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	21.0	23.9	105	120	74-136	13	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	17.6	18.1	88	90	68-125	3	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	38.5	39.9	96	100	71-126	4	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	18.9	19.6	95	98	67-125	3	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	20.4	22.9	102	115	68-137	12	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.3	23.8	107	119	75-131	11	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	19.6	20.1	98	101	71-125	3	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	19.9	22.3	99	111	74-126	11	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	386	416	96	104	68-125	7	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	20.6	19.8	103	99	54-129	4	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	20.8	21.4	104	107	69-139	3	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	84.0	81.4	84	81	54-144	3	30	
2-Chlorotoluene	ug/L	<0.16	20	20	21.5	24.0	107	120	75-134	11	30	
2-Hexanone	ug/L	<0.88	100	100	101	101	101	101	58-137	0	30	
4-Chlorotoluene	ug/L	<0.13	20	20	21.9	24.3	110	121	72-133	10	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	99.9	101	100	101	60-129	1	30	
Acetone	ug/L	<9.2	100	100	70.2	76.7	70	77	62-132	9	30	
Acrolein	ug/L	<1.2	200	200	282	289	141	145	30-150	3	30	
Acrylonitrile	ug/L	<0.91	200	200	184	192	92	96	68-125	4	30	
Benzene	ug/L	<0.10	20	20	19.1	19.7	96	99	68-125	3	30	
Bromobenzene	ug/L	<0.21	20	20	20.5	22.2	102	111	73-126	8	30	
Bromochloromethane	ug/L	<0.27	20	20	18.6	19.3	93	96	66-143	3	30	
Bromodichloromethane	ug/L	<0.22	20	20	18.8	19.7	94	99	74-125	5	30	
Bromoform	ug/L	<0.80	20	20	20.4	21.4	102	107	64-134	5	30	
Bromomethane	ug/L	<1.8	20	20	16.9	17.3	85	86	30-150	2	30	
Carbon disulfide	ug/L	<0.078	20	20	21.0	20.5	105	103	43-147	2	30	
Carbon tetrachloride	ug/L	<0.19	20	20	20.6	22.2	103	111	71-143	8	30	
Chlorobenzene	ug/L	<0.17	20	20	19.2	20.5	96	103	75-125	7	30	
Chloroethane	ug/L	<0.49	20	20	20.7	20.2	104	101	75-129	2	30	
Chloroform	ug/L	<0.45	20	20	17.5	18.4	88	92	66-132	5	30	
Chloromethane	ug/L	<0.16	20	20	19.5	19.8	98	99	53-137	2	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	18.7	19.5	94	98	67-133	4	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	17.1	17.6	86	88	66-125	3	30	
Dibromochloromethane	ug/L	<0.12	20	20	18.8	20.0	94	100	62-132	6	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467835

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3222886 3222887												
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		10467835001 Result	Spike Conc.	Spike Conc.	MS Result							
Dibromomethane	ug/L	<0.16	20	20	19.9	20.5	99	103	67-125	3	30	
Dichlorodifluoromethane	ug/L	<0.23	20	20	21.8	23.0	109	115	71-142	5	30	
Dichlorofluoromethane	ug/L	<0.14	20	20	19.7	20.2	98	101	70-131	3	30	N2
Diisopropyl ether	ug/L	<0.13	20	20	17.8	19.0	89	95	63-131	6	30	
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	18.5	19.7	93	99	66-128	6	30	
Ethylbenzene	ug/L	<0.14	20	20	20.1	22.0	101	110	74-126	9	30	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	22.7	22.0	113	110	68-143	3	30	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	20.7	23.3	103	117	74-130	12	30	
m&p-Xylene	ug/L	<0.31	40	40	46.4	51.7	116	129	69-132	11	30	
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.1	19.8	95	99	65-131	4	30	
Methylene Chloride	ug/L	<0.98	20	20	18.6	19.2	92	95	57-125	3	30	
n-Butylbenzene	ug/L	<0.24	20	20	21.9	22.7	110	113	71-131	3	30	
n-Propylbenzene	ug/L	<0.10	20	20	23.0	25.5	115	127	67-138	10	30	
Naphthalene	ug/L	<0.48	20	20	21.8	24.0	109	120	60-130	10	30	
o-Xylene	ug/L	<0.16	20	20	20.1	22.7	101	113	69-131	12	30	
p-Isopropyltoluene	ug/L	<0.15	20	20	21.7	23.5	109	118	72-133	8	30	
sec-Butylbenzene	ug/L	<0.15	20	20	21.6	23.5	108	117	73-134	8	30	
Styrene	ug/L	<0.19	20	20	19.4	21.1	97	106	72-125	9	30	
tert-Amylmethyl ether	ug/L	<0.11	20	20	18.7	19.5	93	97	67-125	4	30	
tert-Butyl Alcohol	ug/L	<1.2	200	200	183	196	92	98	64-137	7	30	
tert-Butylbenzene	ug/L	<0.15	20	20	21.3	23.4	106	117	70-143	10	30	
Tetrachloroethene	ug/L	<0.17	20	20	21.0	22.9	105	114	72-129	9	30	
Tetrahydrofuran	ug/L	<2.2	200	200	183	192	92	96	66-128	5	30	
Toluene	ug/L	<0.083	20	20	18.6	19.4	93	97	73-125	4	30	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	19.7	20.4	99	102	62-137	3	30	
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	20.5	20.7	103	103	61-136	1	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	50.5	51.7	101	103	45-128	2	30	
Trichloroethene	ug/L	<0.15	20	20	19.9	20.8	99	104	74-132	5	30	
Trichlorofluoromethane	ug/L	<0.23	20	20	22.4	23.7	112	119	75-139	6	30	
Vinyl acetate	ug/L	<1.1	20	20	18.4	18.7	92	93	51-135	2	30	
Vinyl chloride	ug/L	<0.092	20	20	21.3	21.6	107	108	68-146	1	30	
Xylene (Total)	ug/L	<0.31	60	60	66.5	74.4	111	124	67-137	11	30	
1,2-Dichloroethane-d4 (S)	%						104	105	75-136			
4-Bromofluorobenzene (S)	%						100	99	75-125			
Toluene-d8 (S)	%						100	99	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467835

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10467835

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10467835

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10467835001	Asher-GW-032119	EPA 8260B	596124		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: Ch2m Hill

Project #: **WO# : 10467835**

PM: JMG Due Date: 04/05/19
CLIENT: UPRR_CH2M

Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception

Tracking Number: 7978 9392 2337/2322/2311/2344

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other: _____ Temp Blank? Yes No

Thermometer: G87A9155100842 G87A9170600254 Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: <u>0.6, 4.4, 1.2, 0.6</u> °C	Average Corrected Temp (no temp blank only): <input type="checkbox"/>	See Exceptions <input type="checkbox"/>
Correction Factor: <u>Time</u>	Cooler Temp Corrected w/temp blank: <u>0.6, 4.4, 1.2, 0.6</u> °C		

USDA Regulated Soil: (N/A, water sample/Other: _____)

Date/Initials of Person Examining Contents: FE 3/22/19

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

		COMMENTS:
Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time?	<input type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception <input type="checkbox"/>
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other		
All containers needing acid/base preservation have been checked?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. Sample # <input type="checkbox"/> NaOH <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2 pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exception
Exceptions: VOA Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exception
Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception
Trip Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. <u>SHARED w/ wo: 10467822</u>
Trip Blank Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): <u>199028</u>

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: Mark Ochsner

Field Data Required? Yes No
Date/Time: 06/27/18

Comments/Resolution: WA certs not required for 8260 2,2,4-TMP or dichlorofluoromethane.

Project Manager Review: _____

Date: 03/22/19

Note: Whenever there is a discrepancy affecting North Carolina samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled By: _____

April 24, 2019

David Hodson
Jacobs
155 Grand Ave
#800
Oakland, CA 94612

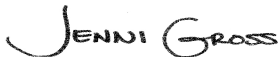
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10471013

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on April 17, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, CH2M Hill
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10471013

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Alaska Certification UST-107
Montana Certificate #CERT0103
Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203
Wisconsin DNR Certification #: 998027470
WA Department of Ecology Lab ID# C1007

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC):
E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC):
T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10471013001	RC04-GW-041519(1)	Water	04/15/19 12:50	04/17/19 09:00
10471013002	RC04-GW-041519(2)	Water	04/15/19 13:20	04/17/19 09:00
10471013003	RC04-GW-041519(3)	Water	04/15/19 13:50	04/17/19 09:00
10471013004	RC04-GW-041519(LF)	Water	04/15/19 15:00	04/17/19 09:00
10471013005	TB-041519	Water	04/15/19 08:00	04/17/19 09:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10471013001	RC04-GW-041519(1)	RSK 175	AJR	3	PASI-M
		EPA 6010D	DM	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10471013002	RC04-GW-041519(2)	RSK 175	AJR	3	PASI-M
		EPA 6010D	DM	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10471013003	RC04-GW-041519(3)	RSK 175	AJR	3	PASI-M
		EPA 6010D	DM	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10471013004	RC04-GW-041519(LF)	RSK 175	AJR	3	PASI-M
		EPA 6010D	DM	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	NTG	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10471013005	TB-041519	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
10471013001	RC04-GW-041519(1)					
EPA 6010D	Barium, Dissolved	24.4	ug/L	10.0	04/19/19 12:36	
EPA 6010D	Beryllium, Dissolved	0.22J	ug/L	5.0	04/19/19 12:36	
EPA 6010D	Chromium, Dissolved	1.5J	ug/L	10.0	04/19/19 12:36	
EPA 6010D	Cobalt, Dissolved	2.3J	ug/L	10.0	04/19/19 12:36	
EPA 6010D	Molybdenum, Dissolved	5.4J	ug/L	15.0	04/19/19 12:36	
EPA 6010D	Nickel, Dissolved	2.9J	ug/L	20.0	04/19/19 12:36	
EPA 6010D	Vanadium, Dissolved	4.4J	ug/L	15.0	04/19/19 12:36	
EPA 6010D	Zinc, Dissolved	7.8J	ug/L	20.0	04/19/19 12:36	
EPA 8260B	Toluene	0.41J	ug/L	0.50	04/18/19 13:50	
SM 2320B	Alkalinity, Total as CaCO3	103	mg/L	5.0	04/18/19 14:06	
SM 2540C	Total Dissolved Solids	176	mg/L	10.0	04/22/19 12:00	
EPA 300.0	Chloride	2.0	mg/L	1.2	04/20/19 06:01	
EPA 300.0	Nitrate as N	0.25	mg/L	0.10	04/20/19 06:01	H5
EPA 300.0	Sulfate	4.9	mg/L	1.2	04/20/19 06:01	B
EPA 353.2	Nitrogen, NO2 plus NO3	0.24	mg/L	0.10	04/20/19 16:08	FS
EPA 410.4	Chemical Oxygen Demand	23.9J	mg/L	50.0	04/18/19 14:17	
SM 5310C	Total Organic Carbon	0.54J	mg/L	1.0	04/19/19 14:44	
10471013002	RC04-GW-041519(2)					
EPA 6010D	Barium, Dissolved	24.5	ug/L	10.0	04/19/19 12:44	
EPA 6010D	Beryllium, Dissolved	0.14J	ug/L	5.0	04/19/19 12:44	
EPA 6010D	Chromium, Dissolved	0.63J	ug/L	10.0	04/19/19 12:44	
EPA 6010D	Cobalt, Dissolved	1.9J	ug/L	10.0	04/19/19 12:44	
EPA 6010D	Molybdenum, Dissolved	6.6J	ug/L	15.0	04/19/19 12:44	
EPA 6010D	Nickel, Dissolved	1.3J	ug/L	20.0	04/19/19 12:44	
EPA 6010D	Vanadium, Dissolved	4.1J	ug/L	15.0	04/19/19 12:44	
EPA 6010D	Zinc, Dissolved	3.1J	ug/L	20.0	04/19/19 12:44	
EPA 8260B	Toluene	0.39J	ug/L	0.50	04/18/19 14:14	
SM 2320B	Alkalinity, Total as CaCO3	113	mg/L	5.0	04/18/19 14:11	
SM 2540C	Total Dissolved Solids	190	mg/L	10.0	04/22/19 12:00	
EPA 300.0	Chloride	2.0	mg/L	1.2	04/20/19 06:16	
EPA 300.0	Nitrate as N	0.17	mg/L	0.10	04/20/19 06:16	H5
EPA 300.0	Sulfate	5.5	mg/L	1.2	04/20/19 06:16	B
EPA 353.2	Nitrogen, NO2 plus NO3	0.20	mg/L	0.10	04/20/19 16:09	FS
EPA 410.4	Chemical Oxygen Demand	26.3J	mg/L	50.0	04/18/19 14:20	
10471013003	RC04-GW-041519(3)					
EPA 6010D	Barium, Dissolved	21.8	ug/L	10.0	04/19/19 12:46	
EPA 6010D	Beryllium, Dissolved	0.17J	ug/L	5.0	04/19/19 12:46	
EPA 6010D	Cobalt, Dissolved	1.8J	ug/L	10.0	04/19/19 12:46	
EPA 6010D	Molybdenum, Dissolved	4.9J	ug/L	15.0	04/19/19 12:46	
EPA 6010D	Vanadium, Dissolved	2.9J	ug/L	15.0	04/19/19 12:46	
EPA 6010D	Zinc, Dissolved	4.5J	ug/L	20.0	04/19/19 12:46	
EPA 8260B	Toluene	0.37J	ug/L	0.50	04/17/19 17:26	
SM 2320B	Alkalinity, Total as CaCO3	115	mg/L	5.0	04/19/19 09:42	
SM 2540C	Total Dissolved Solids	195	mg/L	10.0	04/22/19 12:00	
EPA 300.0	Chloride	2.1	mg/L	1.2	04/20/19 06:32	
EPA 300.0	Nitrate as N	0.16	mg/L	0.10	04/20/19 06:32	H5

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10471013003	RC04-GW-041519(3)					
EPA 300.0	Sulfate	5.3	mg/L	1.2	04/20/19 06:32	B
EPA 353.2	Nitrogen, NO2 plus NO3	0.20	mg/L	0.10	04/20/19 16:11	FS
EPA 410.4	Chemical Oxygen Demand	19.3J	mg/L	50.0	04/18/19 14:20	
SM 5310C	Total Organic Carbon	0.69J	mg/L	1.0	04/19/19 15:11	
10471013004	RC04-GW-041519(LF)					
EPA 6010D	Barium, Dissolved	21.8	ug/L	10.0	04/19/19 12:48	
EPA 6010D	Beryllium, Dissolved	0.20J	ug/L	5.0	04/19/19 12:48	
EPA 6010D	Cobalt, Dissolved	1.2J	ug/L	10.0	04/19/19 12:48	
EPA 6010D	Molybdenum, Dissolved	4.3J	ug/L	15.0	04/19/19 12:48	
EPA 6010D	Nickel, Dissolved	1.2J	ug/L	20.0	04/19/19 12:48	
EPA 6010D	Vanadium, Dissolved	2.7J	ug/L	15.0	04/19/19 12:48	
EPA 6010D	Zinc, Dissolved	6.8J	ug/L	20.0	04/19/19 12:48	
EPA 8260B	Toluene	0.42J	ug/L	0.50	04/17/19 17:50	
SM 2320B	Alkalinity, Total as CaCO3	111	mg/L	5.0	04/19/19 09:45	
SM 2540C	Total Dissolved Solids	184	mg/L	10.0	04/22/19 12:00	
EPA 300.0	Chloride	2.2	mg/L	1.2	04/20/19 07:32	
EPA 300.0	Nitrate as N	0.20	mg/L	0.10	04/20/19 07:32	H5
EPA 300.0	Sulfate	5.4	mg/L	1.2	04/20/19 07:32	B
EPA 353.2	Nitrogen, NO2 plus NO3	0.19	mg/L	0.10	04/20/19 16:12	FS
EPA 410.4	Chemical Oxygen Demand	18.4J	mg/L	50.0	04/18/19 14:20	
SM 5310C	Total Organic Carbon	0.54J	mg/L	1.0	04/19/19 15:25	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Method: RSK 175

Description: RSK 175 GCV Headspace

Client: UPRR_CH2M/Jacobs

Date: April 24, 2019

General Information:

4 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Method: EPA 6010D

Description: 6010D MET ICP, Dissolved

Client: UPRR_CH2M/Jacobs

Date: April 24, 2019

General Information:

4 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Method: EPA 7470A

Description: 7470A Mercury, Dissolved

Client: UPRR_CH2M/Jacobs

Date: April 24, 2019

General Information:

4 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: April 24, 2019

General Information:

5 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

- RC04-GW-041519(1) (Lab ID: 10471013001)
- RC04-GW-041519(2) (Lab ID: 10471013002)

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

QC Batch: 600035

SS: This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value.

- LCS (Lab ID: 3243734)
 - Bromomethane
- MS (Lab ID: 3244814)
 - Bromomethane
- MSD (Lab ID: 3244815)
 - Bromomethane

QC Batch: 600280

SS: This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value.

- LCS (Lab ID: 3245012)
 - Bromomethane
- MS (Lab ID: 3245013)
 - Bromomethane
- MSD (Lab ID: 3245014)
 - Bromomethane

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

QC Batch: 600280

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 3245012)
 - Acetone
 - Acrolein
- MS (Lab ID: 3245013)
 - Acetone
 - Acrolein
- MSD (Lab ID: 3245014)

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: April 24, 2019

QC Batch: 600280

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- Acetone
- Acrolein

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 600280

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- LCS (Lab ID: 3245012)
 - Acetone
 - Acrolein

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 600035

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10471095001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3244814)
 - Acrolein
 - Methyl-tert-butyl ether
 - tert-Amylmethyl ether
- MSD (Lab ID: 3244815)
 - Acrolein
 - Methyl-tert-butyl ether

QC Batch: 600280

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10471197001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 3245013)
 - Acrolein
 - tert-Amylmethyl ether
- MSD (Lab ID: 3245014)
 - Acrolein

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: April 24, 2019

QC Batch: 600280

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10471197001

R1: RPD value was outside control limits.

- MSD (Lab ID: 3245014)
 - tert-Amylmethyl ether

Additional Comments:

Analyte Comments:

QC Batch: 600035

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3243733)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3243734)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3244814)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3244815)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- RC04-GW-041519(3) (Lab ID: 10471013003)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- RC04-GW-041519(LF) (Lab ID: 10471013004)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- TB-041519 (Lab ID: 10471013005)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

QC Batch: 600280

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3245011)
 - 1,2-Dichloroethene (Total)

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_CH2M/Jacobs

Date: April 24, 2019

Analyte Comments:

QC Batch: 600280

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3245011)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3245012)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3245013)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3245014)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- RC04-GW-041519(1) (Lab ID: 10471013001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- RC04-GW-041519(2) (Lab ID: 10471013002)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Method: SM 2320B

Description: 2320B Alkalinity

Client: UPRR_CH2M/Jacobs

Date: April 24, 2019

General Information:

4 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 600515

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10470129012,10471035008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3246269)
 - Alkalinity, Total as CaCO₃
- MS (Lab ID: 3246271)
 - Alkalinity, Total as CaCO₃
- MSD (Lab ID: 3246270)
 - Alkalinity, Total as CaCO₃
- MSD (Lab ID: 3246272)
 - Alkalinity, Total as CaCO₃

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Method: SM 2540C

Description: 2540C Total Dissolved Solids

Client: UPRR_CH2M/Jacobs

Date: April 24, 2019

General Information:

4 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Method: SM 4500-S-2 D

Description: 4500S2D Sulfide, Total

Client: UPRR_CH2M/Jacobs

Date: April 24, 2019

General Information:

4 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 139797

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 20101866006

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 610868)
- Sulfide, Total

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Method: EPA 300.0

Description: 300.0 IC Anions

Client: UPRR_CH2M/Jacobs

Date: April 24, 2019

General Information:

4 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

H5: Reanalysis conducted in excess of EPA method holding time. Results confirm original analysis performed in hold time.

- RC04-GW-041519(1) (Lab ID: 10471013001)
- RC04-GW-041519(2) (Lab ID: 10471013002)
- RC04-GW-041519(3) (Lab ID: 10471013003)
- RC04-GW-041519(LF) (Lab ID: 10471013004)

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 600389

B: Analyte was detected in the associated method blank.

- BLANK for HBN 600389 [WETA/390 (Lab ID: 3245487)
- Sulfate

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 600389

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10470848001,10471035008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3245489)
 - Chloride
- MS (Lab ID: 3245491)
 - Chloride
 - Nitrate as N
 - Sulfate
- MSD (Lab ID: 3245490)
 - Chloride
 - Sulfate
- MSD (Lab ID: 3245492)
 - Chloride
 - Sulfate

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Method: EPA 353.2

Description: 353.2 Nitrate + Nitrite

Client: UPRR_CH2M/Jacobs

Date: April 24, 2019

General Information:

4 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Method: EPA 410.4

Description: 410.4 COD

Client: UPRR_CH2M/Jacobs

Date: April 24, 2019

General Information:

4 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Method: SM 5310C

Description: 5310C TOC

Client: UPRR_CH2M/Jacobs

Date: April 24, 2019

General Information:

4 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10471013

Sample: RC04-GW-041519(1) Lab ID: 10471013001 Collected: 04/15/19 12:50 Received: 04/17/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		04/19/19 10:54	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		04/19/19 10:54	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		04/19/19 10:54	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	04/18/19 14:08	04/19/19 12:36	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	04/18/19 14:08	04/19/19 12:36	7440-38-2	
Barium, Dissolved	24.4	ug/L	10.0	0.18	1	04/18/19 14:08	04/19/19 12:36	7440-39-3	
Beryllium, Dissolved	0.22J	ug/L	5.0	0.12	1	04/18/19 14:08	04/19/19 12:36	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	04/18/19 14:08	04/19/19 12:36	7440-43-9	
Chromium, Dissolved	1.5J	ug/L	10.0	0.49	1	04/18/19 14:08	04/19/19 12:36	7440-47-3	
Cobalt, Dissolved	2.3J	ug/L	10.0	0.50	1	04/18/19 14:08	04/19/19 12:36	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	04/18/19 14:08	04/19/19 12:36	7440-50-8	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	04/18/19 14:08	04/19/19 12:36	7439-92-1	
Molybdenum, Dissolved	5.4J	ug/L	15.0	1.1	1	04/18/19 14:08	04/19/19 12:36	7439-98-7	
Nickel, Dissolved	2.9J	ug/L	20.0	1.1	1	04/18/19 14:08	04/19/19 12:36	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	04/18/19 14:08	04/19/19 12:36	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	04/18/19 14:08	04/19/19 12:36	7440-22-4	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	04/18/19 14:08	04/19/19 12:36	7440-28-0	
Vanadium, Dissolved	4.4J	ug/L	15.0	0.29	1	04/18/19 14:08	04/19/19 12:36	7440-62-2	
Zinc, Dissolved	7.8J	ug/L	20.0	2.5	1	04/18/19 14:08	04/19/19 12:36	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	04/18/19 09:50	04/19/19 14:01	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		04/18/19 13:50	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		04/18/19 13:50	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		04/18/19 13:50	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		04/18/19 13:50	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		04/18/19 13:50	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		04/18/19 13:50	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		04/18/19 13:50	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		04/18/19 13:50	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	1.0	0.21	1		04/18/19 13:50	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		04/18/19 13:50	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		04/18/19 13:50	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		04/18/19 13:50	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	10.0	1.7	1		04/18/19 13:50	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		04/18/19 13:50	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		04/18/19 13:50	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		04/18/19 13:50	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		04/18/19 13:50	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		04/18/19 13:50	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		04/18/19 13:50	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		04/18/19 13:50	541-73-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Sample: RC04-GW-041519(1) Lab ID: 10471013001 Collected: 04/15/19 12:50 Received: 04/17/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		04/18/19 13:50	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		04/18/19 13:50	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		04/18/19 13:50	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		04/18/19 13:50	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		04/18/19 13:50	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		04/18/19 13:50	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		04/18/19 13:50	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		04/18/19 13:50	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		04/18/19 13:50	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		04/18/19 13:50	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		04/18/19 13:50	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		04/18/19 13:50	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		04/18/19 13:50	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		04/18/19 13:50	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		04/18/19 13:50	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		04/18/19 13:50	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		04/18/19 13:50	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		04/18/19 13:50	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		04/18/19 13:50	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		04/18/19 13:50	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		04/18/19 13:50	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		04/18/19 13:50	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		04/18/19 13:50	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		04/18/19 13:50	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		04/18/19 13:50	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		04/18/19 13:50	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		04/18/19 13:50	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		04/18/19 13:50	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		04/18/19 13:50	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		04/18/19 13:50	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		04/18/19 13:50	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		04/18/19 13:50	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		04/18/19 13:50	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		04/18/19 13:50	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		04/18/19 13:50	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		04/18/19 13:50	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		04/18/19 13:50	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		04/18/19 13:50	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		04/18/19 13:50	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		04/18/19 13:50	109-99-9	
Toluene	0.41J	ug/L	0.50	0.083	1		04/18/19 13:50	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		04/18/19 13:50	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		04/18/19 13:50	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		04/18/19 13:50	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		04/18/19 13:50	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		04/18/19 13:50	1330-20-7	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Sample: RC04-GW-041519(1) **Lab ID: 10471013001** Collected: 04/15/19 12:50 Received: 04/17/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		04/18/19 13:50	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		04/18/19 13:50	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		04/18/19 13:50	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		04/18/19 13:50	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		04/18/19 13:50	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		04/18/19 13:50	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		04/18/19 13:50	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		04/18/19 13:50	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		04/18/19 13:50	994-05-8	L2
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		04/18/19 13:50	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		04/18/19 13:50	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		04/18/19 13:50	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		04/18/19 13:50	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		04/18/19 13:50	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%	75-136		1		04/18/19 13:50	17060-07-0	
Toluene-d8 (S)	103	%	75-125		1		04/18/19 13:50	2037-26-5	
4-Bromofluorobenzene (S)	98	%	75-125		1		04/18/19 13:50	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	103	mg/L	5.0	2.0	1		04/18/19 14:06		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	176	mg/L	10.0	5.0	1		04/22/19 12:00		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		04/19/19 17:18	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	2.0	mg/L	1.2	0.28	1		04/20/19 06:01	16887-00-6	
Nitrate as N	0.25	mg/L	0.10	0.015	1		04/20/19 06:01	14797-55-8	H5
Sulfate	4.9	mg/L	1.2	0.19	1		04/20/19 06:01	14808-79-8	B
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	0.24	mg/L	0.10	0.018	1		04/20/19 16:08		FS
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	23.9J	mg/L	50.0	17.0	1	04/18/19 11:53	04/18/19 14:17		
5310C TOC		Analytical Method: SM 5310C							
Total Organic Carbon	0.54J	mg/L	1.0	0.39	1		04/19/19 14:44	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10471013

Sample: RC04-GW-041519(2) **Lab ID:** 10471013002 Collected: 04/15/19 13:20 Received: 04/17/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		04/19/19 11:01	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		04/19/19 11:01	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		04/19/19 11:01	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	04/18/19 14:08	04/19/19 12:44	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	04/18/19 14:08	04/19/19 12:44	7440-38-2	
Barium, Dissolved	24.5	ug/L	10.0	0.18	1	04/18/19 14:08	04/19/19 12:44	7440-39-3	
Beryllium, Dissolved	0.14J	ug/L	5.0	0.12	1	04/18/19 14:08	04/19/19 12:44	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	04/18/19 14:08	04/19/19 12:44	7440-43-9	
Chromium, Dissolved	0.63J	ug/L	10.0	0.49	1	04/18/19 14:08	04/19/19 12:44	7440-47-3	
Cobalt, Dissolved	1.9J	ug/L	10.0	0.50	1	04/18/19 14:08	04/19/19 12:44	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	04/18/19 14:08	04/19/19 12:44	7440-50-8	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	04/18/19 14:08	04/19/19 12:44	7439-92-1	
Molybdenum, Dissolved	6.6J	ug/L	15.0	1.1	1	04/18/19 14:08	04/19/19 12:44	7439-98-7	
Nickel, Dissolved	1.3J	ug/L	20.0	1.1	1	04/18/19 14:08	04/19/19 12:44	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	04/18/19 14:08	04/19/19 12:44	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	04/18/19 14:08	04/19/19 12:44	7440-22-4	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	04/18/19 14:08	04/19/19 12:44	7440-28-0	
Vanadium, Dissolved	4.1J	ug/L	15.0	0.29	1	04/18/19 14:08	04/19/19 12:44	7440-62-2	
Zinc, Dissolved	3.1J	ug/L	20.0	2.5	1	04/18/19 14:08	04/19/19 12:44	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	04/18/19 09:50	04/19/19 14:03	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		04/18/19 14:14	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		04/18/19 14:14	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		04/18/19 14:14	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		04/18/19 14:14	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		04/18/19 14:14	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		04/18/19 14:14	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		04/18/19 14:14	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		04/18/19 14:14	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	1.0	0.21	1		04/18/19 14:14	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		04/18/19 14:14	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		04/18/19 14:14	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		04/18/19 14:14	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	10.0	1.7	1		04/18/19 14:14	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		04/18/19 14:14	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		04/18/19 14:14	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		04/18/19 14:14	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		04/18/19 14:14	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		04/18/19 14:14	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		04/18/19 14:14	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		04/18/19 14:14	541-73-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10471013

Sample: RC04-GW-041519(2) Lab ID: 10471013002 Collected: 04/15/19 13:20 Received: 04/17/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		04/18/19 14:14	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		04/18/19 14:14	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		04/18/19 14:14	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		04/18/19 14:14	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		04/18/19 14:14	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		04/18/19 14:14	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		04/18/19 14:14	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		04/18/19 14:14	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		04/18/19 14:14	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		04/18/19 14:14	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		04/18/19 14:14	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		04/18/19 14:14	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		04/18/19 14:14	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		04/18/19 14:14	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		04/18/19 14:14	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		04/18/19 14:14	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		04/18/19 14:14	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		04/18/19 14:14	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		04/18/19 14:14	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		04/18/19 14:14	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		04/18/19 14:14	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		04/18/19 14:14	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		04/18/19 14:14	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		04/18/19 14:14	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		04/18/19 14:14	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		04/18/19 14:14	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		04/18/19 14:14	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		04/18/19 14:14	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		04/18/19 14:14	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		04/18/19 14:14	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		04/18/19 14:14	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		04/18/19 14:14	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		04/18/19 14:14	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		04/18/19 14:14	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		04/18/19 14:14	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		04/18/19 14:14	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		04/18/19 14:14	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		04/18/19 14:14	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		04/18/19 14:14	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		04/18/19 14:14	109-99-9	
Toluene	0.39J	ug/L	0.50	0.083	1		04/18/19 14:14	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		04/18/19 14:14	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		04/18/19 14:14	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		04/18/19 14:14	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		04/18/19 14:14	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		04/18/19 14:14	1330-20-7	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Sample: RC04-GW-041519(2) **Lab ID:** 10471013002 Collected: 04/15/19 13:20 Received: 04/17/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level Analytical Method: EPA 8260B									
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		04/18/19 14:14	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		04/18/19 14:14	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		04/18/19 14:14	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		04/18/19 14:14	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		04/18/19 14:14	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		04/18/19 14:14	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		04/18/19 14:14	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		04/18/19 14:14	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		04/18/19 14:14	994-05-8	L2
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		04/18/19 14:14	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		04/18/19 14:14	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		04/18/19 14:14	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		04/18/19 14:14	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		04/18/19 14:14	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	97	%	75-136		1		04/18/19 14:14	17060-07-0	
Toluene-d8 (S)	102	%	75-125		1		04/18/19 14:14	2037-26-5	
4-Bromofluorobenzene (S)	100	%	75-125		1		04/18/19 14:14	460-00-4	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	113	mg/L	5.0	2.0	1		04/18/19 14:11		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	190	mg/L	10.0	5.0	1		04/22/19 12:00		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		04/19/19 17:19	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	2.0	mg/L	1.2	0.28	1		04/20/19 06:16	16887-00-6	
Nitrate as N	0.17	mg/L	0.10	0.015	1		04/20/19 06:16	14797-55-8	H5
Sulfate	5.5	mg/L	1.2	0.19	1		04/20/19 06:16	14808-79-8	B
353.2 Nitrate + Nitrite Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	0.20	mg/L	0.10	0.018	1		04/20/19 16:09		FS
410.4 COD Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	26.3J	mg/L	50.0	17.0	1	04/18/19 11:53	04/18/19 14:20		
5310C TOC Analytical Method: SM 5310C									
Total Organic Carbon	<0.39	mg/L	1.0	0.39	1		04/19/19 14:57	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10471013

Sample: RC04-GW-041519(3) **Lab ID: 10471013003** Collected: 04/15/19 13:50 Received: 04/17/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		04/19/19 11:08	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		04/19/19 11:08	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		04/19/19 11:08	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	04/18/19 14:08	04/19/19 12:46	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	04/18/19 14:08	04/19/19 12:46	7440-38-2	
Barium, Dissolved	21.8	ug/L	10.0	0.18	1	04/18/19 14:08	04/19/19 12:46	7440-39-3	
Beryllium, Dissolved	0.17J	ug/L	5.0	0.12	1	04/18/19 14:08	04/19/19 12:46	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	04/18/19 14:08	04/19/19 12:46	7440-43-9	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	04/18/19 14:08	04/19/19 12:46	7440-47-3	
Cobalt, Dissolved	1.8J	ug/L	10.0	0.50	1	04/18/19 14:08	04/19/19 12:46	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	04/18/19 14:08	04/19/19 12:46	7440-50-8	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	04/18/19 14:08	04/19/19 12:46	7439-92-1	
Molybdenum, Dissolved	4.9J	ug/L	15.0	1.1	1	04/18/19 14:08	04/19/19 12:46	7439-98-7	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	04/18/19 14:08	04/19/19 12:46	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	04/18/19 14:08	04/19/19 12:46	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	04/18/19 14:08	04/19/19 12:46	7440-22-4	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	04/18/19 14:08	04/19/19 12:46	7440-28-0	
Vanadium, Dissolved	2.9J	ug/L	15.0	0.29	1	04/18/19 14:08	04/19/19 12:46	7440-62-2	
Zinc, Dissolved	4.5J	ug/L	20.0	2.5	1	04/18/19 14:08	04/19/19 12:46	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	04/18/19 09:50	04/19/19 14:14	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		04/17/19 17:26	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		04/17/19 17:26	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		04/17/19 17:26	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		04/17/19 17:26	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		04/17/19 17:26	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		04/17/19 17:26	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		04/17/19 17:26	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		04/17/19 17:26	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	1.0	0.21	1		04/17/19 17:26	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		04/17/19 17:26	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		04/17/19 17:26	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		04/17/19 17:26	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	10.0	1.7	1		04/17/19 17:26	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		04/17/19 17:26	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		04/17/19 17:26	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		04/17/19 17:26	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		04/17/19 17:26	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		04/17/19 17:26	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		04/17/19 17:26	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		04/17/19 17:26	541-73-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10471013

Sample: RC04-GW-041519(3) Lab ID: 10471013003 Collected: 04/15/19 13:50 Received: 04/17/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		04/17/19 17:26	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		04/17/19 17:26	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		04/17/19 17:26	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		04/17/19 17:26	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		04/17/19 17:26	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		04/17/19 17:26	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		04/17/19 17:26	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		04/17/19 17:26	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		04/17/19 17:26	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		04/17/19 17:26	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		04/17/19 17:26	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		04/17/19 17:26	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		04/17/19 17:26	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		04/17/19 17:26	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		04/17/19 17:26	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		04/17/19 17:26	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		04/17/19 17:26	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		04/17/19 17:26	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		04/17/19 17:26	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		04/17/19 17:26	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		04/17/19 17:26	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		04/17/19 17:26	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		04/17/19 17:26	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		04/17/19 17:26	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		04/17/19 17:26	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		04/17/19 17:26	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		04/17/19 17:26	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		04/17/19 17:26	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		04/17/19 17:26	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		04/17/19 17:26	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		04/17/19 17:26	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		04/17/19 17:26	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		04/17/19 17:26	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		04/17/19 17:26	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		04/17/19 17:26	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		04/17/19 17:26	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		04/17/19 17:26	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		04/17/19 17:26	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		04/17/19 17:26	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		04/17/19 17:26	109-99-9	
Toluene	0.37J	ug/L	0.50	0.083	1		04/17/19 17:26	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		04/17/19 17:26	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		04/17/19 17:26	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		04/17/19 17:26	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		04/17/19 17:26	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		04/17/19 17:26	1330-20-7	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Sample: RC04-GW-041519(3) Lab ID: 10471013003 Collected: 04/15/19 13:50 Received: 04/17/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level									
Analytical Method: EPA 8260B									
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		04/17/19 17:26	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		04/17/19 17:26	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		04/17/19 17:26	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		04/17/19 17:26	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		04/17/19 17:26	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		04/17/19 17:26	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		04/17/19 17:26	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		04/17/19 17:26	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		04/17/19 17:26	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		04/17/19 17:26	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		04/17/19 17:26	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		04/17/19 17:26	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		04/17/19 17:26	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		04/17/19 17:26	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%	75-136		1		04/17/19 17:26	17060-07-0	
Toluene-d8 (S)	103	%	75-125		1		04/17/19 17:26	2037-26-5	
4-Bromofluorobenzene (S)	97	%	75-125		1		04/17/19 17:26	460-00-4	
2320B Alkalinity									
Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	115	mg/L	5.0	2.0	1		04/19/19 09:42		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Total Dissolved Solids	195	mg/L	10.0	5.0	1		04/22/19 12:00		
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		04/19/19 17:20	18496-25-8	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	2.1	mg/L	1.2	0.28	1		04/20/19 06:32	16887-00-6	
Nitrate as N	0.16	mg/L	0.10	0.015	1		04/20/19 06:32	14797-55-8	H5
Sulfate	5.3	mg/L	1.2	0.19	1		04/20/19 06:32	14808-79-8	B
353.2 Nitrate + Nitrite									
Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	0.20	mg/L	0.10	0.018	1		04/20/19 16:11		FS
410.4 COD									
Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	19.3J	mg/L	50.0	17.0	1	04/18/19 11:53	04/18/19 14:20		
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	0.69J	mg/L	1.0	0.39	1		04/19/19 15:11	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10471013

Sample: RC04-GW-041519(LF) Lab ID: 10471013004 Collected: 04/15/19 15:00 Received: 04/17/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		04/19/19 11:15	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		04/19/19 11:15	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		04/19/19 11:15	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	04/18/19 14:08	04/19/19 12:48	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	04/18/19 14:08	04/19/19 12:48	7440-38-2	
Barium, Dissolved	21.8	ug/L	10.0	0.18	1	04/18/19 14:08	04/19/19 12:48	7440-39-3	
Beryllium, Dissolved	0.20J	ug/L	5.0	0.12	1	04/18/19 14:08	04/19/19 12:48	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	04/18/19 14:08	04/19/19 12:48	7440-43-9	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	04/18/19 14:08	04/19/19 12:48	7440-47-3	
Cobalt, Dissolved	1.2J	ug/L	10.0	0.50	1	04/18/19 14:08	04/19/19 12:48	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	04/18/19 14:08	04/19/19 12:48	7440-50-8	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	04/18/19 14:08	04/19/19 12:48	7439-92-1	
Molybdenum, Dissolved	4.3J	ug/L	15.0	1.1	1	04/18/19 14:08	04/19/19 12:48	7439-98-7	
Nickel, Dissolved	1.2J	ug/L	20.0	1.1	1	04/18/19 14:08	04/19/19 12:48	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	04/18/19 14:08	04/19/19 12:48	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	04/18/19 14:08	04/19/19 12:48	7440-22-4	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	04/18/19 14:08	04/19/19 12:48	7440-28-0	
Vanadium, Dissolved	2.7J	ug/L	15.0	0.29	1	04/18/19 14:08	04/19/19 12:48	7440-62-2	
Zinc, Dissolved	6.8J	ug/L	20.0	2.5	1	04/18/19 14:08	04/19/19 12:48	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.078	ug/L	0.20	0.078	1	04/18/19 09:50	04/19/19 14:16	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		04/17/19 17:50	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		04/17/19 17:50	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		04/17/19 17:50	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		04/17/19 17:50	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		04/17/19 17:50	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		04/17/19 17:50	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		04/17/19 17:50	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		04/17/19 17:50	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	1.0	0.21	1		04/17/19 17:50	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		04/17/19 17:50	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		04/17/19 17:50	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		04/17/19 17:50	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	10.0	1.7	1		04/17/19 17:50	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		04/17/19 17:50	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		04/17/19 17:50	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		04/17/19 17:50	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		04/17/19 17:50	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		04/17/19 17:50	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		04/17/19 17:50	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		04/17/19 17:50	541-73-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Sample: RC04-GW-041519(LF) Lab ID: 10471013004 Collected: 04/15/19 15:00 Received: 04/17/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		04/17/19 17:50	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		04/17/19 17:50	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		04/17/19 17:50	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		04/17/19 17:50	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		04/17/19 17:50	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		04/17/19 17:50	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		04/17/19 17:50	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		04/17/19 17:50	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		04/17/19 17:50	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		04/17/19 17:50	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		04/17/19 17:50	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		04/17/19 17:50	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		04/17/19 17:50	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		04/17/19 17:50	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		04/17/19 17:50	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		04/17/19 17:50	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		04/17/19 17:50	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		04/17/19 17:50	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		04/17/19 17:50	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		04/17/19 17:50	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		04/17/19 17:50	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		04/17/19 17:50	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		04/17/19 17:50	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		04/17/19 17:50	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		04/17/19 17:50	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		04/17/19 17:50	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		04/17/19 17:50	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		04/17/19 17:50	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		04/17/19 17:50	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		04/17/19 17:50	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		04/17/19 17:50	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		04/17/19 17:50	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		04/17/19 17:50	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		04/17/19 17:50	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		04/17/19 17:50	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		04/17/19 17:50	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		04/17/19 17:50	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		04/17/19 17:50	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		04/17/19 17:50	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		04/17/19 17:50	109-99-9	
Toluene	0.42J	ug/L	0.50	0.083	1		04/17/19 17:50	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		04/17/19 17:50	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		04/17/19 17:50	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		04/17/19 17:50	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		04/17/19 17:50	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		04/17/19 17:50	1330-20-7	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Sample: RC04-GW-041519(LF) Lab ID: 10471013004 Collected: 04/15/19 15:00 Received: 04/17/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		04/17/19 17:50	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		04/17/19 17:50	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		04/17/19 17:50	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		04/17/19 17:50	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		04/17/19 17:50	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		04/17/19 17:50	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		04/17/19 17:50	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		04/17/19 17:50	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		04/17/19 17:50	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		04/17/19 17:50	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		04/17/19 17:50	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		04/17/19 17:50	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		04/17/19 17:50	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		04/17/19 17:50	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	101	%	75-136		1		04/17/19 17:50	17060-07-0	
Toluene-d8 (S)	103	%	75-125		1		04/17/19 17:50	2037-26-5	
4-Bromofluorobenzene (S)	97	%	75-125		1		04/17/19 17:50	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	111	mg/L	5.0	2.0	1		04/19/19 09:45		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	184	mg/L	10.0	5.0	1		04/22/19 12:00		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		04/19/19 17:20	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	2.2	mg/L	1.2	0.28	1		04/20/19 07:32	16887-00-6	
Nitrate as N	0.20	mg/L	0.10	0.015	1		04/20/19 07:32	14797-55-8	H5
Sulfate	5.4	mg/L	1.2	0.19	1		04/20/19 07:32	14808-79-8	B
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	0.19	mg/L	0.10	0.018	1		04/20/19 16:12		FS
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	18.4J	mg/L	50.0	17.0	1	04/18/19 11:53	04/18/19 14:20		
5310C TOC		Analytical Method: SM 5310C							
Total Organic Carbon	0.54J	mg/L	1.0	0.39	1		04/19/19 15:25	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Sample: TB-041519 **Lab ID: 10471013005** Collected: 04/15/19 08:00 Received: 04/17/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		04/17/19 15:27	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		04/17/19 15:27	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		04/17/19 15:27	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		04/17/19 15:27	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		04/17/19 15:27	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		04/17/19 15:27	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		04/17/19 15:27	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		04/17/19 15:27	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	1.0	0.21	1		04/17/19 15:27	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		04/17/19 15:27	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		04/17/19 15:27	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		04/17/19 15:27	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	10.0	1.7	1		04/17/19 15:27	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		04/17/19 15:27	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		04/17/19 15:27	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		04/17/19 15:27	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		04/17/19 15:27	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		04/17/19 15:27	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		04/17/19 15:27	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		04/17/19 15:27	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		04/17/19 15:27	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		04/17/19 15:27	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		04/17/19 15:27	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		04/17/19 15:27	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		04/17/19 15:27	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		04/17/19 15:27	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		04/17/19 15:27	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		04/17/19 15:27	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		04/17/19 15:27	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		04/17/19 15:27	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		04/17/19 15:27	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		04/17/19 15:27	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		04/17/19 15:27	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		04/17/19 15:27	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		04/17/19 15:27	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		04/17/19 15:27	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		04/17/19 15:27	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		04/17/19 15:27	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		04/17/19 15:27	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		04/17/19 15:27	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		04/17/19 15:27	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		04/17/19 15:27	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		04/17/19 15:27	75-00-3	
Chloroform	<0.45	ug/L	4.0	0.45	1		04/17/19 15:27	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		04/17/19 15:27	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		04/17/19 15:27	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Sample: TB-041519 **Lab ID: 10471013005** Collected: 04/15/19 08:00 Received: 04/17/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		04/17/19 15:27	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		04/17/19 15:27	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		04/17/19 15:27	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		04/17/19 15:27	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		04/17/19 15:27	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		04/17/19 15:27	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		04/17/19 15:27	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		04/17/19 15:27	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		04/17/19 15:27	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		04/17/19 15:27	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		04/17/19 15:27	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		04/17/19 15:27	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		04/17/19 15:27	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		04/17/19 15:27	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		04/17/19 15:27	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		04/17/19 15:27	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		04/17/19 15:27	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		04/17/19 15:27	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		04/17/19 15:27	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		04/17/19 15:27	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		04/17/19 15:27	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		04/17/19 15:27	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		04/17/19 15:27	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		04/17/19 15:27	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		04/17/19 15:27	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		04/17/19 15:27	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		04/17/19 15:27	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		04/17/19 15:27	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		04/17/19 15:27	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		04/17/19 15:27	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		04/17/19 15:27	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		04/17/19 15:27	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		04/17/19 15:27	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		04/17/19 15:27	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	101	%	75-136		1		04/17/19 15:27	17060-07-0	
Toluene-d8 (S)	103	%	75-125		1		04/17/19 15:27	2037-26-5	
4-Bromofluorobenzene (S)	98	%	75-125		1		04/17/19 15:27	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Project No.: 10471013

QC Batch: 600558 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 GCV HEADSPACE
Associated Lab Samples: 10471013001, 10471013002, 10471013003, 10471013004

METHOD BLANK: 3246352 Matrix: Water
Associated Lab Samples: 10471013001, 10471013002, 10471013003, 10471013004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	04/19/19 09:33	
Ethene	ug/L	<2.9	10.0	2.9	04/19/19 09:33	
Methane	ug/L	<4.9	10.0	4.9	04/19/19 09:33	

LABORATORY CONTROL SAMPLE & LCSD: 3246353

Parameter	Units	3246354								Qualifiers
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	
Ethane	ug/L	114	114	118	101	103	85-115	3	20	
Ethene	ug/L	106	106	109	100	103	85-115	3	20	
Methane	ug/L	60.7	58.4	60.2	96	99	85-115	3	20	

SAMPLE DUPLICATE: 3246425

Parameter	Units	60299882001 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	ND	<3.0		20	
Ethene	ug/L	ND	<2.9		20	
Methane	ug/L	11.6	13.0	11	20	

SAMPLE DUPLICATE: 3246426

Parameter	Units	60299882002 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	ND	<3.0		20	
Ethene	ug/L	ND	<2.9		20	
Methane	ug/L	268	235	13	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

QC Batch: 600187 Analysis Method: EPA 7470A
 QC Batch Method: EPA 7470A Analysis Description: 7470A Mercury Water Dissolved
 Associated Lab Samples: 10471013001, 10471013002, 10471013003, 10471013004

METHOD BLANK: 3244703 Matrix: Water
 Associated Lab Samples: 10471013001, 10471013002, 10471013003, 10471013004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.078	0.20	0.078	04/19/19 13:49	

LABORATORY CONTROL SAMPLE: 3244704

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.2	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3244705 3244706

Parameter	Units	10471013002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.078	5	5	5.2	5.3	104	106	80-120	2	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

QC Batch: 600164

Analysis Method: EPA 6010D

QC Batch Method: EPA 3010

Analysis Description: 6010D Water Dissolved

Associated Lab Samples: 10471013001, 10471013002, 10471013003, 10471013004

METHOD BLANK: 3244613

Matrix: Water

Associated Lab Samples: 10471013001, 10471013002, 10471013003, 10471013004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	04/19/19 12:33	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	04/19/19 12:33	
Barium, Dissolved	ug/L	<0.18	10.0	0.18	04/19/19 12:33	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	04/19/19 12:33	
Cadmium, Dissolved	ug/L	<0.26	3.0	0.26	04/19/19 12:33	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	04/19/19 12:33	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	04/19/19 12:33	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	04/19/19 12:33	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	04/19/19 12:33	
Molybdenum, Dissolved	ug/L	<1.1	15.0	1.1	04/19/19 12:33	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	04/19/19 12:33	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	04/19/19 12:33	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	04/19/19 12:33	
Thallium, Dissolved	ug/L	<4.3	20.0	4.3	04/19/19 12:33	
Vanadium, Dissolved	ug/L	<0.29	15.0	0.29	04/19/19 12:33	
Zinc, Dissolved	ug/L	<2.5	20.0	2.5	04/19/19 12:33	

LABORATORY CONTROL SAMPLE: 3244614

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony, Dissolved	ug/L	1000	879	88	80-120	
Arsenic, Dissolved	ug/L	1000	955	96	80-120	
Barium, Dissolved	ug/L	1000	976	98	80-120	
Beryllium, Dissolved	ug/L	1000	991	99	80-120	
Cadmium, Dissolved	ug/L	1000	1000	100	80-120	
Chromium, Dissolved	ug/L	1000	978	98	80-120	
Cobalt, Dissolved	ug/L	1000	987	99	80-120	
Copper, Dissolved	ug/L	1000	951	95	80-120	
Lead, Dissolved	ug/L	1000	984	98	80-120	
Molybdenum, Dissolved	ug/L	1000	893	89	80-120	
Nickel, Dissolved	ug/L	1000	981	98	80-120	
Selenium, Dissolved	ug/L	1000	1030	103	80-120	
Silver, Dissolved	ug/L	500	496	99	80-120	
Thallium, Dissolved	ug/L	1000	971	97	80-120	
Vanadium, Dissolved	ug/L	1000	978	98	80-120	
Zinc, Dissolved	ug/L	1000	991	99	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Parameter	Units	10471013001		MS		MSD		3244615		3244616		Max RPD	Qual
		Result	Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD			
Antimony, Dissolved	ug/L	<7.0	1000	1000	1020	1010	102	101	75-125	2	20		
Arsenic, Dissolved	ug/L	<3.8	1000	1000	996	994	100	99	75-125	0	20		
Barium, Dissolved	ug/L	24.4	1000	1000	1040	1040	102	101	75-125	0	20		
Beryllium, Dissolved	ug/L	0.22J	1000	1000	1030	1030	103	103	75-125	0	20		
Cadmium, Dissolved	ug/L	<0.26	1000	1000	1030	1030	103	103	75-125	0	20		
Chromium, Dissolved	ug/L	1.5J	1000	1000	1020	1020	102	102	75-125	0	20		
Cobalt, Dissolved	ug/L	2.3J	1000	1000	1020	1020	102	102	75-125	0	20		
Copper, Dissolved	ug/L	<1.2	1000	1000	996	995	100	99	75-125	0	20		
Lead, Dissolved	ug/L	<2.0	1000	1000	1010	1010	101	101	75-125	0	20		
Molybdenum, Dissolved	ug/L	5.4J	1000	1000	1030	1020	102	102	75-125	0	20		
Nickel, Dissolved	ug/L	2.9J	1000	1000	1010	1010	101	101	75-125	0	20		
Selenium, Dissolved	ug/L	<5.8	1000	1000	1070	1070	107	107	75-125	0	20		
Silver, Dissolved	ug/L	<0.38	500	500	518	516	104	103	75-125	0	20		
Thallium, Dissolved	ug/L	<4.3	1000	1000	1010	1000	101	100	75-125	1	20		
Vanadium, Dissolved	ug/L	4.4J	1000	1000	1020	1020	102	102	75-125	0	20		
Zinc, Dissolved	ug/L	7.8J	1000	1000	1020	1030	101	102	75-125	1	20		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

QC Batch: 600035 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10471013003, 10471013004, 10471013005

METHOD BLANK: 3243733 Matrix: Water

Associated Lab Samples: 10471013003, 10471013004, 10471013005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	04/17/19 13:27	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	04/17/19 13:27	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	04/17/19 13:27	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	04/17/19 13:27	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	04/17/19 13:27	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	04/17/19 13:27	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	04/17/19 13:27	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	04/17/19 13:27	
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	0.21	04/17/19 13:27	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	04/17/19 13:27	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	04/17/19 13:27	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	04/17/19 13:27	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	10.0	1.7	04/17/19 13:27	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	04/17/19 13:27	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	04/17/19 13:27	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	04/17/19 13:27	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	04/17/19 13:27	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	04/17/19 13:27	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	04/17/19 13:27	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	04/17/19 13:27	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	04/17/19 13:27	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	04/17/19 13:27	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	04/17/19 13:27	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	04/17/19 13:27	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	04/17/19 13:27	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	04/17/19 13:27	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	04/17/19 13:27	
2-Hexanone	ug/L	<0.88	5.0	0.88	04/17/19 13:27	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	04/17/19 13:27	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	04/17/19 13:27	
Acetone	ug/L	<9.2	20.0	9.2	04/17/19 13:27	
Acrolein	ug/L	<1.2	10.0	1.2	04/17/19 13:27	
Acrylonitrile	ug/L	<0.91	10.0	0.91	04/17/19 13:27	
Benzene	ug/L	<0.10	0.50	0.10	04/17/19 13:27	
Bromobenzene	ug/L	<0.21	0.50	0.21	04/17/19 13:27	
Bromochloromethane	ug/L	<0.27	1.0	0.27	04/17/19 13:27	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	04/17/19 13:27	
Bromoform	ug/L	<0.80	4.0	0.80	04/17/19 13:27	
Bromomethane	ug/L	<1.8	4.0	1.8	04/17/19 13:27	
Carbon disulfide	ug/L	<0.078	1.0	0.078	04/17/19 13:27	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	04/17/19 13:27	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

METHOD BLANK: 3243733

Matrix: Water

Associated Lab Samples: 10471013003, 10471013004, 10471013005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	04/17/19 13:27	
Chloroethane	ug/L	<0.49	1.0	0.49	04/17/19 13:27	
Chloroform	ug/L	<0.45	4.0	0.45	04/17/19 13:27	
Chloromethane	ug/L	<0.16	4.0	0.16	04/17/19 13:27	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	04/17/19 13:27	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	04/17/19 13:27	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	04/17/19 13:27	
Dibromomethane	ug/L	<0.16	1.0	0.16	04/17/19 13:27	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	04/17/19 13:27	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	04/17/19 13:27	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	04/17/19 13:27	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	04/17/19 13:27	
Ethylbenzene	ug/L	<0.14	0.50	0.14	04/17/19 13:27	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	04/17/19 13:27	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	04/17/19 13:27	
m&p-Xylene	ug/L	<0.31	1.0	0.31	04/17/19 13:27	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	04/17/19 13:27	
Methylene Chloride	ug/L	<0.98	4.0	0.98	04/17/19 13:27	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	04/17/19 13:27	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	04/17/19 13:27	
Naphthalene	ug/L	<0.48	1.0	0.48	04/17/19 13:27	
o-Xylene	ug/L	<0.16	0.50	0.16	04/17/19 13:27	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	04/17/19 13:27	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	04/17/19 13:27	
Styrene	ug/L	<0.19	0.50	0.19	04/17/19 13:27	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	04/17/19 13:27	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	04/17/19 13:27	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	04/17/19 13:27	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	04/17/19 13:27	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	04/17/19 13:27	
Toluene	ug/L	<0.083	0.50	0.083	04/17/19 13:27	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	04/17/19 13:27	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	04/17/19 13:27	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	04/17/19 13:27	
Trichloroethene	ug/L	<0.15	0.40	0.15	04/17/19 13:27	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	04/17/19 13:27	
Vinyl acetate	ug/L	<1.1	10.0	1.1	04/17/19 13:27	
Vinyl chloride	ug/L	<0.092	0.20	0.092	04/17/19 13:27	
Xylene (Total)	ug/L	<0.31	1.5	0.31	04/17/19 13:27	
1,2-Dichloroethane-d4 (S)	%	99	75-136		04/17/19 13:27	
4-Bromofluorobenzene (S)	%	97	75-125		04/17/19 13:27	
Toluene-d8 (S)	%	102	75-125		04/17/19 13:27	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

LABORATORY CONTROL SAMPLE: 3243734

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	9.0	90	68-141	
1,1,1-Trichloroethane	ug/L	10	9.9	99	75-129	
1,1,2,2-Tetrachloroethane	ug/L	10	8.1	81	73-125	
1,1,2-Trichloroethane	ug/L	10	8.7	87	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	10	8.6	86	69-132	
1,1-Dichloroethane	ug/L	10	8.5	85	73-125	
1,1-Dichloroethene	ug/L	10	8.6	86	71-126	
1,1-Dichloropropene	ug/L	10	8.7	87	73-126	
1,2,3-Trichlorobenzene	ug/L	10	7.6	76	72-126	
1,2,3-Trichloropropane	ug/L	10	8.5	85	75-126	
1,2,4-Trichlorobenzene	ug/L	10	8.9	89	71-134	
1,2,4-Trimethylbenzene	ug/L	10	10.0	100	72-134	
1,2-Dibromo-3-chloropropane	ug/L	25	19.4	77	60-135	
1,2-Dibromoethane (EDB)	ug/L	10	9.1	91	75-129	
1,2-Dichlorobenzene	ug/L	10	9.2	92	75-129	
1,2-Dichloroethane	ug/L	10	8.8	88	75-125	
1,2-Dichloroethene (Total)	ug/L	20	17.7	88	74-125	N2
1,2-Dichloropropane	ug/L	10	8.5	85	75-125	
1,3,5-Trimethylbenzene	ug/L	10	10	100	75-127	
1,3-Dichlorobenzene	ug/L	10	9.4	94	75-126	
1,3-Dichloropropane	ug/L	10	8.9	89	75-125	
1,4-Dichlorobenzene	ug/L	10	8.8	88	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	200	202	101	72-129	
2,2,4-Trimethylpentane	ug/L	10	8.9	89	72-128	N2
2,2-Dichloropropane	ug/L	10	8.7	87	65-138	
2-Butanone (MEK)	ug/L	50	40.1	80	59-144	
2-Chlorotoluene	ug/L	10	9.4	94	75-127	
2-Hexanone	ug/L	50	38.9	78	73-134	
4-Chlorotoluene	ug/L	10	9.6	96	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	50	40.0	80	62-141	
Acetone	ug/L	50	52.4	105	60-137	
Acrolein	ug/L	100	129	129	60-141	
Acrylonitrile	ug/L	100	85.3	85	75-129	
Benzene	ug/L	10	8.9	89	73-125	
Bromobenzene	ug/L	10	8.9	89	73-125	
Bromochloromethane	ug/L	10	9.5	95	75-135	
Bromodichloromethane	ug/L	10	9.4	94	75-125	
Bromoform	ug/L	10	8.6	86	67-136	
Bromomethane	ug/L	10	12.0	120	30-150	SS
Carbon disulfide	ug/L	10	7.5	75	47-137	
Carbon tetrachloride	ug/L	10	10	100	75-125	
Chlorobenzene	ug/L	10	8.8	88	75-125	
Chloroethane	ug/L	10	9.9	99	63-136	
Chloroform	ug/L	10	9.5	95	73-128	
Chloromethane	ug/L	10	7.8	78	55-130	
cis-1,2-Dichloroethene	ug/L	10	8.9	89	75-125	
cis-1,3-Dichloropropene	ug/L	10	10.3	103	74-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

LABORATORY CONTROL SAMPLE: 3243734

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	10	9.7	97	75-125	
Dibromomethane	ug/L	10	9.6	96	75-125	
Dichlorodifluoromethane	ug/L	10	8.3	83	63-132	
Dichlorofluoromethane	ug/L	10	9.8	98	68-127	N2
Diisopropyl ether	ug/L	10	8.3	83	71-131	
Ethyl-tert-butyl ether	ug/L	10	8.3	83	75-125	
Ethylbenzene	ug/L	10	9.5	95	75-125	
Hexachloro-1,3-butadiene	ug/L	10	8.8	88	72-134	
Isopropylbenzene (Cumene)	ug/L	10	10.1	101	75-125	
m&p-Xylene	ug/L	20	19.4	97	75-126	
Methyl-tert-butyl ether	ug/L	10	8.4	84	75-125	
Methylene Chloride	ug/L	10	8.7	87	70-125	
n-Butylbenzene	ug/L	10	9.9	99	75-126	
n-Propylbenzene	ug/L	10	10.1	101	73-127	
Naphthalene	ug/L	10	7.0	70	63-128	
o-Xylene	ug/L	10	9.7	97	75-128	
p-Isopropyltoluene	ug/L	10	10.1	101	75-125	
sec-Butylbenzene	ug/L	10	10.4	104	75-126	
Styrene	ug/L	10	9.8	98	75-125	
tert-Amylmethyl ether	ug/L	10	8.3	83	75-125	
tert-Butyl Alcohol	ug/L	100	98.9	99	75-130	
tert-Butylbenzene	ug/L	10	10.2	102	75-131	
Tetrachloroethene	ug/L	10	9.2	92	74-125	
Tetrahydrofuran	ug/L	100	94.7	95	64-138	
Toluene	ug/L	10	8.6	86	74-125	
trans-1,2-Dichloroethene	ug/L	10	8.8	88	68-128	
trans-1,3-Dichloropropene	ug/L	10	9.5	95	75-125	
trans-1,4-Dichloro-2-butene	ug/L	25	24.5	98	60-127	
Trichloroethene	ug/L	10	9.6	96	75-127	
Trichlorofluoromethane	ug/L	10	9.6	96	72-133	
Vinyl acetate	ug/L	10	7.8J	78	61-129	
Vinyl chloride	ug/L	10	8.5	85	75-128	
Xylene (Total)	ug/L	30	29.0	97	75-125	
1,2-Dichloroethane-d4 (S)	%			98	75-136	
4-Bromofluorobenzene (S)	%			97	75-125	
Toluene-d8 (S)	%			97	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3244814 3244815

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10471095001 Result	Spike Conc.	Spike Conc.	Result								
1,1,1,2-Tetrachloroethane	ug/L	<0.20	10	10	8.5	10.2	85	102	75-140	17	30		
1,1,1-Trichloroethane	ug/L	<0.14	10	10	10.1	13.1	101	131	74-136	25	30		
1,1,2,2-Tetrachloroethane	ug/L	<0.17	10	10	7.7	8.8	77	88	66-134	13	30		
1,1,2-Trichloroethane	ug/L	<0.18	10	10	8.4	9.4	84	94	75-126	11	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3244814		3244815								
Parameter	Units	10471095001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	10	10	9.4	12.1	94	121	65-146	25	30	
1,1-Dichloroethane	ug/L	<0.17	10	10	8.3	10.3	83	103	68-132	22	30	
1,1-Dichloroethene	ug/L	<0.16	10	10	9.5	11.6	95	116	66-139	19	30	
1,1-Dichloropropene	ug/L	<0.20	10	10	8.7	10.9	87	109	67-134	22	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	10	10	7.8	8.6	78	86	67-129	10	30	
1,2,3-Trichloropropane	ug/L	<0.26	10	10	8.4	9.2	84	92	69-128	9	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	10	10	9.0	10.1	90	101	65-140	12	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	10	10	10.2	12.0	102	120	71-133	16	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	25	25	18.4	21.4	74	86	54-138	15	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	10	10	8.6	9.5	86	95	68-125	10	30	
1,2-Dichlorobenzene	ug/L	<0.14	10	10	8.8	10.9	88	109	74-136	20	30	
1,2-Dichloroethane	ug/L	<0.22	10	10	7.6	10.2	76	102	68-125	29	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	20	20	17.7	20.9	89	105	71-126	17	30	N2
1,2-Dichloropropane	ug/L	<0.16	10	10	8.3	9.6	83	96	67-125	15	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	10	10	10.3	12.1	103	121	68-137	17	30	
1,3-Dichlorobenzene	ug/L	<0.16	10	10	9.3	11.1	93	111	75-131	17	30	
1,3-Dichloropropane	ug/L	<0.070	10	10	8.7	9.8	87	98	71-125	12	30	
1,4-Dichlorobenzene	ug/L	<0.17	10	10	8.7	10.6	87	106	74-126	19	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	200	183J	192J	91	96	68-125		30	
2,2,4-Trimethylpentane	ug/L	<0.19	10	10	9.8	10.2	98	102	54-129	4	30	N2
2,2-Dichloropropane	ug/L	<0.17	10	10	9.1	11.5	91	115	69-139	24	30	
2-Butanone (MEK)	ug/L	<0.99	50	50	33.2	42.5	66	85	54-144	25	30	
2-Chlorotoluene	ug/L	<0.16	10	10	9.5	12.1	95	121	75-134	23	30	
2-Hexanone	ug/L	<0.88	50	50	35.1	42.5	70	85	58-137	19	30	
4-Chlorotoluene	ug/L	<0.13	10	10	9.6	11.5	96	115	72-133	18	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	50	50	37.6	44.6	75	89	60-129	17	30	
Acetone	ug/L	<9.2	50	50	50.6	53.4	85	91	62-132	5	30	
Acrolein	ug/L	<1.2	100	100	156	198	156	198	30-150	24	30	M1
Acrylonitrile	ug/L	<0.91	100	100	72.2	90.4	72	90	68-125	22	30	
Benzene	ug/L	<0.10	10	10	8.3	10.5	83	105	68-125	23	30	
Bromobenzene	ug/L	<0.21	10	10	8.8	10.4	88	104	73-126	17	30	
Bromochloromethane	ug/L	<0.27	10	10	9.1	10.7	91	107	66-143	17	30	
Bromodichloromethane	ug/L	<0.22	10	10	9.1	10.1	91	101	74-125	10	30	
Bromoform	ug/L	<0.80	10	10	7.3	8.0	73	80	64-134	10	30	
Bromomethane	ug/L	<1.8	10	10	10.5	13.0	105	130	30-150	22	30	SS
Carbon disulfide	ug/L	0.41J	10	10	8.8	10.0	84	96	43-147	13	30	
Carbon tetrachloride	ug/L	<0.19	10	10	9.8	11.8	98	118	71-143	18	30	
Chlorobenzene	ug/L	<0.17	10	10	8.6	10.2	86	102	75-125	16	30	
Chloroethane	ug/L	<0.49	10	10	9.1	11.3	91	113	75-129	21	30	
Chloroform	ug/L	<0.45	10	10	8.3	10.1	83	101	66-132	19	30	
Chloromethane	ug/L	<0.16	10	10	7.3	8.9	73	89	53-137	20	30	
cis-1,2-Dichloroethene	ug/L	<0.15	10	10	8.6	10.3	86	103	67-133	17	30	
cis-1,3-Dichloropropene	ug/L	<0.20	10	10	9.1	9.7	91	97	66-125	7	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Parameter	Units	10471095001		MS		MSD		MS		MSD		% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	MS Result	MSD Result	% Rec	% Rec								
MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3244814 3244815																
Dibromochloromethane	ug/L	<0.12	10	10	8.6	9.9	86	99	62-132	14	30					
Dibromomethane	ug/L	<0.16	10	10	9.1	10.4	91	104	67-125	13	30					
Dichlorodifluoromethane	ug/L	<0.23	10	10	8.4	9.9	84	99	71-142	17	30					
Dichlorofluoromethane	ug/L	<0.14	10	10	9.0	10.9	90	109	70-131	19	30	N2				
Diisopropyl ether	ug/L	0.53J	10	10	7.9	9.7	74	92	63-131	21	30					
Ethyl-tert-butyl ether	ug/L	<0.18	10	10	7.2	9.5	72	95	66-128	27	30					
Ethylbenzene	ug/L	<0.14	10	10	9.8	11.9	98	119	74-126	19	30					
Hexachloro-1,3-butadiene	ug/L	<0.31	10	10	10.8	9.2	108	92	68-143	15	30					
Isopropylbenzene (Cumene)	ug/L	<0.18	10	10	10.7	12.3	107	123	74-130	14	30					
m&p-Xylene	ug/L	<0.31	20	20	19.9	23.1	99	116	69-132	15	30					
Methyl-tert-butyl ether	ug/L	137	10	10	124	150	-123	136	65-131	19	30	M1				
Methylene Chloride	ug/L	<0.98	10	10	7.9	10	76	97	57-125	23	30					
n-Butylbenzene	ug/L	<0.24	10	10	11.0	11.6	110	116	71-131	5	30					
n-Propylbenzene	ug/L	<0.10	10	10	10.8	13.1	108	131	67-138	20	30					
Naphthalene	ug/L	0.51J	10	10	7.2	8.6	67	81	60-130	18	30					
o-Xylene	ug/L	<0.16	10	10	9.9	11.3	99	113	69-131	13	30					
p-Isopropyltoluene	ug/L	<0.15	10	10	10.8	12.0	108	120	72-133	11	30					
sec-Butylbenzene	ug/L	<0.15	10	10	11.3	12.2	113	122	73-134	8	30					
Styrene	ug/L	<0.19	10	10	9.8	11.4	98	114	72-125	15	30					
tert-Amylmethyl ether	ug/L	2.9	10	10	9.3	12.2	64	93	67-125	27	30	M1				
tert-Butyl Alcohol	ug/L	135	100	100	223	242	88	107	64-137	8	30					
tert-Butylbenzene	ug/L	<0.15	10	10	10.7	12.2	107	122	70-143	14	30					
Tetrachloroethene	ug/L	<0.17	10	10	9.8	11.7	98	117	72-129	18	30					
Tetrahydrofuran	ug/L	<2.2	100	100	89.6	101	90	101	66-128	12	30					
Toluene	ug/L	<0.083	10	10	8.9	10.4	89	104	73-125	16	30					
trans-1,2-Dichloroethene	ug/L	<0.12	10	10	9.1	10.6	91	106	62-137	16	30					
trans-1,3-Dichloropropene	ug/L	<0.18	10	10	8.4	9.8	84	98	61-136	15	30					
trans-1,4-Dichloro-2-butene	ug/L	<2.0	25	25	15.8	16.1	63	64	45-128	2	30					
Trichloroethene	ug/L	<0.15	10	10	10.3	11.7	103	117	74-132	13	30					
Trichlorofluoromethane	ug/L	<0.23	10	10	9.8	12.3	98	123	75-139	22	30					
Vinyl acetate	ug/L	<1.1	10	10	8.4J	10.6	84	106	51-135		30					
Vinyl chloride	ug/L	<0.092	10	10	8.6	10.0	86	100	68-146	15	30					
Xylene (Total)	ug/L	<0.31	30	30	29.7	34.4	99	115	67-137	15	30					
1,2-Dichloroethane-d4 (S)	%						92	98	75-136							
4-Bromofluorobenzene (S)	%						98	99	75-125							
Toluene-d8 (S)	%						98	95	75-125							

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

QC Batch: 600280

Analysis Method: EPA 8260B

QC Batch Method: EPA 8260B

Analysis Description: 8260 MSV LL Water

Associated Lab Samples: 10471013001, 10471013002

METHOD BLANK: 3245011

Matrix: Water

Associated Lab Samples: 10471013001, 10471013002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	04/18/19 11:50	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	04/18/19 11:50	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	04/18/19 11:50	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	04/18/19 11:50	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	04/18/19 11:50	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	04/18/19 11:50	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	04/18/19 11:50	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	04/18/19 11:50	MN
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	0.21	04/18/19 11:50	MN
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	04/18/19 11:50	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	04/18/19 11:50	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	04/18/19 11:50	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	10.0	1.7	04/18/19 11:50	MN
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	04/18/19 11:50	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	04/18/19 11:50	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	04/18/19 11:50	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	04/18/19 11:50	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	04/18/19 11:50	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	04/18/19 11:50	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	04/18/19 11:50	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	04/18/19 11:50	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	04/18/19 11:50	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	04/18/19 11:50	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	04/18/19 11:50	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	04/18/19 11:50	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	04/18/19 11:50	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	04/18/19 11:50	
2-Hexanone	ug/L	<0.88	5.0	0.88	04/18/19 11:50	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	04/18/19 11:50	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	04/18/19 11:50	
Acetone	ug/L	<9.2	20.0	9.2	04/18/19 11:50	
Acrolein	ug/L	<1.2	10.0	1.2	04/18/19 11:50	
Acrylonitrile	ug/L	<0.91	10.0	0.91	04/18/19 11:50	
Benzene	ug/L	<0.10	0.50	0.10	04/18/19 11:50	
Bromobenzene	ug/L	<0.21	0.50	0.21	04/18/19 11:50	
Bromochloromethane	ug/L	<0.27	1.0	0.27	04/18/19 11:50	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	04/18/19 11:50	
Bromoform	ug/L	<0.80	4.0	0.80	04/18/19 11:50	
Bromomethane	ug/L	<1.8	4.0	1.8	04/18/19 11:50	
Carbon disulfide	ug/L	<0.078	1.0	0.078	04/18/19 11:50	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	04/18/19 11:50	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

METHOD BLANK: 3245011

Matrix: Water

Associated Lab Samples: 10471013001, 10471013002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	04/18/19 11:50	
Chloroethane	ug/L	<0.49	1.0	0.49	04/18/19 11:50	
Chloroform	ug/L	<0.45	4.0	0.45	04/18/19 11:50	MN
Chloromethane	ug/L	<0.16	4.0	0.16	04/18/19 11:50	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	04/18/19 11:50	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	04/18/19 11:50	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	04/18/19 11:50	
Dibromomethane	ug/L	<0.16	1.0	0.16	04/18/19 11:50	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	04/18/19 11:50	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	04/18/19 11:50	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	04/18/19 11:50	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	04/18/19 11:50	
Ethylbenzene	ug/L	<0.14	0.50	0.14	04/18/19 11:50	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	04/18/19 11:50	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	04/18/19 11:50	
m&p-Xylene	ug/L	<0.31	1.0	0.31	04/18/19 11:50	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	04/18/19 11:50	
Methylene Chloride	ug/L	<0.98	4.0	0.98	04/18/19 11:50	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	04/18/19 11:50	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	04/18/19 11:50	
Naphthalene	ug/L	<0.48	1.0	0.48	04/18/19 11:50	
o-Xylene	ug/L	<0.16	0.50	0.16	04/18/19 11:50	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	04/18/19 11:50	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	04/18/19 11:50	
Styrene	ug/L	<0.19	0.50	0.19	04/18/19 11:50	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	04/18/19 11:50	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	04/18/19 11:50	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	04/18/19 11:50	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	04/18/19 11:50	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	04/18/19 11:50	
Toluene	ug/L	<0.083	0.50	0.083	04/18/19 11:50	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	04/18/19 11:50	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	04/18/19 11:50	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	04/18/19 11:50	
Trichloroethene	ug/L	<0.15	0.40	0.15	04/18/19 11:50	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	04/18/19 11:50	
Vinyl acetate	ug/L	<1.1	10.0	1.1	04/18/19 11:50	
Vinyl chloride	ug/L	<0.092	0.20	0.092	04/18/19 11:50	
Xylene (Total)	ug/L	<0.31	1.5	0.31	04/18/19 11:50	
1,2-Dichloroethane-d4 (S)	%	98	75-136		04/18/19 11:50	
4-Bromofluorobenzene (S)	%	99	75-125		04/18/19 11:50	
Toluene-d8 (S)	%	103	75-125		04/18/19 11:50	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

LABORATORY CONTROL SAMPLE: 3245012

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	10.1	101	68-141	
1,1,1-Trichloroethane	ug/L	10	9.9	99	75-129	
1,1,2,2-Tetrachloroethane	ug/L	10	8.4	84	73-125	
1,1,2-Trichloroethane	ug/L	10	9.6	96	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	10	9.7	97	69-132	
1,1-Dichloroethane	ug/L	10	8.9	89	73-125	
1,1-Dichloroethene	ug/L	10	9.6	96	71-126	
1,1-Dichloropropene	ug/L	10	8.5	85	73-126	
1,2,3-Trichlorobenzene	ug/L	10	8.6	86	72-126	
1,2,3-Trichloropropane	ug/L	10	8.8	88	75-126	
1,2,4-Trichlorobenzene	ug/L	10	9.5	95	71-134	
1,2,4-Trimethylbenzene	ug/L	10	11.1	111	72-134	
1,2-Dibromo-3-chloropropane	ug/L	25	19.5	78	60-135	
1,2-Dibromoethane (EDB)	ug/L	10	9.3	93	75-129	
1,2-Dichlorobenzene	ug/L	10	10.1	101	75-129	
1,2-Dichloroethane	ug/L	10	7.7	77	75-125	
1,2-Dichloroethene (Total)	ug/L	20	18.5	93	74-125	N2
1,2-Dichloropropane	ug/L	10	8.8	88	75-125	
1,3,5-Trimethylbenzene	ug/L	10	11.3	113	75-127	
1,3-Dichlorobenzene	ug/L	10	10.5	105	75-126	
1,3-Dichloropropane	ug/L	10	9.8	98	75-125	
1,4-Dichlorobenzene	ug/L	10	9.8	98	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	200	205	102	72-129	
2,2,4-Trimethylpentane	ug/L	10	9.3	93	72-128	N2
2,2-Dichloropropane	ug/L	10	8.8	88	65-138	
2-Butanone (MEK)	ug/L	50	40.5	81	59-144	
2-Chlorotoluene	ug/L	10	10.7	107	75-127	
2-Hexanone	ug/L	50	42.6	85	73-134	
4-Chlorotoluene	ug/L	10	10.5	105	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	50	43.1	86	62-141	
Acetone	ug/L	50	71.0	142	60-137	CH,L3
Acrolein	ug/L	100	153	153	60-141	CH,L3
Acrylonitrile	ug/L	100	79.3	79	75-129	
Benzene	ug/L	10	8.5	85	73-125	
Bromobenzene	ug/L	10	9.8	98	73-125	
Bromochloromethane	ug/L	10	9.0	90	75-135	
Bromodichloromethane	ug/L	10	9.5	95	75-125	
Bromoform	ug/L	10	8.6	86	67-136	
Bromomethane	ug/L	10	8.8	88	30-150	SS
Carbon disulfide	ug/L	10	8.6	86	47-137	
Carbon tetrachloride	ug/L	10	9.7	97	75-125	
Chlorobenzene	ug/L	10	9.7	97	75-125	
Chloroethane	ug/L	10	9.0	90	63-136	
Chloroform	ug/L	10	8.9	89	73-128	
Chloromethane	ug/L	10	6.9	69	55-130	
cis-1,2-Dichloroethene	ug/L	10	8.7	87	75-125	
cis-1,3-Dichloropropene	ug/L	10	10	100	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

LABORATORY CONTROL SAMPLE: 3245012

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	10	10.2	102	75-125	
Dibromomethane	ug/L	10	10.2	102	75-125	
Dichlorodifluoromethane	ug/L	10	7.4	74	63-132	
Dichlorofluoromethane	ug/L	10	9.0	90	68-127	N2
Diisopropyl ether	ug/L	10	8.6	86	71-131	
Ethyl-tert-butyl ether	ug/L	10	8.1	81	75-125	
Ethylbenzene	ug/L	10	10.8	108	75-125	
Hexachloro-1,3-butadiene	ug/L	10	9.7	97	72-134	
Isopropylbenzene (Cumene)	ug/L	10	11.4	114	75-125	
m&p-Xylene	ug/L	20	22.0	110	75-126	
Methyl-tert-butyl ether	ug/L	10	8.3	83	75-125	
Methylene Chloride	ug/L	10	8.9	89	70-125	
n-Butylbenzene	ug/L	10	11.5	115	75-126	
n-Propylbenzene	ug/L	10	11.5	115	73-127	
Naphthalene	ug/L	10	7.6	76	63-128	
o-Xylene	ug/L	10	10.7	107	75-128	
p-Isopropyltoluene	ug/L	10	11.6	116	75-125	
sec-Butylbenzene	ug/L	10	11.7	117	75-126	
Styrene	ug/L	10	10.9	109	75-125	
tert-Amylmethyl ether	ug/L	10	7.0	70	75-125	L2
tert-Butyl Alcohol	ug/L	100	114	114	75-130	
tert-Butylbenzene	ug/L	10	11.4	114	75-131	
Tetrachloroethene	ug/L	10	10.9	109	74-125	
Tetrahydrofuran	ug/L	100	98.1	98	64-138	
Toluene	ug/L	10	10.3	103	74-125	
trans-1,2-Dichloroethene	ug/L	10	9.8	98	68-128	
trans-1,3-Dichloropropene	ug/L	10	10.1	101	75-125	
trans-1,4-Dichloro-2-butene	ug/L	25	21.4	85	60-127	
Trichloroethene	ug/L	10	11.2	112	75-127	
Trichlorofluoromethane	ug/L	10	8.6	86	72-133	
Vinyl acetate	ug/L	10	8.3J	83	61-129	
Vinyl chloride	ug/L	10	8.1	81	75-128	
Xylene (Total)	ug/L	30	32.6	109	75-125	
1,2-Dichloroethane-d4 (S)	%			80	75-136	
4-Bromofluorobenzene (S)	%			97	75-125	
Toluene-d8 (S)	%			102	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3245013 3245014

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		10471197001 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
1,1,1,2-Tetrachloroethane	ug/L	ND	10	10	9.8	10.2	98	102	75-140	4	30	
1,1,1-Trichloroethane	ug/L	ND	10	10	11.0	12.7	110	127	74-136	15	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	10	10	8.3	9.6	83	96	66-134	14	30	
1,1,2-Trichloroethane	ug/L	ND	10	10	9.1	9.9	91	99	75-126	8	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3245013 3245014												
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		10471197001 Result	Spike Conc.	Spike Conc.	MS Conc.							
1,1,2-Trichlorotrifluoroethane	ug/L	ND	10	10	10.5	12.0	105	120	65-146	13	30	
1,1-Dichloroethane	ug/L	ND	10	10	9.6	10.5	96	105	68-132	9	30	
1,1-Dichloroethene	ug/L	ND	10	10	10.6	11.2	106	112	66-139	5	30	
1,1-Dichloropropene	ug/L	ND	10	10	9.5	10.6	95	106	67-134	11	30	
1,2,3-Trichlorobenzene	ug/L	ND	10	10	8.8	9.0	88	90	67-129	2	30	
1,2,3-Trichloropropane	ug/L	ND	10	10	8.7	9.6	87	96	69-128	9	30	
1,2,4-Trichlorobenzene	ug/L	ND	10	10	10.3	10.7	103	107	65-140	4	30	
1,2,4-Trimethylbenzene	ug/L	ND	10	10	11.2	12.2	112	122	71-133	9	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	25	25	20.0	21.7	80	87	54-138	8	30	
1,2-Dibromoethane (EDB)	ug/L	ND	10	10	9.1	10.1	91	101	68-125	11	30	
1,2-Dichlorobenzene	ug/L	ND	10	10	9.9	11.3	99	113	74-136	13	30	
1,2-Dichloroethane	ug/L	ND	10	10	7.5	10.0	75	100	68-125	29	30	
1,2-Dichloroethene (Total)	ug/L	ND	20	20	19.6	21.0	98	105	71-126	7	30	N2
1,2-Dichloropropane	ug/L	ND	10	10	8.8	9.5	88	95	67-125	9	30	
1,3,5-Trimethylbenzene	ug/L	ND	10	10	11.6	12.2	116	122	68-137	6	30	
1,3-Dichlorobenzene	ug/L	ND	10	10	10.2	11.3	102	113	75-131	11	30	
1,3-Dichloropropane	ug/L	ND	10	10	9.4	10.1	94	101	71-125	7	30	
1,4-Dichlorobenzene	ug/L	ND	10	10	9.8	10.5	98	105	74-126	7	30	
1,4-Dioxane (p-Dioxane)	ug/L	ND	200	200	200	189J	100	94	68-125		30	
2,2,4-Trimethylpentane	ug/L	ND	10	10	11.2	11.1	112	111	54-129	1	30	N2
2,2-Dichloropropane	ug/L	ND	10	10	10.1	10.9	101	109	69-139	7	30	
2-Butanone (MEK)	ug/L	ND	50	50	33.5	45.0	67	90	54-144	29	30	
2-Chlorotoluene	ug/L	ND	10	10	10.6	12.1	106	121	75-134	13	30	
2-Hexanone	ug/L	ND	50	50	37.4	43.4	75	87	58-137	15	30	
4-Chlorotoluene	ug/L	ND	10	10	10.7	11.6	107	116	72-133	8	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	39.2	45.9	78	92	60-129	16	30	
Acetone	ug/L	ND	50	50	45.9	46.8	92	94	62-132	2	30	CH
Acrolein	ug/L	ND	100	100	183	200	183	200	30-150	9	30	CH,M0
Acrylonitrile	ug/L	ND	100	100	82.7	91.9	83	92	68-125	11	30	
Benzene	ug/L	ND	10	10	8.6	10.2	86	102	68-125	17	30	
Bromobenzene	ug/L	ND	10	10	9.5	10.3	95	103	73-126	8	30	
Bromochloromethane	ug/L	ND	10	10	9.5	11.5	95	115	66-143	18	30	
Bromodichloromethane	ug/L	ND	10	10	9.7	10.3	97	103	74-125	6	30	
Bromoform	ug/L	ND	10	10	8.9	9.5	89	95	64-134	7	30	
Bromomethane	ug/L	ND	10	10	9.7	10.1	97	101	30-150	4	30	SS
Carbon disulfide	ug/L	ND	10	10	10	9.4	100	94	43-147	5	30	
Carbon tetrachloride	ug/L	ND	10	10	10.8	12.5	108	125	71-143	15	30	
Chlorobenzene	ug/L	ND	10	10	9.6	10.4	96	104	75-125	8	30	
Chloroethane	ug/L	ND	10	10	10.2	11.9	102	119	75-129	16	30	
Chloroform	ug/L	ND	10	10	9.0	10.4	90	104	66-132	14	30	
Chloromethane	ug/L	ND	10	10	8.2	8.2	82	82	53-137	0	30	
cis-1,2-Dichloroethene	ug/L	ND	10	10	9.3	10.4	93	104	67-133	11	30	
cis-1,3-Dichloropropene	ug/L	ND	10	10	9.6	10.2	96	102	66-125	6	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Parameter	Units	10471197001		MS		MSD		MS		MSD		% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	MS Result	MSD Result	% Rec	% Rec								
MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3245013 3245014																
Dibromochloromethane	ug/L	ND	10	10	10.2	11.0	102	110	62-132	8	30					
Dibromomethane	ug/L	ND	10	10	9.9	10.5	99	105	67-125	6	30					
Dichlorodifluoromethane	ug/L	ND	10	10	8.9	9.7	89	97	71-142	9	30					
Dichlorofluoromethane	ug/L	ND	10	10	11.0	10.9	110	109	70-131	1	30	N2				
Diisopropyl ether	ug/L	ND	10	10	8.6	9.6	86	96	63-131	11	30					
Ethyl-tert-butyl ether	ug/L	ND	10	10	8.1	9.7	81	97	66-128	18	30					
Ethylbenzene	ug/L	ND	10	10	11.0	11.8	110	118	74-126	8	30					
Hexachloro-1,3-butadiene	ug/L	ND	10	10	12.1	10.3	121	103	68-143	16	30					
Isopropylbenzene (Cumene)	ug/L	ND	10	10	11.5	12.6	115	126	74-130	9	30					
m&p-Xylene	ug/L	ND	20	20	21.7	23.4	108	117	69-132	8	30					
Methyl-tert-butyl ether	ug/L	ND	10	10	8.1	9.6	81	96	65-131	16	30					
Methylene Chloride	ug/L	ND	10	10	9.2	9.9	92	99	57-125	7	30					
n-Butylbenzene	ug/L	ND	10	10	12.4	12.1	124	121	71-131	3	30					
n-Propylbenzene	ug/L	ND	10	10	12.0	13.3	120	133	67-138	10	30					
Naphthalene	ug/L	ND	10	10	7.6	8.8	76	88	60-130	15	30					
o-Xylene	ug/L	ND	10	10	10.8	11.8	108	118	69-131	9	30					
p-Isopropyltoluene	ug/L	ND	10	10	12.0	12.3	120	123	72-133	2	30					
sec-Butylbenzene	ug/L	ND	10	10	12.4	12.7	124	127	73-134	2	30					
Styrene	ug/L	ND	10	10	10.6	11.6	106	116	72-125	9	30					
tert-Amylmethyl ether	ug/L	ND	10	10	6.6	9.2	66	92	67-125	33	30	M0,R1				
tert-Butyl Alcohol	ug/L	ND	100	100	108	102	108	102	64-137	6	30					
tert-Butylbenzene	ug/L	ND	10	10	12.0	12.4	120	124	70-143	3	30					
Tetrachloroethene	ug/L	ND	10	10	10.9	11.8	109	118	72-129	8	30					
Tetrahydrofuran	ug/L	ND	100	100	95.4	107	95	107	66-128	11	30					
Toluene	ug/L	ND	10	10	10	10.5	100	105	73-125	5	30					
trans-1,2-Dichloroethene	ug/L	ND	10	10	10.3	10.6	103	106	62-137	3	30					
trans-1,3-Dichloropropene	ug/L	ND	10	10	9.7	10.7	97	107	61-136	10	30					
trans-1,4-Dichloro-2-butene	ug/L	ND	25	25	21.7	24.9	87	100	45-128	14	30					
Trichloroethene	ug/L	ND	10	10	11.8	12.1	115	118	74-132	3	30					
Trichlorofluoromethane	ug/L	ND	10	10	11.1	11.8	111	118	75-139	6	30					
Vinyl acetate	ug/L	ND	10	10	8.7J	10.1	87	101	51-135		30					
Vinyl chloride	ug/L	ND	10	10	10.1	9.7	101	97	68-146	4	30					
Xylene (Total)	ug/L	ND	30	30	32.4	35.2	108	117	67-137	8	30					
1,2-Dichloroethane-d4 (S)	%							79	100	75-136						
4-Bromofluorobenzene (S)	%							99	101	75-125						
Toluene-d8 (S)	%							101	98	75-125						

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10471013

QC Batch: 600211 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10471013001, 10471013002

METHOD BLANK: 3244789 Matrix: Water
Associated Lab Samples: 10471013001, 10471013002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<2.0	5.0	2.0	04/18/19 11:30	

LABORATORY CONTROL SAMPLE & LCSD: 3244790 3244791

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	42.6	42.7	107	107	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3244792 3244793

Parameter	Units	10470554048 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	66.6	40	40	107	110	101	109	80-120	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3244794 3244795

Parameter	Units	10470554049 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	69.9	40	40	114	110	111	101	80-120	3	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

QC Batch: 600515

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Associated Lab Samples: 10471013003, 10471013004

METHOD BLANK: 3246266

Matrix: Water

Associated Lab Samples: 10471013003, 10471013004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<2.0	5.0	2.0	04/19/19 07:36	

LABORATORY CONTROL SAMPLE & LCSD: 3246267

3246268

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	42.0	42.2	105	106	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3246269

3246270

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10470129012 Result	Spike Conc.	Spike Conc.	Result						
Alkalinity, Total as CaCO ₃	mg/L	ND	40	40	30.2	31.4	75	79	80-120	4	20 M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3246271

3246272

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10471035008 Result	Spike Conc.	Spike Conc.	Result						
Alkalinity, Total as CaCO ₃	mg/L	204	40	40	252	252	121	121	80-120	0	20 M1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

QC Batch: 600823

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 10471013001, 10471013002, 10471013003, 10471013004

METHOD BLANK: 3248039

Matrix: Water

Associated Lab Samples: 10471013001, 10471013002, 10471013003, 10471013004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	04/22/19 12:00	

LABORATORY CONTROL SAMPLE: 3248040

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1000	100	80-120	

SAMPLE DUPLICATE: 3248041

Parameter	Units	10470848001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	380	392	3	5	

SAMPLE DUPLICATE: 3248042

Parameter	Units	10470991002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	748	756	1	5	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

QC Batch: 139797 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10471013001, 10471013002, 10471013003, 10471013004

METHOD BLANK: 610865 Matrix: Water
Associated Lab Samples: 10471013001, 10471013002, 10471013003, 10471013004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	04/19/19 16:24	

LABORATORY CONTROL SAMPLE: 610866

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.2	0.19	97	90-110	

MATRIX SPIKE SAMPLE: 610868

Parameter	Units	20101866006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	0.2	0.013J	7	75-125	M1

SAMPLE DUPLICATE: 610867

Parameter	Units	20101866006 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<0.0054		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10471013

QC Batch: 600389 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10471013001, 10471013002, 10471013003, 10471013004

METHOD BLANK: 3245487 Matrix: Water
Associated Lab Samples: 10471013001, 10471013002, 10471013003, 10471013004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.28	1.2	0.28	04/19/19 21:17	
Nitrate as N	mg/L	<0.015	0.10	0.015	04/19/19 21:17	
Sulfate	mg/L	0.72J	1.2	0.19	04/19/19 21:17	

LABORATORY CONTROL SAMPLE: 3245488

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	13.0	104	90-110	
Nitrate as N	mg/L	1	1.0	101	90-110	
Sulfate	mg/L	12.5	13.5	108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3245489 3245490

Parameter	Units	10470848001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	% Rec					
Chloride	mg/L	58.1	12.5	12.5	59.2	59.0	9	8	90-110	0	20	M1	
Nitrate as N	mg/L	0.044J	1	1	0.97	0.97	92	92	90-110	0	20		
Sulfate	mg/L	13.8	12.5	12.5	26.8	23.3	104	76	90-110	14	20	M1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3245491 3245492

Parameter	Units	10471035008		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	% Rec					
Chloride	mg/L	63.7	12.5	12.5	64.2	64.7	3	7	90-110	1	20	M1	
Nitrate as N	mg/L	0.69	1	1	1.6	1.6	89	90	90-110	1	20	M1	
Sulfate	mg/L	15.2	12.5	12.5	25.4	25.4	82	82	90-110	0	20	M1	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10471013

QC Batch: 600738 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10471013001, 10471013002, 10471013003, 10471013004

METHOD BLANK: 3247614 Matrix: Water
Associated Lab Samples: 10471013001, 10471013002, 10471013003, 10471013004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	04/20/19 17:04	FS

LABORATORY CONTROL SAMPLE: 3247615

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.98	98	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3247616 3247617

Parameter	Units	10470801001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Nitrogen, NO2 plus NO3	mg/L	<0.018	1	1.0	1	1.0	102	102	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3247618 3247619

Parameter	Units	10471014001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Nitrogen, NO2 plus NO3	mg/L	ND	10	11.1	10	11.1	102	102	90-110	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10471013

QC Batch: 600281 Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
Associated Lab Samples: 10471013001, 10471013002, 10471013003, 10471013004

METHOD BLANK: 3245015 Matrix: Water
Associated Lab Samples: 10471013001, 10471013002, 10471013003, 10471013004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	04/18/19 14:11	

LABORATORY CONTROL SAMPLE: 3245016

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	298	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3245017 3245018

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10470848001 Result	Spike Conc.	Spike Conc.	Result						
Chemical Oxygen Demand	mg/L	20.2J	250	250	269	273	99	101	90-110	2	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3245019 3245020

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10470848002 Result	Spike Conc.	Spike Conc.	Result						
Chemical Oxygen Demand	mg/L	<17.0	250	250	255	266	97	101	90-110	4	20

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

QC Batch: 164597 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C TOC
Associated Lab Samples: 10471013001, 10471013002, 10471013003, 10471013004

METHOD BLANK: 648547 Matrix: Water
Associated Lab Samples: 10471013001, 10471013002, 10471013003, 10471013004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.39	1.0	0.39	04/19/19 14:01	

LABORATORY CONTROL SAMPLE: 648548

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	24.8	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 648549 648550

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		10470974002 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Total Organic Carbon	mg/L	13.0	125	125	139	138	101	100	80-120	1	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 648551 648552

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		10471261001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Total Organic Carbon	mg/L	4.8	25	25	30.4	29.7	103	100	80-120	2	20		

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

PASI-N Pace Analytical Services - New Orleans

PASI-V Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

CH The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

FS The sample was filtered in the laboratory prior to analysis.

H5 Reanalysis conducted in excess of EPA method holding time. Results confirm original analysis performed in hold time.

L2 Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

R1 RPD value was outside control limits.

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10471013

ANALYTE QUALIFIERS

SS This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10471013001	RC04-GW-041519(1)	RSK 175	600558		
10471013002	RC04-GW-041519(2)	RSK 175	600558		
10471013003	RC04-GW-041519(3)	RSK 175	600558		
10471013004	RC04-GW-041519(LF)	RSK 175	600558		
10471013001	RC04-GW-041519(1)	EPA 3010	600164	EPA 6010D	600503
10471013002	RC04-GW-041519(2)	EPA 3010	600164	EPA 6010D	600503
10471013003	RC04-GW-041519(3)	EPA 3010	600164	EPA 6010D	600503
10471013004	RC04-GW-041519(LF)	EPA 3010	600164	EPA 6010D	600503
10471013001	RC04-GW-041519(1)	EPA 7470A	600187	EPA 7470A	600465
10471013002	RC04-GW-041519(2)	EPA 7470A	600187	EPA 7470A	600465
10471013003	RC04-GW-041519(3)	EPA 7470A	600187	EPA 7470A	600465
10471013004	RC04-GW-041519(LF)	EPA 7470A	600187	EPA 7470A	600465
10471013001	RC04-GW-041519(1)	EPA 8260B	600280		
10471013002	RC04-GW-041519(2)	EPA 8260B	600280		
10471013003	RC04-GW-041519(3)	EPA 8260B	600035		
10471013004	RC04-GW-041519(LF)	EPA 8260B	600035		
10471013005	TB-041519	EPA 8260B	600035		
10471013001	RC04-GW-041519(1)	SM 2320B	600211		
10471013002	RC04-GW-041519(2)	SM 2320B	600211		
10471013003	RC04-GW-041519(3)	SM 2320B	600515		
10471013004	RC04-GW-041519(LF)	SM 2320B	600515		
10471013001	RC04-GW-041519(1)	SM 2540C	600823		
10471013002	RC04-GW-041519(2)	SM 2540C	600823		
10471013003	RC04-GW-041519(3)	SM 2540C	600823		
10471013004	RC04-GW-041519(LF)	SM 2540C	600823		
10471013001	RC04-GW-041519(1)	SM 4500-S-2 D	139797		
10471013002	RC04-GW-041519(2)	SM 4500-S-2 D	139797		
10471013003	RC04-GW-041519(3)	SM 4500-S-2 D	139797		
10471013004	RC04-GW-041519(LF)	SM 4500-S-2 D	139797		
10471013001	RC04-GW-041519(1)	EPA 300.0	600389		
10471013002	RC04-GW-041519(2)	EPA 300.0	600389		
10471013003	RC04-GW-041519(3)	EPA 300.0	600389		
10471013004	RC04-GW-041519(LF)	EPA 300.0	600389		
10471013001	RC04-GW-041519(1)	EPA 353.2	600738		
10471013002	RC04-GW-041519(2)	EPA 353.2	600738		
10471013003	RC04-GW-041519(3)	EPA 353.2	600738		
10471013004	RC04-GW-041519(LF)	EPA 353.2	600738		
10471013001	RC04-GW-041519(1)	EPA 410.4	600281	EPA 410.4	600421
10471013002	RC04-GW-041519(2)	EPA 410.4	600281	EPA 410.4	600421
10471013003	RC04-GW-041519(3)	EPA 410.4	600281	EPA 410.4	600421
10471013004	RC04-GW-041519(LF)	EPA 410.4	600281	EPA 410.4	600421
10471013001	RC04-GW-041519(1)	SM 5310C	164597		
10471013002	RC04-GW-041519(2)	SM 5310C	164597		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10471013

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10471013003	RC04-GW-041519(3)	SM 5310C	164597		
10471013004	RC04-GW-041519(LF)	SM 5310C	164597		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt Client Name: CH2M Hill Project #: **WO#: 10471013**

Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception

Tracking Number: 7475 9257 2366

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other: _____ Temp Blank? Yes No

Thermometer: T1(0461) T2(1336) T3(0459)
 T4(0254) T5(0048)

Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: <u>4.6</u> °C	Average Corrected Temp (no temp blank only): _____ °C	See Exceptions <input type="checkbox"/>
Correction Factor: <u>40.1</u>	Cooler Temp Corrected w/temp blank: <u>4.7</u> °C		

USDA Regulated Soil: (N/A, water sample/Other: _____) Date/Initials of Person Examining Contents: 04/17/19CS

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

	COMMENTS:
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: _____ See Exception <input type="checkbox"/>
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	
All containers needing acid/base preservation have been checked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12. Sample # <u>1-4</u> <input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ <input checked="" type="checkbox"/> H ₂ SO ₄ <input checked="" type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ <input checked="" type="checkbox"/> H ₂ SO ₄ <input checked="" type="checkbox"/> Zinc Acetate
Exceptions: <u>VOA</u> Coliform, <u>TOC</u> DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS <u>(PST)</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No pH Paper Lot# _____ See Exception <input type="checkbox"/>
	Res. Chlorine 0-6 Roll <u>225718</u> 0-6 Strip _____ 0-14 Strip <u>10D4671</u>
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. _____ See Exception <input type="checkbox"/>
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. Pace Trip Blank Lot # (if purchased): <u>199048</u>
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: Mark Ochsner Date/Time: 06/27/18 Field Data Required? Yes No

Comments/Resolution: WA certs not required for RSK175 or sulfide.

Project Manager Review: _____ Date: 04/17/19

Note: Whenever there is a discrepancy affecting North Carolina samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect container).

Labeled by: 199048 JJ
04/17/19CS Page 66 of 71

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
(1)	0	1	2	3	Y
(2)	0	1	2	3	Y
(3)	0	0	3	3	Y
(LF)	0	0	3	3	Y
TB	0	1	1	2	N

Chain of Custody

WO#: 12123832



Page 68 of 71

Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Cert. Needed: Yes

Owner Received Date: 4/17/2019 Results Requested By: 4/24/2019

Workorder: 10471013

Workorder Name: 1497 Freeman WA-Grain Handling

Report To	Subcontract To	Requested Analysis
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042	

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers					5632354 / 5310 TOC	LAB USE ONLY
						1	2	3	4	5		
1	RC04-GW-041519(1)	PS	4/15/2019 12:50	10471013001	Water	2					X	
2	RC04-GW-041519(2)	PS	4/15/2019 13:20	10471013002	Water	2					X	
3	RC04-GW-041519(3)	PS	4/15/2019 13:50	10471013003	Water	2					X	
4	RC04-GW-041519(LF)	PS	4/15/2019 15:00	10471013004	Water	2					X	
5												

Transfers						Comments
Transfers	Released By	Date/Time	Received By	Date/Time		
1	<i>[Signature]</i>	4/18/19 1725	<i>[Signature]</i>	4/18/19 1820		
2	<i>[Signature]</i>	4/18/19 2300	<i>[Signature]</i>	4/19/19 0230		
3						

Cooler Temperature on Receipt 1.1 °C Custody Seal or N Received on Ice or N Samples Intact or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.



Document Name: Sample Condition Upon Receipt Form

Document Revised: 03Apr2019 Page 1 of 1

Document No.: F-VM-C-001-Rev.12

Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace WA

Project #:

WO#: 12123832

Due Date: 04/25/19

PM: CLJ

CLIENT: PACE MPLS

Courier: Fed Ex, UPS, USPS, Client, Commercial, Pace, Other:

Tracking Number:

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No

Optional: Proj. Due Date: Proj. Name:

Packing Material: Bubble Wrap, Bubble Bags, None, Other:

Temp Blank? Yes No

Thermometer Used: 140792808

Type of Ice: Wet, Blue, None

Samples on ice, cooling process has begun

Cooler Temp Read °C: 0.8

Cooler Temp Corrected °C: 1.1

Biological Tissue Frozen? Yes No NA

Temp should be above freezing to 6°C

Correction Factor: 0.3

Date and Initials of Person Examining Contents: 4/18/19 DC

Comments: BM 4/19/19

Table with 15 rows of checklist items regarding custody, hold time, volume, and containers.

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? Yes No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review:

Katie Richards

Date: 4/19/2019

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

WO#: 20101912

PM: CMM

Due Date: 04/25/19

CLIENT: PASI-MINN



Sample Condition Upon F

1000 Riverbend Blvd., Suite F
St. Rose, LA 70087

Project #: ZU

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 4-19-19

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1	
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2	
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4	
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	5	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8	
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	9	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10	
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11	
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12	
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13	If No, was preservative added? <input type="checkbox"/> Yes <input type="checkbox"/> No If added record lot no.: HNO3 _____ H2SO4 _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14	
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	15	

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

May 10, 2019

David Hodson
Jacobs
155 Grand Ave
#800
Oakland, CA 94612

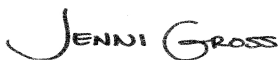
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10473442

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on May 04, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, Jacobs
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
 A2LA Certification #: 2926.01
 Alabama Certification #: 40770
 Alaska Contaminated Sites Certification #: 17-009
 Alaska DW Certification #: MN00064
 Arizona Certification #: AZ0014
 Arkansas DW Certification #: MN00064
 Arkansas WW Certification #: 88-0680
 California Certification #: 2929
 CNMI Saipan Certification #: MP0003
 Colorado Certification #: MN00064
 Connecticut Certification #: PH-0256
 EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
 Florida Certification #: E87605
 Georgia Certification #: 959
 Guam EPA Certification #: MN00064
 Hawaii Certification #: MN00064
 Idaho Certification #: MN00064
 Illinois Certification #: 200011
 Indiana Certification #: C-MN-01
 Iowa Certification #: 368
 Kansas Certification #: E-10167
 Kentucky DW Certification #: 90062
 Kentucky WW Certification #: 90062
 Louisiana DEQ Certification #: 03086
 Louisiana DW Certification #: MN00064
 Maine Certification #: MN00064
 Maryland Certification #: 322
 Massachusetts Certification #: M-MN064
 Michigan Certification #: 9909
 Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137
 Minnesota Petrofund Certification #: 1240
 Mississippi Certification #: MN00064
 Missouri Certification #: 10100
 Montana Certification #: CERT0092
 Nebraska Certification #: NE-OS-18-06
 Nevada Certification #: MN00064
 New Hampshire Certification #: 2081
 New Jersey Certification #: MN002
 New York Certification #: 11647
 North Carolina DW Certification #: 27700
 North Carolina WW Certification #: 530
 North Dakota Certification #: R-036
 Ohio DW Certification #: 41244
 Ohio VAP Certification #: CL101
 Oklahoma Certification #: 9507
 Oregon Primary Certification #: MN300001
 Oregon Secondary Certification #: MN200001
 Pennsylvania Certification #: 68-00563
 Puerto Rico Certification #: MN00064
 South Carolina Certification #:74003001
 Tennessee Certification #: TN02818
 Texas Certification #: T104704192
 Utah Certification #: MN00064
 Vermont Certification #: VT-027053137
 Virginia Certification #: 460163
 Washington Certification #: C486
 West Virginia DEP Certification #: 382
 West Virginia DW Certification #: 9952 C
 Wisconsin Certification #: 999407970
 Wyoming UST Certification #: via A2LA 2926.01

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
 Montana Certificate #CERT0103
 Alaska Certification UST-107
 Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203
 Wisconsin DNR Certification #: 998027470
 WA Department of Ecology Lab ID# C1007

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
 11277CA
 Florida Department of Health (NELAC): E87595
 Illinois Environmental Protection Agency: 0025721
 Kansas Department of Health and Environment (NELAC):
 E-10266
 Louisiana Dept. of Environmental Quality (NELAC/LELAP):
 02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202
 Texas Commission on Env. Quality (NELAC):
 T104704405-09-TX
 U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
 Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10473442001	RC04-254-264.5-050219	Water	05/02/19 12:50	05/04/19 09:00
10473442002	RC04-254-264.5-050219 (2)	Water	05/02/19 14:30	05/04/19 09:00
10473442003	RC04-265.5-276-050219	Water	05/02/19 17:35	05/04/19 09:00
10473442004	RC04-265.5-276-050219 (2)	Water	05/02/19 18:05	05/04/19 09:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10473442001	RC04-254-264.5-050219	RSK 175	AJR	3	PASI-M
		EPA 6010D	IP	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	AEZ	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JFP	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CSD	1	PASI-V
10473442002	RC04-254-264.5-050219 (2)	RSK 175	AJR	3	PASI-M
		EPA 6010D	IP	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	AEZ	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JFP	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CSD	1	PASI-V
10473442003	RC04-265.5-276-050219	RSK 175	AJR	3	PASI-M
		EPA 6010D	IP	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	AEZ	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JFP	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CSD	1	PASI-V
10473442004	RC04-265.5-276-050219 (2)	RSK 175	AJR	3	PASI-M
		EPA 6010D	IP	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	AEZ	83	PASI-M

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JFP	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CSD	1	PASI-V

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
10473442001	RC04-254-264.5-050219					
EPA 6010D	Barium, Dissolved	34.0	ug/L	10.0	05/08/19 15:56	
EPA 6010D	Cobalt, Dissolved	7.1J	ug/L	10.0	05/08/19 15:56	
EPA 6010D	Molybdenum, Dissolved	6.2J	ug/L	15.0	05/08/19 15:56	
EPA 6010D	Nickel, Dissolved	6.6J	ug/L	20.0	05/08/19 15:56	
EPA 6010D	Vanadium, Dissolved	2.9J	ug/L	15.0	05/08/19 15:56	
EPA 6010D	Zinc, Dissolved	388	ug/L	20.0	05/08/19 15:56	
EPA 8260B	Toluene	70.9	ug/L	0.50	05/08/19 18:55	
SM 2320B	Alkalinity, Total as CaCO3	164	mg/L	5.0	05/08/19 07:19	
SM 2540C	Total Dissolved Solids	206	mg/L	10.0	05/07/19 15:44	
EPA 300.0	Chloride	1.9	mg/L	1.2	05/06/19 10:10	
EPA 300.0	Sulfate	6.8	mg/L	1.2	05/06/19 10:10	
SM 5310C	Total Organic Carbon	0.57J	mg/L	1.0	05/09/19 11:41	
10473442002	RC04-254-264.5-050219 (2)					
EPA 6010D	Barium, Dissolved	33.9	ug/L	10.0	05/08/19 16:11	
EPA 6010D	Cobalt, Dissolved	7.3J	ug/L	10.0	05/08/19 16:11	
EPA 6010D	Molybdenum, Dissolved	6.5J	ug/L	15.0	05/08/19 16:11	
EPA 6010D	Nickel, Dissolved	7.0J	ug/L	20.0	05/08/19 16:11	
EPA 6010D	Vanadium, Dissolved	2.9J	ug/L	15.0	05/08/19 16:11	
EPA 6010D	Zinc, Dissolved	292	ug/L	20.0	05/08/19 16:11	
EPA 8260B	Toluene	47.2	ug/L	0.50	05/08/19 19:11	
SM 2320B	Alkalinity, Total as CaCO3	164	mg/L	5.0	05/08/19 07:34	
SM 2540C	Total Dissolved Solids	207	mg/L	10.0	05/07/19 15:44	
SM 4500-S-2 D	Sulfide, Total	0.0063J	mg/L	0.020	05/09/19 10:17	
EPA 300.0	Chloride	1.8	mg/L	1.2	05/04/19 15:33	
EPA 300.0	Sulfate	6.4	mg/L	1.2	05/04/19 15:33	
SM 5310C	Total Organic Carbon	0.51J	mg/L	1.0	05/09/19 11:55	
10473442003	RC04-265.5-276-050219					
EPA 6010D	Barium, Dissolved	38.8	ug/L	10.0	05/08/19 16:14	
EPA 6010D	Cobalt, Dissolved	2.1J	ug/L	10.0	05/08/19 16:14	
EPA 6010D	Molybdenum, Dissolved	3.8J	ug/L	15.0	05/08/19 16:14	
EPA 6010D	Nickel, Dissolved	2.6J	ug/L	20.0	05/08/19 16:14	
EPA 6010D	Vanadium, Dissolved	1.2J	ug/L	15.0	05/08/19 16:14	
EPA 6010D	Zinc, Dissolved	267	ug/L	20.0	05/08/19 16:14	
EPA 8260B	Toluene	29.1	ug/L	0.50	05/08/19 19:27	
SM 2320B	Alkalinity, Total as CaCO3	160	mg/L	5.0	05/08/19 07:49	
SM 2540C	Total Dissolved Solids	216	mg/L	10.0	05/07/19 15:44	
SM 4500-S-2 D	Sulfide, Total	0.0078J	mg/L	0.020	05/09/19 10:17	
EPA 300.0	Chloride	2.4	mg/L	1.2	05/04/19 16:34	
EPA 300.0	Sulfate	6.3	mg/L	1.2	05/04/19 16:34	
10473442004	RC04-265.5-276-050219 (2)					
EPA 6010D	Barium, Dissolved	38.8	ug/L	10.0	05/08/19 16:16	
EPA 6010D	Cobalt, Dissolved	2.3J	ug/L	10.0	05/08/19 16:16	
EPA 6010D	Molybdenum, Dissolved	3.9J	ug/L	15.0	05/08/19 16:16	
EPA 6010D	Nickel, Dissolved	2.2J	ug/L	20.0	05/08/19 16:16	
EPA 6010D	Vanadium, Dissolved	1.2J	ug/L	15.0	05/08/19 16:16	
EPA 6010D	Zinc, Dissolved	235	ug/L	20.0	05/08/19 16:16	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10473442004	RC04-265.5-276-050219 (2)					
EPA 8260B	Toluene	24.4	ug/L	0.50	05/08/19 19:42	
SM 2320B	Alkalinity, Total as CaCO ₃	167	mg/L	5.0	05/08/19 08:08	
SM 2540C	Total Dissolved Solids	213	mg/L	10.0	05/07/19 15:44	
EPA 300.0	Chloride	1.9	mg/L	1.2	05/04/19 16:49	
EPA 300.0	Sulfate	6.5	mg/L	1.2	05/04/19 16:49	
SM 5310C	Total Organic Carbon	0.82J	mg/L	1.0	05/09/19 13:34	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Method: RSK 175

Description: RSK 175 GCV Headspace

Client: UPRR_Jacobs

Date: May 10, 2019

General Information:

4 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Method: EPA 6010D

Description: 6010D MET ICP, Dissolved

Client: UPRR_Jacobs

Date: May 10, 2019

General Information:

4 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Method: EPA 7470A

Description: 7470A Mercury, Dissolved

Client: UPRR_Jacobs

Date: May 10, 2019

General Information:

4 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: May 10, 2019

General Information:

4 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

QC Batch: 604504

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 3268007)
 - Acetone
- MS (Lab ID: 3269872)
 - Acetone
- MSD (Lab ID: 3269873)
 - Acetone

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 604504

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

- LCS (Lab ID: 3268007)
 - Acetone

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: May 10, 2019

QC Batch: 604504

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10474100001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 3269872)
 - Acetone
- MSD (Lab ID: 3269873)
 - Acetone

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3269872)
 - Vinyl acetate
- MSD (Lab ID: 3269873)
 - 1,1,2,2-Tetrachloroethane
 - Vinyl acetate

R1: RPD value was outside control limits.

- MSD (Lab ID: 3269873)
 - 1,1,2,2-Tetrachloroethane

Additional Comments:

Analyte Comments:

QC Batch: 604504

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3268006)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3268007)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3269872)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3269873)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- RC04-254-264.5-050219 (Lab ID: 10473442001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- RC04-254-264.5-050219 (2) (Lab ID: 10473442002)
 - 1,2-Dichloroethene (Total)

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: May 10, 2019

Analyte Comments:

QC Batch: 604504

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- RC04-254-264.5-050219 (2) (Lab ID: 10473442002)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- RC04-265.5-276-050219 (Lab ID: 10473442003)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- RC04-265.5-276-050219 (2) (Lab ID: 10473442004)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Method: SM 2320B

Description: 2320B Alkalinity

Client: UPRR_Jacobs

Date: May 10, 2019

General Information:

4 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Method: SM 2540C

Description: 2540C Total Dissolved Solids

Client: UPRR_Jacobs

Date: May 10, 2019

General Information:

4 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Method: SM 4500-S-2 D

Description: 4500S2D Sulfide, Total

Client: UPRR_Jacobs

Date: May 10, 2019

General Information:

4 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 141697

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10473442001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 620199)
- Sulfide, Total

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Method: EPA 300.0

Description: 300.0 IC Anions

Client: UPRR_Jacobs

Date: May 10, 2019

General Information:

4 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

H1: Analysis conducted outside the recognized method holding time.

- RC04-254-264.5-050219 (Lab ID: 10473442001)
- RC04-254-264.5-050219 (2) (Lab ID: 10473442002)

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Method: EPA 353.2

Description: 353.2 Nitrate + Nitrite

Client: UPRR_Jacobs

Date: May 10, 2019

General Information:

4 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Method: EPA 410.4

Description: 410.4 COD

Client: UPRR_Jacobs

Date: May 10, 2019

General Information:

4 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Method: SM 5310C

Description: 5310C TOC

Client: UPRR_Jacobs

Date: May 10, 2019

General Information:

4 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10473442

Sample: RC04-254-264.5-050219 Lab ID: 10473442001 Collected: 05/02/19 12:50 Received: 05/04/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace									
Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		05/07/19 19:32	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		05/07/19 19:32	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		05/07/19 19:32	74-85-1	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	05/08/19 06:08	05/08/19 15:56	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	05/08/19 06:08	05/08/19 15:56	7440-38-2	
Barium, Dissolved	34.0	ug/L	10.0	0.18	1	05/08/19 06:08	05/08/19 15:56	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	05/08/19 06:08	05/08/19 15:56	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	05/08/19 06:08	05/08/19 15:56	7440-43-9	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	05/08/19 06:08	05/08/19 15:56	7440-47-3	
Cobalt, Dissolved	7.1J	ug/L	10.0	0.50	1	05/08/19 06:08	05/08/19 15:56	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	05/08/19 06:08	05/08/19 15:56	7440-50-8	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	05/08/19 06:08	05/08/19 15:56	7439-92-1	
Molybdenum, Dissolved	6.2J	ug/L	15.0	1.1	1	05/08/19 06:08	05/08/19 15:56	7439-98-7	
Nickel, Dissolved	6.6J	ug/L	20.0	1.1	1	05/08/19 06:08	05/08/19 15:56	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	05/08/19 06:08	05/08/19 15:56	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	05/08/19 06:08	05/08/19 15:56	7440-22-4	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	05/08/19 06:08	05/08/19 15:56	7440-28-0	
Vanadium, Dissolved	2.9J	ug/L	15.0	0.29	1	05/08/19 06:08	05/08/19 15:56	7440-62-2	
Zinc, Dissolved	388	ug/L	20.0	2.5	1	05/08/19 06:08	05/08/19 15:56	7440-66-6	
7470A Mercury, Dissolved									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	05/08/19 09:38	05/09/19 12:17	7439-97-6	
8260B MSV Low Level									
Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/08/19 18:55	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/08/19 18:55	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/08/19 18:55	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/08/19 18:55	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/08/19 18:55	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/08/19 18:55	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		05/08/19 18:55	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/08/19 18:55	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		05/08/19 18:55	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/08/19 18:55	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		05/08/19 18:55	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		05/08/19 18:55	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/08/19 18:55	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		05/08/19 18:55	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/08/19 18:55	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	1.0	0.22	1		05/08/19 18:55	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/08/19 18:55	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/08/19 18:55	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/08/19 18:55	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/08/19 18:55	541-73-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10473442

Sample: RC04-254-264.5-050219 **Lab ID: 10473442001** Collected: 05/02/19 12:50 Received: 05/04/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/08/19 18:55	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/08/19 18:55	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/08/19 18:55	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/08/19 18:55	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/08/19 18:55	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/08/19 18:55	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/08/19 18:55	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/08/19 18:55	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/08/19 18:55	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/08/19 18:55	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		05/08/19 18:55	67-64-1	
Acrolein	<1.2	ug/L	40.0	1.2	1		05/08/19 18:55	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/08/19 18:55	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/08/19 18:55	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		05/08/19 18:55	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/08/19 18:55	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/08/19 18:55	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/08/19 18:55	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/08/19 18:55	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		05/08/19 18:55	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		05/08/19 18:55	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/08/19 18:55	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		05/08/19 18:55	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		05/08/19 18:55	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/08/19 18:55	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		05/08/19 18:55	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/08/19 18:55	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/08/19 18:55	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/08/19 18:55	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/08/19 18:55	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/08/19 18:55	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/08/19 18:55	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/08/19 18:55	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		05/08/19 18:55	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		05/08/19 18:55	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/08/19 18:55	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/08/19 18:55	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/08/19 18:55	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/08/19 18:55	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/08/19 18:55	109-99-9	
Toluene	70.9	ug/L	0.50	0.083	1		05/08/19 18:55	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/08/19 18:55	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/08/19 18:55	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/08/19 18:55	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/08/19 18:55	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/08/19 18:55	1330-20-7	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Sample: RC04-254-264.5-050219 **Lab ID: 10473442001** Collected: 05/02/19 12:50 Received: 05/04/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level									
Analytical Method: EPA 8260B									
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/08/19 18:55	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/08/19 18:55	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/08/19 18:55	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		05/08/19 18:55	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/08/19 18:55	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/08/19 18:55	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		05/08/19 18:55	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/08/19 18:55	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/08/19 18:55	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/08/19 18:55	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/08/19 18:55	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/08/19 18:55	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		05/08/19 18:55	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/08/19 18:55	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	105	%	75-136		1		05/08/19 18:55	17060-07-0	
Toluene-d8 (S)	95	%	75-125		1		05/08/19 18:55	2037-26-5	
4-Bromofluorobenzene (S)	104	%	75-125		1		05/08/19 18:55	460-00-4	
2320B Alkalinity									
Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	164	mg/L	5.0	2.0	1		05/08/19 07:19		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Total Dissolved Solids	206	mg/L	10.0	5.0	1		05/07/19 15:44		
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		05/09/19 09:51	18496-25-8	M1
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	1.9	mg/L	1.2	0.12	1		05/06/19 10:10	16887-00-6	
Nitrate as N	<0.012	mg/L	0.10	0.012	1		05/06/19 10:10	14797-55-8	H1
Sulfate	6.8	mg/L	1.2	0.28	1		05/06/19 10:10	14808-79-8	
353.2 Nitrate + Nitrite									
Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	<0.018	mg/L	0.10	0.018	1		05/07/19 14:08		
410.4 COD									
Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	05/09/19 12:50	05/09/19 16:33		
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	0.57J	mg/L	1.0	0.39	1		05/09/19 11:41	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Project No.: 10473442

Sample: RC04-254-264.5-050219 (2) Lab ID: 10473442002 Collected: 05/02/19 14:30 Received: 05/04/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace		Analytical Method: RSK 175							
Methane	<4.9	ug/L	10.0	4.9	1		05/07/19 19:46	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		05/07/19 19:46	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		05/07/19 19:46	74-85-1	
6010D MET ICP, Dissolved		Analytical Method: EPA 6010D Preparation Method: EPA 3010							
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	05/08/19 06:08	05/08/19 16:11	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	05/08/19 06:08	05/08/19 16:11	7440-38-2	
Barium, Dissolved	33.9	ug/L	10.0	0.18	1	05/08/19 06:08	05/08/19 16:11	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	05/08/19 06:08	05/08/19 16:11	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	05/08/19 06:08	05/08/19 16:11	7440-43-9	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	05/08/19 06:08	05/08/19 16:11	7440-47-3	
Cobalt, Dissolved	7.3J	ug/L	10.0	0.50	1	05/08/19 06:08	05/08/19 16:11	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	05/08/19 06:08	05/08/19 16:11	7440-50-8	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	05/08/19 06:08	05/08/19 16:11	7439-92-1	
Molybdenum, Dissolved	6.5J	ug/L	15.0	1.1	1	05/08/19 06:08	05/08/19 16:11	7439-98-7	
Nickel, Dissolved	7.0J	ug/L	20.0	1.1	1	05/08/19 06:08	05/08/19 16:11	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	05/08/19 06:08	05/08/19 16:11	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	05/08/19 06:08	05/08/19 16:11	7440-22-4	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	05/08/19 06:08	05/08/19 16:11	7440-28-0	
Vanadium, Dissolved	2.9J	ug/L	15.0	0.29	1	05/08/19 06:08	05/08/19 16:11	7440-62-2	
Zinc, Dissolved	292	ug/L	20.0	2.5	1	05/08/19 06:08	05/08/19 16:11	7440-66-6	
7470A Mercury, Dissolved		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	05/08/19 09:38	05/09/19 12:20	7439-97-6	
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/08/19 19:11	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/08/19 19:11	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/08/19 19:11	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/08/19 19:11	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/08/19 19:11	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/08/19 19:11	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		05/08/19 19:11	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/08/19 19:11	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		05/08/19 19:11	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/08/19 19:11	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		05/08/19 19:11	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		05/08/19 19:11	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/08/19 19:11	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		05/08/19 19:11	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/08/19 19:11	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	1.0	0.22	1		05/08/19 19:11	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/08/19 19:11	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/08/19 19:11	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/08/19 19:11	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/08/19 19:11	541-73-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Project No.: 10473442

Sample: RC04-254-264.5-050219 (2) Lab ID: 10473442002 Collected: 05/02/19 14:30 Received: 05/04/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/08/19 19:11	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/08/19 19:11	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/08/19 19:11	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/08/19 19:11	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/08/19 19:11	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/08/19 19:11	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/08/19 19:11	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/08/19 19:11	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/08/19 19:11	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/08/19 19:11	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		05/08/19 19:11	67-64-1	
Acrolein	<1.2	ug/L	40.0	1.2	1		05/08/19 19:11	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/08/19 19:11	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/08/19 19:11	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		05/08/19 19:11	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/08/19 19:11	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/08/19 19:11	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/08/19 19:11	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/08/19 19:11	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		05/08/19 19:11	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		05/08/19 19:11	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/08/19 19:11	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		05/08/19 19:11	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		05/08/19 19:11	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/08/19 19:11	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		05/08/19 19:11	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/08/19 19:11	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/08/19 19:11	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/08/19 19:11	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/08/19 19:11	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/08/19 19:11	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/08/19 19:11	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/08/19 19:11	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		05/08/19 19:11	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		05/08/19 19:11	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/08/19 19:11	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/08/19 19:11	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/08/19 19:11	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/08/19 19:11	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/08/19 19:11	109-99-9	
Toluene	47.2	ug/L	0.50	0.083	1		05/08/19 19:11	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/08/19 19:11	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/08/19 19:11	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/08/19 19:11	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/08/19 19:11	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/08/19 19:11	1330-20-7	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Sample: RC04-254-264.5-050219 (2) **Lab ID:** 10473442002 Collected: 05/02/19 14:30 Received: 05/04/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/08/19 19:11	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/08/19 19:11	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/08/19 19:11	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		05/08/19 19:11	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/08/19 19:11	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/08/19 19:11	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		05/08/19 19:11	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/08/19 19:11	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/08/19 19:11	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/08/19 19:11	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/08/19 19:11	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/08/19 19:11	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		05/08/19 19:11	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/08/19 19:11	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	107	%	75-136		1		05/08/19 19:11	17060-07-0	
Toluene-d8 (S)	95	%	75-125		1		05/08/19 19:11	2037-26-5	
4-Bromofluorobenzene (S)	104	%	75-125		1		05/08/19 19:11	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	164	mg/L	5.0	2.0	1		05/08/19 07:34		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	207	mg/L	10.0	5.0	1		05/07/19 15:44		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	0.0063J	mg/L	0.020	0.0054	1		05/09/19 10:17	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	1.8	mg/L	1.2	0.12	1		05/04/19 15:33	16887-00-6	
Nitrate as N	<0.012	mg/L	0.10	0.012	1		05/04/19 15:33	14797-55-8	H1
Sulfate	6.4	mg/L	1.2	0.28	1		05/04/19 15:33	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	<0.018	mg/L	0.10	0.018	1		05/07/19 14:13		
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	05/09/19 12:50	05/09/19 16:35		
5310C TOC		Analytical Method: SM 5310C							
Total Organic Carbon	0.51J	mg/L	1.0	0.39	1		05/09/19 11:55	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10473442

Sample: RC04-265.5-276-050219 Lab ID: 10473442003 Collected: 05/02/19 17:35 Received: 05/04/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace									
Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		05/07/19 19:53	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		05/07/19 19:53	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		05/07/19 19:53	74-85-1	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	05/08/19 06:08	05/08/19 16:14	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	05/08/19 06:08	05/08/19 16:14	7440-38-2	
Barium, Dissolved	38.8	ug/L	10.0	0.18	1	05/08/19 06:08	05/08/19 16:14	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	05/08/19 06:08	05/08/19 16:14	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	05/08/19 06:08	05/08/19 16:14	7440-43-9	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	05/08/19 06:08	05/08/19 16:14	7440-47-3	
Cobalt, Dissolved	2.1J	ug/L	10.0	0.50	1	05/08/19 06:08	05/08/19 16:14	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	05/08/19 06:08	05/08/19 16:14	7440-50-8	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	05/08/19 06:08	05/08/19 16:14	7439-92-1	
Molybdenum, Dissolved	3.8J	ug/L	15.0	1.1	1	05/08/19 06:08	05/08/19 16:14	7439-98-7	
Nickel, Dissolved	2.6J	ug/L	20.0	1.1	1	05/08/19 06:08	05/08/19 16:14	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	05/08/19 06:08	05/08/19 16:14	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	05/08/19 06:08	05/08/19 16:14	7440-22-4	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	05/08/19 06:08	05/08/19 16:14	7440-28-0	
Vanadium, Dissolved	1.2J	ug/L	15.0	0.29	1	05/08/19 06:08	05/08/19 16:14	7440-62-2	
Zinc, Dissolved	267	ug/L	20.0	2.5	1	05/08/19 06:08	05/08/19 16:14	7440-66-6	
7470A Mercury, Dissolved									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	05/08/19 09:38	05/09/19 12:26	7439-97-6	
8260B MSV Low Level									
Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/08/19 19:27	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/08/19 19:27	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/08/19 19:27	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/08/19 19:27	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/08/19 19:27	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/08/19 19:27	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		05/08/19 19:27	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/08/19 19:27	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		05/08/19 19:27	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/08/19 19:27	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		05/08/19 19:27	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		05/08/19 19:27	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/08/19 19:27	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		05/08/19 19:27	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/08/19 19:27	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	1.0	0.22	1		05/08/19 19:27	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/08/19 19:27	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/08/19 19:27	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/08/19 19:27	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/08/19 19:27	541-73-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10473442

Sample: RC04-265.5-276-050219 Lab ID: 10473442003 Collected: 05/02/19 17:35 Received: 05/04/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/08/19 19:27	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/08/19 19:27	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/08/19 19:27	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/08/19 19:27	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/08/19 19:27	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/08/19 19:27	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/08/19 19:27	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/08/19 19:27	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/08/19 19:27	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/08/19 19:27	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		05/08/19 19:27	67-64-1	
Acrolein	<1.2	ug/L	40.0	1.2	1		05/08/19 19:27	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/08/19 19:27	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/08/19 19:27	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		05/08/19 19:27	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/08/19 19:27	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/08/19 19:27	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/08/19 19:27	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/08/19 19:27	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		05/08/19 19:27	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		05/08/19 19:27	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/08/19 19:27	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		05/08/19 19:27	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		05/08/19 19:27	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/08/19 19:27	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		05/08/19 19:27	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/08/19 19:27	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/08/19 19:27	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/08/19 19:27	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/08/19 19:27	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/08/19 19:27	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/08/19 19:27	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/08/19 19:27	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		05/08/19 19:27	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		05/08/19 19:27	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/08/19 19:27	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/08/19 19:27	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/08/19 19:27	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/08/19 19:27	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/08/19 19:27	109-99-9	
Toluene	29.1	ug/L	0.50	0.083	1		05/08/19 19:27	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/08/19 19:27	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/08/19 19:27	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/08/19 19:27	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/08/19 19:27	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/08/19 19:27	1330-20-7	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Sample: RC04-265.5-276-050219 Lab ID: 10473442003 Collected: 05/02/19 17:35 Received: 05/04/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/08/19 19:27	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/08/19 19:27	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/08/19 19:27	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		05/08/19 19:27	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/08/19 19:27	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/08/19 19:27	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		05/08/19 19:27	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/08/19 19:27	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/08/19 19:27	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/08/19 19:27	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/08/19 19:27	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/08/19 19:27	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		05/08/19 19:27	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/08/19 19:27	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%	75-136		1		05/08/19 19:27	17060-07-0	
Toluene-d8 (S)	95	%	75-125		1		05/08/19 19:27	2037-26-5	
4-Bromofluorobenzene (S)	105	%	75-125		1		05/08/19 19:27	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	160	mg/L	5.0	2.0	1		05/08/19 07:49		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	216	mg/L	10.0	5.0	1		05/07/19 15:44		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	0.0078J	mg/L	0.020	0.0054	1		05/09/19 10:17	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	2.4	mg/L	1.2	0.12	1		05/04/19 16:34	16887-00-6	
Nitrate as N	<0.012	mg/L	0.10	0.012	1		05/04/19 16:34	14797-55-8	
Sulfate	6.3	mg/L	1.2	0.28	1		05/04/19 16:34	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	<0.018	mg/L	0.10	0.018	1		05/07/19 14:14		
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	05/09/19 12:50	05/09/19 16:35		
5310C TOC		Analytical Method: SM 5310C							
Total Organic Carbon	<0.39	mg/L	1.0	0.39	1		05/09/19 13:05	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10473442

Sample: RC04-265.5-276-050219 (2) Lab ID: 10473442004 Collected: 05/02/19 18:05 Received: 05/04/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace		Analytical Method: RSK 175							
Methane	<4.9	ug/L	10.0	4.9	1		05/07/19 20:00	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		05/07/19 20:00	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		05/07/19 20:00	74-85-1	
6010D MET ICP, Dissolved		Analytical Method: EPA 6010D Preparation Method: EPA 3010							
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	05/08/19 06:08	05/08/19 16:16	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	05/08/19 06:08	05/08/19 16:16	7440-38-2	
Barium, Dissolved	38.8	ug/L	10.0	0.18	1	05/08/19 06:08	05/08/19 16:16	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	05/08/19 06:08	05/08/19 16:16	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	05/08/19 06:08	05/08/19 16:16	7440-43-9	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	05/08/19 06:08	05/08/19 16:16	7440-47-3	
Cobalt, Dissolved	2.3J	ug/L	10.0	0.50	1	05/08/19 06:08	05/08/19 16:16	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	05/08/19 06:08	05/08/19 16:16	7440-50-8	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	05/08/19 06:08	05/08/19 16:16	7439-92-1	
Molybdenum, Dissolved	3.9J	ug/L	15.0	1.1	1	05/08/19 06:08	05/08/19 16:16	7439-98-7	
Nickel, Dissolved	2.2J	ug/L	20.0	1.1	1	05/08/19 06:08	05/08/19 16:16	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	05/08/19 06:08	05/08/19 16:16	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	05/08/19 06:08	05/08/19 16:16	7440-22-4	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	05/08/19 06:08	05/08/19 16:16	7440-28-0	
Vanadium, Dissolved	1.2J	ug/L	15.0	0.29	1	05/08/19 06:08	05/08/19 16:16	7440-62-2	
Zinc, Dissolved	235	ug/L	20.0	2.5	1	05/08/19 06:08	05/08/19 16:16	7440-66-6	
7470A Mercury, Dissolved		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	05/08/19 09:38	05/09/19 12:29	7439-97-6	
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/08/19 19:42	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/08/19 19:42	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/08/19 19:42	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/08/19 19:42	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/08/19 19:42	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/08/19 19:42	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		05/08/19 19:42	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/08/19 19:42	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		05/08/19 19:42	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/08/19 19:42	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		05/08/19 19:42	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		05/08/19 19:42	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/08/19 19:42	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		05/08/19 19:42	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/08/19 19:42	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	1.0	0.22	1		05/08/19 19:42	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/08/19 19:42	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/08/19 19:42	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/08/19 19:42	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/08/19 19:42	541-73-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10473442

Sample: RC04-265.5-276-050219 (2) Lab ID: 10473442004 Collected: 05/02/19 18:05 Received: 05/04/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/08/19 19:42	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/08/19 19:42	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/08/19 19:42	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/08/19 19:42	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/08/19 19:42	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/08/19 19:42	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/08/19 19:42	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/08/19 19:42	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/08/19 19:42	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/08/19 19:42	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		05/08/19 19:42	67-64-1	
Acrolein	<1.2	ug/L	40.0	1.2	1		05/08/19 19:42	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/08/19 19:42	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/08/19 19:42	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		05/08/19 19:42	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/08/19 19:42	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/08/19 19:42	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/08/19 19:42	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/08/19 19:42	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		05/08/19 19:42	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		05/08/19 19:42	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/08/19 19:42	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		05/08/19 19:42	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		05/08/19 19:42	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/08/19 19:42	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		05/08/19 19:42	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/08/19 19:42	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/08/19 19:42	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/08/19 19:42	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/08/19 19:42	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/08/19 19:42	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/08/19 19:42	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/08/19 19:42	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		05/08/19 19:42	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		05/08/19 19:42	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/08/19 19:42	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/08/19 19:42	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/08/19 19:42	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/08/19 19:42	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/08/19 19:42	109-99-9	
Toluene	24.4	ug/L	0.50	0.083	1		05/08/19 19:42	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/08/19 19:42	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/08/19 19:42	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/08/19 19:42	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/08/19 19:42	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/08/19 19:42	1330-20-7	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Sample: RC04-265.5-276-050219 (2) **Lab ID: 10473442004** Collected: 05/02/19 18:05 Received: 05/04/19 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/08/19 19:42	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/08/19 19:42	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/08/19 19:42	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		05/08/19 19:42	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/08/19 19:42	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/08/19 19:42	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		05/08/19 19:42	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/08/19 19:42	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/08/19 19:42	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/08/19 19:42	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/08/19 19:42	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/08/19 19:42	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		05/08/19 19:42	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/08/19 19:42	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	104	%	75-136		1		05/08/19 19:42	17060-07-0	
Toluene-d8 (S)	96	%	75-125		1		05/08/19 19:42	2037-26-5	
4-Bromofluorobenzene (S)	105	%	75-125		1		05/08/19 19:42	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	167	mg/L	5.0	2.0	1		05/08/19 08:08		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	213	mg/L	10.0	5.0	1		05/07/19 15:44		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		05/09/19 10:18	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	1.9	mg/L	1.2	0.12	1		05/04/19 16:49	16887-00-6	
Nitrate as N	<0.012	mg/L	0.10	0.012	1		05/04/19 16:49	14797-55-8	
Sulfate	6.5	mg/L	1.2	0.28	1		05/04/19 16:49	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	<0.018	mg/L	0.10	0.018	1		05/07/19 14:15		
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	05/09/19 12:50	05/09/19 16:35		
5310C TOC		Analytical Method: SM 5310C							
Total Organic Carbon	0.82J	mg/L	1.0	0.39	1		05/09/19 13:34	7440-44-0	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

QC Batch: 604347

Analysis Method: RSK 175

QC Batch Method: RSK 175

Analysis Description: RSK 175 GCV HEADSPACE

Associated Lab Samples: 10473442001, 10473442002, 10473442003, 10473442004

METHOD BLANK: 3267364

Matrix: Water

Associated Lab Samples: 10473442001, 10473442002, 10473442003, 10473442004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	05/07/19 17:05	
Ethene	ug/L	<2.9	10.0	2.9	05/07/19 17:05	
Methane	ug/L	<4.9	10.0	4.9	05/07/19 17:05	

LABORATORY CONTROL SAMPLE & LCSD: 3267365

3267366

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	117	114	103	101	85-115	2	20	
Ethene	ug/L	106	108	106	102	100	85-115	2	20	
Methane	ug/L	60.7	59.8	58.4	99	96	85-115	2	20	

SAMPLE DUPLICATE: 3267638

Parameter	Units	10473442001 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<3.0	<3.0		20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	<4.9	<4.9		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

QC Batch: 603852 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10473442001, 10473442002, 10473442003, 10473442004

METHOD BLANK: 3265111 Matrix: Water
Associated Lab Samples: 10473442001, 10473442002, 10473442003, 10473442004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.093	0.20	0.093	05/09/19 12:13	

LABORATORY CONTROL SAMPLE: 3265112

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.6	111	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3265113 3265114

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		10473442002 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Mercury, Dissolved	ug/L	<0.093	5	5	5.4	5.4	108	108	80-120	1	20		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

QC Batch: 603822 Analysis Method: EPA 6010D
 QC Batch Method: EPA 3010 Analysis Description: 6010D Water Dissolved
 Associated Lab Samples: 10473442001, 10473442002, 10473442003, 10473442004

METHOD BLANK: 3265000 Matrix: Water
 Associated Lab Samples: 10473442001, 10473442002, 10473442003, 10473442004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	05/08/19 15:50	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	05/08/19 15:50	
Barium, Dissolved	ug/L	<0.18	10.0	0.18	05/08/19 15:50	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	05/08/19 15:50	
Cadmium, Dissolved	ug/L	<0.26	3.0	0.26	05/08/19 15:50	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	05/08/19 15:50	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	05/08/19 15:50	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	05/08/19 15:50	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	05/08/19 15:50	
Molybdenum, Dissolved	ug/L	<1.1	15.0	1.1	05/08/19 15:50	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	05/08/19 15:50	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	05/08/19 15:50	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	05/08/19 15:50	
Thallium, Dissolved	ug/L	<4.3	20.0	4.3	05/08/19 15:50	
Vanadium, Dissolved	ug/L	<0.29	15.0	0.29	05/08/19 15:50	
Zinc, Dissolved	ug/L	<2.5	20.0	2.5	05/08/19 15:50	

LABORATORY CONTROL SAMPLE: 3265001

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony, Dissolved	ug/L	1000	1080	108	80-120	
Arsenic, Dissolved	ug/L	1000	1050	105	80-120	
Barium, Dissolved	ug/L	1000	1080	108	80-120	
Beryllium, Dissolved	ug/L	1000	1060	106	80-120	
Cadmium, Dissolved	ug/L	1000	1030	103	80-120	
Chromium, Dissolved	ug/L	1000	1070	107	80-120	
Cobalt, Dissolved	ug/L	1000	1050	105	80-120	
Copper, Dissolved	ug/L	1000	993	99	80-120	
Lead, Dissolved	ug/L	1000	1040	104	80-120	
Molybdenum, Dissolved	ug/L	1000	1060	106	80-120	
Nickel, Dissolved	ug/L	1000	1060	106	80-120	
Selenium, Dissolved	ug/L	1000	1040	104	80-120	
Silver, Dissolved	ug/L	500	498	100	80-120	
Thallium, Dissolved	ug/L	1000	1070	107	80-120	
Vanadium, Dissolved	ug/L	1000	992	99	80-120	
Zinc, Dissolved	ug/L	1000	1030	103	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3265002		3265003		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		10473442001 Result	MS Spike Conc.	MSD Spike Conc.									
Antimony, Dissolved	ug/L	<7.0	1000	1000	1070	1070	107	107	75-125	1	20		
Arsenic, Dissolved	ug/L	<3.8	1000	1000	1040	1040	103	104	75-125	0	20		
Barium, Dissolved	ug/L	34.0	1000	1000	1090	1090	105	106	75-125	0	20		
Beryllium, Dissolved	ug/L	<0.12	1000	1000	1050	1050	105	105	75-125	1	20		
Cadmium, Dissolved	ug/L	<0.26	1000	1000	1000	1010	100	101	75-125	0	20		
Chromium, Dissolved	ug/L	<0.49	1000	1000	1050	1050	105	105	75-125	0	20		
Cobalt, Dissolved	ug/L	7.1J	1000	1000	1020	1030	102	103	75-125	1	20		
Copper, Dissolved	ug/L	<1.2	1000	1000	975	977	97	98	75-125	0	20		
Lead, Dissolved	ug/L	<2.0	1000	1000	1010	1010	101	101	75-125	0	20		
Molybdenum, Dissolved	ug/L	6.2J	1000	1000	1040	1040	103	104	75-125	1	20		
Nickel, Dissolved	ug/L	6.6J	1000	1000	1040	1040	103	103	75-125	0	20		
Selenium, Dissolved	ug/L	<5.8	1000	1000	1010	1010	101	101	75-125	0	20		
Silver, Dissolved	ug/L	<0.38	500	500	489	491	98	98	75-125	0	20		
Thallium, Dissolved	ug/L	<4.3	1000	1000	1030	1040	103	104	75-125	1	20		
Vanadium, Dissolved	ug/L	2.9J	1000	1000	979	982	98	98	75-125	0	20		
Zinc, Dissolved	ug/L	388	1000	1000	1380	1390	99	100	75-125	0	20		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

QC Batch: 604504 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10473442001, 10473442002, 10473442003, 10473442004

METHOD BLANK: 3268006 Matrix: Water
Associated Lab Samples: 10473442001, 10473442002, 10473442003, 10473442004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	05/08/19 12:00	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	05/08/19 12:00	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	05/08/19 12:00	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	05/08/19 12:00	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	05/08/19 12:00	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	05/08/19 12:00	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	05/08/19 12:00	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	05/08/19 12:00	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	05/08/19 12:00	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	05/08/19 12:00	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	05/08/19 12:00	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	05/08/19 12:00	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	05/08/19 12:00	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	05/08/19 12:00	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	05/08/19 12:00	
1,2-Dichloroethane	ug/L	<0.22	1.0	0.22	05/08/19 12:00	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	05/08/19 12:00	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	05/08/19 12:00	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	05/08/19 12:00	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	05/08/19 12:00	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	05/08/19 12:00	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	05/08/19 12:00	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	05/08/19 12:00	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	05/08/19 12:00	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	05/08/19 12:00	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	05/08/19 12:00	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	05/08/19 12:00	
2-Hexanone	ug/L	<0.88	5.0	0.88	05/08/19 12:00	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	05/08/19 12:00	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	05/08/19 12:00	
Acetone	ug/L	<9.2	20.0	9.2	05/08/19 12:00	
Acrolein	ug/L	<1.2	40.0	1.2	05/08/19 12:00	
Acrylonitrile	ug/L	<0.91	10.0	0.91	05/08/19 12:00	
Benzene	ug/L	<0.10	0.50	0.10	05/08/19 12:00	
Bromobenzene	ug/L	<0.21	0.50	0.21	05/08/19 12:00	
Bromochloromethane	ug/L	<0.27	1.0	0.27	05/08/19 12:00	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	05/08/19 12:00	
Bromoform	ug/L	<0.80	4.0	0.80	05/08/19 12:00	
Bromomethane	ug/L	<1.8	4.0	1.8	05/08/19 12:00	
Carbon disulfide	ug/L	<0.078	1.0	0.078	05/08/19 12:00	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	05/08/19 12:00	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

METHOD BLANK: 3268006

Matrix: Water

Associated Lab Samples: 10473442001, 10473442002, 10473442003, 10473442004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	05/08/19 12:00	
Chloroethane	ug/L	<0.49	1.0	0.49	05/08/19 12:00	
Chloroform	ug/L	<0.45	1.0	0.45	05/08/19 12:00	
Chloromethane	ug/L	<0.16	4.0	0.16	05/08/19 12:00	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	05/08/19 12:00	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	05/08/19 12:00	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	05/08/19 12:00	
Dibromomethane	ug/L	<0.16	1.0	0.16	05/08/19 12:00	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	05/08/19 12:00	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	05/08/19 12:00	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	05/08/19 12:00	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	05/08/19 12:00	
Ethylbenzene	ug/L	<0.14	0.50	0.14	05/08/19 12:00	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	05/08/19 12:00	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	05/08/19 12:00	
m&p-Xylene	ug/L	<0.31	1.0	0.31	05/08/19 12:00	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	05/08/19 12:00	
Methylene Chloride	ug/L	<0.98	4.0	0.98	05/08/19 12:00	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	05/08/19 12:00	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	05/08/19 12:00	
Naphthalene	ug/L	<0.48	1.0	0.48	05/08/19 12:00	
o-Xylene	ug/L	<0.16	0.50	0.16	05/08/19 12:00	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	05/08/19 12:00	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	05/08/19 12:00	
Styrene	ug/L	<0.19	0.50	0.19	05/08/19 12:00	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	05/08/19 12:00	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	05/08/19 12:00	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	05/08/19 12:00	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	05/08/19 12:00	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	05/08/19 12:00	
Toluene	ug/L	<0.083	0.50	0.083	05/08/19 12:00	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	05/08/19 12:00	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	05/08/19 12:00	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	05/08/19 12:00	
Trichloroethene	ug/L	<0.15	0.40	0.15	05/08/19 12:00	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	05/08/19 12:00	
Vinyl acetate	ug/L	<1.1	10.0	1.1	05/08/19 12:00	
Vinyl chloride	ug/L	<0.092	0.20	0.092	05/08/19 12:00	
Xylene (Total)	ug/L	<0.31	1.5	0.31	05/08/19 12:00	
1,2-Dichloroethane-d4 (S)	%	106	75-136		05/08/19 12:00	
4-Bromofluorobenzene (S)	%	106	75-125		05/08/19 12:00	
Toluene-d8 (S)	%	97	75-125		05/08/19 12:00	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

LABORATORY CONTROL SAMPLE: 3268007

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	18.2	91	68-141	
1,1,1-Trichloroethane	ug/L	20	19.6	98	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	20.4	102	73-125	
1,1,2-Trichloroethane	ug/L	20	20.3	101	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	22.3	112	69-132	
1,1-Dichloroethane	ug/L	20	21.3	106	73-125	
1,1-Dichloroethene	ug/L	20	18.6	93	71-126	
1,1-Dichloropropene	ug/L	20	21.0	105	73-126	
1,2,3-Trichlorobenzene	ug/L	20	20.7	104	72-126	
1,2,3-Trichloropropane	ug/L	20	20.6	103	75-126	
1,2,4-Trichlorobenzene	ug/L	20	20.7	103	71-134	
1,2,4-Trimethylbenzene	ug/L	20	21.5	108	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	44.0	88	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	19.2	96	75-129	
1,2-Dichlorobenzene	ug/L	20	20.3	101	75-129	
1,2-Dichloroethane	ug/L	20	20.5	102	75-125	
1,2-Dichloroethene (Total)	ug/L	40	38.2	96	74-125	N2
1,2-Dichloropropane	ug/L	20	22.2	111	75-125	
1,3,5-Trimethylbenzene	ug/L	20	21.5	107	75-127	
1,3-Dichlorobenzene	ug/L	20	20.3	101	75-126	
1,3-Dichloropropane	ug/L	20	20.6	103	75-125	
1,4-Dichlorobenzene	ug/L	20	20.5	102	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	419	105	72-129	
2,2,4-Trimethylpentane	ug/L	20	20.2	101	72-128	N2
2,2-Dichloropropane	ug/L	20	25.2	126	65-138	
2-Butanone (MEK)	ug/L	100	126	126	59-144	
2-Chlorotoluene	ug/L	20	22.3	112	75-127	
2-Hexanone	ug/L	100	118	118	73-134	
4-Chlorotoluene	ug/L	20	21.8	109	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	100	100	62-141	
Acetone	ug/L	100	152	152	60-137	CH,L1
Acrolein	ug/L	200	210	105	60-141	
Acrylonitrile	ug/L	200	209	104	75-129	
Benzene	ug/L	20	19.9	100	73-125	
Bromobenzene	ug/L	20	20.5	102	73-125	
Bromochloromethane	ug/L	20	18.5	92	75-135	
Bromodichloromethane	ug/L	20	19.1	96	75-125	
Bromoform	ug/L	20	16.9	84	67-136	
Bromomethane	ug/L	20	19.4	97	30-150	
Carbon disulfide	ug/L	20	16.0	80	47-137	
Carbon tetrachloride	ug/L	20	18.3	92	75-125	
Chlorobenzene	ug/L	20	19.6	98	75-125	
Chloroethane	ug/L	20	20.2	101	63-136	
Chloroform	ug/L	20	20.3	101	73-128	
Chloromethane	ug/L	20	16.6	83	55-130	
cis-1,2-Dichloroethene	ug/L	20	19.7	98	75-125	
cis-1,3-Dichloropropene	ug/L	20	20.9	104	74-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

LABORATORY CONTROL SAMPLE: 3268007

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	17.0	85	75-125	
Dibromomethane	ug/L	20	19.3	96	75-125	
Dichlorodifluoromethane	ug/L	20	19.3	96	63-132	
Dichlorofluoromethane	ug/L	20	21.1	105	68-127	N2
Diisopropyl ether	ug/L	20	21.6	108	71-131	
Ethyl-tert-butyl ether	ug/L	20	20.9	104	75-125	
Ethylbenzene	ug/L	20	21.7	109	75-125	
Hexachloro-1,3-butadiene	ug/L	20	21.5	107	72-134	
Isopropylbenzene (Cumene)	ug/L	20	20.9	105	75-125	
m&p-Xylene	ug/L	40	42.3	106	75-126	
Methyl-tert-butyl ether	ug/L	20	21.8	109	75-125	
Methylene Chloride	ug/L	20	20.3	102	70-125	
n-Butylbenzene	ug/L	20	22.9	114	75-126	
n-Propylbenzene	ug/L	20	22.8	114	73-127	
Naphthalene	ug/L	20	19.8	99	63-128	
o-Xylene	ug/L	20	20.5	102	75-128	
p-Isopropyltoluene	ug/L	20	21.7	108	75-125	
sec-Butylbenzene	ug/L	20	22.1	111	75-126	
Styrene	ug/L	20	20.5	103	75-125	
tert-Amylmethyl ether	ug/L	20	21.4	107	75-125	
tert-Butyl Alcohol	ug/L	200	214	107	75-130	
tert-Butylbenzene	ug/L	20	21.2	106	75-131	
Tetrachloroethene	ug/L	20	18.3	92	74-125	
Tetrahydrofuran	ug/L	200	211	106	64-138	
Toluene	ug/L	20	20.6	103	74-125	
trans-1,2-Dichloroethene	ug/L	20	18.5	93	68-128	
trans-1,3-Dichloropropene	ug/L	20	21.3	107	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	51.1	102	60-127	
Trichloroethene	ug/L	20	19.0	95	75-127	
Trichlorofluoromethane	ug/L	20	21.1	106	72-133	
Vinyl acetate	ug/L	20	18.7	94	61-129	
Vinyl chloride	ug/L	20	19.4	97	75-128	
Xylene (Total)	ug/L	60	62.8	105	75-125	
1,2-Dichloroethane-d4 (S)	%			106	75-136	
4-Bromofluorobenzene (S)	%			103	75-125	
Toluene-d8 (S)	%			98	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3269872 3269873

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10474100001 Result	Spike Conc.	Spike Conc.	Conc.								
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	17.9	18.1	90	90	75-140	1	30		
1,1,1-Trichloroethane	ug/L	<0.14	20	20	18.7	18.8	94	94	74-136	0	30		
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	16.3	11.7	81	59	66-134	33	30	M1, R1	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	19.8	20.5	99	103	75-126	3	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3269872		3269873								
Parameter	Units	10474100001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	21.1	20.4	106	102	65-146	4	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	21.0	20.7	105	104	68-132	1	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	17.9	17.7	89	89	66-139	1	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	20.0	19.8	100	99	67-134	1	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	24.7	25.6	123	128	67-129	4	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	21.0	21.3	105	107	69-128	1	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	22.4	22.9	112	114	65-140	2	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	20.9	21.0	105	105	71-133	0	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	47.6	47.8	95	96	54-138	1	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	19.0	19.3	95	96	68-125	1	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	20.3	20.7	101	103	74-136	2	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	20.5	20.6	103	103	68-125	1	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	37.2	36.7	93	92	71-126	2	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	21.3	21.4	107	107	67-125	0	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	20.8	20.8	104	104	68-137	0	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	19.9	19.8	99	99	75-131	0	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	20.2	20.8	101	104	71-125	3	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	20.1	20.5	100	103	74-126	2	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	425	444	106	111	68-125	4	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	19.0	17.3	95	86	54-129	10	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	24.6	24.0	123	120	69-139	2	30	
2-Butanone (MEK)	ug/L	2.3J	100	100	134	145	132	142	54-144	7	30	
2-Chlorotoluene	ug/L	<0.16	20	20	22.0	21.4	110	107	75-134	3	30	
2-Hexanone	ug/L	<0.88	100	100	132	135	132	135	58-137	2	30	
4-Chlorotoluene	ug/L	<0.13	20	20	22.1	21.3	111	107	72-133	4	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	107	110	107	110	60-129	3	30	
Acetone	ug/L	492	100	100	649	671	157	179	62-132	3	30	CH,M0
Acrolein	ug/L	<1.2	200	200	210	207	105	104	30-150	2	30	
Acrylonitrile	ug/L	<0.91	200	200	217	219	108	110	68-125	1	30	
Benzene	ug/L	<0.10	20	20	19.5	19.3	97	96	68-125	1	30	
Bromobenzene	ug/L	<0.21	20	20	20.2	19.8	101	99	73-126	2	30	
Bromochloromethane	ug/L	<0.27	20	20	18.0	18.2	90	91	66-143	1	30	
Bromodichloromethane	ug/L	<0.22	20	20	19.0	19.1	95	95	74-125	0	30	
Bromoform	ug/L	<0.80	20	20	17.3	17.9	87	89	64-134	3	30	
Bromomethane	ug/L	<1.8	20	20	19.1	19.3	95	96	30-150	1	30	
Carbon disulfide	ug/L	<0.078	20	20	15.1	14.8	76	74	43-147	2	30	
Carbon tetrachloride	ug/L	<0.19	20	20	18.0	17.6	90	88	71-143	2	30	
Chlorobenzene	ug/L	1.8	20	20	21.0	20.9	96	96	75-125	0	30	
Chloroethane	ug/L	<0.49	20	20	18.7	19.3	93	96	75-129	3	30	
Chloroform	ug/L	<0.45	20	20	20.1	19.9	99	98	66-132	1	30	
Chloromethane	ug/L	<0.16	20	20	15.9	15.7	80	79	53-137	1	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	19.3	18.9	96	94	67-133	2	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	20.5	20.6	103	103	66-125	0	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Parameter	Units	10474100001		MS		MSD		3269872		3269873		Qual
		Result	Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec	Max RPD		
Dibromochloromethane	ug/L	<0.12	20	20	17.0	17.4	85	87	62-132	2	30	
Dibromomethane	ug/L	<0.16	20	20	18.9	19.2	95	96	67-125	1	30	
Dichlorodifluoromethane	ug/L	<0.23	20	20	17.5	17.0	87	85	71-142	3	30	
Dichlorofluoromethane	ug/L	<0.14	20	20	19.8	19.6	99	98	70-131	1	30	N2
Diisopropyl ether	ug/L	<0.13	20	20	21.5	21.5	107	107	63-131	0	30	
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	20.7	21.1	104	105	66-128	2	30	
Ethylbenzene	ug/L	<0.14	20	20	20.7	20.8	103	104	74-126	0	30	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	23.4	23.3	117	117	68-143	0	30	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	19.9	20.2	100	101	74-130	1	30	
m&p-Xylene	ug/L	<0.31	40	40	40.3	40.7	101	102	69-132	1	30	
Methyl-tert-butyl ether	ug/L	<0.16	20	20	21.8	22.2	109	111	65-131	2	30	
Methylene Chloride	ug/L	<0.98	20	20	20.3	20.1	100	99	57-125	1	30	
n-Butylbenzene	ug/L	<0.24	20	20	22.7	22.8	113	114	71-131	1	30	
n-Propylbenzene	ug/L	<0.10	20	20	21.9	21.5	109	108	67-138	2	30	
Naphthalene	ug/L	<0.48	20	20	24.4	25.5	122	127	60-130	4	30	
o-Xylene	ug/L	<0.16	20	20	20.0	20.2	100	101	69-131	1	30	
p-Isopropyltoluene	ug/L	<0.15	20	20	21.1	20.9	106	105	72-133	1	30	
sec-Butylbenzene	ug/L	<0.15	20	20	21.8	21.3	109	107	73-134	2	30	
Styrene	ug/L	<0.19	20	20	20.0	20.3	100	102	72-125	2	30	
tert-Amylmethyl ether	ug/L	<0.11	20	20	21.4	21.7	107	108	67-125	1	30	
tert-Butyl Alcohol	ug/L	<1.2	200	200	213	221	107	110	64-137	4	30	
tert-Butylbenzene	ug/L	<0.15	20	20	20.4	20.2	102	101	70-143	1	30	
Tetrachloroethene	ug/L	<0.17	20	20	17.4	17.1	87	85	72-129	2	30	
Tetrahydrofuran	ug/L	<2.2	200	200	211	211	105	106	66-128	0	30	
Toluene	ug/L	0.22J	20	20	19.9	20.0	98	99	73-125	1	30	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	18.0	17.8	90	89	62-137	1	30	
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	21.1	21.5	106	108	61-136	2	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	54.2	54.7	108	109	45-128	1	30	
Trichloroethene	ug/L	<0.15	20	20	22.4	26.3	112	132	74-132	16	30	
Trichlorofluoromethane	ug/L	<0.23	20	20	19.3	18.9	97	94	75-139	2	30	
Vinyl acetate	ug/L	<1.1	20	20	5.5J	3.4J	28	17	51-135		30	M1
Vinyl chloride	ug/L	<0.092	20	20	18.2	18.0	91	90	68-146	1	30	
Xylene (Total)	ug/L	<0.31	60	60	60.3	60.9	100	101	67-137	1	30	
1,2-Dichloroethane-d4 (S)	%						107	107	75-136			
4-Bromofluorobenzene (S)	%						105	102	75-125			
Toluene-d8 (S)	%						98	98	75-125			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

QC Batch: 604410 Analysis Method: SM 2320B
 QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
 Associated Lab Samples: 10473442001, 10473442002, 10473442003, 10473442004

METHOD BLANK: 3267761 Matrix: Water
 Associated Lab Samples: 10473442001, 10473442002, 10473442003, 10473442004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<2.0	5.0	2.0	05/08/19 07:04	

LABORATORY CONTROL SAMPLE & LCSD: 3267762 3267763

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	41.5	41.5	104	104	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3267764 3267765

Parameter	Units	10473442001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	164	40	40	204	204	101	100	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3267766 3267767

Parameter	Units	10473442002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	164	40	40	209	209	112	113	80-120	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

QC Batch: 604205

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 10473442001, 10473442002, 10473442003, 10473442004

METHOD BLANK: 3266547

Matrix: Water

Associated Lab Samples: 10473442001, 10473442002, 10473442003, 10473442004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	05/07/19 15:44	

LABORATORY CONTROL SAMPLE: 3266548

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	974	97	80-120	

SAMPLE DUPLICATE: 3266549

Parameter	Units	10473442001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	206	207	0	5	

SAMPLE DUPLICATE: 3266550

Parameter	Units	10473365001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	194	188	3	5	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10473442

QC Batch: 141697 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10473442001, 10473442002, 10473442003, 10473442004

METHOD BLANK: 620196 Matrix: Water
Associated Lab Samples: 10473442001, 10473442002, 10473442003, 10473442004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	05/09/19 11:28	

LABORATORY CONTROL SAMPLE: 620197

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.2	0.22	110	90-110	

MATRIX SPIKE SAMPLE: 620199

Parameter	Units	10473442001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.2	0.27	133	75-125	M1

SAMPLE DUPLICATE: 620198

Parameter	Units	10473442001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.0058J		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

QC Batch: 603761

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Associated Lab Samples: 10473442001, 10473442002, 10473442003, 10473442004

METHOD BLANK: 3264607

Matrix: Water

Associated Lab Samples: 10473442001, 10473442002, 10473442003, 10473442004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.12	1.2	0.12	05/04/19 16:19	
Nitrate as N	mg/L	<0.012	0.10	0.012	05/04/19 16:19	
Sulfate	mg/L	<0.28	1.2	0.28	05/04/19 16:19	

LABORATORY CONTROL SAMPLE: 3264608

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.2	98	90-110	
Nitrate as N	mg/L	1	0.97	97	90-110	
Sulfate	mg/L	12.5	12.5	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3264609 3264610

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10473442001 Result	Spike Conc.	Spike Conc.	MS Result						
Chloride	mg/L	1.9	12.5	12.5	13.8	13.8	96	95	90-110	1	20
Nitrate as N	mg/L	<0.012	1	1	0.98	0.97	98	97	90-110	1	20
Sulfate	mg/L	6.8	12.5	12.5	18.2	18.2	91	91	90-110	0	20

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10473442

QC Batch: 604185 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10473442001, 10473442002, 10473442003, 10473442004

METHOD BLANK: 3266443 Matrix: Water
Associated Lab Samples: 10473442001, 10473442002, 10473442003, 10473442004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	05/07/19 14:21	FS

LABORATORY CONTROL SAMPLE: 3266444

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.96	96	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3266445 3266446

Parameter	Units	10472077011 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.								
Nitrogen, NO2 plus NO3	mg/L	<0.020	1	1	1.0	1.0	102	101	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3266447 3266448

Parameter	Units	10472291001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.								
Nitrogen, NO2 plus NO3	mg/L	ND	1	1	1.0	1.0	104	101	90-110	3	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

QC Batch: 604761

Analysis Method: EPA 410.4

QC Batch Method: EPA 410.4

Analysis Description: 410.4 COD

Associated Lab Samples: 10473442001, 10473442002, 10473442003, 10473442004

METHOD BLANK: 3269449

Matrix: Water

Associated Lab Samples: 10473442001, 10473442002, 10473442003, 10473442004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	05/09/19 16:33	

LABORATORY CONTROL SAMPLE: 3269450

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	289	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3269451 3269452

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		10473442001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Chemical Oxygen Demand	mg/L	<17.0	250	250	239	244	96	98	90-110	2	20		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

QC Batch: 165606

Analysis Method: SM 5310C

QC Batch Method: SM 5310C

Analysis Description: 5310C TOC

Associated Lab Samples: 10473442001, 10473442002, 10473442003, 10473442004

METHOD BLANK: 652664

Matrix: Water

Associated Lab Samples: 10473442001, 10473442002, 10473442003, 10473442004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.39	1.0	0.39	05/09/19 09:49	

LABORATORY CONTROL SAMPLE: 652665

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.3	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 652666 652667

Parameter	Units	652666		652667		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		10473229003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Total Organic Carbon	mg/L	6.0	25	25	30.8	31.1	99	100	80-120	1	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 652668 652669

Parameter	Units	652668		652669		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		10473396001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Total Organic Carbon	mg/L	0.71J	25	25	26.3	26.1	102	102	80-120	1	20

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

PASI-N Pace Analytical Services - New Orleans

PASI-V Pace Analytical Services - Virginia

WORKORDER QUALIFIERS

WO: 10473442

[1] Samples in this workorder were received in the laboratory without an associated trip blank.

ANALYTE QUALIFIERS

CH The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

FS The sample was filtered in the laboratory prior to analysis.

H1 Analysis conducted outside the recognized method holding time.

L1 Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

R1 RPD value was outside control limits.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473442

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10473442

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10473442001	RC04-254-264.5-050219	RSK 175	604347		
10473442002	RC04-254-264.5-050219 (2)	RSK 175	604347		
10473442003	RC04-265.5-276-050219	RSK 175	604347		
10473442004	RC04-265.5-276-050219 (2)	RSK 175	604347		
10473442001	RC04-254-264.5-050219	EPA 3010	603822	EPA 6010D	604585
10473442002	RC04-254-264.5-050219 (2)	EPA 3010	603822	EPA 6010D	604585
10473442003	RC04-265.5-276-050219	EPA 3010	603822	EPA 6010D	604585
10473442004	RC04-265.5-276-050219 (2)	EPA 3010	603822	EPA 6010D	604585
10473442001	RC04-254-264.5-050219	EPA 7470A	603852	EPA 7470A	604616
10473442002	RC04-254-264.5-050219 (2)	EPA 7470A	603852	EPA 7470A	604616
10473442003	RC04-265.5-276-050219	EPA 7470A	603852	EPA 7470A	604616
10473442004	RC04-265.5-276-050219 (2)	EPA 7470A	603852	EPA 7470A	604616
10473442001	RC04-254-264.5-050219	EPA 8260B	604504		
10473442002	RC04-254-264.5-050219 (2)	EPA 8260B	604504		
10473442003	RC04-265.5-276-050219	EPA 8260B	604504		
10473442004	RC04-265.5-276-050219 (2)	EPA 8260B	604504		
10473442001	RC04-254-264.5-050219	SM 2320B	604410		
10473442002	RC04-254-264.5-050219 (2)	SM 2320B	604410		
10473442003	RC04-265.5-276-050219	SM 2320B	604410		
10473442004	RC04-265.5-276-050219 (2)	SM 2320B	604410		
10473442001	RC04-254-264.5-050219	SM 2540C	604205		
10473442002	RC04-254-264.5-050219 (2)	SM 2540C	604205		
10473442003	RC04-265.5-276-050219	SM 2540C	604205		
10473442004	RC04-265.5-276-050219 (2)	SM 2540C	604205		
10473442001	RC04-254-264.5-050219	SM 4500-S-2 D	141697		
10473442002	RC04-254-264.5-050219 (2)	SM 4500-S-2 D	141697		
10473442003	RC04-265.5-276-050219	SM 4500-S-2 D	141697		
10473442004	RC04-265.5-276-050219 (2)	SM 4500-S-2 D	141697		
10473442001	RC04-254-264.5-050219	EPA 300.0	603761		
10473442002	RC04-254-264.5-050219 (2)	EPA 300.0	603761		
10473442003	RC04-265.5-276-050219	EPA 300.0	603761		
10473442004	RC04-265.5-276-050219 (2)	EPA 300.0	603761		
10473442001	RC04-254-264.5-050219	EPA 353.2	604185		
10473442002	RC04-254-264.5-050219 (2)	EPA 353.2	604185		
10473442003	RC04-265.5-276-050219	EPA 353.2	604185		
10473442004	RC04-265.5-276-050219 (2)	EPA 353.2	604185		
10473442001	RC04-254-264.5-050219	EPA 410.4	604761	EPA 410.4	604953
10473442002	RC04-254-264.5-050219 (2)	EPA 410.4	604761	EPA 410.4	604953
10473442003	RC04-265.5-276-050219	EPA 410.4	604761	EPA 410.4	604953
10473442004	RC04-265.5-276-050219 (2)	EPA 410.4	604761	EPA 410.4	604953
10473442001	RC04-254-264.5-050219	SM 5310C	165606		
10473442002	RC04-254-264.5-050219 (2)	SM 5310C	165606		
10473442003	RC04-265.5-276-050219	SM 5310C	165606		
10473442004	RC04-265.5-276-050219 (2)	SM 5310C	165606		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10473442

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
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REPORT OF LABORATORY ANALYSIS

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Section A

Section B

Section C

Required Client Information:

Required Project Information:

Invoice Information

Company: CH2M Hill
Address: 999 W. Riverside Ave, Suite 500
Spokane, WA 99201
Email:
Phone:
Requested Due Date: 10 Day Standard

Report To: Mark Ochsner, Brad Ostapkowicz
Copy To: Steve Demus, Jonathan Espinoza
Copy To: David Hodson, UPRR-Sysdat@ghd.com
Purchase Order # PEDD# 1497
Project Name: Freeman WA Grain Handling Facility
Project #: 1497

Attention: Ann
Company:
Address: 1400 W. 52nd Ave, Denver, CO 80221
Pace Quote: Contract# 758938
Pace Project Manager: Jennifer Gross
Pace Profile #: 36447/4

Regulatory Agency:
State / Location:
WA / Freeman

Main data table with columns: ITEM #, SAMPLE ID, MATRIX, CODE, COLLECTED (DATE, TIME), PRESERVATIVES, ANALYSES TEST, and Requested Analysis Filtered (Y/N). Includes handwritten entries for items 1-5.

Summary table with columns: ADDITIONAL COMMENTS, RELINQUISHED BY / AFFILIATION, DATE, TIME, ACCEPTED BY / AFFILIATION, DATE, TIME, SAMPLE CONDITIONS. Includes handwritten signatures and dates.

SAMPLER NAME AND SIGNATURE section containing PRINT Name of SAMPLER (Jonathan Espinoza), SIGNATURE of SAMPLER, and DATE Signed (5/2/19).

Sample Condition Upon Receipt

Client Name: CH2M Hill

Project #: **WO# : 10473442**
 PM: JMG Due Date: 05/20/19
 CLIENT: UPRR_CH2M

Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception

Tracking Number: 7475 9397 8147

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other: _____ Temp Blank? Yes No

Thermometer: T1(0461) T2(1336) T3(0459)
 T4(0254) T5(0048) Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: 1.5 °C Average Corrected Temp See Exceptions
 (no temp blank only):
 Correction Factor: 1.5 Cooler Temp Corrected w/temp blank: 1.5 °C

USDA Regulated Soil: (N/A, water sample/Other: _____) Date/Initials of Person Examining Contents: HE 5/14/19
 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No
 Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No
 If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.


	COMMENTS:
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input checked="" type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9. <u>No Trip Blanks arrived</u>
Field Filtered Volume Received for Dissolved Tests? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	
All containers needing acid/base preservation have been checked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12. Sample # <input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ <input checked="" type="checkbox"/> H ₂ SO ₄ <input checked="" type="checkbox"/> Zinc Acetate <u>1-4 3/4</u> <u>1/2</u> <u>1/2</u>
All containers needing preservation are found to be in compliance with EPA recommendation? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exception Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No pH Paper Lot# <input type="checkbox"/>
Exceptions: <input checked="" type="checkbox"/> VOA, <input checked="" type="checkbox"/> Coliform, <input checked="" type="checkbox"/> TOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	Res. Chlorine 0-6 Roll <u>203019</u> 0-6 Strip 0-14 Strip <u>1004671</u>
Headspace in VOA Vials (greater than 6mm)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception
Trip Blank Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14. <input type="checkbox"/>
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: Mark Ochsner Date/Time: 06/27/18 Field Data Required? Yes No
 Comments/Resolution: WA certs not required for RSK and sulfide.

Project Manager Review: JENNI GROSS Date: 05/06/19
 Note: Whenever there is a discrepancy affecting North Carolina samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect container, etc.)

Labeled by: HF

	Document Name: Headspace Exception	Document Revised: 17Dec2018 Page 1 of 1
	Document No.: F-MN-C-276-Rev.01	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
R04-254-264.5-050214	1	2	0	3	N
" (2)	0	3	0	3	N
R04-265.5-276-05 AF 5/4/19					

Chain of Custody

WO#: 12124478



Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Cert. Needed: Yes

Owner Received Date: 5/4/2019 Results Requested By: 5/20/2019

Workorder: 10473442 Workorder Name: 1497 Freeman WA-Grain Handling

Report To		Subcontract To				Requested Analysis																													
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426		Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042				<div style="display: flex; justify-content: space-between;"> 5632354 / 5310 TOC LAB USE ONLY </div>																													
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix													Preserved Containers																	
1	RC04-254-264.5-050219	PS	5/2/2019 12:50	10473442001	Water													2																	
2	RC04-254-264.5-050219 (2)	PS	5/2/2019 14:30	10473442002	Water													2																	
3	RC04-265.5-276-050219	PS	5/2/2019 17:35	10473442003	Water													2																	
4	RC04-265.5-276-050219 (2)	PS	5/2/2019 18:05	10473442004	Water	2																													
5																																			

Transfers						Comments											
Transfers	Released By	Date/Time	Received By	Date/Time													
1	<i>[Signature]</i>	5/6/19 1600	<i>[Signature]</i>	5/6/19 2030													
2	<i>[Signature]</i>	5/7/19 00:45	<i>B. Matthews</i>	5/7/19 0700													
3																	

Cooler Temperature on Receipt 1.7 °C Custody Seal or N Received on Ice or N Samples Intact or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Sample Condition Upon Receipt

Client Name: Pace WA Project #: _____

WO#: 12124478
 PM: CLJ Due Date: 05/21/19
 CLIENT: PACE MPLS

Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

Tracking Number: _____

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No
 Optional: Proj. Due Date: _____ Proj. Name: _____

Packing Material: Bubble Wrap Bubble Bags None Other: _____ Temp Blank? Yes No

Thermometer Used: 140792808 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temp Read °C: 1.4 Cooler Temp Corrected °C: 1.7 Biological Tissue Frozen? Yes No N/A

Temp should be above freezing to 6 °C Correction Factor: 0.3 Date and Initials of Person Examining Contents: 5/7/19 DC

Comments: Bm 5/9/19

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and Signature on COC?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5. If Fecal: <input type="checkbox"/> <8 hours <input type="checkbox"/> >8, <24 hours <input type="checkbox"/> >24 hours
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>		
All containers needing acid/base preservation properly preserved?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. Note samples needing adjustment:
Headspace in Methyl Mercury Container	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased): _____		

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? Yes No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Carrin Fern Date: 5/7/19

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody



Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Cert. Needed: Yes No

Owner Received Date: 5/4/2019 Results Requested By: 5/20/2019

Workorder: 10473442 Workorder Name: 1497 Freeman WA-Grain Handling

Report To		Subcontract To				Requested Analysis														
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426		Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333				<div style="text-align: center;"> <p>WO# : 20103549</p> <p>20103549</p> </div>														
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Other BP2Z	Preserved Containers				LAB USE ONLY									
1	RC04-254-264.5-050219	PS	5/2/2019 12:50	10473442001	Water	1					X									
2	RC04-254-264.5-050219 (2)	PS	5/2/2019 14:30	10473442002	Water	1					X									
3	RC04-265.5-276-050219	PS	5/2/2019 17:35	10473442003	Water	1					X									
4	RC04-265.5-276-050219 (2)	PS	5/2/2019 18:05	10473442004	Water	1					X									
5																				

Transfers						Comments									
Released By	Date/Time	Received By	Date/Time												
<i>Kayla Pace</i>	05/06/19	<i>1505</i>													
<i>Fedex</i>	5-7-19	<i>0910</i>	<i>mmh</i>	<i>Paa</i>	<i>5-7-19</i>	<i>0910</i>									
Cooler Temperature on Receipt <i>2.5°C</i>		Custody Seal <input checked="" type="checkbox"/> Y or N		Received on Ice <input checked="" type="checkbox"/> Y or N		Samples Intact <input checked="" type="checkbox"/> Y or N									

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.



Sample Condition Upon

WO#: 20103549

1000 Riverbend Blvd., Suite F
St. Rose, LA 70087

PTC PM: CMM

Due Date: 05/20/19

CLIENT: PASI-MINN

Courier: Pace Courier Hired Courier Fed X UPS

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used:

- Therm Fisher IR 5
- Therm Fisher IR 6
- Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Date and Initials of person examining contents: 5/21/19 MS

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present??	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1	
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2	
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4	
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	5	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8	
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10	
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11	
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12	
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13	If No, was preservative added? <input type="checkbox"/> Yes <input type="checkbox"/> No If added record lot no.: HNO3 _____ H2SO4 _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14	
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	15	

Client Notification/ Resolution:

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

May 10, 2019

David Hodson
Jacobs
155 Grand Ave
#800
Oakland, CA 94612

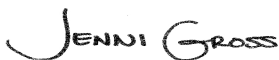
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10473723

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on May 07, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, Jacobs
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Montana Certificate #CERT0103
Alaska Certification UST-107
Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203
Wisconsin DNR Certification #: 998027470
WA Department of Ecology Lab ID# C1007

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC):
E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC):
T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10473723001	RC04-148-SWL-050419	Water	05/04/19 07:45	05/07/19 10:00
10473723002	TB-050419	Water	05/04/19 07:00	05/07/19 10:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10473723001	RC04-148-SWL-050419	RSK 175	AJR	3	PASI-M
		EPA 6010D	IP	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	AEZ	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	DCL	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	KEO	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	CSD	1	PASI-V
10473723002	TB-050419	EPA 8260B	AEZ	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10473723001	RC04-148-SWL-050419					
EPA 6010D	Barium, Dissolved	43.6	ug/L	10.0	05/08/19 16:25	
EPA 6010D	Chromium, Dissolved	0.69J	ug/L	10.0	05/08/19 16:25	
EPA 6010D	Cobalt, Dissolved	3.0J	ug/L	10.0	05/08/19 16:25	
EPA 6010D	Copper, Dissolved	4.9J	ug/L	10.0	05/08/19 16:25	
EPA 6010D	Molybdenum, Dissolved	13.0J	ug/L	15.0	05/08/19 16:25	
EPA 6010D	Nickel, Dissolved	3.3J	ug/L	20.0	05/08/19 16:25	
EPA 6010D	Vanadium, Dissolved	2.6J	ug/L	15.0	05/08/19 16:25	
EPA 6010D	Zinc, Dissolved	2360	ug/L	20.0	05/08/19 16:25	
EPA 8260B	2-Butanone (MEK)	12.5	ug/L	5.0	05/08/19 19:58	
EPA 8260B	2-Hexanone	2.6J	ug/L	5.0	05/08/19 19:58	
EPA 8260B	4-Methyl-2-pentanone (MIBK)	0.59J	ug/L	5.0	05/08/19 19:58	
EPA 8260B	Acetone	28.8	ug/L	20.0	05/08/19 19:58	CH,L1
EPA 8260B	Benzene	0.22J	ug/L	0.50	05/08/19 19:58	
EPA 8260B	Toluene	427	ug/L	2.5	05/09/19 15:21	
SM 2320B	Alkalinity, Total as CaCO3	165	mg/L	5.0	05/09/19 09:21	
SM 2540C	Total Dissolved Solids	210	mg/L	10.0	05/08/19 15:22	
EPA 300.0	Chloride	8.2	mg/L	1.2	05/08/19 20:51	
EPA 300.0	Nitrate as N	0.19	mg/L	0.10	05/08/19 20:51	B,H3
EPA 300.0	Sulfate	9.1	mg/L	1.2	05/08/19 20:51	
SM 5310C	Total Organic Carbon	2.6	mg/L	1.0	05/09/19 14:16	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

Method: RSK 175

Description: RSK 175 GCV Headspace

Client: UPRR_Jacobs

Date: May 10, 2019

General Information:

1 sample was analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

Method: EPA 6010D

Description: 6010D MET ICP, Dissolved

Client: UPRR_Jacobs

Date: May 10, 2019

General Information:

1 sample was analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

Method: EPA 7470A

Description: 7470A Mercury, Dissolved

Client: UPRR_Jacobs

Date: May 10, 2019

General Information:

1 sample was analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: May 10, 2019

General Information:

2 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

QC Batch: 604504

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 3268007)
 - Acetone
- MS (Lab ID: 3269872)
 - Acetone
- MSD (Lab ID: 3269873)
 - Acetone
- RC04-148-SWL-050419 (Lab ID: 10473723001)
 - Acetone

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 604504

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

- LCS (Lab ID: 3268007)
 - Acetone

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: May 10, 2019

QC Batch: 604504

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10474100001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 3269872)
 - Acetone
- MSD (Lab ID: 3269873)
 - Acetone

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3269872)
 - Vinyl acetate
- MSD (Lab ID: 3269873)
 - 1,1,2,2-Tetrachloroethane
 - Vinyl acetate

R1: RPD value was outside control limits.

- MSD (Lab ID: 3269873)
 - 1,1,2,2-Tetrachloroethane

Additional Comments:

Analyte Comments:

QC Batch: 604504

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3268006)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3268007)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3269872)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3269873)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- RC04-148-SWL-050419 (Lab ID: 10473723001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- TB-050419 (Lab ID: 10473723002)
 - 1,2-Dichloroethene (Total)

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: May 10, 2019

Analyte Comments:

QC Batch: 604504

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- TB-050419 (Lab ID: 10473723002)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

Method: SM 2320B

Description: 2320B Alkalinity

Client: UPRR_Jacobs

Date: May 10, 2019

General Information:

1 sample was analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 604411

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10473359008,10473359009

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3267773)
 - Alkalinity, Total as CaCO₃
- MSD (Lab ID: 3267774)
 - Alkalinity, Total as CaCO₃

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

Method: SM 2540C

Description: 2540C Total Dissolved Solids

Client: UPRR_Jacobs

Date: May 10, 2019

General Information:

1 sample was analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 604560

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 3268310)
- Total Dissolved Solids

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

Method: SM 4500-S-2 D

Description: 4500S2D Sulfide, Total

Client: UPRR_Jacobs

Date: May 10, 2019

General Information:

1 sample was analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 141697

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10473442001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 620199)
- Sulfide, Total

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

Method: EPA 300.0

Description: 300.0 IC Anions

Client: UPRR_Jacobs

Date: May 10, 2019

General Information:

1 sample was analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

H3: Sample was received or analysis requested beyond the recognized method holding time.

- RC04-148-SWL-050419 (Lab ID: 10473723001)

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 604578

B: Analyte was detected in the associated method blank.

- BLANK for HBN 604578 [WETA/392 (Lab ID: 3268373)
- Nitrate as N

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 604578

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10473396001,10473848001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3268375)
 - Chloride
 - Nitrate as N
- MS (Lab ID: 3268377)
 - Chloride
 - Nitrate as N
- MSD (Lab ID: 3268376)
 - Chloride
- MSD (Lab ID: 3268378)
 - Chloride
 - Nitrate as N

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

Method: EPA 353.2

Description: 353.2 Nitrate + Nitrite

Client: UPRR_Jacobs

Date: May 10, 2019

General Information:

1 sample was analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

Method: EPA 410.4

Description: 410.4 COD

Client: UPRR_Jacobs

Date: May 10, 2019

General Information:

1 sample was analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

Method: SM 5310C

Description: 5310C TOC

Client: UPRR_Jacobs

Date: May 10, 2019

General Information:

1 sample was analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Project No.: 10473723

Sample: RC04-148-SWL-050419 **Lab ID: 10473723001** Collected: 05/04/19 07:45 Received: 05/07/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		05/08/19 15:04	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		05/08/19 15:04	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		05/08/19 15:04	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	05/08/19 06:08	05/08/19 16:25	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	05/08/19 06:08	05/08/19 16:25	7440-38-2	
Barium, Dissolved	43.6	ug/L	10.0	0.18	1	05/08/19 06:08	05/08/19 16:25	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	05/08/19 06:08	05/08/19 16:25	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	05/08/19 06:08	05/08/19 16:25	7440-43-9	
Chromium, Dissolved	0.69J	ug/L	10.0	0.49	1	05/08/19 06:08	05/08/19 16:25	7440-47-3	
Cobalt, Dissolved	3.0J	ug/L	10.0	0.50	1	05/08/19 06:08	05/08/19 16:25	7440-48-4	
Copper, Dissolved	4.9J	ug/L	10.0	1.2	1	05/08/19 06:08	05/08/19 16:25	7440-50-8	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	05/08/19 06:08	05/08/19 16:25	7439-92-1	
Molybdenum, Dissolved	13.0J	ug/L	15.0	1.1	1	05/08/19 06:08	05/08/19 16:25	7439-98-7	
Nickel, Dissolved	3.3J	ug/L	20.0	1.1	1	05/08/19 06:08	05/08/19 16:25	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	05/08/19 06:08	05/08/19 16:25	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	05/08/19 06:08	05/08/19 16:25	7440-22-4	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	05/08/19 06:08	05/08/19 16:25	7440-28-0	
Vanadium, Dissolved	2.6J	ug/L	15.0	0.29	1	05/08/19 06:08	05/08/19 16:25	7440-62-2	
Zinc, Dissolved	2360	ug/L	20.0	2.5	1	05/08/19 06:08	05/08/19 16:25	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	05/08/19 09:38	05/09/19 12:31	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/08/19 19:58	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/08/19 19:58	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/08/19 19:58	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/08/19 19:58	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/08/19 19:58	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/08/19 19:58	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		05/08/19 19:58	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/08/19 19:58	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		05/08/19 19:58	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/08/19 19:58	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		05/08/19 19:58	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		05/08/19 19:58	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/08/19 19:58	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		05/08/19 19:58	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/08/19 19:58	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	1.0	0.22	1		05/08/19 19:58	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/08/19 19:58	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/08/19 19:58	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/08/19 19:58	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/08/19 19:58	541-73-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Project No.: 10473723

Sample: RC04-148-SWL-050419 Lab ID: 10473723001 Collected: 05/04/19 07:45 Received: 05/07/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/08/19 19:58	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/08/19 19:58	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/08/19 19:58	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/08/19 19:58	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/08/19 19:58	594-20-7	
2-Butanone (MEK)	12.5	ug/L	5.0	0.99	1		05/08/19 19:58	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/08/19 19:58	95-49-8	
2-Hexanone	2.6J	ug/L	5.0	0.88	1		05/08/19 19:58	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/08/19 19:58	106-43-4	
4-Methyl-2-pentanone (MIBK)	0.59J	ug/L	5.0	0.42	1		05/08/19 19:58	108-10-1	
Acetone	28.8	ug/L	20.0	9.2	1		05/08/19 19:58	67-64-1	CH,L1
Acrolein	<1.2	ug/L	40.0	1.2	1		05/08/19 19:58	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/08/19 19:58	107-13-1	
Benzene	0.22J	ug/L	0.50	0.10	1		05/08/19 19:58	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		05/08/19 19:58	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/08/19 19:58	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/08/19 19:58	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/08/19 19:58	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/08/19 19:58	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		05/08/19 19:58	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		05/08/19 19:58	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/08/19 19:58	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		05/08/19 19:58	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		05/08/19 19:58	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/08/19 19:58	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		05/08/19 19:58	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/08/19 19:58	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/08/19 19:58	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/08/19 19:58	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/08/19 19:58	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/08/19 19:58	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/08/19 19:58	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/08/19 19:58	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		05/08/19 19:58	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		05/08/19 19:58	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/08/19 19:58	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/08/19 19:58	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/08/19 19:58	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/08/19 19:58	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/08/19 19:58	109-99-9	
Toluene	427	ug/L	2.5	0.42	5		05/09/19 15:21	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/08/19 19:58	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/08/19 19:58	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/08/19 19:58	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/08/19 19:58	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/08/19 19:58	1330-20-7	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

Sample: RC04-148-SWL-050419 **Lab ID: 10473723001** Collected: 05/04/19 07:45 Received: 05/07/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/08/19 19:58	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/08/19 19:58	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/08/19 19:58	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		05/08/19 19:58	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/08/19 19:58	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/08/19 19:58	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		05/08/19 19:58	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/08/19 19:58	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/08/19 19:58	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/08/19 19:58	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/08/19 19:58	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/08/19 19:58	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		05/08/19 19:58	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/08/19 19:58	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	103	%	75-136		1		05/08/19 19:58	17060-07-0	
Toluene-d8 (S)	96	%	75-125		1		05/08/19 19:58	2037-26-5	
4-Bromofluorobenzene (S)	105	%	75-125		1		05/08/19 19:58	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	165	mg/L	5.0	2.0	1		05/09/19 09:21		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	210	mg/L	10.0	5.0	1		05/08/19 15:22		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		05/09/19 12:02	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	8.2	mg/L	1.2	0.12	1		05/08/19 20:51	16887-00-6	
Nitrate as N	0.19	mg/L	0.10	0.012	1		05/08/19 20:51	14797-55-8	B,H3
Sulfate	9.1	mg/L	1.2	0.28	1		05/08/19 20:51	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	<0.018	mg/L	0.10	0.018	1		05/09/19 14:31		
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	05/09/19 12:50	05/09/19 16:37		
5310C TOC		Analytical Method: SM 5310C							
Total Organic Carbon	2.6	mg/L	1.0	0.39	1		05/09/19 14:16	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10473723

Sample: TB-050419 **Lab ID: 10473723002** Collected: 05/04/19 07:00 Received: 05/07/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/08/19 18:23	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/08/19 18:23	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/08/19 18:23	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/08/19 18:23	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/08/19 18:23	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/08/19 18:23	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		05/08/19 18:23	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/08/19 18:23	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		05/08/19 18:23	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/08/19 18:23	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		05/08/19 18:23	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		05/08/19 18:23	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/08/19 18:23	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		05/08/19 18:23	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/08/19 18:23	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	1.0	0.22	1		05/08/19 18:23	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/08/19 18:23	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/08/19 18:23	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/08/19 18:23	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/08/19 18:23	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/08/19 18:23	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/08/19 18:23	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/08/19 18:23	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/08/19 18:23	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/08/19 18:23	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/08/19 18:23	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/08/19 18:23	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/08/19 18:23	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/08/19 18:23	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/08/19 18:23	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		05/08/19 18:23	67-64-1	
Acrolein	<1.2	ug/L	40.0	1.2	1		05/08/19 18:23	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/08/19 18:23	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/08/19 18:23	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		05/08/19 18:23	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/08/19 18:23	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/08/19 18:23	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/08/19 18:23	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/08/19 18:23	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		05/08/19 18:23	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		05/08/19 18:23	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/08/19 18:23	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		05/08/19 18:23	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		05/08/19 18:23	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/08/19 18:23	74-87-3	
Dibromochloromethane	<0.12	ug/L	0.50	0.12	1		05/08/19 18:23	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

Sample: TB-050419 **Lab ID: 10473723002** Collected: 05/04/19 07:00 Received: 05/07/19 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/08/19 18:23	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/08/19 18:23	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/08/19 18:23	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/08/19 18:23	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/08/19 18:23	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/08/19 18:23	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/08/19 18:23	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		05/08/19 18:23	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		05/08/19 18:23	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/08/19 18:23	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/08/19 18:23	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/08/19 18:23	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/08/19 18:23	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/08/19 18:23	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		05/08/19 18:23	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/08/19 18:23	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/08/19 18:23	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/08/19 18:23	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/08/19 18:23	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/08/19 18:23	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/08/19 18:23	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/08/19 18:23	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/08/19 18:23	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		05/08/19 18:23	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/08/19 18:23	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/08/19 18:23	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		05/08/19 18:23	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/08/19 18:23	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/08/19 18:23	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/08/19 18:23	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/08/19 18:23	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/08/19 18:23	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		05/08/19 18:23	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/08/19 18:23	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%	75-136		1		05/08/19 18:23	17060-07-0	
Toluene-d8 (S)	95	%	75-125		1		05/08/19 18:23	2037-26-5	
4-Bromofluorobenzene (S)	105	%	75-125		1		05/08/19 18:23	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10473723

QC Batch: 604573 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 GCV HEADSPACE
Associated Lab Samples: 10473723001

METHOD BLANK: 3268370 Matrix: Water
Associated Lab Samples: 10473723001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	05/08/19 11:28	
Ethene	ug/L	<2.9	10.0	2.9	05/08/19 11:28	
Methane	ug/L	<4.9	10.0	4.9	05/08/19 11:28	

LABORATORY CONTROL SAMPLE & LCSD: 3268371

Parameter	Units	3268372								
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	115	117	101	103	85-115	2	20	
Ethene	ug/L	106	106	108	100	102	85-115	2	20	
Methane	ug/L	60.7	58.9	59.8	97	99	85-115	1	20	

SAMPLE DUPLICATE: 3268420

Parameter	Units	20103221001		RPD	Max RPD	Qualifiers
		Result	Dup Result			
Ethane	ug/L	ND	<3.0		20	
Ethene	ug/L	ND	<2.9		20	
Methane	ug/L	752	679	10	20	

SAMPLE DUPLICATE: 3268854

Parameter	Units	10473878001		RPD	Max RPD	Qualifiers
		Result	Dup Result			
Ethane	ug/L	<3.0	<3.0		20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	<4.9	<4.9		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

QC Batch: 603852	Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A	Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10473723001	

METHOD BLANK: 3265111 Matrix: Water

Associated Lab Samples: 10473723001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.093	0.20	0.093	05/09/19 12:13	

LABORATORY CONTROL SAMPLE: 3265112

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.6	111	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3265113 3265114

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Mercury, Dissolved	ug/L	<0.093	5	5	5.4	5.4	108	108	80-120	1	20		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

QC Batch: 603822

Analysis Method: EPA 6010D

QC Batch Method: EPA 3010

Analysis Description: 6010D Water Dissolved

Associated Lab Samples: 10473723001

METHOD BLANK: 3265000

Matrix: Water

Associated Lab Samples: 10473723001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	05/08/19 15:50	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	05/08/19 15:50	
Barium, Dissolved	ug/L	<0.18	10.0	0.18	05/08/19 15:50	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	05/08/19 15:50	
Cadmium, Dissolved	ug/L	<0.26	3.0	0.26	05/08/19 15:50	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	05/08/19 15:50	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	05/08/19 15:50	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	05/08/19 15:50	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	05/08/19 15:50	
Molybdenum, Dissolved	ug/L	<1.1	15.0	1.1	05/08/19 15:50	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	05/08/19 15:50	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	05/08/19 15:50	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	05/08/19 15:50	
Thallium, Dissolved	ug/L	<4.3	20.0	4.3	05/08/19 15:50	
Vanadium, Dissolved	ug/L	<0.29	15.0	0.29	05/08/19 15:50	
Zinc, Dissolved	ug/L	<2.5	20.0	2.5	05/08/19 15:50	

LABORATORY CONTROL SAMPLE: 3265001

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony, Dissolved	ug/L	1000	1080	108	80-120	
Arsenic, Dissolved	ug/L	1000	1050	105	80-120	
Barium, Dissolved	ug/L	1000	1080	108	80-120	
Beryllium, Dissolved	ug/L	1000	1060	106	80-120	
Cadmium, Dissolved	ug/L	1000	1030	103	80-120	
Chromium, Dissolved	ug/L	1000	1070	107	80-120	
Cobalt, Dissolved	ug/L	1000	1050	105	80-120	
Copper, Dissolved	ug/L	1000	993	99	80-120	
Lead, Dissolved	ug/L	1000	1040	104	80-120	
Molybdenum, Dissolved	ug/L	1000	1060	106	80-120	
Nickel, Dissolved	ug/L	1000	1060	106	80-120	
Selenium, Dissolved	ug/L	1000	1040	104	80-120	
Silver, Dissolved	ug/L	500	498	100	80-120	
Thallium, Dissolved	ug/L	1000	1070	107	80-120	
Vanadium, Dissolved	ug/L	1000	992	99	80-120	
Zinc, Dissolved	ug/L	1000	1030	103	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3265002		3265003		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		10473442001 Result	MS Spike Conc.	MSD Spike Conc.								
Antimony, Dissolved	ug/L	<7.0	1000	1000	1070	1070	107	107	75-125	1	20	
Arsenic, Dissolved	ug/L	<3.8	1000	1000	1040	1040	103	104	75-125	0	20	
Barium, Dissolved	ug/L	34.0	1000	1000	1090	1090	105	106	75-125	0	20	
Beryllium, Dissolved	ug/L	<0.12	1000	1000	1050	1050	105	105	75-125	1	20	
Cadmium, Dissolved	ug/L	<0.26	1000	1000	1000	1010	100	101	75-125	0	20	
Chromium, Dissolved	ug/L	<0.49	1000	1000	1050	1050	105	105	75-125	0	20	
Cobalt, Dissolved	ug/L	7.1J	1000	1000	1020	1030	102	103	75-125	1	20	
Copper, Dissolved	ug/L	<1.2	1000	1000	975	977	97	98	75-125	0	20	
Lead, Dissolved	ug/L	<2.0	1000	1000	1010	1010	101	101	75-125	0	20	
Molybdenum, Dissolved	ug/L	6.2J	1000	1000	1040	1040	103	104	75-125	1	20	
Nickel, Dissolved	ug/L	6.6J	1000	1000	1040	1040	103	103	75-125	0	20	
Selenium, Dissolved	ug/L	<5.8	1000	1000	1010	1010	101	101	75-125	0	20	
Silver, Dissolved	ug/L	<0.38	500	500	489	491	98	98	75-125	0	20	
Thallium, Dissolved	ug/L	<4.3	1000	1000	1030	1040	103	104	75-125	1	20	
Vanadium, Dissolved	ug/L	2.9J	1000	1000	979	982	98	98	75-125	0	20	
Zinc, Dissolved	ug/L	388	1000	1000	1380	1390	99	100	75-125	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

QC Batch: 604504

Analysis Method: EPA 8260B

QC Batch Method: EPA 8260B

Analysis Description: 8260 MSV LL Water

Associated Lab Samples: 10473723001, 10473723002

METHOD BLANK: 3268006

Matrix: Water

Associated Lab Samples: 10473723001, 10473723002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	05/08/19 12:00	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	05/08/19 12:00	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	05/08/19 12:00	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	05/08/19 12:00	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	05/08/19 12:00	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	05/08/19 12:00	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	05/08/19 12:00	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	05/08/19 12:00	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	05/08/19 12:00	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	05/08/19 12:00	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	05/08/19 12:00	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	05/08/19 12:00	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	05/08/19 12:00	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	05/08/19 12:00	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	05/08/19 12:00	
1,2-Dichloroethane	ug/L	<0.22	1.0	0.22	05/08/19 12:00	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	05/08/19 12:00	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	05/08/19 12:00	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	05/08/19 12:00	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	05/08/19 12:00	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	05/08/19 12:00	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	05/08/19 12:00	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	05/08/19 12:00	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	05/08/19 12:00	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	05/08/19 12:00	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	05/08/19 12:00	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	05/08/19 12:00	
2-Hexanone	ug/L	<0.88	5.0	0.88	05/08/19 12:00	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	05/08/19 12:00	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	05/08/19 12:00	
Acetone	ug/L	<9.2	20.0	9.2	05/08/19 12:00	
Acrolein	ug/L	<1.2	40.0	1.2	05/08/19 12:00	
Acrylonitrile	ug/L	<0.91	10.0	0.91	05/08/19 12:00	
Benzene	ug/L	<0.10	0.50	0.10	05/08/19 12:00	
Bromobenzene	ug/L	<0.21	0.50	0.21	05/08/19 12:00	
Bromochloromethane	ug/L	<0.27	1.0	0.27	05/08/19 12:00	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	05/08/19 12:00	
Bromoform	ug/L	<0.80	4.0	0.80	05/08/19 12:00	
Bromomethane	ug/L	<1.8	4.0	1.8	05/08/19 12:00	
Carbon disulfide	ug/L	<0.078	1.0	0.078	05/08/19 12:00	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	05/08/19 12:00	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

METHOD BLANK: 3268006

Matrix: Water

Associated Lab Samples: 10473723001, 10473723002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	05/08/19 12:00	
Chloroethane	ug/L	<0.49	1.0	0.49	05/08/19 12:00	
Chloroform	ug/L	<0.45	1.0	0.45	05/08/19 12:00	
Chloromethane	ug/L	<0.16	4.0	0.16	05/08/19 12:00	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	05/08/19 12:00	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	05/08/19 12:00	
Dibromochloromethane	ug/L	<0.12	0.50	0.12	05/08/19 12:00	
Dibromomethane	ug/L	<0.16	1.0	0.16	05/08/19 12:00	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	05/08/19 12:00	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	05/08/19 12:00	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	05/08/19 12:00	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	05/08/19 12:00	
Ethylbenzene	ug/L	<0.14	0.50	0.14	05/08/19 12:00	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	05/08/19 12:00	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	05/08/19 12:00	
m&p-Xylene	ug/L	<0.31	1.0	0.31	05/08/19 12:00	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	05/08/19 12:00	
Methylene Chloride	ug/L	<0.98	4.0	0.98	05/08/19 12:00	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	05/08/19 12:00	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	05/08/19 12:00	
Naphthalene	ug/L	<0.48	1.0	0.48	05/08/19 12:00	
o-Xylene	ug/L	<0.16	0.50	0.16	05/08/19 12:00	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	05/08/19 12:00	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	05/08/19 12:00	
Styrene	ug/L	<0.19	0.50	0.19	05/08/19 12:00	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	05/08/19 12:00	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	05/08/19 12:00	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	05/08/19 12:00	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	05/08/19 12:00	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	05/08/19 12:00	
Toluene	ug/L	<0.083	0.50	0.083	05/08/19 12:00	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	05/08/19 12:00	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	05/08/19 12:00	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	05/08/19 12:00	
Trichloroethene	ug/L	<0.15	0.40	0.15	05/08/19 12:00	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	05/08/19 12:00	
Vinyl acetate	ug/L	<1.1	10.0	1.1	05/08/19 12:00	
Vinyl chloride	ug/L	<0.092	0.20	0.092	05/08/19 12:00	
Xylene (Total)	ug/L	<0.31	1.5	0.31	05/08/19 12:00	
1,2-Dichloroethane-d4 (S)	%	106	75-136		05/08/19 12:00	
4-Bromofluorobenzene (S)	%	106	75-125		05/08/19 12:00	
Toluene-d8 (S)	%	97	75-125		05/08/19 12:00	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

LABORATORY CONTROL SAMPLE: 3268007

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	18.2	91	68-141	
1,1,1-Trichloroethane	ug/L	20	19.6	98	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	20.4	102	73-125	
1,1,2-Trichloroethane	ug/L	20	20.3	101	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	22.3	112	69-132	
1,1-Dichloroethane	ug/L	20	21.3	106	73-125	
1,1-Dichloroethene	ug/L	20	18.6	93	71-126	
1,1-Dichloropropene	ug/L	20	21.0	105	73-126	
1,2,3-Trichlorobenzene	ug/L	20	20.7	104	72-126	
1,2,3-Trichloropropane	ug/L	20	20.6	103	75-126	
1,2,4-Trichlorobenzene	ug/L	20	20.7	103	71-134	
1,2,4-Trimethylbenzene	ug/L	20	21.5	108	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	44.0	88	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	19.2	96	75-129	
1,2-Dichlorobenzene	ug/L	20	20.3	101	75-129	
1,2-Dichloroethane	ug/L	20	20.5	102	75-125	
1,2-Dichloroethene (Total)	ug/L	40	38.2	96	74-125	N2
1,2-Dichloropropane	ug/L	20	22.2	111	75-125	
1,3,5-Trimethylbenzene	ug/L	20	21.5	107	75-127	
1,3-Dichlorobenzene	ug/L	20	20.3	101	75-126	
1,3-Dichloropropane	ug/L	20	20.6	103	75-125	
1,4-Dichlorobenzene	ug/L	20	20.5	102	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	419	105	72-129	
2,2,4-Trimethylpentane	ug/L	20	20.2	101	72-128	N2
2,2-Dichloropropane	ug/L	20	25.2	126	65-138	
2-Butanone (MEK)	ug/L	100	126	126	59-144	
2-Chlorotoluene	ug/L	20	22.3	112	75-127	
2-Hexanone	ug/L	100	118	118	73-134	
4-Chlorotoluene	ug/L	20	21.8	109	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	100	100	62-141	
Acetone	ug/L	100	152	152	60-137	CH,L1
Acrolein	ug/L	200	210	105	60-141	
Acrylonitrile	ug/L	200	209	104	75-129	
Benzene	ug/L	20	19.9	100	73-125	
Bromobenzene	ug/L	20	20.5	102	73-125	
Bromochloromethane	ug/L	20	18.5	92	75-135	
Bromodichloromethane	ug/L	20	19.1	96	75-125	
Bromoform	ug/L	20	16.9	84	67-136	
Bromomethane	ug/L	20	19.4	97	30-150	
Carbon disulfide	ug/L	20	16.0	80	47-137	
Carbon tetrachloride	ug/L	20	18.3	92	75-125	
Chlorobenzene	ug/L	20	19.6	98	75-125	
Chloroethane	ug/L	20	20.2	101	63-136	
Chloroform	ug/L	20	20.3	101	73-128	
Chloromethane	ug/L	20	16.6	83	55-130	
cis-1,2-Dichloroethene	ug/L	20	19.7	98	75-125	
cis-1,3-Dichloropropene	ug/L	20	20.9	104	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

LABORATORY CONTROL SAMPLE: 3268007

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	17.0	85	75-125	
Dibromomethane	ug/L	20	19.3	96	75-125	
Dichlorodifluoromethane	ug/L	20	19.3	96	63-132	
Dichlorofluoromethane	ug/L	20	21.1	105	68-127	N2
Diisopropyl ether	ug/L	20	21.6	108	71-131	
Ethyl-tert-butyl ether	ug/L	20	20.9	104	75-125	
Ethylbenzene	ug/L	20	21.7	109	75-125	
Hexachloro-1,3-butadiene	ug/L	20	21.5	107	72-134	
Isopropylbenzene (Cumene)	ug/L	20	20.9	105	75-125	
m&p-Xylene	ug/L	40	42.3	106	75-126	
Methyl-tert-butyl ether	ug/L	20	21.8	109	75-125	
Methylene Chloride	ug/L	20	20.3	102	70-125	
n-Butylbenzene	ug/L	20	22.9	114	75-126	
n-Propylbenzene	ug/L	20	22.8	114	73-127	
Naphthalene	ug/L	20	19.8	99	63-128	
o-Xylene	ug/L	20	20.5	102	75-128	
p-Isopropyltoluene	ug/L	20	21.7	108	75-125	
sec-Butylbenzene	ug/L	20	22.1	111	75-126	
Styrene	ug/L	20	20.5	103	75-125	
tert-Amylmethyl ether	ug/L	20	21.4	107	75-125	
tert-Butyl Alcohol	ug/L	200	214	107	75-130	
tert-Butylbenzene	ug/L	20	21.2	106	75-131	
Tetrachloroethene	ug/L	20	18.3	92	74-125	
Tetrahydrofuran	ug/L	200	211	106	64-138	
Toluene	ug/L	20	20.6	103	74-125	
trans-1,2-Dichloroethene	ug/L	20	18.5	93	68-128	
trans-1,3-Dichloropropene	ug/L	20	21.3	107	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	51.1	102	60-127	
Trichloroethene	ug/L	20	19.0	95	75-127	
Trichlorofluoromethane	ug/L	20	21.1	106	72-133	
Vinyl acetate	ug/L	20	18.7	94	61-129	
Vinyl chloride	ug/L	20	19.4	97	75-128	
Xylene (Total)	ug/L	60	62.8	105	75-125	
1,2-Dichloroethane-d4 (S)	%			106	75-136	
4-Bromofluorobenzene (S)	%			103	75-125	
Toluene-d8 (S)	%			98	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3269872 3269873

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10474100001	Result	Spike Conc.	Spike Conc.								
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	17.9	18.1	90	90	75-140	1	30		
1,1,1-Trichloroethane	ug/L	<0.14	20	20	18.7	18.8	94	94	74-136	0	30		
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	16.3	11.7	81	59	66-134	33	30	M1, R1	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	19.8	20.5	99	103	75-126	3	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3269872		3269873								
Parameter	Units	10474100001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	21.1	20.4	106	102	65-146	4	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	21.0	20.7	105	104	68-132	1	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	17.9	17.7	89	89	66-139	1	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	20.0	19.8	100	99	67-134	1	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	24.7	25.6	123	128	67-129	4	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	21.0	21.3	105	107	69-128	1	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	22.4	22.9	112	114	65-140	2	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	20.9	21.0	105	105	71-133	0	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	47.6	47.8	95	96	54-138	1	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	19.0	19.3	95	96	68-125	1	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	20.3	20.7	101	103	74-136	2	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	20.5	20.6	103	103	68-125	1	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	37.2	36.7	93	92	71-126	2	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	21.3	21.4	107	107	67-125	0	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	20.8	20.8	104	104	68-137	0	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	19.9	19.8	99	99	75-131	0	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	20.2	20.8	101	104	71-125	3	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	20.1	20.5	100	103	74-126	2	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	425	444	106	111	68-125	4	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	19.0	17.3	95	86	54-129	10	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	24.6	24.0	123	120	69-139	2	30	
2-Butanone (MEK)	ug/L	2.3J	100	100	134	145	132	142	54-144	7	30	
2-Chlorotoluene	ug/L	<0.16	20	20	22.0	21.4	110	107	75-134	3	30	
2-Hexanone	ug/L	<0.88	100	100	132	135	132	135	58-137	2	30	
4-Chlorotoluene	ug/L	<0.13	20	20	22.1	21.3	111	107	72-133	4	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	107	110	107	110	60-129	3	30	
Acetone	ug/L	492	100	100	649	671	157	179	62-132	3	30	CH,M0
Acrolein	ug/L	<1.2	200	200	210	207	105	104	30-150	2	30	
Acrylonitrile	ug/L	<0.91	200	200	217	219	108	110	68-125	1	30	
Benzene	ug/L	<0.10	20	20	19.5	19.3	97	96	68-125	1	30	
Bromobenzene	ug/L	<0.21	20	20	20.2	19.8	101	99	73-126	2	30	
Bromochloromethane	ug/L	<0.27	20	20	18.0	18.2	90	91	66-143	1	30	
Bromodichloromethane	ug/L	<0.22	20	20	19.0	19.1	95	95	74-125	0	30	
Bromoform	ug/L	<0.80	20	20	17.3	17.9	87	89	64-134	3	30	
Bromomethane	ug/L	<1.8	20	20	19.1	19.3	95	96	30-150	1	30	
Carbon disulfide	ug/L	<0.078	20	20	15.1	14.8	76	74	43-147	2	30	
Carbon tetrachloride	ug/L	<0.19	20	20	18.0	17.6	90	88	71-143	2	30	
Chlorobenzene	ug/L	1.8	20	20	21.0	20.9	96	96	75-125	0	30	
Chloroethane	ug/L	<0.49	20	20	18.7	19.3	93	96	75-129	3	30	
Chloroform	ug/L	<0.45	20	20	20.1	19.9	99	98	66-132	1	30	
Chloromethane	ug/L	<0.16	20	20	15.9	15.7	80	79	53-137	1	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	19.3	18.9	96	94	67-133	2	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	20.5	20.6	103	103	66-125	0	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

Parameter	Units	10474100001		MS		MSD		3269872		3269873		Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD		
Dibromochloromethane	ug/L	<0.12	20	20	17.0	17.4	85	87	62-132	2	30	
Dibromomethane	ug/L	<0.16	20	20	18.9	19.2	95	96	67-125	1	30	
Dichlorodifluoromethane	ug/L	<0.23	20	20	17.5	17.0	87	85	71-142	3	30	
Dichlorofluoromethane	ug/L	<0.14	20	20	19.8	19.6	99	98	70-131	1	30	N2
Diisopropyl ether	ug/L	<0.13	20	20	21.5	21.5	107	107	63-131	0	30	
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	20.7	21.1	104	105	66-128	2	30	
Ethylbenzene	ug/L	<0.14	20	20	20.7	20.8	103	104	74-126	0	30	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	23.4	23.3	117	117	68-143	0	30	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	19.9	20.2	100	101	74-130	1	30	
m&p-Xylene	ug/L	<0.31	40	40	40.3	40.7	101	102	69-132	1	30	
Methyl-tert-butyl ether	ug/L	<0.16	20	20	21.8	22.2	109	111	65-131	2	30	
Methylene Chloride	ug/L	<0.98	20	20	20.3	20.1	100	99	57-125	1	30	
n-Butylbenzene	ug/L	<0.24	20	20	22.7	22.8	113	114	71-131	1	30	
n-Propylbenzene	ug/L	<0.10	20	20	21.9	21.5	109	108	67-138	2	30	
Naphthalene	ug/L	<0.48	20	20	24.4	25.5	122	127	60-130	4	30	
o-Xylene	ug/L	<0.16	20	20	20.0	20.2	100	101	69-131	1	30	
p-Isopropyltoluene	ug/L	<0.15	20	20	21.1	20.9	106	105	72-133	1	30	
sec-Butylbenzene	ug/L	<0.15	20	20	21.8	21.3	109	107	73-134	2	30	
Styrene	ug/L	<0.19	20	20	20.0	20.3	100	102	72-125	2	30	
tert-Amylmethyl ether	ug/L	<0.11	20	20	21.4	21.7	107	108	67-125	1	30	
tert-Butyl Alcohol	ug/L	<1.2	200	200	213	221	107	110	64-137	4	30	
tert-Butylbenzene	ug/L	<0.15	20	20	20.4	20.2	102	101	70-143	1	30	
Tetrachloroethene	ug/L	<0.17	20	20	17.4	17.1	87	85	72-129	2	30	
Tetrahydrofuran	ug/L	<2.2	200	200	211	211	105	106	66-128	0	30	
Toluene	ug/L	0.22J	20	20	19.9	20.0	98	99	73-125	1	30	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	18.0	17.8	90	89	62-137	1	30	
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	21.1	21.5	106	108	61-136	2	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	54.2	54.7	108	109	45-128	1	30	
Trichloroethene	ug/L	<0.15	20	20	22.4	26.3	112	132	74-132	16	30	
Trichlorofluoromethane	ug/L	<0.23	20	20	19.3	18.9	97	94	75-139	2	30	
Vinyl acetate	ug/L	<1.1	20	20	5.5J	3.4J	28	17	51-135		30	M1
Vinyl chloride	ug/L	<0.092	20	20	18.2	18.0	91	90	68-146	1	30	
Xylene (Total)	ug/L	<0.31	60	60	60.3	60.9	100	101	67-137	1	30	
1,2-Dichloroethane-d4 (S)	%						107	107	75-136			
4-Bromofluorobenzene (S)	%						105	102	75-125			
Toluene-d8 (S)	%						98	98	75-125			

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10473723

QC Batch: 604411 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10473723001

METHOD BLANK: 3267768 Matrix: Water
Associated Lab Samples: 10473723001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<2.0	5.0	2.0	05/09/19 08:15	

LABORATORY CONTROL SAMPLE & LCSD: 3267769 3267770

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	40.9	41.0	102	102	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3267771 3267772

Parameter	Units	10473359008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	579	40	40	618	621	98	105	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3267773 3267774

Parameter	Units	10473359009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	798	40	40	796	862	-4	161	80-120	8	20	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

QC Batch: 604560

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 10473723001

METHOD BLANK: 3268308

Matrix: Water

Associated Lab Samples: 10473723001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	05/08/19 15:22	

LABORATORY CONTROL SAMPLE: 3268309

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	998	100	80-120	

SAMPLE DUPLICATE: 3268310

Parameter	Units	10473807001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2390	2220	7	5	D6

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

QC Batch: 141697

Analysis Method: SM 4500-S-2 D

QC Batch Method: SM 4500-S-2 D

Analysis Description: 4500S2D Sulfide, Total

Associated Lab Samples: 10473723001

METHOD BLANK: 620196

Matrix: Water

Associated Lab Samples: 10473723001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	05/09/19 11:28	

LABORATORY CONTROL SAMPLE: 620197

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.2	0.22	110	90-110	

MATRIX SPIKE SAMPLE: 620199

Parameter	Units	10473442001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.2	0.27	133	75-125	M1

SAMPLE DUPLICATE: 620198

Parameter	Units	10473442001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.0058J		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10473723

QC Batch: 604578 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10473723001

METHOD BLANK: 3268373 Matrix: Water
Associated Lab Samples: 10473723001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.29J	1.2	0.12	05/09/19 10:58	
Nitrate as N	mg/L	0.038J	0.10	0.012	05/09/19 10:58	
Sulfate	mg/L	0.53J	1.2	0.28	05/09/19 10:58	

LABORATORY CONTROL SAMPLE: 3268374

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.1	97	90-110	
Nitrate as N	mg/L	1	0.93	93	90-110	
Sulfate	mg/L	12.5	12.4	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3268375 3268376

Parameter	Units	10473848001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	89.0	12.5	12.5	91.0	91.0	16	16	90-110	0	20	M1	
Nitrate as N	mg/L	0.56	1	1	1.7	1.5	114	90	90-110	15	20	M1	
Sulfate	mg/L	109	62.5	62.5	168	169	94	97	90-110	1	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3268377 3268378

Parameter	Units	10473396001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	19.9	12.5	12.5	30.1	30.0	82	81	90-110	0	20	M1	
Nitrate as N	mg/L	2.1	1	1	2.9	2.9	75	74	90-110	0	20	M1	
Sulfate	mg/L	275	125	125	392	394	94	95	90-110	0	20		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10473723

QC Batch: 604582 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10473723001

METHOD BLANK: 3268393 Matrix: Water
Associated Lab Samples: 10473723001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	05/09/19 15:06	

LABORATORY CONTROL SAMPLE: 3268394

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.94	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3268395 3268396

Parameter	Units	10473390001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Nitrogen, NO2 plus NO3	mg/L	ND	1	1	0.93	0.94	91	93	90-110	2	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3268397 3268398

Parameter	Units	10473390003		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Nitrogen, NO2 plus NO3	mg/L	ND	1	1	0.97	1.0	95	99	90-110	4	20		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

QC Batch: 604761

Analysis Method: EPA 410.4

QC Batch Method: EPA 410.4

Analysis Description: 410.4 COD

Associated Lab Samples: 10473723001

METHOD BLANK: 3269449

Matrix: Water

Associated Lab Samples: 10473723001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	05/09/19 16:33	

LABORATORY CONTROL SAMPLE: 3269450

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	289	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3269451 3269452

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		10473442001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Chemical Oxygen Demand	mg/L	<17.0	250	250	239	244	96	98	90-110	2	20		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10473723

QC Batch: 165606 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C TOC
Associated Lab Samples: 10473723001

METHOD BLANK: 652664 Matrix: Water
Associated Lab Samples: 10473723001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.39	1.0	0.39	05/09/19 09:49	

LABORATORY CONTROL SAMPLE: 652665

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.3	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 652666 652667

Parameter	Units	652666		652667		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		10473229003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Total Organic Carbon	mg/L	6.0	25	25	30.8	31.1	99	100	80-120	1	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 652668 652669

Parameter	Units	652668		652669		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		10473396001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Total Organic Carbon	mg/L	0.71J	25	25	26.3	26.1	102	102	80-120	1	20

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

PASI-N Pace Analytical Services - New Orleans

PASI-V Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

CH The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

H3 Sample was received or analysis requested beyond the recognized method holding time.

L1 Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

R1 RPD value was outside control limits.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10473723

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10473723001	RC04-148-SWL-050419	RSK 175	604573		
10473723001	RC04-148-SWL-050419	EPA 3010	603822	EPA 6010D	604585
10473723001	RC04-148-SWL-050419	EPA 7470A	603852	EPA 7470A	604616
10473723001	RC04-148-SWL-050419	EPA 8260B	604504		
10473723002	TB-050419	EPA 8260B	604504		
10473723001	RC04-148-SWL-050419	SM 2320B	604411		
10473723001	RC04-148-SWL-050419	SM 2540C	604560		
10473723001	RC04-148-SWL-050419	SM 4500-S-2 D	141697		
10473723001	RC04-148-SWL-050419	EPA 300.0	604578		
10473723001	RC04-148-SWL-050419	EPA 353.2	604582		
10473723001	RC04-148-SWL-050419	EPA 410.4	604761	EPA 410.4	604953
10473723001	RC04-148-SWL-050419	SM 5310C	165606		

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Sample Condition Upon Receipt **Client Name:** CH2M Hill **Project #:** **WO#: 10473723**

Courier: Fed Ex UPS USPS Client
 Pace SpeeDee Commercial See Exception

Tracking Number: 7475 9397 8548

Custody Seal on Cooler/Box Present? Yes No **Seals Intact?** Yes No **Biological Tissue Frozen?** Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other: _____ **Temp Blank?** Yes No

Thermometer: T1(0461) T2(1336) T3(0459)
 T4(0254) T5(0048) **Type of Ice:** Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: <u>0.8</u> °C	Average Corrected Temp (no temp blank only): _____ °C	See Exceptions <input type="checkbox"/>
Correction Factor: <u>true</u>	Cooler Temp Corrected w/temp blank: <u>0.8</u> °C	_____ °C	

USDA Regulated Soil: (N/A, water sample/Other: _____) **Date/Initials of Person Examining Contents:** JJ 5/7/19

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

	COMMENTS:
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input checked="" type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: _____ See Exception <input type="checkbox"/>
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other _____	
All containers needing acid/base preservation have been checked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12. Sample # <u>BP22 is at 11.</u>
All containers needing preservation are found to be in compliance with EPA recommendation? <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	<input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ <u>1/4</u> <input checked="" type="checkbox"/> H ₂ SO ₄ <u>1/4</u> <input checked="" type="checkbox"/> Zinc Acetate <u>1/4</u>
Exceptions: <input checked="" type="checkbox"/> VOA <input checked="" type="checkbox"/> Coliform <input checked="" type="checkbox"/> TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No See Exception <input type="checkbox"/> Chlorine? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No pH Paper Lot# _____
Headspace in VOA Vials (greater than 6mm)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Res. Chlorine 0-6 Roll <u>203619</u> 0-6 Strip _____ 0-14 Strip <u>10D4671</u>
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. See Exception <input checked="" type="checkbox"/>
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. Pace Trip Blank Lot # (if purchased): <u>199048</u>

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** Yes No


Person Contacted: Mark Oshcner Date/Time: 06/27/18

Comments/Resolution: WA certs not required for RSK or sulfide.

05/07/19-Brad/Jon-Okay to proceed with 300.0 nitrate analysis past hold. JMG

Project Manager Review: _____ **Date:** 05/07/19

Note: Whenever there is a discrepancy affecting North Carolina samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

	Document Name: Headspace Exception	Document Revised: 17Dec2018 Page 1 of 1
	Document No.: F-MN-C-276-Rev.01	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
RC04-148-SWL-050419	0	3	0	3	Y
TB-050419	1	1	0	2	N

Chain of Custody

WO# : 12124557



Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA
Cert. Needed: Yes

Owner Received Date: 5/7/2019 Results Requested By: 5/10/2019

Workorder: 10473723 Workorder Name: 1497 Freeman WA-Grain Handling

Report To	Subcontract To	Requested Analysis																
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042	<div style="display: flex; justify-content: space-between;"> 5632354 / 5310 TOC <div style="border: 1px solid black; padding: 5px; margin: 5px;">Preserved Containers</div> </div>																
Item	Sample ID														Sample Type	Collect Date/Time	Lab ID	Matrix
1	RC04-148-SWL-050419	PS	5/4/2019 07:45	10473723001	Water	2												
2																		
3																		
4																		
5																		

						Comments
Transfers	Released By	Date/Time	Received By	Date/Time		
1	<i>[Signature]</i>	5/7/19 1705	<i>[Signature]</i>	5/7/19 1850		RUSH RUSH!
2	<i>RC</i>	5/7/19	<i>B. Mathew</i>	5/8/19 0645		
3						

Cooler Temperature on Receipt 0.8 °C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.



Document Name: Sample Condition Upon Receipt Form

Document Revised: 30Apr2019 Page 1 of 1

Document No.: F-VM-C-001-rev.13

Issuing Authority: Pace Virginia Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Project #:

Pace WA

WO#: 12124557

PM: CLJ

Due Date: 05/13/19

CLIENT: PACE MPLS

Courier: Fed Ex, UPS, USPS, Client, Commercial, Pace, Other

Tracking Number:

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Optional: Proj. Due Date: Proj. Name:

Packing Material: Bubble Wrap, Bubble Bags, None, Other Temp Blank? Yes No

Thermometer Used: 140792808 Type of Ice: Wet, Blue, None, Samples on ice, cooling process has begun

Cooler Temp Read °C: 0.3 Cooler Temp Corrected °C: 0.6 Biological Tissue Frozen? Yes No NA

Temp should be above freezing to 6 °C Correction Factor: 0.3 Date and Initials of Person Examining Contents: 5/7/19 DC

Bm 5/8/19

Table with 16 rows of inspection items and checkboxes. Includes items like Chain of Custody Present, Samples Arrived within Hold Time, Short Hold Time Analysis, etc.

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? Yes No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Date: 5/8/19

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

WO#: 20103817

Chain of Custody

Samples were sent directly to the



State Of Origin: WA
Alert Needed: Yes No
Owner Received Date: 5/7/2019 Results Requested By: 5/10/2019

Workorder: 10473723 Workorder Name: 1497 Freeman WA-Grain Handling

Report To		Subcontract To					Requested Analysis																												
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426		Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333					5636267 / 4500 Sulfide																												
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers													LAB USE ONLY																
						B														P	Z														
1	RC04-148-SWL-050419	PS	5/4/2019 07:45	10473723001	Water	1																													
2																																			
3																																			
4																																			
5																																			

Transfers						Comments											
Released By	Date/Time	Received By	Date/Time														
<i>[Signature]</i>	5/7/19 1535	FEDEX				RUSH RUSH!											
FEDEX	5-8-19 920	<i>[Signature]</i>	5-8-19 920														

Cooler Temperature on Receipt 2.6 °C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.



1000 Riverbend Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon R

Proj

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 5-9-19

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?"	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	1
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	5
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	9
Sample Labels match COC:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	15

If No, was preservative added? Yes No
If added record lot no.: HNO3 _____ H2SO4 _____

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

June 19, 2019

David Hodson
Jacobs
155 Grand Ave
#800
Oakland, CA 94612

RE: Project: 1497 Freeman WA-Grain Handling-Revised Report
Pace Project No.: 10473878

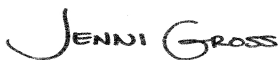
Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on May 08, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This report was revised on June 19, 2019 to move the 8260 results for Pace sample 10473878002 to a separate report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, Jacobs
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Vermont Certification #: VT-027053137

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792

Montana Certificate #CERT0103

Alaska Certification UST-107

Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203

Wisconsin DNR Certification #: 998027470

WA Department of Ecology Lab ID# C1007

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA

Florida Department of Health (NELAC): E87595

Illinois Environmental Protection Agency: 0025721

Kansas Department of Health and Environment (NELAC):

E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):

T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119

Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling-Revised Report
Pace Project No.: 10473878

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10473878001	WS5-GW-050719	Water	05/07/19 08:30	05/08/19 09:50
10473878002	Silva-GW-050719	Water	05/07/19 10:00	05/08/19 09:50
10473878003	TB-050719	Water	05/07/19 07:00	05/08/19 09:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
10473878001	WS5-GW-050719	RSK 175	AJR	3	PASI-M		
		EPA 6010D	DM	16	PASI-M		
		EPA 7470A	LMW	1	PASI-M		
		EPA 8260B	DS2	83	PASI-M		
		SM 2320B	AR3	1	PASI-M		
		SM 2540C	JFP	1	PASI-M		
		SM 4500-S-2 D	PNT	1	PASI-N		
		EPA 300.0	KEO	3	PASI-M		
		EPA 353.2	KEO	1	PASI-M		
		EPA 410.4	AJS	1	PASI-M		
		SM 5310C	CSD	1	PASI-V		
		10473878002	Silva-GW-050719	RSK 175	AJR	3	PASI-M
				EPA 6010D	DM	16	PASI-M
EPA 7470A	LMW			1	PASI-M		
SM 2320B	AR3			1	PASI-M		
SM 2540C	JFP			1	PASI-M		
SM 4500-S-2 D	PNT			1	PASI-N		
EPA 300.0	KEO			3	PASI-M		
EPA 353.2	KEO			1	PASI-M		
EPA 410.4	AJS			1	PASI-M		
SM 5310C	CSD			1	PASI-V		
10473878003	TB-050719	EPA 8260B	DS2	83	PASI-M		

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10473878001	WS5-GW-050719					
EPA 6010D	Barium, Dissolved	53.2	ug/L	10.0	05/10/19 11:55	
EPA 6010D	Beryllium, Dissolved	0.19J	ug/L	5.0	05/10/19 11:55	
EPA 6010D	Cobalt, Dissolved	1.2J	ug/L	10.0	05/10/19 11:55	
EPA 6010D	Copper, Dissolved	8.0J	ug/L	10.0	05/10/19 11:55	
EPA 6010D	Nickel, Dissolved	10.7J	ug/L	20.0	05/10/19 11:55	
EPA 6010D	Vanadium, Dissolved	20.2	ug/L	15.0	05/10/19 11:55	
EPA 6010D	Zinc, Dissolved	33.4	ug/L	20.0	05/10/19 11:55	
EPA 8260B	Carbon tetrachloride	7.1	ug/L	0.50	05/21/19 17:02	
EPA 8260B	Chloroform	0.47J	ug/L	1.0	05/21/19 17:02	
SM 2320B	Alkalinity, Total as CaCO3	171	mg/L	5.0	05/20/19 13:56	
SM 2540C	Total Dissolved Solids	230	mg/L	10.0	05/14/19 18:52	
EPA 300.0	Chloride	3.1	mg/L	1.2	05/08/19 18:49	
EPA 300.0	Nitrate as N	1.2	mg/L	0.10	05/08/19 18:49	
EPA 300.0	Sulfate	5.9	mg/L	1.2	05/08/19 18:49	
EPA 353.2	Nitrogen, NO2 plus NO3	1.1	mg/L	0.10	05/09/19 16:41	
SM 5310C	Total Organic Carbon	0.90J	mg/L	1.0	05/11/19 01:40	
10473878002	Silva-GW-050719					
EPA 6010D	Barium, Dissolved	29.8	ug/L	10.0	05/10/19 11:57	
EPA 6010D	Beryllium, Dissolved	0.13J	ug/L	5.0	05/10/19 11:57	
EPA 6010D	Copper, Dissolved	8.2J	ug/L	10.0	05/10/19 11:57	
EPA 6010D	Nickel, Dissolved	1.1J	ug/L	20.0	05/10/19 11:57	
EPA 6010D	Vanadium, Dissolved	9.8J	ug/L	15.0	05/10/19 11:57	
EPA 6010D	Zinc, Dissolved	46.3	ug/L	20.0	05/10/19 11:57	
SM 2320B	Alkalinity, Total as CaCO3	170	mg/L	5.0	05/20/19 13:59	
SM 2540C	Total Dissolved Solids	239	mg/L	10.0	05/14/19 18:52	
EPA 300.0	Chloride	2.3	mg/L	1.2	05/08/19 19:05	B
EPA 300.0	Nitrate as N	2.4	mg/L	0.10	05/08/19 19:05	
EPA 300.0	Sulfate	10.2	mg/L	1.2	05/08/19 19:05	
EPA 353.2	Nitrogen, NO2 plus NO3	2.4	mg/L	0.50	05/09/19 17:25	
SM 5310C	Total Organic Carbon	1.3	mg/L	1.0	05/11/19 01:57	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

Method: RSK 175

Description: RSK 175 GCV Headspace

Client: UPRR_Jacobs

Date: June 19, 2019

General Information:

2 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

Method: EPA 6010D

Description: 6010D MET ICP, Dissolved

Client: UPRR_Jacobs

Date: June 19, 2019

General Information:

2 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

Method: EPA 7470A

Description: 7470A Mercury, Dissolved

Client: UPRR_Jacobs

Date: June 19, 2019

General Information:

2 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 19, 2019

General Information:

2 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 607382

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10475938001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3285009)
 - Acrolein
 - Toluene
- MSD (Lab ID: 3285010)
 - Acrolein
 - Toluene

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 19, 2019

Analyte Comments:

QC Batch: 607382

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3283484)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3283485)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3285009)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3285010)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- TB-050719 (Lab ID: 10473878003)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- WS5-GW-050719 (Lab ID: 10473878001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

Method: SM 2320B

Description: 2320B Alkalinity

Client: UPRR_Jacobs

Date: June 19, 2019

General Information:

2 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

Method: SM 2540C

Description: 2540C Total Dissolved Solids

Client: UPRR_Jacobs

Date: June 19, 2019

General Information:

2 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

Method: SM 4500-S-2 D

Description: 4500S2D Sulfide, Total

Client: UPRR_Jacobs

Date: June 19, 2019

General Information:

2 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

Method: EPA 300.0

Description: 300.0 IC Anions

Client: UPRR_Jacobs

Date: June 19, 2019

General Information:

2 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 604578

B: Analyte was detected in the associated method blank.

- BLANK for HBN 604578 [WETA/392 (Lab ID: 3268373)]
 - Chloride

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 604578

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10473396001,10473848001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3268375)
 - Chloride
 - Nitrate as N
- MS (Lab ID: 3268377)
 - Chloride
 - Nitrate as N
- MSD (Lab ID: 3268376)
 - Chloride
- MSD (Lab ID: 3268378)
 - Chloride
 - Nitrate as N

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

Method: EPA 353.2

Description: 353.2 Nitrate + Nitrite

Client: UPRR_Jacobs

Date: June 19, 2019

General Information:

2 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

Method: EPA 410.4

Description: 410.4 COD

Client: UPRR_Jacobs

Date: June 19, 2019

General Information:

2 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 607257

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10473878001,10473878002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3282559)
 - Chemical Oxygen Demand

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

Method: SM 5310C

Description: 5310C TOC

Client: UPRR_Jacobs

Date: June 19, 2019

General Information:

2 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

Sample: WS5-GW-050719 **Lab ID: 10473878001** Collected: 05/07/19 08:30 Received: 05/08/19 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace		Analytical Method: RSK 175							
Methane	<4.9	ug/L	10.0	4.9	1		05/08/19 18:58	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		05/08/19 18:58	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		05/08/19 18:58	74-85-1	
6010D MET ICP, Dissolved		Analytical Method: EPA 6010D Preparation Method: EPA 3010							
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	05/09/19 08:24	05/10/19 11:55	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	05/09/19 08:24	05/10/19 11:55	7440-38-2	
Barium, Dissolved	53.2	ug/L	10.0	0.18	1	05/09/19 08:24	05/10/19 11:55	7440-39-3	
Beryllium, Dissolved	0.19J	ug/L	5.0	0.12	1	05/09/19 08:24	05/10/19 11:55	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	05/09/19 08:24	05/10/19 11:55	7440-43-9	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	05/09/19 08:24	05/10/19 11:55	7440-47-3	
Cobalt, Dissolved	1.2J	ug/L	10.0	0.50	1	05/09/19 08:24	05/10/19 11:55	7440-48-4	
Copper, Dissolved	8.0J	ug/L	10.0	1.2	1	05/09/19 08:24	05/10/19 11:55	7440-50-8	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	05/09/19 08:24	05/10/19 11:55	7439-92-1	
Molybdenum, Dissolved	<1.1	ug/L	15.0	1.1	1	05/09/19 08:24	05/10/19 11:55	7439-98-7	
Nickel, Dissolved	10.7J	ug/L	20.0	1.1	1	05/09/19 08:24	05/10/19 11:55	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	05/09/19 08:24	05/10/19 11:55	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	05/09/19 08:24	05/10/19 11:55	7440-22-4	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	05/09/19 08:24	05/10/19 11:55	7440-28-0	
Vanadium, Dissolved	20.2	ug/L	15.0	0.29	1	05/09/19 08:24	05/10/19 11:55	7440-62-2	
Zinc, Dissolved	33.4	ug/L	20.0	2.5	1	05/09/19 08:24	05/10/19 11:55	7440-66-6	
7470A Mercury, Dissolved		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	05/09/19 17:32	05/13/19 16:06	7439-97-6	
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/21/19 17:02	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/21/19 17:02	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/21/19 17:02	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/21/19 17:02	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/21/19 17:02	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/21/19 17:02	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		05/21/19 17:02	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		05/21/19 17:02	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	1.0	0.21	1		05/21/19 17:02	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/21/19 17:02	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	1.0	0.20	1		05/21/19 17:02	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		05/21/19 17:02	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/21/19 17:02	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	1.0	0.24	1		05/21/19 17:02	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/21/19 17:02	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	1.0	0.22	1		05/21/19 17:02	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/21/19 17:02	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/21/19 17:02	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/21/19 17:02	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/21/19 17:02	541-73-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

Sample: WS5-GW-050719 **Lab ID: 10473878001** Collected: 05/07/19 08:30 Received: 05/08/19 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/21/19 17:02	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/21/19 17:02	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/21/19 17:02	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/21/19 17:02	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/21/19 17:02	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/21/19 17:02	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/21/19 17:02	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/21/19 17:02	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/21/19 17:02	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/21/19 17:02	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		05/21/19 17:02	67-64-1	
Acrolein	<1.2	ug/L	40.0	1.2	1		05/21/19 17:02	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/21/19 17:02	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/21/19 17:02	71-43-2	
Bromobenzene	<0.21	ug/L	1.0	0.21	1		05/21/19 17:02	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/21/19 17:02	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/21/19 17:02	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/21/19 17:02	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/21/19 17:02	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		05/21/19 17:02	75-15-0	
Carbon tetrachloride	7.1	ug/L	0.50	0.19	1		05/21/19 17:02	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/21/19 17:02	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		05/21/19 17:02	75-00-3	
Chloroform	0.47J	ug/L	1.0	0.45	1		05/21/19 17:02	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/21/19 17:02	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		05/21/19 17:02	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/21/19 17:02	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/21/19 17:02	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/21/19 17:02	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/21/19 17:02	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/21/19 17:02	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/21/19 17:02	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/21/19 17:02	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		05/21/19 17:02	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	1.0	0.16	1		05/21/19 17:02	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/21/19 17:02	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/21/19 17:02	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/21/19 17:02	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/21/19 17:02	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/21/19 17:02	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		05/21/19 17:02	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/21/19 17:02	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/21/19 17:02	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/21/19 17:02	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/21/19 17:02	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/21/19 17:02	1330-20-7	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

Sample: WS5-GW-050719 **Lab ID: 10473878001** Collected: 05/07/19 08:30 Received: 05/08/19 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/21/19 17:02	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	1.0	0.20	1		05/21/19 17:02	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/21/19 17:02	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		05/21/19 17:02	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/21/19 17:02	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/21/19 17:02	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		05/21/19 17:02	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		05/21/19 17:02	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/21/19 17:02	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/21/19 17:02	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/21/19 17:02	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/21/19 17:02	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		05/21/19 17:02	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/21/19 17:02	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	97	%	75-136		1		05/21/19 17:02	17060-07-0	
Toluene-d8 (S)	99	%	75-125		1		05/21/19 17:02	2037-26-5	
4-Bromofluorobenzene (S)	101	%	75-125		1		05/21/19 17:02	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	171	mg/L	5.0	2.0	1		05/20/19 13:56		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	230	mg/L	10.0	5.0	1		05/14/19 18:52		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		05/14/19 10:45	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	3.1	mg/L	1.2	0.12	1		05/08/19 18:49	16887-00-6	
Nitrate as N	1.2	mg/L	0.10	0.012	1		05/08/19 18:49	14797-55-8	
Sulfate	5.9	mg/L	1.2	0.28	1		05/08/19 18:49	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	1.1	mg/L	0.10	0.018	1		05/09/19 16:41		
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	05/21/19 11:55	05/21/19 17:52		M1
5310C TOC		Analytical Method: SM 5310C							
Total Organic Carbon	0.90J	mg/L	1.0	0.39	1		05/11/19 01:40	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report
Pace Project No.: 10473878

Sample: Silva-GW-050719 **Lab ID: 10473878002** Collected: 05/07/19 10:00 Received: 05/08/19 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		05/08/19 19:27	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		05/08/19 19:27	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		05/08/19 19:27	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	05/09/19 08:24	05/10/19 11:57	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	05/09/19 08:24	05/10/19 11:57	7440-38-2	
Barium, Dissolved	29.8	ug/L	10.0	0.18	1	05/09/19 08:24	05/10/19 11:57	7440-39-3	
Beryllium, Dissolved	0.13J	ug/L	5.0	0.12	1	05/09/19 08:24	05/10/19 11:57	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	05/09/19 08:24	05/10/19 11:57	7440-43-9	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	05/09/19 08:24	05/10/19 11:57	7440-47-3	
Cobalt, Dissolved	<0.50	ug/L	10.0	0.50	1	05/09/19 08:24	05/10/19 11:57	7440-48-4	
Copper, Dissolved	8.2J	ug/L	10.0	1.2	1	05/09/19 08:24	05/10/19 11:57	7440-50-8	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	05/09/19 08:24	05/10/19 11:57	7439-92-1	
Molybdenum, Dissolved	<1.1	ug/L	15.0	1.1	1	05/09/19 08:24	05/10/19 11:57	7439-98-7	
Nickel, Dissolved	1.1J	ug/L	20.0	1.1	1	05/09/19 08:24	05/10/19 11:57	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	05/09/19 08:24	05/10/19 11:57	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	05/09/19 08:24	05/10/19 11:57	7440-22-4	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	05/09/19 08:24	05/10/19 11:57	7440-28-0	
Vanadium, Dissolved	9.8J	ug/L	15.0	0.29	1	05/09/19 08:24	05/10/19 11:57	7440-62-2	
Zinc, Dissolved	46.3	ug/L	20.0	2.5	1	05/09/19 08:24	05/10/19 11:57	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	05/09/19 17:32	05/13/19 16:08	7439-97-6	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	170	mg/L	5.0	2.0	1		05/20/19 13:59		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	239	mg/L	10.0	5.0	1		05/14/19 18:52		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		05/14/19 11:10	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	2.3	mg/L	1.2	0.12	1		05/08/19 19:05	16887-00-6	B
Nitrate as N	2.4	mg/L	0.10	0.012	1		05/08/19 19:05	14797-55-8	
Sulfate	10.2	mg/L	1.2	0.28	1		05/08/19 19:05	14808-79-8	
353.2 Nitrate + Nitrite Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	2.4	mg/L	0.50	0.088	5		05/09/19 17:25		
410.4 COD Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	05/21/19 11:55	05/21/19 17:53		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

Sample: Silva-GW-050719 **Lab ID: 10473878002** Collected: 05/07/19 10:00 Received: 05/08/19 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	1.3	mg/L	1.0	0.39	1		05/11/19 01:57	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

Sample: TB-050719 **Lab ID: 10473878003** Collected: 05/07/19 07:00 Received: 05/08/19 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/21/19 20:07	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/21/19 20:07	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/21/19 20:07	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/21/19 20:07	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/21/19 20:07	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/21/19 20:07	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		05/21/19 20:07	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		05/21/19 20:07	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	1.0	0.21	1		05/21/19 20:07	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/21/19 20:07	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	1.0	0.20	1		05/21/19 20:07	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		05/21/19 20:07	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/21/19 20:07	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	1.0	0.24	1		05/21/19 20:07	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/21/19 20:07	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	1.0	0.22	1		05/21/19 20:07	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/21/19 20:07	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/21/19 20:07	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/21/19 20:07	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/21/19 20:07	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/21/19 20:07	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/21/19 20:07	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/21/19 20:07	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/21/19 20:07	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/21/19 20:07	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/21/19 20:07	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/21/19 20:07	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/21/19 20:07	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/21/19 20:07	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/21/19 20:07	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		05/21/19 20:07	67-64-1	
Acrolein	<1.2	ug/L	40.0	1.2	1		05/21/19 20:07	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/21/19 20:07	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/21/19 20:07	71-43-2	
Bromobenzene	<0.21	ug/L	1.0	0.21	1		05/21/19 20:07	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/21/19 20:07	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/21/19 20:07	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/21/19 20:07	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/21/19 20:07	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		05/21/19 20:07	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		05/21/19 20:07	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/21/19 20:07	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		05/21/19 20:07	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		05/21/19 20:07	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/21/19 20:07	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		05/21/19 20:07	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

Sample: TB-050719 **Lab ID: 10473878003** Collected: 05/07/19 07:00 Received: 05/08/19 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/21/19 20:07	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/21/19 20:07	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/21/19 20:07	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/21/19 20:07	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/21/19 20:07	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/21/19 20:07	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/21/19 20:07	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		05/21/19 20:07	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	1.0	0.16	1		05/21/19 20:07	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/21/19 20:07	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/21/19 20:07	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/21/19 20:07	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/21/19 20:07	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/21/19 20:07	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		05/21/19 20:07	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/21/19 20:07	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/21/19 20:07	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/21/19 20:07	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/21/19 20:07	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/21/19 20:07	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/21/19 20:07	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	1.0	0.20	1		05/21/19 20:07	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/21/19 20:07	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		05/21/19 20:07	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/21/19 20:07	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/21/19 20:07	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		05/21/19 20:07	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		05/21/19 20:07	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/21/19 20:07	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/21/19 20:07	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/21/19 20:07	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/21/19 20:07	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		05/21/19 20:07	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/21/19 20:07	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	96	%	75-136		1		05/21/19 20:07	17060-07-0	
Toluene-d8 (S)	98	%	75-125		1		05/21/19 20:07	2037-26-5	
4-Bromofluorobenzene (S)	98	%	75-125		1		05/21/19 20:07	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Project No.: 10473878

QC Batch: 604573 Analysis Method: RSK 175
 QC Batch Method: RSK 175 Analysis Description: RSK 175 GCV HEADSPACE
 Associated Lab Samples: 10473878001, 10473878002

METHOD BLANK: 3268370 Matrix: Water

Associated Lab Samples: 10473878001, 10473878002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	05/08/19 11:28	
Ethene	ug/L	<2.9	10.0	2.9	05/08/19 11:28	
Methane	ug/L	<4.9	10.0	4.9	05/08/19 11:28	

LABORATORY CONTROL SAMPLE & LCSD: 3268371 3268372

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	115	117	101	103	85-115	2	20	
Ethene	ug/L	106	106	108	100	102	85-115	2	20	
Methane	ug/L	60.7	58.9	59.8	97	99	85-115	1	20	

SAMPLE DUPLICATE: 3268420

Parameter	Units	20103221001 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	ND	<3.0		20	
Ethene	ug/L	ND	<2.9		20	
Methane	ug/L	752	679	10	20	

SAMPLE DUPLICATE: 3268854

Parameter	Units	10473878001 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<3.0	<3.0		20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	<4.9	<4.9		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

QC Batch: 604707

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470A Mercury Water Dissolved

Associated Lab Samples: 10473878001, 10473878002

METHOD BLANK: 3269195

Matrix: Water

Associated Lab Samples: 10473878001, 10473878002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.093	0.20	0.093	05/13/19 15:04	

LABORATORY CONTROL SAMPLE: 3269196

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.8	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3269197 3269198

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		10473591005 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Mercury, Dissolved	ug/L	ND	5	5	4.7	4.9	93	98	80-120	5	20		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

QC Batch:	604692	Analysis Method:	EPA 6010D
QC Batch Method:	EPA 3010	Analysis Description:	6010D Water Dissolved
Associated Lab Samples:	10473878001, 10473878002		

METHOD BLANK: 3269135 Matrix: Water

Associated Lab Samples: 10473878001, 10473878002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	05/10/19 11:13	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	05/10/19 11:13	
Barium, Dissolved	ug/L	<0.18	10.0	0.18	05/10/19 11:13	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	05/10/19 11:13	
Cadmium, Dissolved	ug/L	<0.26	3.0	0.26	05/10/19 11:13	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	05/10/19 11:13	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	05/10/19 11:13	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	05/10/19 11:13	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	05/10/19 11:13	
Molybdenum, Dissolved	ug/L	<1.1	15.0	1.1	05/10/19 11:13	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	05/10/19 11:13	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	05/10/19 11:13	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	05/10/19 11:13	
Thallium, Dissolved	ug/L	<4.3	20.0	4.3	05/10/19 11:13	
Vanadium, Dissolved	ug/L	0.37J	15.0	0.29	05/10/19 11:13	
Zinc, Dissolved	ug/L	<2.5	20.0	2.5	05/10/19 11:13	

LABORATORY CONTROL SAMPLE: 3269136

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony, Dissolved	ug/L	1000	1010	101	80-120	
Arsenic, Dissolved	ug/L	1000	998	100	80-120	
Barium, Dissolved	ug/L	1000	1030	103	80-120	
Beryllium, Dissolved	ug/L	1000	1040	104	80-120	
Cadmium, Dissolved	ug/L	1000	1030	103	80-120	
Chromium, Dissolved	ug/L	1000	1020	102	80-120	
Cobalt, Dissolved	ug/L	1000	1030	103	80-120	
Copper, Dissolved	ug/L	1000	998	100	80-120	
Lead, Dissolved	ug/L	1000	1030	103	80-120	
Molybdenum, Dissolved	ug/L	1000	1030	103	80-120	
Nickel, Dissolved	ug/L	1000	1020	102	80-120	
Selenium, Dissolved	ug/L	1000	1070	107	80-120	
Silver, Dissolved	ug/L	500	516	103	80-120	
Thallium, Dissolved	ug/L	1000	1010	101	80-120	
Vanadium, Dissolved	ug/L	1000	1020	102	80-120	
Zinc, Dissolved	ug/L	1000	1040	104	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

Parameter	Units	10473587001		MS		MSD		3269137		3269138		Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result	% Rec	% Rec	MS	MSD	
Antimony, Dissolved	ug/L	ND	1000	1000	1060	1040	106	104	75-125	2	20	
Arsenic, Dissolved	ug/L	ND	1000	1000	1020	1020	102	102	75-125	0	20	
Barium, Dissolved	ug/L	ND	1000	1000	1040	1040	103	103	75-125	0	20	
Beryllium, Dissolved	ug/L	ND	1000	1000	1060	1060	106	106	75-125	0	20	
Cadmium, Dissolved	ug/L	ND	1000	1000	1030	1030	103	103	75-125	0	20	
Chromium, Dissolved	ug/L	ND	1000	1000	1040	1030	104	103	75-125	0	20	
Cobalt, Dissolved	ug/L	ND	1000	1000	1020	1020	102	102	75-125	0	20	
Copper, Dissolved	ug/L	ND	1000	1000	1020	1010	102	101	75-125	1	20	
Lead, Dissolved	ug/L	ND	1000	1000	1040	1030	103	103	75-125	0	20	
Molybdenum, Dissolved	ug/L	ND	1000	1000	1070	1070	107	107	75-125	0	20	
Nickel, Dissolved	ug/L	ND	1000	1000	1010	1010	101	101	75-125	0	20	
Selenium, Dissolved	ug/L	ND	1000	1000	1080	1080	108	108	75-125	0	20	
Silver, Dissolved	ug/L	ND	500	500	532	529	106	106	75-125	1	20	
Thallium, Dissolved	ug/L	ND	1000	1000	1030	1020	102	102	75-125	1	20	
Vanadium, Dissolved	ug/L	ND	1000	1000	1040	1040	104	104	75-125	0	20	
Zinc, Dissolved	ug/L	ND	1000	1000	1030	1030	103	102	75-125	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

QC Batch: 607382 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10473878001, 10473878003

METHOD BLANK: 3283484 Matrix: Water

Associated Lab Samples: 10473878001, 10473878003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	05/21/19 16:11	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	05/21/19 16:11	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	05/21/19 16:11	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	05/21/19 16:11	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	05/21/19 16:11	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	05/21/19 16:11	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	05/21/19 16:11	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	05/21/19 16:11	
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	0.21	05/21/19 16:11	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	05/21/19 16:11	
1,2,4-Trichlorobenzene	ug/L	<0.20	1.0	0.20	05/21/19 16:11	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	05/21/19 16:11	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	05/21/19 16:11	
1,2-Dibromoethane (EDB)	ug/L	<0.24	1.0	0.24	05/21/19 16:11	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	05/21/19 16:11	
1,2-Dichloroethane	ug/L	<0.22	1.0	0.22	05/21/19 16:11	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	05/21/19 16:11	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	05/21/19 16:11	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	05/21/19 16:11	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	05/21/19 16:11	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	05/21/19 16:11	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	05/21/19 16:11	
1,4-Dioxane (p-Dioxane)	ug/L	41.2J	200	16.3	05/21/19 16:11	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	05/21/19 16:11	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	05/21/19 16:11	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	05/21/19 16:11	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	05/21/19 16:11	
2-Hexanone	ug/L	<0.88	5.0	0.88	05/21/19 16:11	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	05/21/19 16:11	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	05/21/19 16:11	
Acetone	ug/L	<9.2	20.0	9.2	05/21/19 16:11	
Acrolein	ug/L	<1.2	40.0	1.2	05/21/19 16:11	
Acrylonitrile	ug/L	<0.91	10.0	0.91	05/21/19 16:11	
Benzene	ug/L	<0.10	0.50	0.10	05/21/19 16:11	
Bromobenzene	ug/L	<0.21	1.0	0.21	05/21/19 16:11	
Bromochloromethane	ug/L	<0.27	1.0	0.27	05/21/19 16:11	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	05/21/19 16:11	
Bromoform	ug/L	<0.80	4.0	0.80	05/21/19 16:11	
Bromomethane	ug/L	<1.8	4.0	1.8	05/21/19 16:11	
Carbon disulfide	ug/L	<0.078	1.0	0.078	05/21/19 16:11	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	05/21/19 16:11	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

METHOD BLANK: 3283484

Matrix: Water

Associated Lab Samples: 10473878001, 10473878003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	05/21/19 16:11	
Chloroethane	ug/L	<0.49	1.0	0.49	05/21/19 16:11	
Chloroform	ug/L	<0.45	1.0	0.45	05/21/19 16:11	
Chloromethane	ug/L	<0.16	4.0	0.16	05/21/19 16:11	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	05/21/19 16:11	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	05/21/19 16:11	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	05/21/19 16:11	
Dibromomethane	ug/L	<0.16	1.0	0.16	05/21/19 16:11	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	05/21/19 16:11	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	05/21/19 16:11	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	05/21/19 16:11	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	05/21/19 16:11	
Ethylbenzene	ug/L	<0.14	0.50	0.14	05/21/19 16:11	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	05/21/19 16:11	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	05/21/19 16:11	
m&p-Xylene	ug/L	<0.31	1.0	0.31	05/21/19 16:11	
Methyl-tert-butyl ether	ug/L	<0.16	1.0	0.16	05/21/19 16:11	
Methylene Chloride	ug/L	<0.98	4.0	0.98	05/21/19 16:11	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	05/21/19 16:11	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	05/21/19 16:11	
Naphthalene	ug/L	<0.48	1.0	0.48	05/21/19 16:11	
o-Xylene	ug/L	<0.16	0.50	0.16	05/21/19 16:11	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	05/21/19 16:11	
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	05/21/19 16:11	
Styrene	ug/L	<0.19	0.50	0.19	05/21/19 16:11	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	05/21/19 16:11	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	05/21/19 16:11	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	05/21/19 16:11	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	05/21/19 16:11	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	05/21/19 16:11	
Toluene	ug/L	<0.083	0.50	0.083	05/21/19 16:11	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	05/21/19 16:11	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	05/21/19 16:11	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	05/21/19 16:11	
Trichloroethene	ug/L	<0.15	0.40	0.15	05/21/19 16:11	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	05/21/19 16:11	
Vinyl acetate	ug/L	<1.1	10.0	1.1	05/21/19 16:11	
Vinyl chloride	ug/L	<0.092	0.20	0.092	05/21/19 16:11	
Xylene (Total)	ug/L	<0.31	1.5	0.31	05/21/19 16:11	
1,2-Dichloroethane-d4 (S)	%	98	75-136		05/21/19 16:11	
4-Bromofluorobenzene (S)	%	100	75-125		05/21/19 16:11	
Toluene-d8 (S)	%	98	75-125		05/21/19 16:11	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

LABORATORY CONTROL SAMPLE: 3283485

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	10.3	103	68-141	
1,1,1-Trichloroethane	ug/L	10	10.7	107	75-129	
1,1,2,2-Tetrachloroethane	ug/L	10	10.1	101	73-125	
1,1,2-Trichloroethane	ug/L	10	10	100	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	10	10.3	103	69-132	
1,1-Dichloroethane	ug/L	10	10.4	104	73-125	
1,1-Dichloroethene	ug/L	10	10.5	105	71-126	
1,1-Dichloropropene	ug/L	10	10.1	101	73-126	
1,2,3-Trichlorobenzene	ug/L	10	10.7	107	72-126	
1,2,3-Trichloropropane	ug/L	10	10.5	105	75-126	
1,2,4-Trichlorobenzene	ug/L	10	10.3	103	71-134	
1,2,4-Trimethylbenzene	ug/L	10	10.9	109	72-134	
1,2-Dibromo-3-chloropropane	ug/L	25	24.6	98	60-135	
1,2-Dibromoethane (EDB)	ug/L	10	10.5	105	75-129	
1,2-Dichlorobenzene	ug/L	10	10.5	105	75-129	
1,2-Dichloroethane	ug/L	10	10	100	75-125	
1,2-Dichloroethene (Total)	ug/L	20	20.7	103	74-125	N2
1,2-Dichloropropane	ug/L	10	10.4	104	75-125	
1,3,5-Trimethylbenzene	ug/L	10	11.0	110	75-127	
1,3-Dichlorobenzene	ug/L	10	10.9	109	75-126	
1,3-Dichloropropane	ug/L	10	11.0	110	75-125	
1,4-Dichlorobenzene	ug/L	10	10.3	103	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	200	210	105	72-129	
2,2,4-Trimethylpentane	ug/L	10	10.3	103	72-128	N2
2,2-Dichloropropane	ug/L	10	10.2	102	65-138	
2-Butanone (MEK)	ug/L	50	45.9	92	59-144	
2-Chlorotoluene	ug/L	10	10.7	107	75-127	
2-Hexanone	ug/L	50	46.2	92	73-134	
4-Chlorotoluene	ug/L	10	10.7	107	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	50	46.8	94	62-141	
Acetone	ug/L	50	46.8	94	60-137	
Acrolein	ug/L	100	105	105	60-141	
Acrylonitrile	ug/L	100	103	103	75-129	
Benzene	ug/L	10	10.5	105	73-125	
Bromobenzene	ug/L	10	10.2	102	73-125	
Bromochloromethane	ug/L	10	10.4	104	75-135	
Bromodichloromethane	ug/L	10	10.2	102	75-125	
Bromoform	ug/L	10	10.4	104	67-136	
Bromomethane	ug/L	10	11.1	111	30-150	
Carbon disulfide	ug/L	10	11.7	117	47-137	
Carbon tetrachloride	ug/L	10	11.2	112	75-125	
Chlorobenzene	ug/L	10	10.9	109	75-125	
Chloroethane	ug/L	10	8.9	89	63-136	
Chloroform	ug/L	10	10.2	102	73-128	
Chloromethane	ug/L	10	10.0	100	55-130	
cis-1,2-Dichloroethene	ug/L	10	10.5	105	75-125	
cis-1,3-Dichloropropene	ug/L	10	10.4	104	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

LABORATORY CONTROL SAMPLE: 3283485

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	10	10.1	101	75-125	
Dibromomethane	ug/L	10	10.6	106	75-125	
Dichlorodifluoromethane	ug/L	10	11.0	110	63-132	
Dichlorofluoromethane	ug/L	10	9.5	95	68-127	N2
Diisopropyl ether	ug/L	10	9.8	98	71-131	
Ethyl-tert-butyl ether	ug/L	10	10.6	106	75-125	
Ethylbenzene	ug/L	10	10.5	105	75-125	
Hexachloro-1,3-butadiene	ug/L	10	11.4	114	72-134	
Isopropylbenzene (Cumene)	ug/L	10	10.7	107	75-125	
m&p-Xylene	ug/L	20	21.1	106	75-126	
Methyl-tert-butyl ether	ug/L	10	9.9	99	75-125	
Methylene Chloride	ug/L	10	10.9	109	70-125	
n-Butylbenzene	ug/L	10	10.8	108	75-126	
n-Propylbenzene	ug/L	10	10.8	108	73-127	
Naphthalene	ug/L	10	9.7	97	63-128	
o-Xylene	ug/L	10	10.7	107	75-128	
p-Isopropyltoluene	ug/L	10	11.0	110	75-125	
sec-Butylbenzene	ug/L	10	10.0	100	75-126	
Styrene	ug/L	10	11.1	111	75-125	
tert-Amylmethyl ether	ug/L	10	9.9	99	75-125	
tert-Butyl Alcohol	ug/L	100	103	103	75-130	
tert-Butylbenzene	ug/L	10	10.7	107	75-131	
Tetrachloroethene	ug/L	10	11.1	111	74-125	
Tetrahydrofuran	ug/L	100	105	105	64-138	
Toluene	ug/L	10	10.8	108	74-125	
trans-1,2-Dichloroethene	ug/L	10	10.2	102	68-128	
trans-1,3-Dichloropropene	ug/L	10	9.6	96	75-125	
trans-1,4-Dichloro-2-butene	ug/L	25	24.8	99	60-127	
Trichloroethene	ug/L	10	11.2	112	75-127	
Trichlorofluoromethane	ug/L	10	11.0	110	72-133	
Vinyl acetate	ug/L	10	9.7J	97	61-129	
Vinyl chloride	ug/L	10	10.5	105	75-128	
Xylene (Total)	ug/L	30	31.8	106	75-125	
1,2-Dichloroethane-d4 (S)	%			99	75-136	
4-Bromofluorobenzene (S)	%			100	75-125	
Toluene-d8 (S)	%			101	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3285009 3285010

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10475938001 Result	Spike Conc.	Spike Conc.	MS Result						
1,1,1,2-Tetrachloroethane	ug/L	<19.6	1000	1000	1040	971	104	97	75-140	7	30
1,1,1-Trichloroethane	ug/L	851	1000	1000	1870	1740	102	89	74-136	7	30
1,1,2,2-Tetrachloroethane	ug/L	<17.0	1000	1000	999	966	100	97	66-134	3	30
1,1,2-Trichloroethane	ug/L	<18.0	1000	1000	1070	1000	105	99	75-126	6	30

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3285009 3285010												
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		10475938001 Result	Spike Conc.	Spike Conc.	MS Result							
1,1,2-Trichlorotrifluoroethane	ug/L	378	1000	1000	1370	1220	100	84	65-146	12	30	
1,1-Dichloroethane	ug/L	238	1000	1000	1220	1150	98	91	68-132	6	30	
1,1-Dichloroethene	ug/L	<15.9	1000	1000	994	906	99	91	66-139	9	30	
1,1-Dichloropropene	ug/L	<19.8	1000	1000	973	896	97	90	67-134	8	30	
1,2,3-Trichlorobenzene	ug/L	<20.6	1000	1000	1080	1010	108	101	67-129	7	30	
1,2,3-Trichloropropane	ug/L	<25.7	1000	1000	1050	951	105	95	69-128	10	30	
1,2,4-Trichlorobenzene	ug/L	<19.9	1000	1000	1070	962	107	96	65-140	11	30	
1,2,4-Trimethylbenzene	ug/L	312	1000	1000	1390	1280	107	97	71-133	8	30	
1,2-Dibromo-3-chloropropane	ug/L	<166	2500	2500	2590	2600	104	104	54-138	0	30	
1,2-Dibromoethane (EDB)	ug/L	<24.1	1000	1000	1060	955	106	96	68-125	10	30	
1,2-Dichlorobenzene	ug/L	<13.7	1000	1000	1060	969	106	97	74-136	9	30	
1,2-Dichloroethane	ug/L	<21.8	1000	1000	995	942	99	94	68-125	5	30	
1,2-Dichloroethene (Total)	ug/L	1510	2000	2000	3560	3320	103	91	71-126	7	30	N2
1,2-Dichloropropane	ug/L	<16.5	1000	1000	1060	983	106	98	67-125	7	30	
1,3,5-Trimethylbenzene	ug/L	97.8	1000	1000	1180	1070	108	97	68-137	10	30	
1,3-Dichlorobenzene	ug/L	<16.1	1000	1000	1100	991	110	99	75-131	11	30	
1,3-Dichloropropane	ug/L	<7.0	1000	1000	1020	992	102	99	71-125	3	30	
1,4-Dichlorobenzene	ug/L	<16.9	1000	1000	1070	956	107	96	74-126	12	30	
1,4-Dioxane (p-Dioxane)	ug/L	5010J	20000	20000	26500	21100	107	81	68-125	22	30	
2,2,4-Trimethylpentane	ug/L	<19.2	1000	1000	1050	956	105	96	54-129	9	30	N2
2,2-Dichloropropane	ug/L	<17.2	1000	1000	1040	970	104	97	69-139	7	30	
2-Butanone (MEK)	ug/L	<99.2	5000	5000	4380	4020	88	80	54-144	9	30	
2-Chlorotoluene	ug/L	<16.3	1000	1000	1120	1010	112	101	75-134	10	30	
2-Hexanone	ug/L	<87.5	5000	5000	4500	4750	90	95	58-137	5	30	
4-Chlorotoluene	ug/L	<13.4	1000	1000	1050	965	105	96	72-133	9	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<42.2	5000	5000	4770	4900	95	98	60-129	3	30	
Acetone	ug/L	<925	5000	5000	4710	4390	94	88	62-132	7	30	
Acrolein	ug/L	<120	10000	10000	31800	35200	318	352	30-150	10	30	M1
Acrylonitrile	ug/L	<90.8	10000	10000	10200	10500	102	105	68-125	2	30	
Benzene	ug/L	<10.2	1000	1000	997	954	100	95	68-125	4	30	
Bromobenzene	ug/L	<20.7	1000	1000	1020	928	102	93	73-126	9	30	
Bromochloromethane	ug/L	<27.3	1000	1000	1030	945	103	94	66-143	8	30	
Bromodichloromethane	ug/L	<21.6	1000	1000	1020	932	102	93	74-125	9	30	
Bromoform	ug/L	<80.2	1000	1000	1040	966	104	97	64-134	7	30	
Bromomethane	ug/L	<182	1000	1000	1080	1020	108	102	30-150	6	30	
Carbon disulfide	ug/L	<7.8	1000	1000	1020	958	102	96	43-147	6	30	
Carbon tetrachloride	ug/L	<18.8	1000	1000	1090	1020	109	102	71-143	6	30	
Chlorobenzene	ug/L	<17.1	1000	1000	1090	976	109	98	75-125	11	30	
Chloroethane	ug/L	<49.0	1000	1000	1030	908	103	91	75-129	12	30	
Chloroform	ug/L	<44.8	1000	1000	968	908	97	91	66-132	6	30	
Chloromethane	ug/L	<15.5	1000	1000	1010	926	101	93	53-137	8	30	
cis-1,2-Dichloroethene	ug/L	1510	1000	1000	2580	2370	107	86	67-133	9	30	
cis-1,3-Dichloropropene	ug/L	<20.5	1000	1000	1010	936	101	94	66-125	8	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3285009			3285010			% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		10475938001	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Dibromochloromethane	ug/L	<12.3	1000	1000	995	961	99	96	62-132	3	30			
Dibromomethane	ug/L	<16.3	1000	1000	1040	1020	104	102	67-125	2	30			
Dichlorodifluoromethane	ug/L	<23.4	1000	1000	1080	985	107	97	71-142	9	30			
Dichlorofluoromethane	ug/L	<14.1	1000	1000	981	914	98	91	70-131	7	30	N2		
Diisopropyl ether	ug/L	<13.3	1000	1000	977	919	98	92	63-131	6	30			
Ethyl-tert-butyl ether	ug/L	<17.8	1000	1000	1060	972	106	97	66-128	8	30			
Ethylbenzene	ug/L	1880	1000	1000	2880	2680	100	80	74-126	7	30			
Hexachloro-1,3-butadiene	ug/L	<31.0	1000	1000	1210	1020	121	102	68-143	17	30			
Isopropylbenzene (Cumene)	ug/L	36.5J	1000	1000	1080	1020	105	98	74-130	6	30			
m&p-Xylene	ug/L	6000	2000	2000	7950	7380	98	69	69-132	7	30			
Methyl-tert-butyl ether	ug/L	<16.1	1000	1000	981	921	98	92	65-131	6	30			
Methylene Chloride	ug/L	<98.0	1000	1000	1080	976	108	98	57-125	10	30			
n-Butylbenzene	ug/L	<23.9	1000	1000	1150	985	115	98	71-131	16	30			
n-Propylbenzene	ug/L	53.1	1000	1000	1110	1040	105	99	67-138	6	30			
Naphthalene	ug/L	96.3J	1000	1000	1050	1030	96	93	60-130	2	30			
o-Xylene	ug/L	1920	1000	1000	2950	2710	103	79	69-131	8	30			
p-Isopropyltoluene	ug/L	<15.2	1000	1000	1130	1010	113	101	72-133	11	30			
sec-Butylbenzene	ug/L	<15.1	1000	1000	1020	911	102	91	73-134	11	30			
Styrene	ug/L	59.8	1000	1000	1160	1070	110	101	72-125	9	30			
tert-Amylmethyl ether	ug/L	<10.8	1000	1000	990	941	99	94	67-125	5	30			
tert-Butyl Alcohol	ug/L	<124	10000	10000	10000	9790	100	98	64-137	2	30			
tert-Butylbenzene	ug/L	<14.8	1000	1000	1050	984	105	98	70-143	6	30			
Tetrachloroethene	ug/L	56.6	1000	1000	1120	1070	106	101	72-129	4	30			
Tetrahydrofuran	ug/L	<222	10000	10000	10400	10100	104	101	66-128	3	30			
Toluene	ug/L	13400	1000	1000	14000	13200	60	-23	73-125	6	30	M1		
trans-1,2-Dichloroethene	ug/L	<11.7	1000	1000	981	953	98	95	62-137	3	30			
trans-1,3-Dichloropropene	ug/L	<18.2	1000	1000	966	922	97	92	61-136	5	30			
trans-1,4-Dichloro-2-butene	ug/L	<204	2500	2500	2570	2620	103	105	45-128	2	30			
Trichloroethene	ug/L	347	1000	1000	1360	1270	101	92	74-132	7	30			
Trichlorofluoromethane	ug/L	<23.2	1000	1000	1070	945	107	95	75-139	12	30			
Vinyl acetate	ug/L	<110	1000	1000	995J	980J	100	98	51-135		30			
Vinyl chloride	ug/L	57.0	1000	1000	1140	1060	108	100	68-146	7	30			
Xylene (Total)	ug/L	7920	3000	3000	10900	10100	99	73	67-137	8	30			
1,2-Dichloroethane-d4 (S)	%						98	99	75-136			HS		
4-Bromofluorobenzene (S)	%						100	99	75-125					
Toluene-d8 (S)	%						100	100	75-125					

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

QC Batch: 606922 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10473878001, 10473878002

METHOD BLANK: 3280966 Matrix: Water

Associated Lab Samples: 10473878001, 10473878002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<2.0	5.0	2.0	05/20/19 11:33	

LABORATORY CONTROL SAMPLE & LCSD: 3280967 3280968

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	41.5	41.4	104	104	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3278768 3278769

Parameter	Units	10474442003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	267	40	40	302	303	88	90	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3280969 3280970

Parameter	Units	10473679001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	146	40	40	186	187	100	102	80-120	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

QC Batch: 605706

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 10473878001, 10473878002

METHOD BLANK: 3274343

Matrix: Water

Associated Lab Samples: 10473878001, 10473878002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	05/14/19 18:52	

LABORATORY CONTROL SAMPLE: 3274344

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	966	97	80-120	

SAMPLE DUPLICATE: 3274345

Parameter	Units	10474087001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	911	888	3	5	

SAMPLE DUPLICATE: 3274346

Parameter	Units	10473893001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1800	1800	0	5	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

QC Batch: 142125

Analysis Method: SM 4500-S-2 D

QC Batch Method: SM 4500-S-2 D

Analysis Description: 4500S2D Sulfide, Total

Associated Lab Samples: 10473878001, 10473878002

METHOD BLANK: 622715

Matrix: Water

Associated Lab Samples: 10473878001, 10473878002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	05/14/19 10:43	

LABORATORY CONTROL SAMPLE: 622716

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.2	0.18	91	90-110	

MATRIX SPIKE SAMPLE: 622718

Parameter	Units	10473878001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.2	0.21	106	75-125	

SAMPLE DUPLICATE: 622717

Parameter	Units	10473878001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report
Pace Project No.: 10473878

QC Batch: 604578 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10473878001, 10473878002

METHOD BLANK: 3268373 Matrix: Water
Associated Lab Samples: 10473878001, 10473878002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.29J	1.2	0.12	05/09/19 10:58	
Nitrate as N	mg/L	0.038J	0.10	0.012	05/09/19 10:58	
Sulfate	mg/L	0.53J	1.2	0.28	05/09/19 10:58	

LABORATORY CONTROL SAMPLE: 3268374

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.1	97	90-110	
Nitrate as N	mg/L	1	0.93	93	90-110	
Sulfate	mg/L	12.5	12.4	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3268375 3268376

Parameter	Units	10473848001		3268375		3268376		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	89.0	12.5	12.5	12.5	91.0	91.0	16	16	90-110	0	20	M1
Nitrate as N	mg/L	0.56	1	1	1	1.7	1.5	114	90	90-110	15	20	M1
Sulfate	mg/L	109	62.5	62.5	62.5	168	169	94	97	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3268377 3268378

Parameter	Units	10473396001		3268377		3268378		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	19.9	12.5	12.5	12.5	30.1	30.0	82	81	90-110	0	20	M1
Nitrate as N	mg/L	2.1	1	1	1	2.9	2.9	75	74	90-110	0	20	M1
Sulfate	mg/L	275	125	125	125	392	394	94	95	90-110	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report
Pace Project No.: 10473878

QC Batch: 604749 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10473878001, 10473878002

METHOD BLANK: 3269365 Matrix: Water
Associated Lab Samples: 10473878001, 10473878002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	05/09/19 17:01	

LABORATORY CONTROL SAMPLE: 3269366

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.96	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3269367 3269368

Parameter	Units	10473878001		3269367		3269368		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.					
Nitrogen, NO2 plus NO3	mg/L	1.1	1	1	1	2.1	2.1	101	95	90-110	3	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3270179 3270180

Parameter	Units	10473878002		3270179		3270180		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.					
Nitrogen, NO2 plus NO3	mg/L	2.4	5	5	5	7.3	7.3	98	98	90-110	0	20

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

QC Batch: 607257 Analysis Method: EPA 410.4

QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD

Associated Lab Samples: 10473878001, 10473878002

METHOD BLANK: 3282557 Matrix: Water

Associated Lab Samples: 10473878001, 10473878002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	05/21/19 17:51	

LABORATORY CONTROL SAMPLE: 3282558

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	298	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3282559 3282560

Parameter	Units	3282559		3282560		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Chemical Oxygen Demand	mg/L	<17.0	250	250	315	258	123	100	90-110	20	20 M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3282561 3282562

Parameter	Units	3282561		3282562		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Chemical Oxygen Demand	mg/L	<17.0	250	250	248	251	98	99	90-110	1	20

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

QC Batch: 165785

Analysis Method: SM 5310C

QC Batch Method: SM 5310C

Analysis Description: 5310C TOC

Associated Lab Samples: 10473878001, 10473878002

METHOD BLANK: 653330

Matrix: Water

Associated Lab Samples: 10473878001, 10473878002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.39	1.0	0.39	05/10/19 21:32	

LABORATORY CONTROL SAMPLE: 653331

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.7	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 653332 653333

Parameter	Units	MS		MSD		% Rec		% Rec Limits	RPD	Max RPD	Qual
		10473734001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec				
Total Organic Carbon	mg/L	<0.39	25	25	25.9	25.7	103	103	80-120	1	20

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

PASI-N Pace Analytical Services - New Orleans

PASI-V Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

HS Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling-Revised Report

Pace Project No.: 10473878

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling-Revised Report
Pace Project No.: 10473878

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10473878001	WS5-GW-050719	RSK 175	604573		
10473878002	Silva-GW-050719	RSK 175	604573		
10473878001	WS5-GW-050719	EPA 3010	604692	EPA 6010D	605021
10473878002	Silva-GW-050719	EPA 3010	604692	EPA 6010D	605021
10473878001	WS5-GW-050719	EPA 7470A	604707	EPA 7470A	605060
10473878002	Silva-GW-050719	EPA 7470A	604707	EPA 7470A	605060
10473878001	WS5-GW-050719	EPA 8260B	607382		
10473878003	TB-050719	EPA 8260B	607382		
10473878001	WS5-GW-050719	SM 2320B	606922		
10473878002	Silva-GW-050719	SM 2320B	606922		
10473878001	WS5-GW-050719	SM 2540C	605706		
10473878002	Silva-GW-050719	SM 2540C	605706		
10473878001	WS5-GW-050719	SM 4500-S-2 D	142125		
10473878002	Silva-GW-050719	SM 4500-S-2 D	142125		
10473878001	WS5-GW-050719	EPA 300.0	604578		
10473878002	Silva-GW-050719	EPA 300.0	604578		
10473878001	WS5-GW-050719	EPA 353.2	604749		
10473878002	Silva-GW-050719	EPA 353.2	604749		
10473878001	WS5-GW-050719	EPA 410.4	607257	EPA 410.4	607459
10473878002	Silva-GW-050719	EPA 410.4	607257	EPA 410.4	607459
10473878001	WS5-GW-050719	SM 5310C	165785		
10473878002	Silva-GW-050719	SM 5310C	165785		

REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.

Sample Condition Upon Receipt **Client Name:** CH2M Hill **Project #:** WO#: 10473878

Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception

Tracking Number: 7475 9397 8607

PM: JMG **Due Date:** 05/15/19
CLIENT: UPRR_CH2M

Custody Seal on Cooler/Box Present? Yes No **Seals Intact?** Yes No **Biological Tissue Frozen?** Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other: PB **Temp Blank?** Yes No

Thermometer: T1(0461) T2(1336) T3(0459)
 T4(0254) T5(0048)

Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: <u>5.7</u> °C	Average Corrected Temp (no temp blank only): <u>5.7</u> °C	See Exceptions <input type="checkbox"/>
Correction Factor: <u>TRUE</u>	Cooler Temp Corrected w/temp blank: <u>5.7</u> °C		

USDA Regulated Soil: (N/A, water sample/Other: _____) **Date/Initials of Person Examining Contents:** ERE 5/8/19

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

	COMMENTS:
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input checked="" type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	
All containers needing acid/base preservation have been checked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12. Sample # <u>1-2</u> <input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ ^{1/1} <input checked="" type="checkbox"/> H ₂ SO ₄ ^{1/1} <input checked="" type="checkbox"/> Zinc Acetate ^{1/1}
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ ^{1/1} <input checked="" type="checkbox"/> H ₂ SO ₄ ^{1/1} <input checked="" type="checkbox"/> Zinc Acetate ^{1/1}
Exceptions: <u>VOA</u> Coliform, <u>TOC</u> DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exception Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No pH Paper Lot# <input type="checkbox"/>
	Res. Chlorine 0-6 Roll <u>203619</u> 0-6 Strip 0-14 Strip <u>10D4671</u>
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception <input checked="" type="checkbox"/>
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. Pace Trip Blank Lot # (if purchased): <u>204792</u>
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** Yes No

Person Contacted: Mark Ochsner Date/Time: 06/27/18


Comments/Resolution: WA certs not required for RSK or sulfide. Analyze 8260 on -001. Per Jon, report 8260 for Silva on separate report. 061719 JMG

Project Manager Review: _____ **Date:** 05/08/19

Note: Whenever there is a discrepancy affecting North Carolina samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: [Signature]

Page 46 of 52

	Document Name: Headspace Exception	Document Revised: 17Dec2018 Page 1 of 1
	Document No.: F-MN-C-276-Rev.01	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
WSS-GW-050719	0	3	0	3	N
Silva-GW-050719	0	0	3	3	N
TB-050719	0	1	1	2	N

Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.

WO# : 12124651



Workorder: 10473878

Workorder Name: 1497 Freeman WA-Grain Handling

State Of Origin: WA

Cert. Needed: Yes

Owner Received Date: 5/8/2019

5/8/2019

Results Requested By: 5/22/2019

Report To	Subcontract To	Requested Analysis												LAB USE ONLY													
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042																										
		Preserved Containers										5632354 / 5310 TOC															
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	HPSO4 DG95																					
1	WS5-GW-050719	PS	5/7/2019 08:30	10473878001	Water	2																				X	
2	Silva-GW-050719	PS	5/7/2019 10:00	10473878002	Water	2																				X	
3																											
4																											
5																											

						Comments											
Transfers	Released By	Date/Time	Received By	Date/Time													
1	<i>[Signature]</i>	5/8/19 1540	<i>[Signature]</i>	5/8/19 1845													
2	<i>[Signature]</i>	5/9/19 00:43	<i>B. Mathew</i>	5/9/19 0700													
3																	

Cooler Temperature on Receipt 0.2 °C Custody Seal or N Received on Ice or N Samples Intact or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Sample Condition Upon Receipt

Client Name: CH2M Hill

Project #: **WO#: 10473878**

PM: JMG Due Date: 05/15/19
CLIENT: UPRR_CH2M

Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception

Tracking Number: 7475 9397 8607

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other: PB Temp Blank? Yes No

Thermometer: T1(0461) T2(1336) T3(0459)
 T4(0254) T5(0048) Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: <u>5.7</u> °C	Average Corrected Temp (no temp blank only): <input type="checkbox"/>	See Exceptions <input type="checkbox"/>
Correction Factor: <u>TRUE</u>	Cooler Temp Corrected w/temp blank: <u>5.7</u> °C		

USDA Regulated Soil: N/A, water sample/Other: _____ Date/Initials of Person Examining Contents: ERE 5/8/19

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No
Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

		COMMENTS:
Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input checked="" type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other		
All containers needing acid/base preservation have been checked?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12. Sample # <u>1-2</u> <input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ <input checked="" type="checkbox"/> H ₂ SO ₄ <input checked="" type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exception
Exceptions: <u>VOA</u> Coliform, <u>TOC</u> DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Chlorine? <input type="checkbox"/> No pH Paper Lot# <input type="checkbox"/>
		Res. Chlorine 0-6 Roll <u>203619</u> 0-6 Strip 0-14 Strip <u>10D4671</u>
Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. <input checked="" type="checkbox"/> See Exception
Trip Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14.
Trip Blank Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): <u>204792</u>

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: Mark Ochsner

Date/Time: 06/27/18

Field Data Required? Yes No

Comments/Resolution: WA certs not required for RSK or sulfide.

Project Manager Review:

Date: 05/08/19

Note: Whenever there is a discrepancy affecting North Carolina samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: [Signature]



Sample Condition Upon Receipt

Client Name:

Project #:

WO#: 12124651

PM: CLJ

Due Date: 05/23/19

CLIENT: PACE MPLS

Pace WA

Courier: [] Fed Ex [] UPS [] USPS [] Client [] Commercial [x] Pace [] Other:

Tracking Number:

Custody Seal on Cooler/Box Present? [x] Yes [] No Seals Intact? [x] Yes [] No

Optional: Proj. Due Date: Proj. Name:

Packing Material: [x] Bubble Wrap [x] Bubble Bags [] None [] Other: Temp Blank? [x] Yes [] No

Thermometer Used: [x] 140792808 Type of Ice: [] Wet [] Blue [] None [x] Samples on ice, cooling process has begun

Cooler Temp Read °C: -0.1 Cooler Temp Corrected °C: 0.2 Biological Tissue Frozen? [] Yes [] No [x] NA

Temp should be above freezing to 6 °C Correction Factor: 0.3 Date and Initials of Person Examining Contents: 5/9/19 BC

Comments:

Bm 5/9/19

Table with 16 rows of checklist items and checkboxes. Items include Chain of Custody Present, Samples Arrived within Hold Time, Short Hold Time Analysis, etc.

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? [] Yes [] No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review:

Katie Richards

Date: 5/9/2019

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

WO#: 20104023

Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA
 Cert. Needed: Yes
 Owner Received Date: 5/8/2019



Workorder: 10473878 Workorder Name: 1497 Freeman WA-Grain Handling Results Requested by: 5/22/2019

Report To		Subcontract To				Requested Analysis																											
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426		Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333				<div style="display: flex; justify-content: space-between;"> 5636267 / 4500 Sulfide LAB USE ONLY </div>																											
Preserved Containers																																	
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix													BPZZ															
1	WS5-GW-050719	PS	5/7/2019 08:30	10473878001	Water													1															
2	Silva-GW-050719	PS	5/7/2019 10:00	10473878002	Water													1															
3																																	
4																																	
5																																	

Transfers					Comments				
Released By	Date/Time	Received By	Date/Time						
<i>[Signature]</i>	5/8/19 1405	FedEx							
FedEx	5/9/19 900	J Pace	5/9/19 900						

Cooler Temperature on Receipt: -7 °C Custody Seal: Y or N Received on Ice: Y or N Samples Intact: Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

WO#: 20104023

PM: CMM

Due Date: 05/22/19

CLIENT: PASI-MINN



Sample Condition Upon

1000 Riverbend Blvd., Suite F
St. Rose, LA 70087

Pr

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 05-20-19/PA

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?"	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	1
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5
Samples Arrived within Hold Time:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13
	If No, was preservative added? <input type="checkbox"/> Yes <input type="checkbox"/> No If added record lot no.: HNO3 _____ H2SO4 _____	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	15

Client Notification/ Resolution:

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

May 24, 2019

David Hodson
Jacobs
155 Grand Ave
#800
Oakland, CA 94612

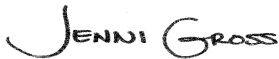
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10475101

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on May 16, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, Jacobs
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475101

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Vermont Certification #: VT-027053137

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10475101

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10475101001	Freeman-ML2-CE-051519	Water	05/15/19 11:20	05/16/19 08:40
10475101002	Freeman-ML2-M-051519	Water	05/15/19 11:25	05/16/19 08:40
10475101003	Freeman-ML2-I-051519	Water	05/15/19 11:30	05/16/19 08:40

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10475101

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10475101001	Freeman-ML2-CE-051519	EPA 6010D	IP	3	PASI-M
		EPA 8260B	DS2	83	PASI-M
10475101002	Freeman-ML2-M-051519	EPA 6010D	IP	3	PASI-M
		EPA 8260B	DS2	83	PASI-M
10475101003	Freeman-ML2-I-051519	EPA 6010D	IP	3	PASI-M
		EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475101

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10475101001	Freeman-ML2-CE-051519					
EPA 6010D	Iron	41.2J	ug/L	50.0	05/17/19 16:07	B
EPA 6010D	Manganese	17.6	ug/L	5.0	05/17/19 16:07	
EPA 6010D	Total Hardness by 2340B	18300	ug/L	3300	05/17/19 16:07	
10475101002	Freeman-ML2-M-051519					
EPA 6010D	Iron	59.6	ug/L	50.0	05/17/19 16:22	
EPA 6010D	Manganese	31.1	ug/L	5.0	05/17/19 16:22	
EPA 6010D	Total Hardness by 2340B	18500	ug/L	3300	05/17/19 16:22	
10475101003	Freeman-ML2-I-051519					
EPA 6010D	Iron	10900	ug/L	50.0	05/17/19 16:25	
EPA 6010D	Manganese	165	ug/L	5.0	05/17/19 16:25	
EPA 6010D	Total Hardness by 2340B	221000	ug/L	3300	05/17/19 16:25	
EPA 8260B	Bromodichloromethane	1.2	ug/L	0.50	05/24/19 01:50	
EPA 8260B	Carbon disulfide	1.3	ug/L	1.0	05/24/19 01:50	
EPA 8260B	Carbon tetrachloride	28.0	ug/L	0.50	05/24/19 01:50	
EPA 8260B	Chloroform	36.7	ug/L	1.0	05/24/19 01:50	
EPA 8260B	Dibromochloromethane	0.47J	ug/L	1.0	05/24/19 01:50	
EPA 8260B	Toluene	27.9	ug/L	0.50	05/24/19 01:50	
EPA 8260B	tert-Butyl Alcohol	2.7J	ug/L	10.0	05/24/19 01:50	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475101

Method: EPA 6010D

Description: 6010D MET ICP

Client: UPRR_Jacobs

Date: May 24, 2019

General Information:

3 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 606611

B: Analyte was detected in the associated method blank.

- BLANK for HBN 606611 [MPRP/927 (Lab ID: 3279064)]
- Iron

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475101

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: May 24, 2019

General Information:

3 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

QC Batch: 608106

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 3287054)
 - Chloroethane
- MS (Lab ID: 3287055)
 - Chloroethane
- MSD (Lab ID: 3287056)
 - Chloroethane

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 608106

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- LCS (Lab ID: 3287054)
 - Chloroethane

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475101

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: May 24, 2019

QC Batch: 608106

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10475457004

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 3287055)
 - Chloroethane
- MSD (Lab ID: 3287056)
 - Chloroethane

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3287055)
 - Acrolein
- MSD (Lab ID: 3287056)
 - Acrolein

Additional Comments:

Analyte Comments:

QC Batch: 608106

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3287053)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- Freeman-ML2-CE-051519 (Lab ID: 10475101001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- Freeman-ML2-I-051519 (Lab ID: 10475101003)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- Freeman-ML2-M-051519 (Lab ID: 10475101002)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3287054)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3287055)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3287056)
 - 1,2-Dichloroethene (Total)

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475101

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: May 24, 2019

Analyte Comments:

QC Batch: 608106

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- MSD (Lab ID: 3287056)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10475101

Sample: Freeman-ML2-CE-051519 Lab ID: 10475101001 Collected: 05/15/19 11:20 Received: 05/16/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010							
Iron	41.2J	ug/L	50.0	4.3	1	05/17/19 10:25	05/17/19 16:07	7439-89-6	B
Manganese	17.6	ug/L	5.0	0.22	1	05/17/19 10:25	05/17/19 16:07	7439-96-5	
Total Hardness by 2340B	18300	ug/L	3300	74.9	1	05/17/19 10:25	05/17/19 16:07		
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/24/19 01:03	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/24/19 01:03	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/24/19 01:03	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/24/19 01:03	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/24/19 01:03	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/24/19 01:03	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		05/24/19 01:03	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/24/19 01:03	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		05/24/19 01:03	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/24/19 01:03	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		05/24/19 01:03	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		05/24/19 01:03	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/24/19 01:03	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		05/24/19 01:03	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/24/19 01:03	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	1.0	0.22	1		05/24/19 01:03	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/24/19 01:03	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/24/19 01:03	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/24/19 01:03	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/24/19 01:03	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/24/19 01:03	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/24/19 01:03	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/24/19 01:03	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/24/19 01:03	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/24/19 01:03	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/24/19 01:03	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/24/19 01:03	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/24/19 01:03	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/24/19 01:03	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/24/19 01:03	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		05/24/19 01:03	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		05/24/19 01:03	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/24/19 01:03	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/24/19 01:03	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		05/24/19 01:03	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/24/19 01:03	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/24/19 01:03	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/24/19 01:03	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/24/19 01:03	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		05/24/19 01:03	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		05/24/19 01:03	56-23-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Project No.: 10475101

Sample: **Freeman-ML2-CE-051519** Lab ID: **10475101001** Collected: 05/15/19 11:20 Received: 05/16/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/24/19 01:03	108-90-7	
Chloroethane	<0.49	ug/L	4.0	0.49	1		05/24/19 01:03	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		05/24/19 01:03	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/24/19 01:03	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		05/24/19 01:03	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/24/19 01:03	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/24/19 01:03	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/24/19 01:03	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/24/19 01:03	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/24/19 01:03	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/24/19 01:03	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/24/19 01:03	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		05/24/19 01:03	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		05/24/19 01:03	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/24/19 01:03	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/24/19 01:03	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/24/19 01:03	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/24/19 01:03	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/24/19 01:03	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		05/24/19 01:03	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/24/19 01:03	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/24/19 01:03	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/24/19 01:03	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/24/19 01:03	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/24/19 01:03	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/24/19 01:03	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/24/19 01:03	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/24/19 01:03	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		05/24/19 01:03	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/24/19 01:03	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/24/19 01:03	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		05/24/19 01:03	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/24/19 01:03	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/24/19 01:03	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/24/19 01:03	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/24/19 01:03	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/24/19 01:03	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		05/24/19 01:03	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/24/19 01:03	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	96	%	75-136		1		05/24/19 01:03	17060-07-0	
Toluene-d8 (S)	102	%	75-125		1		05/24/19 01:03	2037-26-5	
4-Bromofluorobenzene (S)	95	%	75-125		1		05/24/19 01:03	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10475101

Sample: **Freeman-ML2-M-051519** Lab ID: **10475101002** Collected: 05/15/19 11:25 Received: 05/16/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010							
Iron	59.6	ug/L	50.0	4.3	1	05/17/19 10:25	05/17/19 16:22	7439-89-6	
Manganese	31.1	ug/L	5.0	0.22	1	05/17/19 10:25	05/17/19 16:22	7439-96-5	
Total Hardness by 2340B	18500	ug/L	3300	74.9	1	05/17/19 10:25	05/17/19 16:22		
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/24/19 01:27	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/24/19 01:27	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/24/19 01:27	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/24/19 01:27	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/24/19 01:27	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/24/19 01:27	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		05/24/19 01:27	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/24/19 01:27	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		05/24/19 01:27	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/24/19 01:27	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		05/24/19 01:27	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		05/24/19 01:27	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/24/19 01:27	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		05/24/19 01:27	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/24/19 01:27	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	1.0	0.22	1		05/24/19 01:27	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/24/19 01:27	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/24/19 01:27	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/24/19 01:27	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/24/19 01:27	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/24/19 01:27	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/24/19 01:27	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/24/19 01:27	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/24/19 01:27	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/24/19 01:27	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/24/19 01:27	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/24/19 01:27	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/24/19 01:27	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/24/19 01:27	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/24/19 01:27	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		05/24/19 01:27	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		05/24/19 01:27	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/24/19 01:27	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/24/19 01:27	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		05/24/19 01:27	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/24/19 01:27	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/24/19 01:27	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/24/19 01:27	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/24/19 01:27	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		05/24/19 01:27	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		05/24/19 01:27	56-23-5	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10475101

Sample: Freeman-ML2-M-051519 Lab ID: 10475101002 Collected: 05/15/19 11:25 Received: 05/16/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/24/19 01:27	108-90-7	
Chloroethane	<0.49	ug/L	4.0	0.49	1		05/24/19 01:27	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		05/24/19 01:27	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/24/19 01:27	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		05/24/19 01:27	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/24/19 01:27	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/24/19 01:27	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/24/19 01:27	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/24/19 01:27	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/24/19 01:27	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/24/19 01:27	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/24/19 01:27	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		05/24/19 01:27	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		05/24/19 01:27	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/24/19 01:27	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/24/19 01:27	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/24/19 01:27	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/24/19 01:27	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/24/19 01:27	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		05/24/19 01:27	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/24/19 01:27	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/24/19 01:27	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/24/19 01:27	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/24/19 01:27	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/24/19 01:27	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/24/19 01:27	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/24/19 01:27	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/24/19 01:27	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		05/24/19 01:27	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/24/19 01:27	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/24/19 01:27	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		05/24/19 01:27	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/24/19 01:27	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/24/19 01:27	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/24/19 01:27	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/24/19 01:27	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/24/19 01:27	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		05/24/19 01:27	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/24/19 01:27	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%	75-136		1		05/24/19 01:27	17060-07-0	
Toluene-d8 (S)	99	%	75-125		1		05/24/19 01:27	2037-26-5	
4-Bromofluorobenzene (S)	98	%	75-125		1		05/24/19 01:27	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10475101

Sample: **Freeman-ML2-I-051519** Lab ID: **10475101003** Collected: 05/15/19 11:30 Received: 05/16/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Iron	10900	ug/L	50.0	4.3	1	05/17/19 10:25	05/17/19 16:25	7439-89-6	
Manganese	165	ug/L	5.0	0.22	1	05/17/19 10:25	05/17/19 16:25	7439-96-5	
Total Hardness by 2340B	221000	ug/L	3300	74.9	1	05/17/19 10:25	05/17/19 16:25		
8260B MSV Low Level									
Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/24/19 01:50	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/24/19 01:50	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/24/19 01:50	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/24/19 01:50	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/24/19 01:50	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/24/19 01:50	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		05/24/19 01:50	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/24/19 01:50	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		05/24/19 01:50	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/24/19 01:50	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		05/24/19 01:50	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		05/24/19 01:50	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/24/19 01:50	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		05/24/19 01:50	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/24/19 01:50	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	1.0	0.22	1		05/24/19 01:50	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/24/19 01:50	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/24/19 01:50	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/24/19 01:50	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/24/19 01:50	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/24/19 01:50	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/24/19 01:50	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/24/19 01:50	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/24/19 01:50	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/24/19 01:50	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/24/19 01:50	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/24/19 01:50	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/24/19 01:50	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/24/19 01:50	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/24/19 01:50	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		05/24/19 01:50	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		05/24/19 01:50	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/24/19 01:50	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/24/19 01:50	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		05/24/19 01:50	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/24/19 01:50	74-97-5	
Bromodichloromethane	1.2	ug/L	0.50	0.22	1		05/24/19 01:50	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/24/19 01:50	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/24/19 01:50	74-83-9	
Carbon disulfide	1.3	ug/L	1.0	0.078	1		05/24/19 01:50	75-15-0	
Carbon tetrachloride	28.0	ug/L	0.50	0.19	1		05/24/19 01:50	56-23-5	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10475101

Sample: **Freeman-ML2-I-051519** Lab ID: **10475101003** Collected: 05/15/19 11:30 Received: 05/16/19 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/24/19 01:50	108-90-7	
Chloroethane	<0.49	ug/L	4.0	0.49	1		05/24/19 01:50	75-00-3	
Chloroform	36.7	ug/L	1.0	0.45	1		05/24/19 01:50	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/24/19 01:50	74-87-3	
Dibromochloromethane	0.47J	ug/L	1.0	0.12	1		05/24/19 01:50	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/24/19 01:50	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/24/19 01:50	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/24/19 01:50	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/24/19 01:50	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/24/19 01:50	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/24/19 01:50	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/24/19 01:50	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		05/24/19 01:50	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		05/24/19 01:50	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/24/19 01:50	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/24/19 01:50	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/24/19 01:50	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/24/19 01:50	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/24/19 01:50	109-99-9	
Toluene	27.9	ug/L	0.50	0.083	1		05/24/19 01:50	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/24/19 01:50	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/24/19 01:50	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/24/19 01:50	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/24/19 01:50	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/24/19 01:50	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/24/19 01:50	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/24/19 01:50	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/24/19 01:50	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		05/24/19 01:50	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/24/19 01:50	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/24/19 01:50	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		05/24/19 01:50	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/24/19 01:50	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/24/19 01:50	994-05-8	
tert-Butyl Alcohol	2.7J	ug/L	10.0	1.2	1		05/24/19 01:50	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/24/19 01:50	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/24/19 01:50	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		05/24/19 01:50	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/24/19 01:50	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	95	%	75-136		1		05/24/19 01:50	17060-07-0	
Toluene-d8 (S)	99	%	75-125		1		05/24/19 01:50	2037-26-5	
4-Bromofluorobenzene (S)	97	%	75-125		1		05/24/19 01:50	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475101

QC Batch: 606611

Analysis Method: EPA 6010D

QC Batch Method: EPA 3010

Analysis Description: 6010D Water

Associated Lab Samples: 10475101001, 10475101002, 10475101003

METHOD BLANK: 3279064

Matrix: Water

Associated Lab Samples: 10475101001, 10475101002, 10475101003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	ug/L	5.7J	50.0	4.3	05/17/19 16:02	
Manganese	ug/L	<0.22	5.0	0.22	05/17/19 16:02	

LABORATORY CONTROL SAMPLE: 3279065

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	20000	20300	101	80-120	
Manganese	ug/L	1000	1030	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3279066 3279067

Parameter	Units	10475101001		3279067		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Iron	ug/L	41.2J	20000	19800	20000	99	100	75-125	1	20	
Manganese	ug/L	17.6	1000	1020	1040	100	102	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475101

QC Batch: 608106 Analysis Method: EPA 8260B
 QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
 Associated Lab Samples: 10475101001, 10475101002, 10475101003

METHOD BLANK: 3287053 Matrix: Water

Associated Lab Samples: 10475101001, 10475101002, 10475101003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	05/24/19 00:39	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	05/24/19 00:39	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	05/24/19 00:39	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	05/24/19 00:39	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	05/24/19 00:39	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	05/24/19 00:39	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	05/24/19 00:39	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	05/24/19 00:39	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	05/24/19 00:39	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	05/24/19 00:39	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	05/24/19 00:39	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	05/24/19 00:39	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	05/24/19 00:39	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	05/24/19 00:39	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	05/24/19 00:39	
1,2-Dichloroethane	ug/L	<0.22	1.0	0.22	05/24/19 00:39	MN
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	05/24/19 00:39	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	05/24/19 00:39	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	05/24/19 00:39	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	05/24/19 00:39	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	05/24/19 00:39	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	05/24/19 00:39	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	05/24/19 00:39	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	05/24/19 00:39	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	05/24/19 00:39	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	05/24/19 00:39	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	05/24/19 00:39	
2-Hexanone	ug/L	<0.88	5.0	0.88	05/24/19 00:39	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	05/24/19 00:39	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	05/24/19 00:39	
Acetone	ug/L	<9.2	20.0	9.2	05/24/19 00:39	
Acrolein	ug/L	<1.2	10.0	1.2	05/24/19 00:39	
Acrylonitrile	ug/L	<0.91	10.0	0.91	05/24/19 00:39	
Benzene	ug/L	<0.10	0.50	0.10	05/24/19 00:39	
Bromobenzene	ug/L	<0.21	0.50	0.21	05/24/19 00:39	
Bromochloromethane	ug/L	<0.27	1.0	0.27	05/24/19 00:39	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	05/24/19 00:39	
Bromoform	ug/L	<0.80	4.0	0.80	05/24/19 00:39	
Bromomethane	ug/L	<1.8	4.0	1.8	05/24/19 00:39	
Carbon disulfide	ug/L	<0.078	1.0	0.078	05/24/19 00:39	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	05/24/19 00:39	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475101

METHOD BLANK: 3287053

Matrix: Water

Associated Lab Samples: 10475101001, 10475101002, 10475101003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	05/24/19 00:39	
Chloroethane	ug/L	<0.49	4.0	0.49	05/24/19 00:39	MN
Chloroform	ug/L	<0.45	1.0	0.45	05/24/19 00:39	
Chloromethane	ug/L	<0.16	4.0	0.16	05/24/19 00:39	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	05/24/19 00:39	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	05/24/19 00:39	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	05/24/19 00:39	MN
Dibromomethane	ug/L	<0.16	1.0	0.16	05/24/19 00:39	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	05/24/19 00:39	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	05/24/19 00:39	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	05/24/19 00:39	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	05/24/19 00:39	
Ethylbenzene	ug/L	<0.14	0.50	0.14	05/24/19 00:39	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	05/24/19 00:39	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	05/24/19 00:39	
m&p-Xylene	ug/L	<0.31	1.0	0.31	05/24/19 00:39	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	05/24/19 00:39	
Methylene Chloride	ug/L	<0.98	4.0	0.98	05/24/19 00:39	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	05/24/19 00:39	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	05/24/19 00:39	
Naphthalene	ug/L	<0.48	1.0	0.48	05/24/19 00:39	
o-Xylene	ug/L	<0.16	0.50	0.16	05/24/19 00:39	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	05/24/19 00:39	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	05/24/19 00:39	
Styrene	ug/L	<0.19	0.50	0.19	05/24/19 00:39	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	05/24/19 00:39	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	05/24/19 00:39	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	05/24/19 00:39	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	05/24/19 00:39	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	05/24/19 00:39	
Toluene	ug/L	<0.083	0.50	0.083	05/24/19 00:39	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	05/24/19 00:39	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	05/24/19 00:39	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	05/24/19 00:39	
Trichloroethene	ug/L	<0.15	0.40	0.15	05/24/19 00:39	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	05/24/19 00:39	
Vinyl acetate	ug/L	<1.1	10.0	1.1	05/24/19 00:39	
Vinyl chloride	ug/L	<0.092	0.20	0.092	05/24/19 00:39	
Xylene (Total)	ug/L	<0.31	1.5	0.31	05/24/19 00:39	
1,2-Dichloroethane-d4 (S)	%	97	75-136		05/24/19 00:39	
4-Bromofluorobenzene (S)	%	96	75-125		05/24/19 00:39	
Toluene-d8 (S)	%	100	75-125		05/24/19 00:39	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475101

LABORATORY CONTROL SAMPLE: 3287054

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	17.7	89	68-141	
1,1,1-Trichloroethane	ug/L	20	17.0	85	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	17.4	87	73-125	
1,1,2-Trichloroethane	ug/L	20	18.9	95	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	17.1	85	69-132	
1,1-Dichloroethane	ug/L	20	17.1	85	73-125	
1,1-Dichloroethene	ug/L	20	17.0	85	71-126	
1,1-Dichloropropene	ug/L	20	16.7	84	73-126	
1,2,3-Trichlorobenzene	ug/L	20	18.3	92	72-126	
1,2,3-Trichloropropane	ug/L	20	18.2	91	75-126	
1,2,4-Trichlorobenzene	ug/L	20	17.8	89	71-134	
1,2,4-Trimethylbenzene	ug/L	20	18.6	93	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	47.4	95	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	18.3	91	75-129	
1,2-Dichlorobenzene	ug/L	20	18.3	91	75-129	
1,2-Dichloroethane	ug/L	20	18.1	90	75-125	
1,2-Dichloroethene (Total)	ug/L	40	35.3	88	74-125	N2
1,2-Dichloropropane	ug/L	20	18.7	94	75-125	
1,3,5-Trimethylbenzene	ug/L	20	18.2	91	75-127	
1,3-Dichlorobenzene	ug/L	20	18.1	91	75-126	
1,3-Dichloropropane	ug/L	20	18.2	91	75-125	
1,4-Dichlorobenzene	ug/L	20	17.5	87	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	359	90	72-129	
2,2,4-Trimethylpentane	ug/L	20	16.1	81	72-128	N2
2,2-Dichloropropane	ug/L	20	16.9	85	65-138	
2-Butanone (MEK)	ug/L	100	94.7	95	59-144	
2-Chlorotoluene	ug/L	20	17.3	86	75-127	
2-Hexanone	ug/L	100	83.9	84	73-134	
4-Chlorotoluene	ug/L	20	17.5	88	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	89.9	90	62-141	
Acetone	ug/L	100	113	113	60-137	
Acrolein	ug/L	200	214	107	60-141	
Acrylonitrile	ug/L	200	179	89	75-129	
Benzene	ug/L	20	17.5	87	73-125	
Bromobenzene	ug/L	20	17.5	88	73-125	
Bromochloromethane	ug/L	20	18.8	94	75-135	
Bromodichloromethane	ug/L	20	18.3	91	75-125	
Bromoform	ug/L	20	18.4	92	67-136	
Bromomethane	ug/L	20	23.9	119	30-150	
Carbon disulfide	ug/L	20	16.9	84	47-137	
Carbon tetrachloride	ug/L	20	17.1	85	75-125	
Chlorobenzene	ug/L	20	17.7	89	75-125	
Chloroethane	ug/L	20	28.2	141	63-136	CH,L3
Chloroform	ug/L	20	17.2	86	73-128	
Chloromethane	ug/L	20	16.8	84	55-130	
cis-1,2-Dichloroethene	ug/L	20	18.3	91	75-125	
cis-1,3-Dichloropropene	ug/L	20	20.3	101	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475101

LABORATORY CONTROL SAMPLE: 3287054

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	20.6	103	75-125	
Dibromomethane	ug/L	20	20.5	102	75-125	
Dichlorodifluoromethane	ug/L	20	17.7	89	63-132	
Dichlorofluoromethane	ug/L	20	18.7	93	68-127	N2
Diisopropyl ether	ug/L	20	17.2	86	71-131	
Ethyl-tert-butyl ether	ug/L	20	18.4	92	75-125	
Ethylbenzene	ug/L	20	17.5	88	75-125	
Hexachloro-1,3-butadiene	ug/L	20	18.4	92	72-134	
Isopropylbenzene (Cumene)	ug/L	20	17.9	90	75-125	
m&p-Xylene	ug/L	40	35.7	89	75-126	
Methyl-tert-butyl ether	ug/L	20	17.8	89	75-125	
Methylene Chloride	ug/L	20	18.4	92	70-125	
n-Butylbenzene	ug/L	20	17.5	88	75-126	
n-Propylbenzene	ug/L	20	17.3	87	73-127	
Naphthalene	ug/L	20	17.9	90	63-128	
o-Xylene	ug/L	20	17.8	89	75-128	
p-Isopropyltoluene	ug/L	20	18.6	93	75-125	
sec-Butylbenzene	ug/L	20	18.0	90	75-126	
Styrene	ug/L	20	18.8	94	75-125	
tert-Amylmethyl ether	ug/L	20	17.4	87	75-125	
tert-Butyl Alcohol	ug/L	200	193	96	75-130	
tert-Butylbenzene	ug/L	20	18.0	90	75-131	
Tetrachloroethene	ug/L	20	17.8	89	74-125	
Tetrahydrofuran	ug/L	200	190	95	64-138	
Toluene	ug/L	20	17.1	85	74-125	
trans-1,2-Dichloroethene	ug/L	20	17.0	85	68-128	
trans-1,3-Dichloropropene	ug/L	20	19.7	99	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	42.1	84	60-127	
Trichloroethene	ug/L	20	19.0	95	75-127	
Trichlorofluoromethane	ug/L	20	19.7	98	72-133	
Vinyl acetate	ug/L	20	17.2	86	61-129	
Vinyl chloride	ug/L	20	18.9	95	75-128	
Xylene (Total)	ug/L	60	53.5	89	75-125	
1,2-Dichloroethane-d4 (S)	%			98	75-136	
4-Bromofluorobenzene (S)	%			98	75-125	
Toluene-d8 (S)	%			98	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3287055 3287056

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10475457004	Result	Spike Conc.	Spike Conc.								
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	20.0	20.3	100	102	75-140	2	30		
1,1,1-Trichloroethane	ug/L	ND	20	20	19.8	19.2	99	96	74-136	3	30		
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	18.5	19.2	92	96	66-134	4	30		
1,1,2-Trichloroethane	ug/L	ND	20	20	20.2	19.3	101	96	75-126	5	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475101

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3287055												3287056	
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10475457004	Result	Spike Conc.	MSD Spike Conc.								
1,1,2-Trichlorotrifluoroethane	ug/L	ND	20	20	20.9	21.0	105	105	65-146	0	30		
1,1-Dichloroethane	ug/L	ND	20	20	19.2	18.6	96	93	68-132	3	30		
1,1-Dichloroethene	ug/L	ND	20	20	20.4	19.1	102	95	66-139	7	30		
1,1-Dichloropropene	ug/L	ND	20	20	20.4	18.9	102	94	67-134	8	30		
1,2,3-Trichlorobenzene	ug/L	ND	20	20	20.3	22.8	102	114	67-129	11	30		
1,2,3-Trichloropropane	ug/L	ND	20	20	18.4	19.6	92	98	69-128	6	30		
1,2,4-Trichlorobenzene	ug/L	ND	20	20	20.0	21.7	100	108	65-140	8	30		
1,2,4-Trimethylbenzene	ug/L	ND	20	20	21.2	23.1	106	116	71-133	9	30		
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	48.1	52.1	96	104	54-138	8	30		
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	19.5	19.3	97	97	68-125	1	30		
1,2-Dichlorobenzene	ug/L	ND	20	20	19.7	21.7	98	109	74-136	10	30		
1,2-Dichloroethane	ug/L	1.1	20	20	18.2	19.2	86	91	68-125	5	30		
1,2-Dichloroethene (Total)	ug/L	ND	40	40	40.8	38.6	102	97	71-126	5	30	N2	
1,2-Dichloropropane	ug/L	ND	20	20	19.4	18.7	97	94	67-125	4	30		
1,3,5-Trimethylbenzene	ug/L	ND	20	20	20.8	23.2	104	116	68-137	11	30		
1,3-Dichlorobenzene	ug/L	ND	20	20	20.0	21.5	100	108	75-131	7	30		
1,3-Dichloropropane	ug/L	ND	20	20	19.4	18.9	97	95	71-125	2	30		
1,4-Dichlorobenzene	ug/L	ND	20	20	19.2	20.8	96	104	74-126	8	30		
1,4-Dioxane (p-Dioxane)	ug/L	ND	400	400	375	403	94	101	68-125	7	30		
2,2,4-Trimethylpentane	ug/L	ND	20	20	18.6	17.0	93	85	54-129	9	30	N2	
2,2-Dichloropropane	ug/L	ND	20	20	19.4	18.4	97	92	69-139	5	30		
2-Butanone (MEK)	ug/L	ND	100	100	81.4	87.2	81	87	54-144	7	30		
2-Chlorotoluene	ug/L	ND	20	20	19.7	21.3	98	107	75-134	8	30		
2-Hexanone	ug/L	ND	100	100	80.7	86.8	81	87	58-137	7	30		
4-Chlorotoluene	ug/L	ND	20	20	19.7	20.8	99	104	72-133	5	30		
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	91.5	96.4	91	96	60-129	5	30		
Acetone	ug/L	ND	100	100	88.4	92.0	88	92	62-132	4	30		
Acrolein	ug/L	ND	200	200	426	420	213	210	30-150	1	30	M1	
Acrylonitrile	ug/L	ND	200	200	178	179	89	89	68-125	1	30		
Benzene	ug/L	ND	20	20	19.3	18.4	97	92	68-125	5	30		
Bromobenzene	ug/L	ND	20	20	19.4	19.9	97	100	73-126	3	30		
Bromochloromethane	ug/L	ND	20	20	20.7	19.1	103	96	66-143	8	30		
Bromodichloromethane	ug/L	ND	20	20	19.5	18.7	98	94	74-125	4	30		
Bromoform	ug/L	ND	20	20	19.3	20.0	96	100	64-134	4	30		
Bromomethane	ug/L	ND	20	20	26.6	25.5	133	127	30-150	5	30		
Carbon disulfide	ug/L	ND	20	20	21.5	19.1	107	96	43-147	12	30		
Carbon tetrachloride	ug/L	ND	20	20	20.2	20.1	101	101	71-143	0	30		
Chlorobenzene	ug/L	ND	20	20	19.4	19.4	97	97	75-125	0	30		
Chloroethane	ug/L	ND	20	20	28.7	26.6	144	133	75-129	8	30	CH ₄ M0	
Chloroform	ug/L	ND	20	20	18.4	17.8	92	89	66-132	3	30		
Chloromethane	ug/L	ND	20	20	19.6	18.2	98	91	53-137	8	30		
cis-1,2-Dichloroethene	ug/L	ND	20	20	20.4	19.5	102	98	67-133	4	30		
cis-1,3-Dichloropropene	ug/L	ND	20	20	21.4	20.5	107	103	66-125	4	30		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475101

Parameter	Units	3287055		3287056		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		10475457004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Dibromochloromethane	ug/L	ND	20	20	21.7	22.5	108	113	62-132	4	30		
Dibromomethane	ug/L	ND	20	20	20.9	21.2	104	106	67-125	2	30		
Dichlorodifluoromethane	ug/L	ND	20	20	20.5	19.9	102	100	71-142	3	30		
Dichlorofluoromethane	ug/L	ND	20	20	22.3	20.9	112	104	70-131	7	30	N2	
Diisopropyl ether	ug/L	ND	20	20	18.1	18.2	91	91	63-131	0	30		
Ethyl-tert-butyl ether	ug/L	ND	20	20	19.0	19.1	95	96	66-128	1	30		
Ethylbenzene	ug/L	ND	20	20	20.2	20.9	101	105	74-126	4	30		
Hexachloro-1,3-butadiene	ug/L	ND	20	20	22.4	21.9	112	110	68-143	2	30		
Isopropylbenzene (Cumene)	ug/L	ND	20	20	21.2	23.2	106	116	74-130	9	30		
m&p-Xylene	ug/L	ND	40	40	41.5	43.6	104	109	69-132	5	30		
Methyl-tert-butyl ether	ug/L	ND	20	20	18.5	18.5	92	92	65-131	0	30		
Methylene Chloride	ug/L	ND	20	20	19.3	18.0	97	90	57-125	7	30		
n-Butylbenzene	ug/L	ND	20	20	21.4	21.7	107	109	71-131	1	30		
n-Propylbenzene	ug/L	ND	20	20	20.1	21.9	101	110	67-138	9	30		
Naphthalene	ug/L	ND	20	20	19.0	22.1	95	111	60-130	15	30		
o-Xylene	ug/L	ND	20	20	20.2	21.4	101	107	69-131	5	30		
p-Isopropyltoluene	ug/L	ND	20	20	22.1	23.2	110	116	72-133	5	30		
sec-Butylbenzene	ug/L	ND	20	20	21.3	22.4	106	112	73-134	5	30		
Styrene	ug/L	ND	20	20	21.2	21.9	106	109	72-125	3	30		
tert-Amylmethyl ether	ug/L	ND	20	20	18.1	18.3	90	92	67-125	1	30		
tert-Butyl Alcohol	ug/L	ND	200	200	196	193	98	96	64-137	2	30		
tert-Butylbenzene	ug/L	ND	20	20	21.0	22.6	105	113	70-143	7	30		
Tetrachloroethene	ug/L	ND	20	20	21.5	23.1	107	115	72-129	7	30		
Tetrahydrofuran	ug/L	ND	200	200	188	195	94	98	66-128	4	30		
Toluene	ug/L	ND	20	20	19.1	19.5	96	97	73-125	2	30		
trans-1,2-Dichloroethene	ug/L	ND	20	20	20.4	19.1	102	96	62-137	7	30		
trans-1,3-Dichloropropene	ug/L	ND	20	20	21.6	20.5	108	103	61-136	5	30		
trans-1,4-Dichloro-2-butene	ug/L	ND	50	50	40.9	43.0	82	86	45-128	5	30		
Trichloroethene	ug/L	ND	20	20	21.6	21.0	108	105	74-132	2	30		
Trichlorofluoromethane	ug/L	ND	20	20	23.0	22.6	115	113	75-139	2	30		
Vinyl acetate	ug/L	ND	20	20	17.0	16.7	85	84	51-135	2	30		
Vinyl chloride	ug/L	ND	20	20	22.9	22.1	115	110	68-146	4	30		
Xylene (Total)	ug/L	ND	60	60	61.8	65.0	103	108	67-137	5	30		
1,2-Dichloroethane-d4 (S)	%						100	96	75-136				
4-Bromofluorobenzene (S)	%						99	99	75-125				
Toluene-d8 (S)	%						98	97	75-125				

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475101

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

WORKORDER QUALIFIERS

WO: 10475101

[1] Samples in this workorder were received in the laboratory without an associated trip blank.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

CH The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475101

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475101

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10475101001	Freeman-ML2-CE-051519	EPA 3010	606611	EPA 6010D	606780
10475101002	Freeman-ML2-M-051519	EPA 3010	606611	EPA 6010D	606780
10475101003	Freeman-ML2-I-051519	EPA 3010	606611	EPA 6010D	606780
10475101001	Freeman-ML2-CE-051519	EPA 8260B	608106		
10475101002	Freeman-ML2-M-051519	EPA 8260B	608106		
10475101003	Freeman-ML2-I-051519	EPA 8260B	608106		

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CHAIN-OF-CUSTODY / Analytical Request Doc

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be

WO# : 10475101



Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:			
Company: CH2M Hill		Report To: Mark Ochsner, Brad Ostapkowicz		Attention: Anne Walsh		Regulatory Agency	
Address: 999 W. Riverside Ave, Suite 500 Spokane, WA 99201		Copy To: Steve Demus, Jonathan Espinoza		Company: UPRR		State / Location	
Email:		Copy To: David Hodson, UPRR-Sysdat@ghd.com		Address: 1400 W. 52nd Ave, Denver, CO 80221		WA / Freeman	
Phone:		Purchase Order # PEDD# 1497		Pace Quote: Contract# 758938			
Requested Due Date: <u>10 Day Standard</u>		Project Name: Freeman WA-Grain Handling Facility		Pace Project Manager: Jennifer Gross			
		Project #: 1497		Pace Profile #: 36447 / 4			

ITEM #	SAMPLE ID <small>One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique</small>	MATRIX <small>Drinking Water DW Water WT Waste Water WW Product P Soil/Solid SL Oil OL Wipe WP Air AR Other OT Tissue TS</small>	CODE <small>DW WT WW P SL OL WP AR OT TS</small>	MATRX CODE <small>(see valid codes to left)</small>	SAMPLE TYPE <small>(G-GRAB C-COMP)</small>	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Analysis Test	Requested Analysis Filtered (Y/N)											MSMSD Requested	SAMPLE CONDITIONS
						DATE	TIME			Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other		Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, Nitrate 300.0	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitro 353.2	4500 Total Phosphorus	6010 Total Iron		
1	Freeman-MLZ-CE-051519				WT6	2019	5/15	1120	4		X	X																RTSS Total Fe, Mn, hardness	001
2	Freeman-MLZ-M-051519							1125	4		X	X																	002
3	Freeman-MLZ-I-051519							1130	4		X	X																	003

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Short hold analyses are in bold	JT Li / Jacobs	5/15/19	1300	Eng Yra	5/16/19	0840:09	Y N Y
*Field filtered by client							

SAMPLER NAME AND SIGNATURE			TEMP in C	Received on ice (Y/N)	Custody Sealed (Y/N)	Cooler Used (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	Jonathan Espinoza						
SIGNATURE of SAMPLER:	JT Li	DATE Signed: 5/15/19					

Sample Condition Upon Receipt Client Name: CH2M Hill Project #: **WO#: 10475101**

Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception

Tracking Number: 4886 7752 7092

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other: _____ Temp Blank? Yes No

Thermometer: T1(0461) T2(1336) T3(0459)
 T4(0254) T5(0489) Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: _____ °C Average Corrected Temp (no temp blank only): 0.9 °C See Exceptions

Correction Factor: Time Cooler Temp Corrected w/temp blank: _____ °C

USDA Regulated Soil: (N/A, water sample/Other: _____) Date/Initials of Person Examining Contents: FE 5/16/19

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

		COMMENTS:
Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: See Exception <input type="checkbox"/>
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other		
All containers needing acid/base preservation have been checked?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
Exceptions: <u>VOA</u> Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No See Exception <input type="checkbox"/> Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No pH Paper Lot# <input type="checkbox"/>
		Res. Chlorine 0-6 Roll <u>20399</u> 0-6 Strip 0-14 Strip
Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. See Exception <input type="checkbox"/>
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): <u>NA</u>

CLIENT NOTIFICATION/RESOLUTION Field Data Required? Yes No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: JENNI Gross Date: 05/17/19

Note: Whenever there is a discrepancy affecting North Carolina samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

May 29, 2019

David Hodson
Jacobs
155 Grand Ave
#800
Oakland, CA 94612

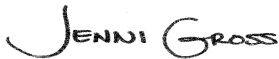
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10475648

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on May 21, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, Jacobs
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10475648

Minnesota Certification IDs

<p>1700 Elm Street SE, Minneapolis, MN 55414-2485 A2LA Certification #: 2926.01 Alabama Certification #: 40770 Alaska Contaminated Sites Certification #: 17-009 Alaska DW Certification #: MN00064 Arizona Certification #: AZ0014 Arkansas DW Certification #: MN00064 Arkansas WW Certification #: 88-0680 California Certification #: 2929 CNMI Saipan Certification #: MP0003 Colorado Certification #: MN00064 Connecticut Certification #: PH-0256 EPA Region 8+Wyoming DW Certification #: via MN 027-053-137 Florida Certification #: E87605 Georgia Certification #: 959 Guam EPA Certification #: MN00064 Hawaii Certification #: MN00064 Idaho Certification #: MN00064 Illinois Certification #: 200011 Indiana Certification #: C-MN-01 Iowa Certification #: 368 Kansas Certification #: E-10167 Kentucky DW Certification #: 90062 Kentucky WW Certification #: 90062 Louisiana DEQ Certification #: 03086 Louisiana DW Certification #: MN00064 Maine Certification #: MN00064 Maryland Certification #: 322 Massachusetts Certification #: M-MN064 Michigan Certification #: 9909 Minnesota Certification #: 027-053-137</p>	<p>Minnesota Dept of Ag Certification #: via MN 027-053-137 Minnesota Petrofund Certification #: 1240 Mississippi Certification #: MN00064 Missouri Certification #: 10100 Montana Certification #: CERT0092 Nebraska Certification #: NE-OS-18-06 Nevada Certification #: MN00064 New Hampshire Certification #: 2081 New Jersey Certification #: MN002 New York Certification #: 11647 North Carolina DW Certification #: 27700 North Carolina WW Certification #: 530 North Dakota Certification #: R-036 Ohio DW Certification #: 41244 Ohio VAP Certification #: CL101 Oklahoma Certification #: 9507 Oregon Primary Certification #: MN300001 Oregon Secondary Certification #: MN200001 Pennsylvania Certification #: 68-00563 Puerto Rico Certification #: MN00064 South Carolina Certification #: 74003001 Tennessee Certification #: TN02818 Texas Certification #: T104704192 Utah Certification #: MN00064 Vermont Certification #: VT-027053137 Virginia Certification #: 460163 Washington Certification #: C486 West Virginia DEP Certification #: 382 West Virginia DW Certification #: 9952 C Wisconsin Certification #: 999407970 Wyoming UST Certification #: via A2LA 2926.01</p>
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Virginia Minnesota Certification ID's

<p>315 Chestnut Street, Virginia, MN 55792 Montana Certificate #CERT0103 Alaska Certification UST-107 Minnesota Dept of Health Certification #: 027-137-445</p>	<p>North Dakota Certification: # R-203 Wisconsin DNR Certification #: 998027470 WA Department of Ecology Lab ID# C1007</p>
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New Orleans Certification IDs

<p>California Env. Lab Accreditation Program Branch: 11277CA Florida Department of Health (NELAC): E87595 Illinois Environmental Protection Agency: 0025721 Kansas Department of Health and Environment (NELAC): E-10266 Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006</p>	<p>Pennsylvania Dept. of Env Protection (NELAC): 68-04202 Texas Commission on Env. Quality (NELAC): T104704405-09-TX U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119 Commonwealth of Virginia (TNI): 480246</p>
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REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10475648001	RC04-282-292.5-051819	Water	05/18/19 14:15	05/21/19 08:45
10475648002	RC04-282-292.5-051819(2)	Water	05/18/19 15:15	05/21/19 08:45
10475648003	TB-051819	Water	05/18/19 08:00	05/21/19 08:45
10475648004	Potable Water	Water	05/19/19 09:30	05/21/19 08:45
10475648005	Potable Water-Filtered	Water	05/19/19 09:35	05/21/19 08:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10475648001	RC04-282-292.5-051819	RSK 175	AJR	3	PASI-M
		EPA 6010D	IP	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JFP	1	PASI-M
		SM 4500-S-2 D	SMS2	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	KEO	1	PASI-M
		EPA 410.4	KEO	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10475648002	RC04-282-292.5-051819(2)	RSK 175	AJR	3	PASI-M
		EPA 6010D	IP	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JFP	1	PASI-M
		SM 4500-S-2 D	SMS2	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	KEO	1	PASI-M
		EPA 410.4	KEO	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10475648003	TB-051819	EPA 8260B	DS2	83	PASI-M
10475648004	Potable Water	EPA 8260B	DS2	83	PASI-M
10475648005	Potable Water-Filtered	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10475648001	RC04-282-292.5-051819					
EPA 6010D	Barium, Dissolved	39.6	ug/L	10.0	05/24/19 16:02	
EPA 6010D	Beryllium, Dissolved	0.47J	ug/L	5.0	05/24/19 16:02	
EPA 6010D	Cadmium, Dissolved	0.46J	ug/L	3.0	05/24/19 16:02	
EPA 6010D	Chromium, Dissolved	1.0J	ug/L	10.0	05/24/19 16:02	B
EPA 6010D	Cobalt, Dissolved	0.52J	ug/L	10.0	05/24/19 16:02	
EPA 6010D	Copper, Dissolved	1.6J	ug/L	10.0	05/24/19 16:02	
EPA 6010D	Lead, Dissolved	2.3J	ug/L	10.0	05/24/19 16:02	
EPA 6010D	Molybdenum, Dissolved	5.9J	ug/L	15.0	05/24/19 16:02	
EPA 6010D	Nickel, Dissolved	2.0J	ug/L	20.0	05/24/19 16:02	
EPA 6010D	Vanadium, Dissolved	2.6J	ug/L	15.0	05/24/19 16:02	B
EPA 6010D	Zinc, Dissolved	190	ug/L	20.0	05/24/19 16:02	
EPA 8260B	Toluene	5.7	ug/L	0.50	05/25/19 15:06	
SM 2320B	Alkalinity, Total as CaCO3	161	mg/L	5.0	05/28/19 13:18	
SM 2540C	Total Dissolved Solids	269	mg/L	10.0	05/24/19 08:48	
SM 4500-S-2 D	Sulfide, Total	0.014J	mg/L	0.020	05/23/19 11:23	
EPA 300.0	Chloride	2.2	mg/L	1.2	05/21/19 17:55	
EPA 300.0	Sulfate	11.5	mg/L	1.2	05/21/19 17:55	
SM 5310C	Total Organic Carbon	2.6	mg/L	1.0	05/23/19 16:01	
10475648002	RC04-282-292.5-051819(2)					
EPA 6010D	Arsenic, Dissolved	4.8J	ug/L	20.0	05/24/19 16:17	
EPA 6010D	Barium, Dissolved	40.1	ug/L	10.0	05/24/19 16:17	
EPA 6010D	Beryllium, Dissolved	0.57J	ug/L	5.0	05/24/19 16:17	
EPA 6010D	Cadmium, Dissolved	0.58J	ug/L	3.0	05/24/19 16:17	
EPA 6010D	Chromium, Dissolved	1.2J	ug/L	10.0	05/24/19 16:17	B
EPA 6010D	Cobalt, Dissolved	0.76J	ug/L	10.0	05/24/19 16:17	
EPA 6010D	Copper, Dissolved	1.5J	ug/L	10.0	05/24/19 16:17	
EPA 6010D	Molybdenum, Dissolved	6.4J	ug/L	15.0	05/24/19 16:17	
EPA 6010D	Nickel, Dissolved	1.6J	ug/L	20.0	05/24/19 16:17	
EPA 6010D	Vanadium, Dissolved	1.4J	ug/L	15.0	05/24/19 16:17	B
EPA 6010D	Zinc, Dissolved	16.1J	ug/L	20.0	05/24/19 16:17	B
EPA 8260B	Toluene	0.35J	ug/L	0.50	05/25/19 15:30	
SM 2320B	Alkalinity, Total as CaCO3	169	mg/L	5.0	05/28/19 13:22	
SM 2540C	Total Dissolved Solids	219	mg/L	10.0	05/24/19 08:48	
EPA 300.0	Chloride	1.8	mg/L	1.2	05/21/19 18:11	
EPA 300.0	Sulfate	5.5	mg/L	1.2	05/21/19 18:11	
SM 5310C	Total Organic Carbon	0.72J	mg/L	1.0	05/23/19 16:18	
10475648005	Potable Water-Filtered					
EPA 8260B	Chlorobenzene	0.68	ug/L	0.50	05/25/19 14:19	
EPA 8260B	Toluene	0.095J	ug/L	0.50	05/25/19 14:19	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

Method: RSK 175

Description: RSK 175 GCV Headspace

Client: UPRR_Jacobs

Date: May 29, 2019

General Information:

2 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

Method: EPA 6010D

Description: 6010D MET ICP, Dissolved

Client: UPRR_Jacobs

Date: May 29, 2019

General Information:

2 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

QC Batch: 607812

CU: The continuing calibration for this analyte is above laboratory acceptance limits. Analyte was not detected above the reporting limit in any of the associated samples..

- LCS (Lab ID: 3285812)
 - Arsenic, Dissolved
 - Thallium, Dissolved
- MS (Lab ID: 3285813)
 - Arsenic, Dissolved
 - Thallium, Dissolved
- MSD (Lab ID: 3285814)
 - Arsenic, Dissolved
 - Thallium, Dissolved

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 607812

B: Analyte was detected in the associated method blank.

- BLANK for HBN 607812 [MPRP/929 (Lab ID: 3285811)]
 - Chromium, Dissolved
 - Vanadium, Dissolved
 - Zinc, Dissolved

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10475648

Method: EPA 6010D
Description: 6010D MET ICP, Dissolved
Client: UPRR_Jacobs
Date: May 29, 2019

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

Method: EPA 7470A

Description: 7470A Mercury, Dissolved

Client: UPRR_Jacobs

Date: May 29, 2019

General Information:

2 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: May 29, 2019

General Information:

5 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 608436

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10475457011

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3289002)
 - Acrolein
 - Chloroethane
- MSD (Lab ID: 3289003)
 - Acrolein
 - Chloroethane

R1: RPD value was outside control limits.

- MSD (Lab ID: 3289003)
 - Chloromethane

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: May 29, 2019

Analyte Comments:

QC Batch: 608436

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3289000)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3289001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3289002)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3289003)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- Potable Water (Lab ID: 10475648004)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- Potable Water-Filtered (Lab ID: 10475648005)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- RC04-282-292.5-051819 (Lab ID: 10475648001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- RC04-282-292.5-051819(2) (Lab ID: 10475648002)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- TB-051819 (Lab ID: 10475648003)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

Method: SM 2320B

Description: 2320B Alkalinity

Client: UPRR_Jacobs

Date: May 29, 2019

General Information:

2 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 608534

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10474929008,10474929015

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3289532)
 - Alkalinity, Total as CaCO₃
- MSD (Lab ID: 3289533)
 - Alkalinity, Total as CaCO₃

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

Method: SM 2540C

Description: 2540C Total Dissolved Solids

Client: UPRR_Jacobs

Date: May 29, 2019

General Information:

2 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

Method: SM 4500-S-2 D

Description: 4500S2D Sulfide, Total

Client: UPRR_Jacobs

Date: May 29, 2019

General Information:

2 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 143203

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 20105197001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 627538)
- Sulfide, Total

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

Method: EPA 300.0

Description: 300.0 IC Anions

Client: UPRR_Jacobs

Date: May 29, 2019

General Information:

2 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

H3: Sample was received or analysis requested beyond the recognized method holding time.

- RC04-282-292.5-051819 (Lab ID: 10475648001)
- RC04-282-292.5-051819(2) (Lab ID: 10475648002)

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 607399

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10475692001,10475692002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3283596)
 - Sulfate
- MS (Lab ID: 3283598)
 - Sulfate
- MSD (Lab ID: 3283599)
 - Sulfate

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

Method: EPA 353.2

Description: 353.2 Nitrate + Nitrite

Client: UPRR_Jacobs

Date: May 29, 2019

General Information:

2 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

Method: EPA 410.4

Description: 410.4 COD

Client: UPRR_Jacobs

Date: May 29, 2019

General Information:

2 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

Method: SM 5310C

Description: 5310C TOC

Client: UPRR_Jacobs

Date: May 29, 2019

General Information:

2 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10475648

Sample: RC04-282-292.5-051819 Lab ID: 10475648001 Collected: 05/18/19 14:15 Received: 05/21/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace									
Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		05/21/19 18:42	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		05/21/19 18:42	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		05/21/19 18:42	74-85-1	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	05/23/19 07:06	05/24/19 16:02	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	05/23/19 07:06	05/24/19 16:02	7440-38-2	
Barium, Dissolved	39.6	ug/L	10.0	0.18	1	05/23/19 07:06	05/24/19 16:02	7440-39-3	
Beryllium, Dissolved	0.47J	ug/L	5.0	0.12	1	05/23/19 07:06	05/24/19 16:02	7440-41-7	
Cadmium, Dissolved	0.46J	ug/L	3.0	0.26	1	05/23/19 07:06	05/24/19 16:02	7440-43-9	
Chromium, Dissolved	1.0J	ug/L	10.0	0.49	1	05/23/19 07:06	05/24/19 16:02	7440-47-3	B
Cobalt, Dissolved	0.52J	ug/L	10.0	0.50	1	05/23/19 07:06	05/24/19 16:02	7440-48-4	
Copper, Dissolved	1.6J	ug/L	10.0	1.2	1	05/23/19 07:06	05/24/19 16:02	7440-50-8	
Lead, Dissolved	2.3J	ug/L	10.0	2.0	1	05/23/19 07:06	05/24/19 16:02	7439-92-1	
Molybdenum, Dissolved	5.9J	ug/L	15.0	1.1	1	05/23/19 07:06	05/24/19 16:02	7439-98-7	
Nickel, Dissolved	2.0J	ug/L	20.0	1.1	1	05/23/19 07:06	05/24/19 16:02	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	05/23/19 07:06	05/24/19 16:02	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	05/23/19 07:06	05/24/19 16:02	7440-22-4	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	05/23/19 07:06	05/24/19 16:02	7440-28-0	
Vanadium, Dissolved	2.6J	ug/L	15.0	0.29	1	05/23/19 07:06	05/24/19 16:02	7440-62-2	B
Zinc, Dissolved	190	ug/L	20.0	2.5	1	05/23/19 07:06	05/24/19 16:02	7440-66-6	
7470A Mercury, Dissolved									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	05/23/19 14:55	05/24/19 14:34	7439-97-6	
8260B MSV Low Level									
Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/25/19 15:06	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/25/19 15:06	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/25/19 15:06	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/25/19 15:06	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/25/19 15:06	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/25/19 15:06	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		05/25/19 15:06	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/25/19 15:06	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		05/25/19 15:06	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/25/19 15:06	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		05/25/19 15:06	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		05/25/19 15:06	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/25/19 15:06	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		05/25/19 15:06	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/25/19 15:06	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	1.0	0.22	1		05/25/19 15:06	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/25/19 15:06	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/25/19 15:06	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/25/19 15:06	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/25/19 15:06	541-73-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10475648

Sample: RC04-282-292.5-051819 Lab ID: 10475648001 Collected: 05/18/19 14:15 Received: 05/21/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/25/19 15:06	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/25/19 15:06	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/25/19 15:06	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/25/19 15:06	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/25/19 15:06	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/25/19 15:06	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/25/19 15:06	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/25/19 15:06	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/25/19 15:06	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/25/19 15:06	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		05/25/19 15:06	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		05/25/19 15:06	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/25/19 15:06	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/25/19 15:06	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		05/25/19 15:06	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/25/19 15:06	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/25/19 15:06	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/25/19 15:06	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/25/19 15:06	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		05/25/19 15:06	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		05/25/19 15:06	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/25/19 15:06	108-90-7	
Chloroethane	<0.49	ug/L	4.0	0.49	1		05/25/19 15:06	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		05/25/19 15:06	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/25/19 15:06	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		05/25/19 15:06	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/25/19 15:06	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/25/19 15:06	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/25/19 15:06	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/25/19 15:06	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/25/19 15:06	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/25/19 15:06	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/25/19 15:06	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		05/25/19 15:06	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		05/25/19 15:06	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/25/19 15:06	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/25/19 15:06	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/25/19 15:06	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/25/19 15:06	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/25/19 15:06	109-99-9	
Toluene	5.7	ug/L	0.50	0.083	1		05/25/19 15:06	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/25/19 15:06	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/25/19 15:06	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/25/19 15:06	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/25/19 15:06	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/25/19 15:06	1330-20-7	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

Sample: RC04-282-292.5-051819 **Lab ID:** 10475648001 Collected: 05/18/19 14:15 Received: 05/21/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/25/19 15:06	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/25/19 15:06	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/25/19 15:06	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		05/25/19 15:06	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/25/19 15:06	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/25/19 15:06	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		05/25/19 15:06	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/25/19 15:06	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/25/19 15:06	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/25/19 15:06	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/25/19 15:06	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/25/19 15:06	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		05/25/19 15:06	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/25/19 15:06	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	97	%	75-136		1		05/25/19 15:06	17060-07-0	
Toluene-d8 (S)	98	%	75-125		1		05/25/19 15:06	2037-26-5	
4-Bromofluorobenzene (S)	97	%	75-125		1		05/25/19 15:06	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	161	mg/L	5.0	2.0	1		05/28/19 13:18		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	269	mg/L	10.0	5.0	1		05/24/19 08:48		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	0.014J	mg/L	0.020	0.0054	1		05/23/19 11:23	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	2.2	mg/L	1.2	0.12	1		05/21/19 17:55	16887-00-6	
Nitrate as N	<0.012	mg/L	0.10	0.012	1		05/21/19 17:55	14797-55-8	H3
Sulfate	11.5	mg/L	1.2	0.28	1		05/21/19 17:55	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	<0.018	mg/L	0.10	0.018	1		05/23/19 16:17		
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	05/29/19 11:34	05/29/19 15:47		
5310C TOC		Analytical Method: SM 5310C							
Total Organic Carbon	2.6	mg/L	1.0	0.39	1		05/23/19 16:01	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10475648

Sample: RC04-282-292.5-051819(2) Lab ID: 10475648002 Collected: 05/18/19 15:15 Received: 05/21/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		05/21/19 18:49	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		05/21/19 18:49	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		05/21/19 18:49	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	05/23/19 07:06	05/24/19 16:17	7440-36-0	
Arsenic, Dissolved	4.8J	ug/L	20.0	3.8	1	05/23/19 07:06	05/24/19 16:17	7440-38-2	
Barium, Dissolved	40.1	ug/L	10.0	0.18	1	05/23/19 07:06	05/24/19 16:17	7440-39-3	
Beryllium, Dissolved	0.57J	ug/L	5.0	0.12	1	05/23/19 07:06	05/24/19 16:17	7440-41-7	
Cadmium, Dissolved	0.58J	ug/L	3.0	0.26	1	05/23/19 07:06	05/24/19 16:17	7440-43-9	
Chromium, Dissolved	1.2J	ug/L	10.0	0.49	1	05/23/19 07:06	05/24/19 16:17	7440-47-3	B
Cobalt, Dissolved	0.76J	ug/L	10.0	0.50	1	05/23/19 07:06	05/24/19 16:17	7440-48-4	
Copper, Dissolved	1.5J	ug/L	10.0	1.2	1	05/23/19 07:06	05/24/19 16:17	7440-50-8	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	05/23/19 07:06	05/24/19 16:17	7439-92-1	
Molybdenum, Dissolved	6.4J	ug/L	15.0	1.1	1	05/23/19 07:06	05/24/19 16:17	7439-98-7	
Nickel, Dissolved	1.6J	ug/L	20.0	1.1	1	05/23/19 07:06	05/24/19 16:17	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	05/23/19 07:06	05/24/19 16:17	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	05/23/19 07:06	05/24/19 16:17	7440-22-4	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	05/23/19 07:06	05/24/19 16:17	7440-28-0	
Vanadium, Dissolved	1.4J	ug/L	15.0	0.29	1	05/23/19 07:06	05/24/19 16:17	7440-62-2	B
Zinc, Dissolved	16.1J	ug/L	20.0	2.5	1	05/23/19 07:06	05/24/19 16:17	7440-66-6	B
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	05/23/19 14:55	05/24/19 14:36	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/25/19 15:30	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/25/19 15:30	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/25/19 15:30	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/25/19 15:30	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/25/19 15:30	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/25/19 15:30	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		05/25/19 15:30	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/25/19 15:30	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		05/25/19 15:30	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/25/19 15:30	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		05/25/19 15:30	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		05/25/19 15:30	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/25/19 15:30	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		05/25/19 15:30	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/25/19 15:30	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	1.0	0.22	1		05/25/19 15:30	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/25/19 15:30	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/25/19 15:30	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/25/19 15:30	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/25/19 15:30	541-73-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10475648

Sample: RC04-282-292.5-051819(2) Lab ID: 10475648002 Collected: 05/18/19 15:15 Received: 05/21/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/25/19 15:30	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/25/19 15:30	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/25/19 15:30	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/25/19 15:30	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/25/19 15:30	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/25/19 15:30	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/25/19 15:30	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/25/19 15:30	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/25/19 15:30	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/25/19 15:30	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		05/25/19 15:30	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		05/25/19 15:30	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/25/19 15:30	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/25/19 15:30	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		05/25/19 15:30	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/25/19 15:30	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/25/19 15:30	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/25/19 15:30	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/25/19 15:30	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		05/25/19 15:30	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		05/25/19 15:30	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/25/19 15:30	108-90-7	
Chloroethane	<0.49	ug/L	4.0	0.49	1		05/25/19 15:30	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		05/25/19 15:30	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/25/19 15:30	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		05/25/19 15:30	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/25/19 15:30	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/25/19 15:30	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/25/19 15:30	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/25/19 15:30	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/25/19 15:30	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/25/19 15:30	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/25/19 15:30	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		05/25/19 15:30	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		05/25/19 15:30	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/25/19 15:30	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/25/19 15:30	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/25/19 15:30	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/25/19 15:30	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/25/19 15:30	109-99-9	
Toluene	0.35J	ug/L	0.50	0.083	1		05/25/19 15:30	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/25/19 15:30	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/25/19 15:30	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/25/19 15:30	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/25/19 15:30	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/25/19 15:30	1330-20-7	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

Sample: RC04-282-292.5-051819(2) **Lab ID:** 10475648002 Collected: 05/18/19 15:15 Received: 05/21/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/25/19 15:30	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/25/19 15:30	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/25/19 15:30	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		05/25/19 15:30	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/25/19 15:30	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/25/19 15:30	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		05/25/19 15:30	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/25/19 15:30	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/25/19 15:30	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/25/19 15:30	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/25/19 15:30	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/25/19 15:30	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		05/25/19 15:30	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/25/19 15:30	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	94	%	75-136		1		05/25/19 15:30	17060-07-0	
Toluene-d8 (S)	100	%	75-125		1		05/25/19 15:30	2037-26-5	
4-Bromofluorobenzene (S)	95	%	75-125		1		05/25/19 15:30	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	169	mg/L	5.0	2.0	1		05/28/19 13:22		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	219	mg/L	10.0	5.0	1		05/24/19 08:48		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		05/23/19 11:24	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	1.8	mg/L	1.2	0.12	1		05/21/19 18:11	16887-00-6	
Nitrate as N	<0.012	mg/L	0.10	0.012	1		05/21/19 18:11	14797-55-8	H3
Sulfate	5.5	mg/L	1.2	0.28	1		05/21/19 18:11	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	<0.018	mg/L	0.10	0.018	1		05/23/19 16:18		
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	05/29/19 11:34	05/29/19 15:48		
5310C TOC		Analytical Method: SM 5310C							
Total Organic Carbon	0.72J	mg/L	1.0	0.39	1		05/23/19 16:18	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Project No.: 10475648

Sample: **TB-051819** Lab ID: **10475648003** Collected: 05/18/19 08:00 Received: 05/21/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/25/19 12:21	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/25/19 12:21	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/25/19 12:21	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/25/19 12:21	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/25/19 12:21	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/25/19 12:21	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		05/25/19 12:21	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/25/19 12:21	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		05/25/19 12:21	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/25/19 12:21	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		05/25/19 12:21	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		05/25/19 12:21	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/25/19 12:21	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		05/25/19 12:21	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/25/19 12:21	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	1.0	0.22	1		05/25/19 12:21	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/25/19 12:21	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/25/19 12:21	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/25/19 12:21	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/25/19 12:21	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/25/19 12:21	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/25/19 12:21	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/25/19 12:21	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/25/19 12:21	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/25/19 12:21	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/25/19 12:21	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/25/19 12:21	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/25/19 12:21	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/25/19 12:21	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/25/19 12:21	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		05/25/19 12:21	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		05/25/19 12:21	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/25/19 12:21	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/25/19 12:21	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		05/25/19 12:21	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/25/19 12:21	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/25/19 12:21	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/25/19 12:21	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/25/19 12:21	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		05/25/19 12:21	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		05/25/19 12:21	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/25/19 12:21	108-90-7	
Chloroethane	<0.49	ug/L	4.0	0.49	1		05/25/19 12:21	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		05/25/19 12:21	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/25/19 12:21	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		05/25/19 12:21	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

Sample: TB-051819 **Lab ID: 10475648003** Collected: 05/18/19 08:00 Received: 05/21/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/25/19 12:21	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/25/19 12:21	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/25/19 12:21	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/25/19 12:21	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/25/19 12:21	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/25/19 12:21	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/25/19 12:21	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		05/25/19 12:21	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		05/25/19 12:21	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/25/19 12:21	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/25/19 12:21	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/25/19 12:21	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/25/19 12:21	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/25/19 12:21	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		05/25/19 12:21	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/25/19 12:21	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/25/19 12:21	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/25/19 12:21	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/25/19 12:21	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/25/19 12:21	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/25/19 12:21	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/25/19 12:21	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/25/19 12:21	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		05/25/19 12:21	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/25/19 12:21	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/25/19 12:21	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		05/25/19 12:21	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/25/19 12:21	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/25/19 12:21	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/25/19 12:21	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/25/19 12:21	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/25/19 12:21	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		05/25/19 12:21	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/25/19 12:21	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	93	%	75-136		1		05/25/19 12:21	17060-07-0	
Toluene-d8 (S)	99	%	75-125		1		05/25/19 12:21	2037-26-5	
4-Bromofluorobenzene (S)	95	%	75-125		1		05/25/19 12:21	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10475648

Sample: Potable Water **Lab ID: 10475648004** Collected: 05/19/19 09:30 Received: 05/21/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/25/19 14:43	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/25/19 14:43	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/25/19 14:43	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/25/19 14:43	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/25/19 14:43	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/25/19 14:43	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		05/25/19 14:43	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/25/19 14:43	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		05/25/19 14:43	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/25/19 14:43	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		05/25/19 14:43	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		05/25/19 14:43	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/25/19 14:43	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		05/25/19 14:43	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/25/19 14:43	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	1.0	0.22	1		05/25/19 14:43	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/25/19 14:43	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/25/19 14:43	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/25/19 14:43	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/25/19 14:43	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/25/19 14:43	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/25/19 14:43	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/25/19 14:43	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/25/19 14:43	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/25/19 14:43	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/25/19 14:43	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/25/19 14:43	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/25/19 14:43	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/25/19 14:43	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/25/19 14:43	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		05/25/19 14:43	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		05/25/19 14:43	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/25/19 14:43	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/25/19 14:43	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		05/25/19 14:43	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/25/19 14:43	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/25/19 14:43	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/25/19 14:43	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/25/19 14:43	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		05/25/19 14:43	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		05/25/19 14:43	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/25/19 14:43	108-90-7	
Chloroethane	<0.49	ug/L	4.0	0.49	1		05/25/19 14:43	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		05/25/19 14:43	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/25/19 14:43	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		05/25/19 14:43	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10475648

Sample: Potable Water **Lab ID: 10475648004** Collected: 05/19/19 09:30 Received: 05/21/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level									
Analytical Method: EPA 8260B									
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/25/19 14:43	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/25/19 14:43	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/25/19 14:43	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/25/19 14:43	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/25/19 14:43	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/25/19 14:43	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/25/19 14:43	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		05/25/19 14:43	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		05/25/19 14:43	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/25/19 14:43	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/25/19 14:43	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/25/19 14:43	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/25/19 14:43	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/25/19 14:43	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		05/25/19 14:43	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/25/19 14:43	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/25/19 14:43	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/25/19 14:43	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/25/19 14:43	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/25/19 14:43	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/25/19 14:43	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/25/19 14:43	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/25/19 14:43	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		05/25/19 14:43	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/25/19 14:43	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/25/19 14:43	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		05/25/19 14:43	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/25/19 14:43	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/25/19 14:43	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/25/19 14:43	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/25/19 14:43	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/25/19 14:43	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		05/25/19 14:43	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/25/19 14:43	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	97	%	75-136		1		05/25/19 14:43	17060-07-0	
Toluene-d8 (S)	98	%	75-125		1		05/25/19 14:43	2037-26-5	
4-Bromofluorobenzene (S)	91	%	75-125		1		05/25/19 14:43	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10475648

Sample: Potable Water-Filtered Lab ID: 10475648005 Collected: 05/19/19 09:35 Received: 05/21/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/25/19 14:19	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/25/19 14:19	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/25/19 14:19	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/25/19 14:19	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/25/19 14:19	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/25/19 14:19	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		05/25/19 14:19	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/25/19 14:19	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		05/25/19 14:19	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/25/19 14:19	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		05/25/19 14:19	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		05/25/19 14:19	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/25/19 14:19	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		05/25/19 14:19	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/25/19 14:19	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	1.0	0.22	1		05/25/19 14:19	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/25/19 14:19	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/25/19 14:19	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/25/19 14:19	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/25/19 14:19	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/25/19 14:19	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/25/19 14:19	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/25/19 14:19	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/25/19 14:19	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/25/19 14:19	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/25/19 14:19	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/25/19 14:19	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/25/19 14:19	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/25/19 14:19	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/25/19 14:19	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		05/25/19 14:19	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		05/25/19 14:19	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/25/19 14:19	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/25/19 14:19	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		05/25/19 14:19	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/25/19 14:19	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/25/19 14:19	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/25/19 14:19	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/25/19 14:19	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		05/25/19 14:19	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		05/25/19 14:19	56-23-5	
Chlorobenzene	0.68	ug/L	0.50	0.17	1		05/25/19 14:19	108-90-7	
Chloroethane	<0.49	ug/L	4.0	0.49	1		05/25/19 14:19	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		05/25/19 14:19	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/25/19 14:19	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		05/25/19 14:19	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

Sample: Potable Water-Filtered **Lab ID: 10475648005** Collected: 05/19/19 09:35 Received: 05/21/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/25/19 14:19	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/25/19 14:19	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/25/19 14:19	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/25/19 14:19	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/25/19 14:19	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/25/19 14:19	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/25/19 14:19	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		05/25/19 14:19	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		05/25/19 14:19	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/25/19 14:19	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/25/19 14:19	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/25/19 14:19	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/25/19 14:19	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/25/19 14:19	109-99-9	
Toluene	0.095J	ug/L	0.50	0.083	1		05/25/19 14:19	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/25/19 14:19	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/25/19 14:19	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/25/19 14:19	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/25/19 14:19	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/25/19 14:19	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/25/19 14:19	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/25/19 14:19	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/25/19 14:19	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		05/25/19 14:19	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/25/19 14:19	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/25/19 14:19	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		05/25/19 14:19	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/25/19 14:19	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/25/19 14:19	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/25/19 14:19	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/25/19 14:19	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/25/19 14:19	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		05/25/19 14:19	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/25/19 14:19	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%	75-136		1		05/25/19 14:19	17060-07-0	
Toluene-d8 (S)	99	%	75-125		1		05/25/19 14:19	2037-26-5	
4-Bromofluorobenzene (S)	95	%	75-125		1		05/25/19 14:19	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10475648

QC Batch: 607275 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 GCV HEADSPACE
Associated Lab Samples: 10475648001, 10475648002

METHOD BLANK: 3282622 Matrix: Water
Associated Lab Samples: 10475648001, 10475648002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	05/21/19 15:18	
Ethene	ug/L	<2.9	10.0	2.9	05/21/19 15:18	
Methane	ug/L	<4.9	10.0	4.9	05/21/19 15:18	

LABORATORY CONTROL SAMPLE & LCSD: 3282623

Parameter	Units	3282624								Qualifiers
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	
Ethane	ug/L	114	114	116	100	102	85-115	2	20	
Ethene	ug/L	106	106	108	100	101	85-115	2	20	
Methane	ug/L	60.7	58.0	60.8	96	100	85-115	5	20	

SAMPLE DUPLICATE: 3283749

Parameter	Units	60303029008		RPD	Max RPD	Qualifiers
		Result	Dup Result			
Ethane	ug/L	ND	<3.0		20	
Ethene	ug/L	ND	<2.9		20	
Methane	ug/L	741	750	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

QC Batch: 607830

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470A Mercury Water Dissolved

Associated Lab Samples: 10475648001, 10475648002

METHOD BLANK: 3285889

Matrix: Water

Associated Lab Samples: 10475648001, 10475648002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.093	0.20	0.093	05/24/19 14:27	

LABORATORY CONTROL SAMPLE: 3285890

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.2	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3285891 3285892

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		10475648002 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Mercury, Dissolved	ug/L	<0.093	5	5	5.4	5.3	107	105	80-120	1	20		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

QC Batch: 607812

Analysis Method: EPA 6010D

QC Batch Method: EPA 3010

Analysis Description: 6010D Water Dissolved

Associated Lab Samples: 10475648001, 10475648002

METHOD BLANK: 3285811

Matrix: Water

Associated Lab Samples: 10475648001, 10475648002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	05/24/19 15:56	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	05/24/19 15:56	
Barium, Dissolved	ug/L	<0.18	10.0	0.18	05/24/19 15:56	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	05/24/19 15:56	
Cadmium, Dissolved	ug/L	<0.26	3.0	0.26	05/24/19 15:56	
Chromium, Dissolved	ug/L	1.4J	10.0	0.49	05/24/19 15:56	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	05/24/19 15:56	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	05/24/19 15:56	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	05/24/19 15:56	
Molybdenum, Dissolved	ug/L	<1.1	15.0	1.1	05/24/19 15:56	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	05/24/19 15:56	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	05/24/19 15:56	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	05/24/19 15:56	
Thallium, Dissolved	ug/L	<4.3	20.0	4.3	05/24/19 15:56	
Vanadium, Dissolved	ug/L	0.30J	15.0	0.29	05/24/19 15:56	
Zinc, Dissolved	ug/L	6.0J	20.0	2.5	05/24/19 15:56	

LABORATORY CONTROL SAMPLE: 3285812

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony, Dissolved	ug/L	1000	1040	104	80-120	
Arsenic, Dissolved	ug/L	1000	1080	108	80-120	CU
Barium, Dissolved	ug/L	1000	1020	102	80-120	
Beryllium, Dissolved	ug/L	1000	998	100	80-120	
Cadmium, Dissolved	ug/L	1000	1070	107	80-120	
Chromium, Dissolved	ug/L	1000	1020	102	80-120	
Cobalt, Dissolved	ug/L	1000	1020	102	80-120	
Copper, Dissolved	ug/L	1000	963	96	80-120	
Lead, Dissolved	ug/L	1000	1060	106	80-120	
Molybdenum, Dissolved	ug/L	1000	1000	100	80-120	
Nickel, Dissolved	ug/L	1000	1040	104	80-120	
Selenium, Dissolved	ug/L	1000	1080	108	80-120	
Silver, Dissolved	ug/L	500	484	97	80-120	
Thallium, Dissolved	ug/L	1000	1080	108	80-120	CU
Vanadium, Dissolved	ug/L	1000	969	97	80-120	
Zinc, Dissolved	ug/L	1000	1090	109	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

Parameter	Units	3285813		3285814		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10475648001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Antimony, Dissolved	ug/L	<7.0	1000	1000	1010	1040	101	104	75-125	3	20		
Arsenic, Dissolved	ug/L	<3.8	1000	1000	1060	1080	106	108	75-125	2	20	CU	
Barium, Dissolved	ug/L	39.6	1000	1000	1030	1040	100	100	75-125	1	20		
Beryllium, Dissolved	ug/L	0.47J	1000	1000	987	1000	99	100	75-125	2	20		
Cadmium, Dissolved	ug/L	0.46J	1000	1000	1040	1060	104	106	75-125	2	20		
Chromium, Dissolved	ug/L	1.0J	1000	1000	1000	1020	100	102	75-125	2	20		
Cobalt, Dissolved	ug/L	0.52J	1000	1000	994	1010	99	101	75-125	2	20		
Copper, Dissolved	ug/L	1.6J	1000	1000	946	955	94	95	75-125	1	20		
Lead, Dissolved	ug/L	2.3J	1000	1000	1030	1040	102	104	75-125	1	20		
Molybdenum, Dissolved	ug/L	5.9J	1000	1000	983	1010	98	101	75-125	3	20		
Nickel, Dissolved	ug/L	2.0J	1000	1000	1010	1030	101	103	75-125	2	20		
Selenium, Dissolved	ug/L	<5.8	1000	1000	1050	1070	105	107	75-125	2	20		
Silver, Dissolved	ug/L	<0.38	500	500	479	483	96	97	75-125	1	20		
Thallium, Dissolved	ug/L	<4.3	1000	1000	1040	1060	104	106	75-125	2	20	CU	
Vanadium, Dissolved	ug/L	2.6J	1000	1000	960	970	96	97	75-125	1	20		
Zinc, Dissolved	ug/L	190	1000	1000	1240	1260	105	107	75-125	2	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10475648

QC Batch: 608436 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10475648001, 10475648002, 10475648003, 10475648004, 10475648005

METHOD BLANK: 3289000 Matrix: Water
Associated Lab Samples: 10475648001, 10475648002, 10475648003, 10475648004, 10475648005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	05/25/19 11:57	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	05/25/19 11:57	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	05/25/19 11:57	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	05/25/19 11:57	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	05/25/19 11:57	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	05/25/19 11:57	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	05/25/19 11:57	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	05/25/19 11:57	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	05/25/19 11:57	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	05/25/19 11:57	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	05/25/19 11:57	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	05/25/19 11:57	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	05/25/19 11:57	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	05/25/19 11:57	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	05/25/19 11:57	
1,2-Dichloroethane	ug/L	<0.22	1.0	0.22	05/25/19 11:57	MN
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	05/25/19 11:57	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	05/25/19 11:57	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	05/25/19 11:57	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	05/25/19 11:57	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	05/25/19 11:57	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	05/25/19 11:57	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	05/25/19 11:57	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	05/25/19 11:57	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	05/25/19 11:57	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	05/25/19 11:57	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	05/25/19 11:57	
2-Hexanone	ug/L	<0.88	5.0	0.88	05/25/19 11:57	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	05/25/19 11:57	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	05/25/19 11:57	
Acetone	ug/L	<9.2	20.0	9.2	05/25/19 11:57	
Acrolein	ug/L	<1.2	10.0	1.2	05/25/19 11:57	
Acrylonitrile	ug/L	<0.91	10.0	0.91	05/25/19 11:57	
Benzene	ug/L	<0.10	0.50	0.10	05/25/19 11:57	
Bromobenzene	ug/L	<0.21	0.50	0.21	05/25/19 11:57	
Bromochloromethane	ug/L	<0.27	1.0	0.27	05/25/19 11:57	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	05/25/19 11:57	
Bromoform	ug/L	<0.80	4.0	0.80	05/25/19 11:57	
Bromomethane	ug/L	<1.8	4.0	1.8	05/25/19 11:57	
Carbon disulfide	ug/L	<0.078	1.0	0.078	05/25/19 11:57	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	05/25/19 11:57	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

METHOD BLANK: 3289000

Matrix: Water

Associated Lab Samples: 10475648001, 10475648002, 10475648003, 10475648004, 10475648005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	05/25/19 11:57	
Chloroethane	ug/L	<0.49	4.0	0.49	05/25/19 11:57	MN
Chloroform	ug/L	<0.45	1.0	0.45	05/25/19 11:57	
Chloromethane	ug/L	<0.16	4.0	0.16	05/25/19 11:57	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	05/25/19 11:57	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	05/25/19 11:57	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	05/25/19 11:57	MN
Dibromomethane	ug/L	<0.16	1.0	0.16	05/25/19 11:57	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	05/25/19 11:57	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	05/25/19 11:57	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	05/25/19 11:57	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	05/25/19 11:57	
Ethylbenzene	ug/L	<0.14	0.50	0.14	05/25/19 11:57	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	05/25/19 11:57	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	05/25/19 11:57	
m&p-Xylene	ug/L	<0.31	1.0	0.31	05/25/19 11:57	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	05/25/19 11:57	
Methylene Chloride	ug/L	<0.98	4.0	0.98	05/25/19 11:57	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	05/25/19 11:57	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	05/25/19 11:57	
Naphthalene	ug/L	<0.48	1.0	0.48	05/25/19 11:57	
o-Xylene	ug/L	<0.16	0.50	0.16	05/25/19 11:57	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	05/25/19 11:57	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	05/25/19 11:57	
Styrene	ug/L	<0.19	0.50	0.19	05/25/19 11:57	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	05/25/19 11:57	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	05/25/19 11:57	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	05/25/19 11:57	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	05/25/19 11:57	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	05/25/19 11:57	
Toluene	ug/L	<0.083	0.50	0.083	05/25/19 11:57	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	05/25/19 11:57	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	05/25/19 11:57	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	05/25/19 11:57	
Trichloroethene	ug/L	<0.15	0.40	0.15	05/25/19 11:57	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	05/25/19 11:57	
Vinyl acetate	ug/L	<1.1	10.0	1.1	05/25/19 11:57	
Vinyl chloride	ug/L	<0.092	0.20	0.092	05/25/19 11:57	
Xylene (Total)	ug/L	<0.31	1.5	0.31	05/25/19 11:57	
1,2-Dichloroethane-d4 (S)	%	96	75-136		05/25/19 11:57	
4-Bromofluorobenzene (S)	%	92	75-125		05/25/19 11:57	
Toluene-d8 (S)	%	99	75-125		05/25/19 11:57	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

LABORATORY CONTROL SAMPLE: 3289001

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.5	97	68-141	
1,1,1-Trichloroethane	ug/L	20	18.8	94	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	17.2	86	73-125	
1,1,2-Trichloroethane	ug/L	20	20.0	100	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	18.6	93	69-132	
1,1-Dichloroethane	ug/L	20	18.8	94	73-125	
1,1-Dichloroethene	ug/L	20	18.5	93	71-126	
1,1-Dichloropropene	ug/L	20	18.7	93	73-126	
1,2,3-Trichlorobenzene	ug/L	20	19.4	97	72-126	
1,2,3-Trichloropropane	ug/L	20	17.6	88	75-126	
1,2,4-Trichlorobenzene	ug/L	20	18.3	91	71-134	
1,2,4-Trimethylbenzene	ug/L	20	19.3	97	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	45.4	91	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	19.6	98	75-129	
1,2-Dichlorobenzene	ug/L	20	18.5	93	75-129	
1,2-Dichloroethane	ug/L	20	19.5	98	75-125	
1,2-Dichloroethene (Total)	ug/L	40	38.8	97	74-125	N2
1,2-Dichloropropane	ug/L	20	18.9	94	75-125	
1,3,5-Trimethylbenzene	ug/L	20	18.8	94	75-127	
1,3-Dichlorobenzene	ug/L	20	18.6	93	75-126	
1,3-Dichloropropane	ug/L	20	19.3	97	75-125	
1,4-Dichlorobenzene	ug/L	20	18.2	91	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	374	93	72-129	
2,2,4-Trimethylpentane	ug/L	20	16.7	84	72-128	N2
2,2-Dichloropropane	ug/L	20	18.9	95	65-138	
2-Butanone (MEK)	ug/L	100	96.1	96	59-144	
2-Chlorotoluene	ug/L	20	17.5	88	75-127	
2-Hexanone	ug/L	100	88.9	89	73-134	
4-Chlorotoluene	ug/L	20	18.1	90	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	93.3	93	62-141	
Acetone	ug/L	100	115	115	60-137	
Acrolein	ug/L	200	229	114	60-141	
Acrylonitrile	ug/L	200	193	97	75-129	
Benzene	ug/L	20	19.0	95	73-125	
Bromobenzene	ug/L	20	18.3	91	73-125	
Bromochloromethane	ug/L	20	20.5	102	75-135	
Bromodichloromethane	ug/L	20	19.0	95	75-125	
Bromoform	ug/L	20	19.1	95	67-136	
Bromomethane	ug/L	20	18.8	94	30-150	
Carbon disulfide	ug/L	20	17.9	89	47-137	
Carbon tetrachloride	ug/L	20	18.3	91	75-125	
Chlorobenzene	ug/L	20	19.0	95	75-125	
Chloroethane	ug/L	20	22.3	111	63-136	
Chloroform	ug/L	20	18.5	93	73-128	
Chloromethane	ug/L	20	18.0	90	55-130	
cis-1,2-Dichloroethene	ug/L	20	19.4	97	75-125	
cis-1,3-Dichloropropene	ug/L	20	21.6	108	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

LABORATORY CONTROL SAMPLE: 3289001

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	22.1	111	75-125	
Dibromomethane	ug/L	20	21.4	107	75-125	
Dichlorodifluoromethane	ug/L	20	18.7	94	63-132	
Dichlorofluoromethane	ug/L	20	21.2	106	68-127	N2
Diisopropyl ether	ug/L	20	18.6	93	71-131	
Ethyl-tert-butyl ether	ug/L	20	19.5	97	75-125	
Ethylbenzene	ug/L	20	18.6	93	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.2	101	72-134	
Isopropylbenzene (Cumene)	ug/L	20	19.2	96	75-125	
m&p-Xylene	ug/L	40	38.7	97	75-126	
Methyl-tert-butyl ether	ug/L	20	18.9	94	75-125	
Methylene Chloride	ug/L	20	19.7	99	70-125	
n-Butylbenzene	ug/L	20	18.2	91	75-126	
n-Propylbenzene	ug/L	20	17.6	88	73-127	
Naphthalene	ug/L	20	18.0	90	63-128	
o-Xylene	ug/L	20	20.3	101	75-128	
p-Isopropyltoluene	ug/L	20	19.4	97	75-125	
sec-Butylbenzene	ug/L	20	19.0	95	75-126	
Styrene	ug/L	20	20.6	103	75-125	
tert-Amylmethyl ether	ug/L	20	18.6	93	75-125	
tert-Butyl Alcohol	ug/L	200	197	98	75-130	
tert-Butylbenzene	ug/L	20	19.0	95	75-131	
Tetrachloroethene	ug/L	20	19.5	98	74-125	
Tetrahydrofuran	ug/L	200	208	104	64-138	
Toluene	ug/L	20	18.0	90	74-125	
trans-1,2-Dichloroethene	ug/L	20	19.4	97	68-128	
trans-1,3-Dichloropropene	ug/L	20	20.9	104	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	30.7	61	60-127	
Trichloroethene	ug/L	20	20.6	103	75-127	
Trichlorofluoromethane	ug/L	20	22.2	111	72-133	
Vinyl acetate	ug/L	20	18.2	91	61-129	
Vinyl chloride	ug/L	20	21.8	109	75-128	
Xylene (Total)	ug/L	60	59.0	98	75-125	
1,2-Dichloroethane-d4 (S)	%			99	75-136	
4-Bromofluorobenzene (S)	%			91	75-125	
Toluene-d8 (S)	%			96	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3289002 3289003

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10475457011 Result	Spike Conc.	Spike Conc.	Conc.								
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	18.4	19.9	92	100	75-140	8	30		
1,1,1-Trichloroethane	ug/L	ND	20	20	19.6	19.5	98	97	74-136	1	30		
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	17.1	19.3	86	96	66-134	12	30		
1,1,2-Trichloroethane	ug/L	ND	20	20	18.6	20.2	93	101	75-126	9	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3289002			3289003							
Parameter	Units	10475457011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	ND	20	20	21.2	21.1	106	106	65-146	0	30	
1,1-Dichloroethane	ug/L	ND	20	20	18.8	18.3	94	91	68-132	3	30	
1,1-Dichloroethene	ug/L	ND	20	20	19.7	19.2	99	96	66-139	3	30	
1,1-Dichloropropene	ug/L	ND	20	20	19.3	19.2	96	96	67-134	1	30	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	21.2	22.1	106	111	67-129	4	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	18.1	20.4	90	102	69-128	12	30	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	21.7	21.8	108	109	65-140	1	30	
1,2,4-Trimethylbenzene	ug/L	ND	20	20	20.8	22.7	103	113	71-133	9	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	44.8	51.7	90	103	54-138	14	30	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	18.2	19.6	91	98	68-125	7	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	19.1	20.7	96	104	74-136	8	30	
1,2-Dichloroethane	ug/L	2.9	20	20	21.1	21.5	91	93	68-125	1	30	
1,2-Dichloroethene (Total)	ug/L	ND	40	40	38.8	37.6	97	94	71-126	3	30	N2
1,2-Dichloropropane	ug/L	ND	20	20	18.9	19.8	94	99	67-125	4	30	
1,3,5-Trimethylbenzene	ug/L	ND	20	20	20.1	21.9	100	109	68-137	9	30	
1,3-Dichlorobenzene	ug/L	ND	20	20	19.3	20.8	96	104	75-131	8	30	
1,3-Dichloropropane	ug/L	ND	20	20	18.2	19.4	91	97	71-125	6	30	
1,4-Dichlorobenzene	ug/L	ND	20	20	18.7	20.5	93	102	74-126	9	30	
1,4-Dioxane (p-Dioxane)	ug/L	ND	400	400	358	398	89	100	68-125	11	30	
2,2,4-Trimethylpentane	ug/L	ND	20	20	22.6	18.9	108	89	54-129	18	30	N2
2,2-Dichloropropane	ug/L	ND	20	20	19.8	19.5	99	98	69-139	1	30	
2-Butanone (MEK)	ug/L	9.1	100	100	89.6	99.1	81	90	54-144	10	30	
2-Chlorotoluene	ug/L	ND	20	20	18.7	20.3	94	102	75-134	8	30	
2-Hexanone	ug/L	ND	100	100	78.6	93.9	79	94	58-137	18	30	
4-Chlorotoluene	ug/L	ND	20	20	18.4	20.5	92	102	72-133	11	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	89.6	102	90	102	60-129	13	30	
Acetone	ug/L	ND	100	100	101	97.4	95	91	62-132	4	30	
Acrolein	ug/L	ND	200	200	484	489	242	245	30-150	1	30	M1
Acrylonitrile	ug/L	ND	200	200	183	195	92	98	68-125	6	30	
Benzene	ug/L	9.1	20	20	28.3	27.5	96	92	68-125	3	30	
Bromobenzene	ug/L	ND	20	20	18.6	19.7	93	99	73-126	6	30	
Bromochloromethane	ug/L	ND	20	20	19.0	19.6	95	98	66-143	3	30	
Bromodichloromethane	ug/L	ND	20	20	18.0	19.2	90	96	74-125	6	30	
Bromoform	ug/L	ND	20	20	17.5	19.7	87	98	64-134	12	30	
Bromomethane	ug/L	ND	20	20	19.4	22.6	97	113	30-150	15	30	
Carbon disulfide	ug/L	ND	20	20	19.9	17.8	99	89	43-147	11	30	
Carbon tetrachloride	ug/L	ND	20	20	19.2	19.5	96	97	71-143	1	30	
Chlorobenzene	ug/L	ND	20	20	18.6	19.8	93	99	75-125	6	30	
Chloroethane	ug/L	ND	20	20	28.6	27.0	143	135	75-129	6	30	M1
Chloroform	ug/L	ND	20	20	18.5	18.2	93	91	66-132	2	30	
Chloromethane	ug/L	ND	20	20	14.9	21.9	74	109	53-137	38	30	R1
cis-1,2-Dichloroethene	ug/L	ND	20	20	19.4	18.8	97	94	67-133	3	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	20.3	21.2	101	106	66-125	4	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

Parameter	Units	3289002		3289003		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
Dibromochloromethane	ug/L	ND	20	20	20.1	21.9	100	109	62-132	9	30		
Dibromomethane	ug/L	ND	20	20	20.3	21.7	102	108	67-125	6	30		
Dichlorodifluoromethane	ug/L	ND	20	20	17.3	21.4	87	107	71-142	21	30		
Dichlorofluoromethane	ug/L	ND	20	20	19.0	23.5	95	117	70-131	21	30	N2	
Diisopropyl ether	ug/L	ND	20	20	17.4	17.9	87	89	63-131	3	30		
Ethyl-tert-butyl ether	ug/L	ND	20	20	18.5	19.4	92	97	66-128	5	30		
Ethylbenzene	ug/L	0.68	20	20	19.3	21.3	93	103	74-126	10	30		
Hexachloro-1,3-butadiene	ug/L	ND	20	20	27.6	21.5	138	107	68-143	25	30		
Isopropylbenzene (Cumene)	ug/L	0.62	20	20	21.2	23.7	103	116	74-130	11	30		
m&p-Xylene	ug/L	ND	40	40	38.6	41.6	97	104	69-132	7	30		
Methyl-tert-butyl ether	ug/L	ND	20	20	17.5	19.5	87	97	65-131	11	30		
Methylene Chloride	ug/L	ND	20	20	18.9	19.0	95	95	57-125	0	30		
n-Butylbenzene	ug/L	ND	20	20	21.9	21.3	109	106	71-131	3	30		
n-Propylbenzene	ug/L	ND	20	20	19.5	21.6	96	107	67-138	10	30		
Naphthalene	ug/L	ND	20	20	19.0	22.8	95	114	60-130	18	30		
o-Xylene	ug/L	ND	20	20	19.1	21.6	96	108	69-131	12	30		
p-Isopropyltoluene	ug/L	ND	20	20	22.6	23.1	113	115	72-133	2	30		
sec-Butylbenzene	ug/L	0.77	20	20	22.6	23.0	109	111	73-134	2	30		
Styrene	ug/L	ND	20	20	19.8	21.8	99	109	72-125	10	30		
tert-Amylmethyl ether	ug/L	ND	20	20	18.2	18.8	91	94	67-125	3	30		
tert-Butyl Alcohol	ug/L	ND	200	200	198	197	99	98	64-137	1	30		
tert-Butylbenzene	ug/L	ND	20	20	20.5	21.8	103	109	70-143	6	30		
Tetrachloroethene	ug/L	1.2	20	20	22.0	23.6	104	112	72-129	7	30		
Tetrahydrofuran	ug/L	ND	200	200	205	195	102	97	66-128	5	30		
Toluene	ug/L	ND	20	20	18.2	19.0	90	94	73-125	4	30		
trans-1,2-Dichloroethene	ug/L	ND	20	20	19.4	18.7	97	94	62-137	3	30		
trans-1,3-Dichloropropene	ug/L	ND	20	20	19.9	21.4	99	107	61-136	8	30		
trans-1,4-Dichloro-2-butene	ug/L	ND	50	50	28.4	36.1	57	72	45-128	24	30		
Trichloroethene	ug/L	ND	20	20	21.1	21.2	105	105	74-132	0	30		
Trichlorofluoromethane	ug/L	ND	20	20	19.9	24.6	100	123	75-139	21	30		
Vinyl acetate	ug/L	ND	20	20	16.3	18.2	81	91	51-135	11	30		
Vinyl chloride	ug/L	ND	20	20	19.9	23.8	100	119	68-146	18	30		
Xylene (Total)	ug/L	ND	60	60	57.8	63.2	96	105	67-137	9	30		
1,2-Dichloroethane-d4 (S)	%						97	101	75-136				
4-Bromofluorobenzene (S)	%						99	100	75-125				
Toluene-d8 (S)	%						98	97	75-125				

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

QC Batch: 608534 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10475648001, 10475648002

METHOD BLANK: 3289529 Matrix: Water

Associated Lab Samples: 10475648001, 10475648002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<2.0	5.0	2.0	05/28/19 11:09	

LABORATORY CONTROL SAMPLE & LCSD: 3289530 3289531

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	41.7	41.6	104	104	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3289532 3289533

Parameter	Units	10474929008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	257	40	40	308	308	126	126	80-120	0	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3289534 3289535

Parameter	Units	10474929015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	238	40	40	275	279	92	103	80-120	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

QC Batch: 608142

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 10475648001, 10475648002

METHOD BLANK: 3287255

Matrix: Water

Associated Lab Samples: 10475648001, 10475648002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	05/24/19 08:48	

LABORATORY CONTROL SAMPLE: 3287256

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	986	99	80-120	

SAMPLE DUPLICATE: 3287257

Parameter	Units	10475740014 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	252	252	0	5	

SAMPLE DUPLICATE: 3287258

Parameter	Units	10475740015 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	225	218	3	5	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10475648

QC Batch: 143203 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10475648001, 10475648002

METHOD BLANK: 627535 Matrix: Water
Associated Lab Samples: 10475648001, 10475648002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	05/23/19 11:20	

LABORATORY CONTROL SAMPLE: 627536

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.2	0.19	97	90-110	

MATRIX SPIKE SAMPLE: 627538

Parameter	Units	20105197001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	0.2	0.086	43	75-125	M1

SAMPLE DUPLICATE: 627537

Parameter	Units	20105197001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<0.0054		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10475648

QC Batch: 607399 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10475648001, 10475648002

METHOD BLANK: 3283594 Matrix: Water
Associated Lab Samples: 10475648001, 10475648002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.12	1.2	0.12	05/21/19 17:40	
Nitrate as N	mg/L	<0.012	0.10	0.012	05/21/19 17:40	
Sulfate	mg/L	0.53J	1.2	0.28	05/21/19 17:40	

LABORATORY CONTROL SAMPLE: 3283595

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.8	103	90-110	
Nitrate as N	mg/L	1	0.96	96	90-110	
Sulfate	mg/L	12.5	13.1	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3283596 3283597

Parameter	Units	10475692001		10475692002		3283596		3283597		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
Chloride	mg/L	3.6	12.5	12.5	12.5	16.6	16.7	104	105	90-110	0	20	
Nitrate as N	mg/L	0.10	1	1	1	1.1	1.1	102	102	90-110	0	20	
Sulfate	mg/L	33.0	12.5	12.5	12.5	43.9	44.4	87	91	90-110	1	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3283598 3283599

Parameter	Units	10475692002		10475692001		3283598		3283599		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
Chloride	mg/L	3.9	12.5	12.5	12.5	16.9	17.0	104	104	90-110	0	20	
Nitrate as N	mg/L	ND	1	1	1	1.1	1.1	100	100	90-110	0	20	
Sulfate	mg/L	35.1	12.5	12.5	12.5	45.9	46.1	86	88	90-110	0	20	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10475648

QC Batch: 608008 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10475648001, 10475648002

METHOD BLANK: 3286607 Matrix: Water
Associated Lab Samples: 10475648001, 10475648002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	05/23/19 16:04	

LABORATORY CONTROL SAMPLE: 3286608

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.95	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3286609 3286610

Parameter	Units	10476170001		3286609		3286610		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.					
Nitrogen, NO2 plus NO3	mg/L	3.7	10	10	10	13.6	13.7	99	100	90-110	1	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3286611 3286612

Parameter	Units	10476170002		3286611		3286612		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.					
Nitrogen, NO2 plus NO3	mg/L	3.6	10	10	10	13.0	12.8	94	92	90-110	2	20

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10475648

QC Batch: 608980 Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
Associated Lab Samples: 10475648001, 10475648002

METHOD BLANK: 3291329 Matrix: Water
Associated Lab Samples: 10475648001, 10475648002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	05/29/19 15:46	

LABORATORY CONTROL SAMPLE: 3291330

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	296	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3291331 3291332

Parameter	Units	10475648001		3291331		3291332		% Rec Limits	RPD	Max RPD	Qual	
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec					MSD % Rec
Chemical Oxygen Demand	mg/L	<17.0	250	250	260	257	98	97	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3291333 3291334

Parameter	Units	10475648002		3291333		3291334		% Rec Limits	RPD	Max RPD	Qual	
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec					MSD % Rec
Chemical Oxygen Demand	mg/L	<17.0	250	250	241	236	96	94	90-110	2	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10475648

QC Batch: 166695 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C TOC
Associated Lab Samples: 10475648001, 10475648002

METHOD BLANK: 656987 Matrix: Water
Associated Lab Samples: 10475648001, 10475648002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.39	1.0	0.39	05/23/19 14:38	

LABORATORY CONTROL SAMPLE: 656988

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.2	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 656989 656990

Parameter	Units	10475607001		656989		656990		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Total Organic Carbon	mg/L	ND	25	25	25.8	25.7	103	102	80-120	0	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 656991 656992

Parameter	Units	12125139001		656991		656992		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Total Organic Carbon	mg/L	16.3	25	25	41.7	41.3	102	100	80-120	1	20

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

PASI-N Pace Analytical Services - New Orleans

PASI-V Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

CU The continuing calibration for this analyte is above laboratory acceptance limits. Analyte was not detected above the reporting limit in any of the associated samples..

H3 Sample was received or analysis requested beyond the recognized method holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

R1 RPD value was outside control limits.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475648

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10475648

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10475648001	RC04-282-292.5-051819	RSK 175	607275		
10475648002	RC04-282-292.5-051819(2)	RSK 175	607275		
10475648001	RC04-282-292.5-051819	EPA 3010	607812	EPA 6010D	608096
10475648002	RC04-282-292.5-051819(2)	EPA 3010	607812	EPA 6010D	608096
10475648001	RC04-282-292.5-051819	EPA 7470A	607830	EPA 7470A	608248
10475648002	RC04-282-292.5-051819(2)	EPA 7470A	607830	EPA 7470A	608248
10475648001	RC04-282-292.5-051819	EPA 8260B	608436		
10475648002	RC04-282-292.5-051819(2)	EPA 8260B	608436		
10475648003	TB-051819	EPA 8260B	608436		
10475648004	Potable Water	EPA 8260B	608436		
10475648005	Potable Water-Filtered	EPA 8260B	608436		
10475648001	RC04-282-292.5-051819	SM 2320B	608534		
10475648002	RC04-282-292.5-051819(2)	SM 2320B	608534		
10475648001	RC04-282-292.5-051819	SM 2540C	608142		
10475648002	RC04-282-292.5-051819(2)	SM 2540C	608142		
10475648001	RC04-282-292.5-051819	SM 4500-S-2 D	143203		
10475648002	RC04-282-292.5-051819(2)	SM 4500-S-2 D	143203		
10475648001	RC04-282-292.5-051819	EPA 300.0	607399		
10475648002	RC04-282-292.5-051819(2)	EPA 300.0	607399		
10475648001	RC04-282-292.5-051819	EPA 353.2	608008		
10475648002	RC04-282-292.5-051819(2)	EPA 353.2	608008		
10475648001	RC04-282-292.5-051819	EPA 410.4	608980	EPA 410.4	609181
10475648002	RC04-282-292.5-051819(2)	EPA 410.4	608980	EPA 410.4	609181
10475648001	RC04-282-292.5-051819	SM 5310C	166695		
10475648002	RC04-282-292.5-051819(2)	SM 5310C	166695		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: CHQM Hill

Project #: **WO# : 10475648**
 PM: JMG Due Date: 05/29/19
 CLIENT: UPRR_Jacobs

Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception

Tracking Number: 7475 9397 8592

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other: PB Temp Blank? Yes No

Thermometer: T1(0461) T2(1336) T3(0459)
 T4(0254) T5(0489) Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: <u>4.1</u> °C	Average Corrected Temp (no temp blank only): <u>4.2</u> °C	See Exceptions <input type="checkbox"/>
Correction Factor: <u>+0.1</u>	Cooler Temp Corrected w/temp blank: <u>4.2</u> °C		

USDA Regulated Soil: (N/A, water sample/Other: _____) Date/Initials of Person Examining Contents: ERZ 5/21/19

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No
 Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

	COMMENTS:
Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 1.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 2.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A 3.
Samples Arrived within Hold Time?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 4. <u>Out of Hold</u>
Short Hold Time Analysis (<72 hr)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input checked="" type="checkbox"/> Nitrate <input checked="" type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 6. <u>1 Day Turn Around</u>
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 7.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 8.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 9.
Field Filtered Volume Received for Dissolved Tests?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A 10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	
All containers needing acid/base preservation have been checked?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A 12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ <input checked="" type="checkbox"/> H ₂ SO ₄ <input checked="" type="checkbox"/> Zinc Acetate
Exceptions: <u>VOA</u> Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No pH Paper Lot#
	Res. Chlorine <u>203619</u> 0-6 Strip 0-14 Strip <u>10D3581</u>
Headpace in VOA Vials (greater than 6mm)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A 13. <input checked="" type="checkbox"/> See Exception
Trip Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A 14.
Trip Blank Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Pace Trip Blank Lot # (if purchased): <u>204792</u>

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: Brad / Mark Date/Time: 05/21/19 Field Data Required? Yes No
 Comments/Resolution: Notified client of nitrate being past hold and 24 hour can not be met. WA certs not required for sulfide/RSK previous email 06/27/18.

Project Manager Review:

Note: Whenever there is a discrepancy affecting N compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers). Date: 05/21/19

05/22/19 per Mark drinking water cert is not required. JMG

Labeled by: [Signature]



Document Name:
Headspace Exception

Document Revised: 17Dec2018
Page 1 of 1

Document No.:
F-MN-C-276-Rev.01

Issuing Authority:
Pace Minnesota Quality Office

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
RC04-282-292.5-051819	0	1	7	8	N
RC04-282-292.5-051819(2)	0	1	7	8	N
Trip Blank	1	1	0	2	N
Potable Water	0	0	3	3	N
Potable Water-filtered	0	0	3	3	N

Chain of Custody

WO#: 12125270



12125270

Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Cert. Needed: Yes

Owner Received Date: 5/21/2019 Results Requested By: 5/29/2019

Workorder: 10475648 Workorder Name: 1497 Freeman WA-Grain Handling

Report To		Subcontract To				Requested Analysis																													
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426		Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042				<div style="display: flex; justify-content: space-between;"> 5632354 / 5310 TOC LAB USE ONLY </div>																													
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix													Preserved Containers																	
1	RC04-282-292.5-051819	PS	5/18/2019 14:15	10475648001	Water													2																	
2	RC04-282-292.5-051819(2)	PS	5/18/2019 15:15	10475648002	Water													2																	
3																																			
4																																			
5																																			

Transfers						Comments											
Transfers	Released By	Date/Time	Received By	Date/Time													
1	<i>Ray Vard Pace</i>	<i>5/21/19 1715</i>	<i>R. CC</i>	<i>5/21/19 1845</i>													
2	<i>R. CC</i>	<i>5/21/19 2330</i>	<i>B. Matthews</i>	<i>5/22/19 0630</i>													
3																	

Cooler Temperature on Receipt 0.7 °C Custody Seal or N Received on Ice or N Samples Intact or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.



Document Name: Sample Condition Upon Receipt Form

Document Revised: 30Apr2019 Page 1 of 1

Document No.: F-VM-C-001-rev.13

Issuing Authority: Pace Virginia Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace WA

Project #:

WO#: 12125270

PM: CLJ

Due Date: 05/31/19

CLIENT: PACE MPLS

Courier: Fed Ex, UPS, USPS, Client, Commercial, Pace, Other

Tracking Number:

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No

Optional: Proj. Due Date: Proj. Name:

Packing Material: Bubble Wrap, Bubble Bags, None, Other Temp Blank? Yes No

Thermometer Used: 140792808 Type of Ice: Wet, Blue, None Samples on ice, cooling process has begun

Cooler Temp Read °C: 0.4 Cooler Temp Corrected °C: 0.7 Biological Tissue Frozen? Yes No NA

Temp should be above freezing to 6 °C Correction Factor: 0.3 Date and Initials of Person Examining Contents: 5/21/19 BC

Comments: BM 5/22/19

Table with 16 rows of inspection criteria and checkboxes. Includes items like Chain of Custody Present, Samples Arrived within Hold Time, Short Hold Time Analysis, etc.

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? Yes No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Nikki Jarve

Date: 5/22/19

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

WO#: 20105113

Samples were sent directly to the State



Place of Origin: WA
 Needed: Yes No

Workorder: 10475648 Workorder Name:

Owner Received Date: 5/21/2019 Results Requested By: 5/29/2019

Report To

Jennifer Gross
 Pace Analytical Seattle
 596 Industry Drive,
 Suite 602
 Tukwila, WA 98188
 Phone (206)957-2426

Pace Analytical New Orleans
 1000 Riverbend Blvd
 Suite F
 St. Rose, LA 70087
 Phone (504)469-0333

Requested Analysis

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers											LAB USE ONLY										
						1	2	3	4	5	6	7	8	9	10	11		12									
1	RC04-282-292.5-051819	PS	5/18/2019 14:15	10475648001	Water	1																					
2	RC04-282-292.5-051819(2)	PS	5/18/2019 15:15	10475648002	Water	1																					
3																											
4																											
5																											

5636267 / 4500 Sulfide

Comments

Transfers	Released By	Date/Time	Received By	Date/Time
1				
2	Jed 3x	5-22-19 0900	mech / Pac	5-22-19 0900
3				

Cooler Temperature on Receipt 5.0°C Custody Seal (Y) or N Received on Ice (Y) or N Samples Intact (Y) or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

Page 56 of 57

WO#: 20105113

PM: CMM

Due Date: 05/29/19

CLIENT: PASI-MINN



Sample Condition Upo

1000 Riverbend Blvd., Suite F
St. Rose, LA 70087

F

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 5-22-19

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?"	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1	
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2	
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4	
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	5	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8	
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	9	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10	
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11	
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12	
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13	If No, was preservative added? <input type="checkbox"/> Yes <input type="checkbox"/> No If added record lot no.: HNO3 _____ H2SO4 _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14	
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	15	

Client Notification/ Resolution:

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

May 30, 2019

David Hodson
Jacobs
155 Grand Ave
#800
Oakland, CA 94612

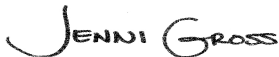
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10475929

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on May 22, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, Jacobs
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
 A2LA Certification #: 2926.01
 Alabama Certification #: 40770
 Alaska Contaminated Sites Certification #: 17-009
 Alaska DW Certification #: MN00064
 Arizona Certification #: AZ0014
 Arkansas DW Certification #: MN00064
 Arkansas WW Certification #: 88-0680
 California Certification #: 2929
 CNMI Saipan Certification #: MP0003
 Colorado Certification #: MN00064
 Connecticut Certification #: PH-0256
 EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
 Florida Certification #: E87605
 Georgia Certification #: 959
 Guam EPA Certification #: MN00064
 Hawaii Certification #: MN00064
 Idaho Certification #: MN00064
 Illinois Certification #: 200011
 Indiana Certification #: C-MN-01
 Iowa Certification #: 368
 Kansas Certification #: E-10167
 Kentucky DW Certification #: 90062
 Kentucky WW Certification #: 90062
 Louisiana DEQ Certification #: 03086
 Louisiana DW Certification #: MN00064
 Maine Certification #: MN00064
 Maryland Certification #: 322
 Massachusetts Certification #: M-MN064
 Michigan Certification #: 9909
 Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137
 Minnesota Petrofund Certification #: 1240
 Mississippi Certification #: MN00064
 Missouri Certification #: 10100
 Montana Certification #: CERT0092
 Nebraska Certification #: NE-OS-18-06
 Nevada Certification #: MN00064
 New Hampshire Certification #: 2081
 New Jersey Certification #: MN002
 New York Certification #: 11647
 North Carolina DW Certification #: 27700
 North Carolina WW Certification #: 530
 North Dakota Certification #: R-036
 Ohio DW Certification #: 41244
 Ohio VAP Certification #: CL101
 Oklahoma Certification #: 9507
 Oregon Primary Certification #: MN300001
 Oregon Secondary Certification #: MN200001
 Pennsylvania Certification #: 68-00563
 Puerto Rico Certification #: MN00064
 South Carolina Certification #:74003001
 Tennessee Certification #: TN02818
 Texas Certification #: T104704192
 Utah Certification #: MN00064
 Vermont Certification #: VT-027053137
 Virginia Certification #: 460163
 Washington Certification #: C486
 West Virginia DEP Certification #: 382
 West Virginia DW Certification #: 9952 C
 Wisconsin Certification #: 999407970
 Wyoming UST Certification #: via A2LA 2926.01

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
 Montana Certificate #CERT0103
 Alaska Certification UST-107
 Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203
 Wisconsin DNR Certification #: 998027470
 WA Department of Ecology Lab ID# C1007

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
 11277CA
 Florida Department of Health (NELAC): E87595
 Illinois Environmental Protection Agency: 0025721
 Kansas Department of Health and Environment (NELAC):
 E-10266
 Louisiana Dept. of Environmental Quality (NELAC/LELAP):
 02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202
 Texas Commission on Env. Quality (NELAC):
 T104704405-09-TX
 U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
 Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10475929

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10475929001	RC02-SWL-142-052119	Water	05/21/19 08:15	05/22/19 08:50
10475929002	RC02-SWL-142-052119(2)	Water	05/21/19 08:45	05/22/19 08:50
10475929003	TB-052119	Water	05/21/19 07:00	05/22/19 08:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10475929001	RC02-SWL-142-052119	RSK 175	AJR	3	PASI-M
		EPA 6010D	IP	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JFP	1	PASI-M
		SM 4500-S-2 D	GJE	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	KEO	1	PASI-M
		EPA 410.4	KEO	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10475929002	RC02-SWL-142-052119(2)	RSK 175	AJR	3	PASI-M
		EPA 6010D	IP	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JFP	1	PASI-M
		SM 4500-S-2 D	GJE	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	KEO	1	PASI-M
		EPA 410.4	KEO	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10475929003	TB-052119	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10475929001	RC02-SWL-142-052119					
EPA 6010D	Arsenic, Dissolved	3.9J	ug/L	20.0	05/24/19 16:25	
EPA 6010D	Barium, Dissolved	15.4	ug/L	10.0	05/24/19 16:25	
EPA 6010D	Beryllium, Dissolved	0.21J	ug/L	5.0	05/24/19 16:25	
EPA 6010D	Chromium, Dissolved	0.58J	ug/L	10.0	05/24/19 16:25	B
EPA 6010D	Copper, Dissolved	5.9J	ug/L	10.0	05/24/19 16:25	
EPA 6010D	Molybdenum, Dissolved	8.9J	ug/L	15.0	05/24/19 16:25	
EPA 6010D	Nickel, Dissolved	2.1J	ug/L	20.0	05/24/19 16:25	
EPA 6010D	Vanadium, Dissolved	5.7J	ug/L	15.0	05/24/19 16:25	
EPA 6010D	Zinc, Dissolved	834	ug/L	20.0	05/24/19 16:25	
EPA 8260B	Acetone	9.8J	ug/L	20.0	05/25/19 15:53	
EPA 8260B	Carbon disulfide	0.93J	ug/L	1.0	05/25/19 15:53	
EPA 8260B	Carbon tetrachloride	411	ug/L	2.5	05/26/19 13:09	
EPA 8260B	Chloroform	33.3	ug/L	1.0	05/25/19 15:53	
EPA 8260B	Toluene	5.7	ug/L	0.50	05/25/19 15:53	
SM 2320B	Alkalinity, Total as CaCO3	178	mg/L	5.0	05/29/19 10:01	
SM 2540C	Total Dissolved Solids	297	mg/L	10.0	05/28/19 14:06	
EPA 300.0	Chloride	9.1	mg/L	1.2	05/22/19 22:55	
EPA 300.0	Nitrate as N	5.3	mg/L	0.10	05/22/19 22:55	
EPA 300.0	Sulfate	22.6	mg/L	1.2	05/22/19 22:55	
EPA 353.2	Nitrogen, NO2 plus NO3	4.9	mg/L	0.50	05/23/19 16:53	
SM 5310C	Total Organic Carbon	1.1	mg/L	1.0	05/28/19 19:41	
10475929002	RC02-SWL-142-052119(2)					
EPA 6010D	Barium, Dissolved	17.2	ug/L	10.0	05/24/19 16:28	
EPA 6010D	Molybdenum, Dissolved	23.6	ug/L	15.0	05/24/19 16:28	
EPA 6010D	Nickel, Dissolved	1.2J	ug/L	20.0	05/24/19 16:28	
EPA 6010D	Vanadium, Dissolved	4.6J	ug/L	15.0	05/24/19 16:28	
EPA 6010D	Zinc, Dissolved	470	ug/L	20.0	05/24/19 16:28	
EPA 8260B	Carbon disulfide	0.66J	ug/L	1.0	05/25/19 16:17	
EPA 8260B	Carbon tetrachloride	313	ug/L	1.0	05/26/19 13:33	
EPA 8260B	Chloroform	26.5	ug/L	1.0	05/25/19 16:17	
EPA 8260B	Toluene	7.4	ug/L	0.50	05/25/19 16:17	
SM 2320B	Alkalinity, Total as CaCO3	177	mg/L	5.0	05/29/19 10:31	
SM 2540C	Total Dissolved Solids	279	mg/L	10.0	05/28/19 14:06	
EPA 300.0	Chloride	8.9	mg/L	1.2	05/22/19 23:10	
EPA 300.0	Nitrate as N	3.8	mg/L	0.10	05/22/19 23:10	
EPA 300.0	Sulfate	18.3	mg/L	1.2	05/22/19 23:10	
EPA 353.2	Nitrogen, NO2 plus NO3	3.5	mg/L	0.50	05/23/19 16:54	
SM 5310C	Total Organic Carbon	1.4	mg/L	1.0	05/28/19 19:57	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

Method: RSK 175

Description: RSK 175 GCV Headspace

Client: UPRR_Jacobs

Date: May 30, 2019

General Information:

2 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10475929

Method: EPA 6010D
Description: 6010D MET ICP, Dissolved
Client: UPRR_Jacobs
Date: May 30, 2019

General Information:

2 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

QC Batch: 607812

CU: The continuing calibration for this analyte is above laboratory acceptance limits. Analyte was not detected above the reporting limit in any of the associated samples..

- LCS (Lab ID: 3285812)
 - Arsenic, Dissolved
 - Thallium, Dissolved
- MS (Lab ID: 3285813)
 - Arsenic, Dissolved
 - Thallium, Dissolved
- MSD (Lab ID: 3285814)
 - Arsenic, Dissolved
 - Thallium, Dissolved

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 607812

B: Analyte was detected in the associated method blank.

- BLANK for HBN 607812 [MPRP/929 (Lab ID: 3285811)
 - Chromium, Dissolved

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

Method: EPA 7470A

Description: 7470A Mercury, Dissolved

Client: UPRR_Jacobs

Date: May 30, 2019

General Information:

2 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: May 30, 2019

General Information:

3 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 608436

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10475457011

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3289002)
 - Acrolein
 - Chloroethane
- MSD (Lab ID: 3289003)
 - Acrolein
 - Chloroethane

R1: RPD value was outside control limits.

- MSD (Lab ID: 3289003)
 - Chloromethane

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: May 30, 2019

Analyte Comments:

QC Batch: 608436

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3289000)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3289001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3289002)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3289003)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- RC02-SWL-142-052119 (Lab ID: 10475929001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- RC02-SWL-142-052119(2) (Lab ID: 10475929002)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- TB-052119 (Lab ID: 10475929003)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

Method: SM 2320B

Description: 2320B Alkalinity

Client: UPRR_Jacobs

Date: May 30, 2019

General Information:

2 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

Method: SM 2540C

Description: 2540C Total Dissolved Solids

Client: UPRR_Jacobs

Date: May 30, 2019

General Information:

2 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

Method: SM 4500-S-2 D

Description: 4500S2D Sulfide, Total

Client: UPRR_Jacobs

Date: May 30, 2019

General Information:

2 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 143534

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10475929001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 629671)
- Sulfide, Total

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

Method: EPA 300.0

Description: 300.0 IC Anions

Client: UPRR_Jacobs

Date: May 30, 2019

General Information:

2 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

Method: EPA 353.2

Description: 353.2 Nitrate + Nitrite

Client: UPRR_Jacobs

Date: May 30, 2019

General Information:

2 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

Method: EPA 410.4

Description: 410.4 COD

Client: UPRR_Jacobs

Date: May 30, 2019

General Information:

2 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

Method: SM 5310C

Description: 5310C TOC

Client: UPRR_Jacobs

Date: May 30, 2019

General Information:

2 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10475929

Sample: RC02-SWL-142-052119 **Lab ID: 10475929001** Collected: 05/21/19 08:15 Received: 05/22/19 08:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		05/23/19 14:48	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		05/23/19 14:48	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		05/23/19 14:48	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	05/23/19 07:06	05/24/19 16:25	7440-36-0	
Arsenic, Dissolved	3.9J	ug/L	20.0	3.8	1	05/23/19 07:06	05/24/19 16:25	7440-38-2	
Barium, Dissolved	15.4	ug/L	10.0	0.18	1	05/23/19 07:06	05/24/19 16:25	7440-39-3	
Beryllium, Dissolved	0.21J	ug/L	5.0	0.12	1	05/23/19 07:06	05/24/19 16:25	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	05/23/19 07:06	05/24/19 16:25	7440-43-9	
Chromium, Dissolved	0.58J	ug/L	10.0	0.49	1	05/23/19 07:06	05/24/19 16:25	7440-47-3	B
Cobalt, Dissolved	<0.50	ug/L	10.0	0.50	1	05/23/19 07:06	05/24/19 16:25	7440-48-4	
Copper, Dissolved	5.9J	ug/L	10.0	1.2	1	05/23/19 07:06	05/24/19 16:25	7440-50-8	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	05/23/19 07:06	05/24/19 16:25	7439-92-1	
Molybdenum, Dissolved	8.9J	ug/L	15.0	1.1	1	05/23/19 07:06	05/24/19 16:25	7439-98-7	
Nickel, Dissolved	2.1J	ug/L	20.0	1.1	1	05/23/19 07:06	05/24/19 16:25	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	05/23/19 07:06	05/24/19 16:25	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	05/23/19 07:06	05/24/19 16:25	7440-22-4	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	05/23/19 07:06	05/24/19 16:25	7440-28-0	
Vanadium, Dissolved	5.7J	ug/L	15.0	0.29	1	05/23/19 07:06	05/24/19 16:25	7440-62-2	
Zinc, Dissolved	834	ug/L	20.0	2.5	1	05/23/19 07:06	05/24/19 16:25	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	05/23/19 14:55	05/24/19 14:43	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/25/19 15:53	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/25/19 15:53	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/25/19 15:53	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/25/19 15:53	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/25/19 15:53	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/25/19 15:53	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		05/25/19 15:53	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/25/19 15:53	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		05/25/19 15:53	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/25/19 15:53	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		05/25/19 15:53	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		05/25/19 15:53	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/25/19 15:53	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		05/25/19 15:53	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/25/19 15:53	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	1.0	0.22	1		05/25/19 15:53	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/25/19 15:53	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/25/19 15:53	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/25/19 15:53	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/25/19 15:53	541-73-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10475929

Sample: RC02-SWL-142-052119 Lab ID: 10475929001 Collected: 05/21/19 08:15 Received: 05/22/19 08:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/25/19 15:53	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/25/19 15:53	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/25/19 15:53	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/25/19 15:53	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/25/19 15:53	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/25/19 15:53	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/25/19 15:53	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/25/19 15:53	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/25/19 15:53	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/25/19 15:53	108-10-1	
Acetone	9.8J	ug/L	20.0	9.2	1		05/25/19 15:53	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		05/25/19 15:53	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/25/19 15:53	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/25/19 15:53	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		05/25/19 15:53	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/25/19 15:53	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/25/19 15:53	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/25/19 15:53	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/25/19 15:53	74-83-9	
Carbon disulfide	0.93J	ug/L	1.0	0.078	1		05/25/19 15:53	75-15-0	
Carbon tetrachloride	411	ug/L	2.5	0.94	5		05/26/19 13:09	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/25/19 15:53	108-90-7	
Chloroethane	<0.49	ug/L	4.0	0.49	1		05/25/19 15:53	75-00-3	
Chloroform	33.3	ug/L	1.0	0.45	1		05/25/19 15:53	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/25/19 15:53	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		05/25/19 15:53	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/25/19 15:53	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/25/19 15:53	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/25/19 15:53	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/25/19 15:53	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/25/19 15:53	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/25/19 15:53	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/25/19 15:53	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		05/25/19 15:53	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		05/25/19 15:53	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/25/19 15:53	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/25/19 15:53	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/25/19 15:53	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/25/19 15:53	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/25/19 15:53	109-99-9	
Toluene	5.7	ug/L	0.50	0.083	1		05/25/19 15:53	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/25/19 15:53	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/25/19 15:53	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/25/19 15:53	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/25/19 15:53	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/25/19 15:53	1330-20-7	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

Sample: RC02-SWL-142-052119 Lab ID: 10475929001 Collected: 05/21/19 08:15 Received: 05/22/19 08:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level									
Analytical Method: EPA 8260B									
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/25/19 15:53	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/25/19 15:53	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/25/19 15:53	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		05/25/19 15:53	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/25/19 15:53	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/25/19 15:53	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		05/25/19 15:53	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/25/19 15:53	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/25/19 15:53	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/25/19 15:53	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/25/19 15:53	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/25/19 15:53	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		05/25/19 15:53	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/25/19 15:53	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	93	%	75-136		1		05/25/19 15:53	17060-07-0	
Toluene-d8 (S)	97	%	75-125		1		05/25/19 15:53	2037-26-5	
4-Bromofluorobenzene (S)	94	%	75-125		1		05/25/19 15:53	460-00-4	
2320B Alkalinity									
Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	178	mg/L	5.0	2.0	1		05/29/19 10:01		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Total Dissolved Solids	297	mg/L	10.0	5.0	1		05/28/19 14:06		
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		05/28/19 15:14	18496-25-8	M1
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	9.1	mg/L	1.2	0.12	1		05/22/19 22:55	16887-00-6	
Nitrate as N	5.3	mg/L	0.10	0.012	1		05/22/19 22:55	14797-55-8	
Sulfate	22.6	mg/L	1.2	0.28	1		05/22/19 22:55	14808-79-8	
353.2 Nitrate + Nitrite									
Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	4.9	mg/L	0.50	0.088	5		05/23/19 16:53		
410.4 COD									
Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	05/29/19 11:34	05/29/19 15:52		
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	1.1	mg/L	1.0	0.39	1		05/28/19 19:41	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10475929

Sample: RC02-SWL-142-052119(2) **Lab ID:** 10475929002 Collected: 05/21/19 08:45 Received: 05/22/19 08:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace		Analytical Method: RSK 175							
Methane	<4.9	ug/L	10.0	4.9	1		05/23/19 14:55	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		05/23/19 14:55	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		05/23/19 14:55	74-85-1	
6010D MET ICP, Dissolved		Analytical Method: EPA 6010D Preparation Method: EPA 3010							
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	05/23/19 07:06	05/24/19 16:28	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	05/23/19 07:06	05/24/19 16:28	7440-38-2	
Barium, Dissolved	17.2	ug/L	10.0	0.18	1	05/23/19 07:06	05/24/19 16:28	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	05/23/19 07:06	05/24/19 16:28	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	05/23/19 07:06	05/24/19 16:28	7440-43-9	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	05/23/19 07:06	05/24/19 16:28	7440-47-3	
Cobalt, Dissolved	<0.50	ug/L	10.0	0.50	1	05/23/19 07:06	05/24/19 16:28	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	05/23/19 07:06	05/24/19 16:28	7440-50-8	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	05/23/19 07:06	05/24/19 16:28	7439-92-1	
Molybdenum, Dissolved	23.6	ug/L	15.0	1.1	1	05/23/19 07:06	05/24/19 16:28	7439-98-7	
Nickel, Dissolved	1.2J	ug/L	20.0	1.1	1	05/23/19 07:06	05/24/19 16:28	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	05/23/19 07:06	05/24/19 16:28	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	05/23/19 07:06	05/24/19 16:28	7440-22-4	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	05/23/19 07:06	05/24/19 16:28	7440-28-0	
Vanadium, Dissolved	4.6J	ug/L	15.0	0.29	1	05/23/19 07:06	05/24/19 16:28	7440-62-2	
Zinc, Dissolved	470	ug/L	20.0	2.5	1	05/23/19 07:06	05/24/19 16:28	7440-66-6	
7470A Mercury, Dissolved		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	05/23/19 14:55	05/24/19 14:46	7439-97-6	
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/25/19 16:17	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/25/19 16:17	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/25/19 16:17	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/25/19 16:17	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/25/19 16:17	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/25/19 16:17	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		05/25/19 16:17	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/25/19 16:17	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		05/25/19 16:17	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/25/19 16:17	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		05/25/19 16:17	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		05/25/19 16:17	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/25/19 16:17	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		05/25/19 16:17	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/25/19 16:17	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	1.0	0.22	1		05/25/19 16:17	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/25/19 16:17	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/25/19 16:17	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/25/19 16:17	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/25/19 16:17	541-73-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

Sample: RC02-SWL-142-052119(2) Lab ID: 10475929002 Collected: 05/21/19 08:45 Received: 05/22/19 08:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/25/19 16:17	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/25/19 16:17	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/25/19 16:17	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/25/19 16:17	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/25/19 16:17	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/25/19 16:17	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/25/19 16:17	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/25/19 16:17	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/25/19 16:17	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/25/19 16:17	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		05/25/19 16:17	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		05/25/19 16:17	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/25/19 16:17	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/25/19 16:17	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		05/25/19 16:17	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/25/19 16:17	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/25/19 16:17	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/25/19 16:17	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/25/19 16:17	74-83-9	
Carbon disulfide	0.66J	ug/L	1.0	0.078	1		05/25/19 16:17	75-15-0	
Carbon tetrachloride	313	ug/L	1.0	0.38	2		05/26/19 13:33	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/25/19 16:17	108-90-7	
Chloroethane	<0.49	ug/L	4.0	0.49	1		05/25/19 16:17	75-00-3	
Chloroform	26.5	ug/L	1.0	0.45	1		05/25/19 16:17	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/25/19 16:17	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		05/25/19 16:17	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/25/19 16:17	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/25/19 16:17	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/25/19 16:17	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/25/19 16:17	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/25/19 16:17	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/25/19 16:17	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/25/19 16:17	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		05/25/19 16:17	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		05/25/19 16:17	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/25/19 16:17	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/25/19 16:17	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/25/19 16:17	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/25/19 16:17	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/25/19 16:17	109-99-9	
Toluene	7.4	ug/L	0.50	0.083	1		05/25/19 16:17	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/25/19 16:17	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/25/19 16:17	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/25/19 16:17	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/25/19 16:17	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/25/19 16:17	1330-20-7	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

Sample: RC02-SWL-142-052119(2) **Lab ID:** 10475929002 Collected: 05/21/19 08:45 Received: 05/22/19 08:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/25/19 16:17	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/25/19 16:17	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/25/19 16:17	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		05/25/19 16:17	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/25/19 16:17	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/25/19 16:17	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		05/25/19 16:17	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/25/19 16:17	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/25/19 16:17	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/25/19 16:17	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/25/19 16:17	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/25/19 16:17	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		05/25/19 16:17	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/25/19 16:17	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	96	%	75-136		1		05/25/19 16:17	17060-07-0	
Toluene-d8 (S)	97	%	75-125		1		05/25/19 16:17	2037-26-5	
4-Bromofluorobenzene (S)	93	%	75-125		1		05/25/19 16:17	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	177	mg/L	5.0	2.0	1		05/29/19 10:31		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	279	mg/L	10.0	5.0	1		05/28/19 14:06		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		05/28/19 15:18	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	8.9	mg/L	1.2	0.12	1		05/22/19 23:10	16887-00-6	
Nitrate as N	3.8	mg/L	0.10	0.012	1		05/22/19 23:10	14797-55-8	
Sulfate	18.3	mg/L	1.2	0.28	1		05/22/19 23:10	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	3.5	mg/L	0.50	0.088	5		05/23/19 16:54		
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	05/29/19 11:34	05/29/19 15:52		
5310C TOC		Analytical Method: SM 5310C							
Total Organic Carbon	1.4	mg/L	1.0	0.39	1		05/28/19 19:57	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10475929

Sample: TB-052119 **Lab ID: 10475929003** Collected: 05/21/19 07:00 Received: 05/22/19 08:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/25/19 13:08	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/25/19 13:08	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/25/19 13:08	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/25/19 13:08	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/25/19 13:08	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/25/19 13:08	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		05/25/19 13:08	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/25/19 13:08	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		05/25/19 13:08	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/25/19 13:08	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		05/25/19 13:08	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		05/25/19 13:08	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/25/19 13:08	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		05/25/19 13:08	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/25/19 13:08	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	1.0	0.22	1		05/25/19 13:08	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/25/19 13:08	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/25/19 13:08	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/25/19 13:08	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/25/19 13:08	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/25/19 13:08	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/25/19 13:08	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/25/19 13:08	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/25/19 13:08	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/25/19 13:08	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/25/19 13:08	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/25/19 13:08	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/25/19 13:08	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/25/19 13:08	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/25/19 13:08	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		05/25/19 13:08	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		05/25/19 13:08	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/25/19 13:08	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/25/19 13:08	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		05/25/19 13:08	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/25/19 13:08	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/25/19 13:08	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/25/19 13:08	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/25/19 13:08	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		05/25/19 13:08	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		05/25/19 13:08	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/25/19 13:08	108-90-7	
Chloroethane	<0.49	ug/L	4.0	0.49	1		05/25/19 13:08	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		05/25/19 13:08	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/25/19 13:08	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		05/25/19 13:08	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Project No.: 10475929

Sample: TB-052119 **Lab ID: 10475929003** Collected: 05/21/19 07:00 Received: 05/22/19 08:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level									
Analytical Method: EPA 8260B									
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/25/19 13:08	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/25/19 13:08	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/25/19 13:08	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/25/19 13:08	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/25/19 13:08	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/25/19 13:08	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/25/19 13:08	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		05/25/19 13:08	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		05/25/19 13:08	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/25/19 13:08	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/25/19 13:08	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/25/19 13:08	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/25/19 13:08	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/25/19 13:08	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		05/25/19 13:08	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/25/19 13:08	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/25/19 13:08	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/25/19 13:08	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/25/19 13:08	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/25/19 13:08	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/25/19 13:08	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/25/19 13:08	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/25/19 13:08	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		05/25/19 13:08	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/25/19 13:08	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/25/19 13:08	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		05/25/19 13:08	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/25/19 13:08	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/25/19 13:08	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/25/19 13:08	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/25/19 13:08	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/25/19 13:08	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		05/25/19 13:08	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/25/19 13:08	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%	75-136		1		05/25/19 13:08	17060-07-0	
Toluene-d8 (S)	98	%	75-125		1		05/25/19 13:08	2037-26-5	
4-Bromofluorobenzene (S)	95	%	75-125		1		05/25/19 13:08	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10475929

QC Batch: 608020 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 GCV HEADSPACE
Associated Lab Samples: 10475929001, 10475929002

METHOD BLANK: 3286701 Matrix: Water
Associated Lab Samples: 10475929001, 10475929002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	05/23/19 13:43	
Ethene	ug/L	<2.9	10.0	2.9	05/23/19 13:43	
Methane	ug/L	<4.9	10.0	4.9	05/23/19 13:43	

LABORATORY CONTROL SAMPLE & LCSD: 3286702

Parameter	Units	3286703								Qualifiers
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	
Ethane	ug/L	114	109	112	96	98	85-115	3	20	
Ethene	ug/L	106	102	104	96	99	85-115	3	20	
Methane	ug/L	60.7	57.0	57.2	94	94	85-115	0	20	

SAMPLE DUPLICATE: 3286772

Parameter	Units	10476170002 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<3.0	<3.0		20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	<4.9	<4.9		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

QC Batch: 607830

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470A Mercury Water Dissolved

Associated Lab Samples: 10475929001, 10475929002

METHOD BLANK: 3285889

Matrix: Water

Associated Lab Samples: 10475929001, 10475929002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.093	0.20	0.093	05/24/19 14:27	

LABORATORY CONTROL SAMPLE: 3285890

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.2	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3285891 3285892

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		10475648002 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Mercury, Dissolved	ug/L	<0.093	5	5	5.4	5.3	107	105	80-120	1	20		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

QC Batch: 607812

Analysis Method: EPA 6010D

QC Batch Method: EPA 3010

Analysis Description: 6010D Water Dissolved

Associated Lab Samples: 10475929001, 10475929002

METHOD BLANK: 3285811

Matrix: Water

Associated Lab Samples: 10475929001, 10475929002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	05/24/19 15:56	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	05/24/19 15:56	
Barium, Dissolved	ug/L	<0.18	10.0	0.18	05/24/19 15:56	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	05/24/19 15:56	
Cadmium, Dissolved	ug/L	<0.26	3.0	0.26	05/24/19 15:56	
Chromium, Dissolved	ug/L	1.4J	10.0	0.49	05/24/19 15:56	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	05/24/19 15:56	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	05/24/19 15:56	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	05/24/19 15:56	
Molybdenum, Dissolved	ug/L	<1.1	15.0	1.1	05/24/19 15:56	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	05/24/19 15:56	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	05/24/19 15:56	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	05/24/19 15:56	
Thallium, Dissolved	ug/L	<4.3	20.0	4.3	05/24/19 15:56	
Vanadium, Dissolved	ug/L	0.30J	15.0	0.29	05/24/19 15:56	
Zinc, Dissolved	ug/L	6.0J	20.0	2.5	05/24/19 15:56	

LABORATORY CONTROL SAMPLE: 3285812

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony, Dissolved	ug/L	1000	1040	104	80-120	
Arsenic, Dissolved	ug/L	1000	1080	108	80-120	CU
Barium, Dissolved	ug/L	1000	1020	102	80-120	
Beryllium, Dissolved	ug/L	1000	998	100	80-120	
Cadmium, Dissolved	ug/L	1000	1070	107	80-120	
Chromium, Dissolved	ug/L	1000	1020	102	80-120	
Cobalt, Dissolved	ug/L	1000	1020	102	80-120	
Copper, Dissolved	ug/L	1000	963	96	80-120	
Lead, Dissolved	ug/L	1000	1060	106	80-120	
Molybdenum, Dissolved	ug/L	1000	1000	100	80-120	
Nickel, Dissolved	ug/L	1000	1040	104	80-120	
Selenium, Dissolved	ug/L	1000	1080	108	80-120	
Silver, Dissolved	ug/L	500	484	97	80-120	
Thallium, Dissolved	ug/L	1000	1080	108	80-120	CU
Vanadium, Dissolved	ug/L	1000	969	97	80-120	
Zinc, Dissolved	ug/L	1000	1090	109	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

Parameter	Units	10475648001		MS		MSD		3285813		3285814		Max RPD	Qual
		Result	Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD			
Antimony, Dissolved	ug/L	<7.0	1000	1000	1010	1040	101	104	75-125	3	20		
Arsenic, Dissolved	ug/L	<3.8	1000	1000	1060	1080	106	108	75-125	2	20	CU	
Barium, Dissolved	ug/L	39.6	1000	1000	1030	1040	100	100	75-125	1	20		
Beryllium, Dissolved	ug/L	0.47J	1000	1000	987	1000	99	100	75-125	2	20		
Cadmium, Dissolved	ug/L	0.46J	1000	1000	1040	1060	104	106	75-125	2	20		
Chromium, Dissolved	ug/L	1.0J	1000	1000	1000	1020	100	102	75-125	2	20		
Cobalt, Dissolved	ug/L	0.52J	1000	1000	994	1010	99	101	75-125	2	20		
Copper, Dissolved	ug/L	1.6J	1000	1000	946	955	94	95	75-125	1	20		
Lead, Dissolved	ug/L	2.3J	1000	1000	1030	1040	102	104	75-125	1	20		
Molybdenum, Dissolved	ug/L	5.9J	1000	1000	983	1010	98	101	75-125	3	20		
Nickel, Dissolved	ug/L	2.0J	1000	1000	1010	1030	101	103	75-125	2	20		
Selenium, Dissolved	ug/L	<5.8	1000	1000	1050	1070	105	107	75-125	2	20		
Silver, Dissolved	ug/L	<0.38	500	500	479	483	96	97	75-125	1	20		
Thallium, Dissolved	ug/L	<4.3	1000	1000	1040	1060	104	106	75-125	2	20	CU	
Vanadium, Dissolved	ug/L	2.6J	1000	1000	960	970	96	97	75-125	1	20		
Zinc, Dissolved	ug/L	190	1000	1000	1240	1260	105	107	75-125	2	20		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

QC Batch: 608436 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10475929001, 10475929002, 10475929003

METHOD BLANK: 3289000 Matrix: Water

Associated Lab Samples: 10475929001, 10475929002, 10475929003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	05/25/19 11:57	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	05/25/19 11:57	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	05/25/19 11:57	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	05/25/19 11:57	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	05/25/19 11:57	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	05/25/19 11:57	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	05/25/19 11:57	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	05/25/19 11:57	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	05/25/19 11:57	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	05/25/19 11:57	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	05/25/19 11:57	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	05/25/19 11:57	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	05/25/19 11:57	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	05/25/19 11:57	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	05/25/19 11:57	
1,2-Dichloroethane	ug/L	<0.22	1.0	0.22	05/25/19 11:57	MN
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	05/25/19 11:57	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	05/25/19 11:57	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	05/25/19 11:57	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	05/25/19 11:57	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	05/25/19 11:57	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	05/25/19 11:57	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	05/25/19 11:57	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	05/25/19 11:57	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	05/25/19 11:57	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	05/25/19 11:57	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	05/25/19 11:57	
2-Hexanone	ug/L	<0.88	5.0	0.88	05/25/19 11:57	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	05/25/19 11:57	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	05/25/19 11:57	
Acetone	ug/L	<9.2	20.0	9.2	05/25/19 11:57	
Acrolein	ug/L	<1.2	10.0	1.2	05/25/19 11:57	
Acrylonitrile	ug/L	<0.91	10.0	0.91	05/25/19 11:57	
Benzene	ug/L	<0.10	0.50	0.10	05/25/19 11:57	
Bromobenzene	ug/L	<0.21	0.50	0.21	05/25/19 11:57	
Bromochloromethane	ug/L	<0.27	1.0	0.27	05/25/19 11:57	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	05/25/19 11:57	
Bromoform	ug/L	<0.80	4.0	0.80	05/25/19 11:57	
Bromomethane	ug/L	<1.8	4.0	1.8	05/25/19 11:57	
Carbon disulfide	ug/L	<0.078	1.0	0.078	05/25/19 11:57	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	05/25/19 11:57	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

METHOD BLANK: 3289000

Matrix: Water

Associated Lab Samples: 10475929001, 10475929002, 10475929003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	05/25/19 11:57	
Chloroethane	ug/L	<0.49	4.0	0.49	05/25/19 11:57	MN
Chloroform	ug/L	<0.45	1.0	0.45	05/25/19 11:57	
Chloromethane	ug/L	<0.16	4.0	0.16	05/25/19 11:57	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	05/25/19 11:57	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	05/25/19 11:57	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	05/25/19 11:57	MN
Dibromomethane	ug/L	<0.16	1.0	0.16	05/25/19 11:57	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	05/25/19 11:57	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	05/25/19 11:57	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	05/25/19 11:57	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	05/25/19 11:57	
Ethylbenzene	ug/L	<0.14	0.50	0.14	05/25/19 11:57	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	05/25/19 11:57	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	05/25/19 11:57	
m&p-Xylene	ug/L	<0.31	1.0	0.31	05/25/19 11:57	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	05/25/19 11:57	
Methylene Chloride	ug/L	<0.98	4.0	0.98	05/25/19 11:57	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	05/25/19 11:57	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	05/25/19 11:57	
Naphthalene	ug/L	<0.48	1.0	0.48	05/25/19 11:57	
o-Xylene	ug/L	<0.16	0.50	0.16	05/25/19 11:57	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	05/25/19 11:57	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	05/25/19 11:57	
Styrene	ug/L	<0.19	0.50	0.19	05/25/19 11:57	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	05/25/19 11:57	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	05/25/19 11:57	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	05/25/19 11:57	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	05/25/19 11:57	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	05/25/19 11:57	
Toluene	ug/L	<0.083	0.50	0.083	05/25/19 11:57	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	05/25/19 11:57	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	05/25/19 11:57	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	05/25/19 11:57	
Trichloroethene	ug/L	<0.15	0.40	0.15	05/25/19 11:57	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	05/25/19 11:57	
Vinyl acetate	ug/L	<1.1	10.0	1.1	05/25/19 11:57	
Vinyl chloride	ug/L	<0.092	0.20	0.092	05/25/19 11:57	
Xylene (Total)	ug/L	<0.31	1.5	0.31	05/25/19 11:57	
1,2-Dichloroethane-d4 (S)	%	96	75-136		05/25/19 11:57	
4-Bromofluorobenzene (S)	%	92	75-125		05/25/19 11:57	
Toluene-d8 (S)	%	99	75-125		05/25/19 11:57	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

LABORATORY CONTROL SAMPLE: 3289001

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.5	97	68-141	
1,1,1-Trichloroethane	ug/L	20	18.8	94	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	17.2	86	73-125	
1,1,2-Trichloroethane	ug/L	20	20.0	100	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	18.6	93	69-132	
1,1-Dichloroethane	ug/L	20	18.8	94	73-125	
1,1-Dichloroethene	ug/L	20	18.5	93	71-126	
1,1-Dichloropropene	ug/L	20	18.7	93	73-126	
1,2,3-Trichlorobenzene	ug/L	20	19.4	97	72-126	
1,2,3-Trichloropropane	ug/L	20	17.6	88	75-126	
1,2,4-Trichlorobenzene	ug/L	20	18.3	91	71-134	
1,2,4-Trimethylbenzene	ug/L	20	19.3	97	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	45.4	91	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	19.6	98	75-129	
1,2-Dichlorobenzene	ug/L	20	18.5	93	75-129	
1,2-Dichloroethane	ug/L	20	19.5	98	75-125	
1,2-Dichloroethene (Total)	ug/L	40	38.8	97	74-125	N2
1,2-Dichloropropane	ug/L	20	18.9	94	75-125	
1,3,5-Trimethylbenzene	ug/L	20	18.8	94	75-127	
1,3-Dichlorobenzene	ug/L	20	18.6	93	75-126	
1,3-Dichloropropane	ug/L	20	19.3	97	75-125	
1,4-Dichlorobenzene	ug/L	20	18.2	91	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	374	93	72-129	
2,2,4-Trimethylpentane	ug/L	20	16.7	84	72-128	N2
2,2-Dichloropropane	ug/L	20	18.9	95	65-138	
2-Butanone (MEK)	ug/L	100	96.1	96	59-144	
2-Chlorotoluene	ug/L	20	17.5	88	75-127	
2-Hexanone	ug/L	100	88.9	89	73-134	
4-Chlorotoluene	ug/L	20	18.1	90	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	93.3	93	62-141	
Acetone	ug/L	100	115	115	60-137	
Acrolein	ug/L	200	229	114	60-141	
Acrylonitrile	ug/L	200	193	97	75-129	
Benzene	ug/L	20	19.0	95	73-125	
Bromobenzene	ug/L	20	18.3	91	73-125	
Bromochloromethane	ug/L	20	20.5	102	75-135	
Bromodichloromethane	ug/L	20	19.0	95	75-125	
Bromoform	ug/L	20	19.1	95	67-136	
Bromomethane	ug/L	20	18.8	94	30-150	
Carbon disulfide	ug/L	20	17.9	89	47-137	
Carbon tetrachloride	ug/L	20	18.3	91	75-125	
Chlorobenzene	ug/L	20	19.0	95	75-125	
Chloroethane	ug/L	20	22.3	111	63-136	
Chloroform	ug/L	20	18.5	93	73-128	
Chloromethane	ug/L	20	18.0	90	55-130	
cis-1,2-Dichloroethene	ug/L	20	19.4	97	75-125	
cis-1,3-Dichloropropene	ug/L	20	21.6	108	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

LABORATORY CONTROL SAMPLE: 3289001

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	22.1	111	75-125	
Dibromomethane	ug/L	20	21.4	107	75-125	
Dichlorodifluoromethane	ug/L	20	18.7	94	63-132	
Dichlorofluoromethane	ug/L	20	21.2	106	68-127	N2
Diisopropyl ether	ug/L	20	18.6	93	71-131	
Ethyl-tert-butyl ether	ug/L	20	19.5	97	75-125	
Ethylbenzene	ug/L	20	18.6	93	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.2	101	72-134	
Isopropylbenzene (Cumene)	ug/L	20	19.2	96	75-125	
m&p-Xylene	ug/L	40	38.7	97	75-126	
Methyl-tert-butyl ether	ug/L	20	18.9	94	75-125	
Methylene Chloride	ug/L	20	19.7	99	70-125	
n-Butylbenzene	ug/L	20	18.2	91	75-126	
n-Propylbenzene	ug/L	20	17.6	88	73-127	
Naphthalene	ug/L	20	18.0	90	63-128	
o-Xylene	ug/L	20	20.3	101	75-128	
p-Isopropyltoluene	ug/L	20	19.4	97	75-125	
sec-Butylbenzene	ug/L	20	19.0	95	75-126	
Styrene	ug/L	20	20.6	103	75-125	
tert-Amylmethyl ether	ug/L	20	18.6	93	75-125	
tert-Butyl Alcohol	ug/L	200	197	98	75-130	
tert-Butylbenzene	ug/L	20	19.0	95	75-131	
Tetrachloroethene	ug/L	20	19.5	98	74-125	
Tetrahydrofuran	ug/L	200	208	104	64-138	
Toluene	ug/L	20	18.0	90	74-125	
trans-1,2-Dichloroethene	ug/L	20	19.4	97	68-128	
trans-1,3-Dichloropropene	ug/L	20	20.9	104	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	30.7	61	60-127	
Trichloroethene	ug/L	20	20.6	103	75-127	
Trichlorofluoromethane	ug/L	20	22.2	111	72-133	
Vinyl acetate	ug/L	20	18.2	91	61-129	
Vinyl chloride	ug/L	20	21.8	109	75-128	
Xylene (Total)	ug/L	60	59.0	98	75-125	
1,2-Dichloroethane-d4 (S)	%			99	75-136	
4-Bromofluorobenzene (S)	%			91	75-125	
Toluene-d8 (S)	%			96	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3289002 3289003

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10475457011 Result	Spike Conc.	Spike Conc.	Result								
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	18.4	19.9	92	100	75-140	8	30		
1,1,1-Trichloroethane	ug/L	ND	20	20	19.6	19.5	98	97	74-136	1	30		
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	17.1	19.3	86	96	66-134	12	30		
1,1,2-Trichloroethane	ug/L	ND	20	20	18.6	20.2	93	101	75-126	9	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3289002												3289003	
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10475457011 Result	Spike Conc.	Spike Conc.	MS Conc.								
1,1,2-Trichlorotrifluoroethane	ug/L	ND	20	20	20	21.2	21.1	106	106	65-146	0	30	
1,1-Dichloroethane	ug/L	ND	20	20	18.8	18.3	94	91	68-132	3	30		
1,1-Dichloroethene	ug/L	ND	20	20	19.7	19.2	99	96	66-139	3	30		
1,1-Dichloropropene	ug/L	ND	20	20	19.3	19.2	96	96	67-134	1	30		
1,2,3-Trichlorobenzene	ug/L	ND	20	20	21.2	22.1	106	111	67-129	4	30		
1,2,3-Trichloropropane	ug/L	ND	20	20	18.1	20.4	90	102	69-128	12	30		
1,2,4-Trichlorobenzene	ug/L	ND	20	20	21.7	21.8	108	109	65-140	1	30		
1,2,4-Trimethylbenzene	ug/L	ND	20	20	20.8	22.7	103	113	71-133	9	30		
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	44.8	51.7	90	103	54-138	14	30		
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	18.2	19.6	91	98	68-125	7	30		
1,2-Dichlorobenzene	ug/L	ND	20	20	19.1	20.7	96	104	74-136	8	30		
1,2-Dichloroethane	ug/L	2.9	20	20	21.1	21.5	91	93	68-125	1	30		
1,2-Dichloroethene (Total)	ug/L	ND	40	40	38.8	37.6	97	94	71-126	3	30	N2	
1,2-Dichloropropane	ug/L	ND	20	20	18.9	19.8	94	99	67-125	4	30		
1,3,5-Trimethylbenzene	ug/L	ND	20	20	20.1	21.9	100	109	68-137	9	30		
1,3-Dichlorobenzene	ug/L	ND	20	20	19.3	20.8	96	104	75-131	8	30		
1,3-Dichloropropane	ug/L	ND	20	20	18.2	19.4	91	97	71-125	6	30		
1,4-Dichlorobenzene	ug/L	ND	20	20	18.7	20.5	93	102	74-126	9	30		
1,4-Dioxane (p-Dioxane)	ug/L	ND	400	400	358	398	89	100	68-125	11	30		
2,2,4-Trimethylpentane	ug/L	ND	20	20	22.6	18.9	108	89	54-129	18	30	N2	
2,2-Dichloropropane	ug/L	ND	20	20	19.8	19.5	99	98	69-139	1	30		
2-Butanone (MEK)	ug/L	9.1	100	100	89.6	99.1	81	90	54-144	10	30		
2-Chlorotoluene	ug/L	ND	20	20	18.7	20.3	94	102	75-134	8	30		
2-Hexanone	ug/L	ND	100	100	78.6	93.9	79	94	58-137	18	30		
4-Chlorotoluene	ug/L	ND	20	20	18.4	20.5	92	102	72-133	11	30		
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	89.6	102	90	102	60-129	13	30		
Acetone	ug/L	ND	100	100	101	97.4	95	91	62-132	4	30		
Acrolein	ug/L	ND	200	200	484	489	242	245	30-150	1	30	M1	
Acrylonitrile	ug/L	ND	200	200	183	195	92	98	68-125	6	30		
Benzene	ug/L	9.1	20	20	28.3	27.5	96	92	68-125	3	30		
Bromobenzene	ug/L	ND	20	20	18.6	19.7	93	99	73-126	6	30		
Bromochloromethane	ug/L	ND	20	20	19.0	19.6	95	98	66-143	3	30		
Bromodichloromethane	ug/L	ND	20	20	18.0	19.2	90	96	74-125	6	30		
Bromoform	ug/L	ND	20	20	17.5	19.7	87	98	64-134	12	30		
Bromomethane	ug/L	ND	20	20	19.4	22.6	97	113	30-150	15	30		
Carbon disulfide	ug/L	ND	20	20	19.9	17.8	99	89	43-147	11	30		
Carbon tetrachloride	ug/L	ND	20	20	19.2	19.5	96	97	71-143	1	30		
Chlorobenzene	ug/L	ND	20	20	18.6	19.8	93	99	75-125	6	30		
Chloroethane	ug/L	ND	20	20	28.6	27.0	143	135	75-129	6	30	M1	
Chloroform	ug/L	ND	20	20	18.5	18.2	93	91	66-132	2	30		
Chloromethane	ug/L	ND	20	20	14.9	21.9	74	109	53-137	38	30	R1	
cis-1,2-Dichloroethene	ug/L	ND	20	20	19.4	18.8	97	94	67-133	3	30		
cis-1,3-Dichloropropene	ug/L	ND	20	20	20.3	21.2	101	106	66-125	4	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

Parameter	Units	3289002		3289003		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
Dibromochloromethane	ug/L	ND	20	20	20.1	21.9	100	109	62-132	9	30		
Dibromomethane	ug/L	ND	20	20	20.3	21.7	102	108	67-125	6	30		
Dichlorodifluoromethane	ug/L	ND	20	20	17.3	21.4	87	107	71-142	21	30		
Dichlorofluoromethane	ug/L	ND	20	20	19.0	23.5	95	117	70-131	21	30	N2	
Diisopropyl ether	ug/L	ND	20	20	17.4	17.9	87	89	63-131	3	30		
Ethyl-tert-butyl ether	ug/L	ND	20	20	18.5	19.4	92	97	66-128	5	30		
Ethylbenzene	ug/L	0.68	20	20	19.3	21.3	93	103	74-126	10	30		
Hexachloro-1,3-butadiene	ug/L	ND	20	20	27.6	21.5	138	107	68-143	25	30		
Isopropylbenzene (Cumene)	ug/L	0.62	20	20	21.2	23.7	103	116	74-130	11	30		
m&p-Xylene	ug/L	ND	40	40	38.6	41.6	97	104	69-132	7	30		
Methyl-tert-butyl ether	ug/L	ND	20	20	17.5	19.5	87	97	65-131	11	30		
Methylene Chloride	ug/L	ND	20	20	18.9	19.0	95	95	57-125	0	30		
n-Butylbenzene	ug/L	ND	20	20	21.9	21.3	109	106	71-131	3	30		
n-Propylbenzene	ug/L	ND	20	20	19.5	21.6	96	107	67-138	10	30		
Naphthalene	ug/L	ND	20	20	19.0	22.8	95	114	60-130	18	30		
o-Xylene	ug/L	ND	20	20	19.1	21.6	96	108	69-131	12	30		
p-Isopropyltoluene	ug/L	ND	20	20	22.6	23.1	113	115	72-133	2	30		
sec-Butylbenzene	ug/L	0.77	20	20	22.6	23.0	109	111	73-134	2	30		
Styrene	ug/L	ND	20	20	19.8	21.8	99	109	72-125	10	30		
tert-Amylmethyl ether	ug/L	ND	20	20	18.2	18.8	91	94	67-125	3	30		
tert-Butyl Alcohol	ug/L	ND	200	200	198	197	99	98	64-137	1	30		
tert-Butylbenzene	ug/L	ND	20	20	20.5	21.8	103	109	70-143	6	30		
Tetrachloroethene	ug/L	1.2	20	20	22.0	23.6	104	112	72-129	7	30		
Tetrahydrofuran	ug/L	ND	200	200	205	195	102	97	66-128	5	30		
Toluene	ug/L	ND	20	20	18.2	19.0	90	94	73-125	4	30		
trans-1,2-Dichloroethene	ug/L	ND	20	20	19.4	18.7	97	94	62-137	3	30		
trans-1,3-Dichloropropene	ug/L	ND	20	20	19.9	21.4	99	107	61-136	8	30		
trans-1,4-Dichloro-2-butene	ug/L	ND	50	50	28.4	36.1	57	72	45-128	24	30		
Trichloroethene	ug/L	ND	20	20	21.1	21.2	105	105	74-132	0	30		
Trichlorofluoromethane	ug/L	ND	20	20	19.9	24.6	100	123	75-139	21	30		
Vinyl acetate	ug/L	ND	20	20	16.3	18.2	81	91	51-135	11	30		
Vinyl chloride	ug/L	ND	20	20	19.9	23.8	100	119	68-146	18	30		
Xylene (Total)	ug/L	ND	60	60	57.8	63.2	96	105	67-137	9	30		
1,2-Dichloroethane-d4 (S)	%						97	101	75-136				
4-Bromofluorobenzene (S)	%						99	100	75-125				
Toluene-d8 (S)	%						98	97	75-125				

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10475929

QC Batch: 608894 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10475929001, 10475929002

METHOD BLANK: 3291133 Matrix: Water
Associated Lab Samples: 10475929001, 10475929002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<2.0	5.0	2.0	05/29/19 07:54	

LABORATORY CONTROL SAMPLE & LCSD: 3291134 3291135

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	41.0	41.0	102	103	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3291136 3291137

Parameter	Units	10475431010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	<5.0	40	40	42.0	39.4	100	94	80-120	7	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3291138 3291139

Parameter	Units	10476537002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	173	40	40	213	213	99	101	80-120	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

QC Batch: 608557

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 10475929001, 10475929002

METHOD BLANK: 3289591

Matrix: Water

Associated Lab Samples: 10475929001, 10475929002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	05/28/19 14:06	

LABORATORY CONTROL SAMPLE: 3289592

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	996	100	80-120	

SAMPLE DUPLICATE: 3289593

Parameter	Units	10475929001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	297	295	1	5	

SAMPLE DUPLICATE: 3289594

Parameter	Units	10476068001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	278	268	4	5	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

QC Batch: 143534 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10475929001, 10475929002

METHOD BLANK: 629668 Matrix: Water

Associated Lab Samples: 10475929001, 10475929002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	05/28/19 15:10	

LABORATORY CONTROL SAMPLE: 629669

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.2	0.19	96	90-110	

MATRIX SPIKE SAMPLE: 629671

Parameter	Units	10475929001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.2	0.12	57	75-125	M1

SAMPLE DUPLICATE: 629670

Parameter	Units	10475929001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10475929

QC Batch: 607679 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10475929001, 10475929002

METHOD BLANK: 3284973 Matrix: Water
Associated Lab Samples: 10475929001, 10475929002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.12	1.2	0.12	05/22/19 20:58	
Nitrate as N	mg/L	<0.012	0.10	0.012	05/22/19 20:58	
Sulfate	mg/L	<0.28	1.2	0.28	05/22/19 20:58	

LABORATORY CONTROL SAMPLE: 3284974

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.9	104	90-110	
Nitrate as N	mg/L	1	0.96	96	90-110	
Sulfate	mg/L	12.5	11.6	93	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3284975 3284976

Parameter	Units	10475024001		10475024002		MSD		MS		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	0.52J	12.5	12.5	13.6	13.7	105	105	105	90-110	0	20	
Nitrate as N	mg/L	0.13	1	1	1.1	1.1	102	102	102	90-110	0	20	
Sulfate	mg/L	1.6	12.5	12.5	14.9	14.7	106	105	105	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3284977 3284978

Parameter	Units	10475024002		10475024001		MSD		MS		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	0.39J	12.5	12.5	13.5	13.5	105	105	105	90-110	0	20	
Nitrate as N	mg/L	0.078J	1	1	1.1	1.1	101	101	101	90-110	0	20	
Sulfate	mg/L	0.93J	12.5	12.5	14.2	14.0	106	104	104	90-110	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10475929

QC Batch: 608008 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10475929001, 10475929002

METHOD BLANK: 3286607 Matrix: Water
Associated Lab Samples: 10475929001, 10475929002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	05/23/19 16:04	

LABORATORY CONTROL SAMPLE: 3286608

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.95	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3286609 3286610

Parameter	Units	10476170001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Nitrogen, NO2 plus NO3	mg/L	3.7	10	10	13.6	13.7	99	100	90-110	1	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3286611 3286612

Parameter	Units	10476170002		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Nitrogen, NO2 plus NO3	mg/L	3.6	10	10	13.0	12.8	94	92	90-110	2	20		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

QC Batch: 608980

Analysis Method: EPA 410.4

QC Batch Method: EPA 410.4

Analysis Description: 410.4 COD

Associated Lab Samples: 10475929001, 10475929002

METHOD BLANK: 3291329

Matrix: Water

Associated Lab Samples: 10475929001, 10475929002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	05/29/19 15:46	

LABORATORY CONTROL SAMPLE: 3291330

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	296	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3291331 3291332

Parameter	Units	10475648001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chemical Oxygen Demand	mg/L	<17.0	250	250	260	257	98	97	90-110	1	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3291333 3291334

Parameter	Units	10475648002		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chemical Oxygen Demand	mg/L	<17.0	250	250	241	236	96	94	90-110	2	20		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

QC Batch: 166934 Analysis Method: SM 5310C
 QC Batch Method: SM 5310C Analysis Description: 5310C TOC
 Associated Lab Samples: 10475929001, 10475929002

METHOD BLANK: 657819 Matrix: Water

Associated Lab Samples: 10475929001, 10475929002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.39	1.0	0.39	05/28/19 15:56	

LABORATORY CONTROL SAMPLE: 657820

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	24.9	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 657821 657822

Parameter	Units	657821		657822		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10475607002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Total Organic Carbon	mg/L	ND	25	25	26.0	25.7	103	102	80-120	1	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 657823 657824

Parameter	Units	657823		657824		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10475203001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Total Organic Carbon	mg/L	8.2	25	25	32.9	32.7	99	98	80-120	1	20

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

PASI-N Pace Analytical Services - New Orleans

PASI-V Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

CU The continuing calibration for this analyte is above laboratory acceptance limits. Analyte was not detected above the reporting limit in any of the associated samples..

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

R1 RPD value was outside control limits.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10475929

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10475929001	RC02-SWL-142-052119	RSK 175	608020		
10475929002	RC02-SWL-142-052119(2)	RSK 175	608020		
10475929001	RC02-SWL-142-052119	EPA 3010	607812	EPA 6010D	608096
10475929002	RC02-SWL-142-052119(2)	EPA 3010	607812	EPA 6010D	608096
10475929001	RC02-SWL-142-052119	EPA 7470A	607830	EPA 7470A	608248
10475929002	RC02-SWL-142-052119(2)	EPA 7470A	607830	EPA 7470A	608248
10475929001	RC02-SWL-142-052119	EPA 8260B	608436		
10475929002	RC02-SWL-142-052119(2)	EPA 8260B	608436		
10475929003	TB-052119	EPA 8260B	608436		
10475929001	RC02-SWL-142-052119	SM 2320B	608894		
10475929002	RC02-SWL-142-052119(2)	SM 2320B	608894		
10475929001	RC02-SWL-142-052119	SM 2540C	608557		
10475929002	RC02-SWL-142-052119(2)	SM 2540C	608557		
10475929001	RC02-SWL-142-052119	SM 4500-S-2 D	143534		
10475929002	RC02-SWL-142-052119(2)	SM 4500-S-2 D	143534		
10475929001	RC02-SWL-142-052119	EPA 300.0	607679		
10475929002	RC02-SWL-142-052119(2)	EPA 300.0	607679		
10475929001	RC02-SWL-142-052119	EPA 353.2	608008		
10475929002	RC02-SWL-142-052119(2)	EPA 353.2	608008		
10475929001	RC02-SWL-142-052119	EPA 410.4	608980	EPA 410.4	609181
10475929002	RC02-SWL-142-052119(2)	EPA 410.4	608980	EPA 410.4	609181
10475929001	RC02-SWL-142-052119	SM 5310C	166934		
10475929002	RC02-SWL-142-052119(2)	SM 5310C	166934		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields

WO#: 10475929

10475929

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:	
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh	
Address: 999 W. Riverside Ave, Suite 500 Spokane, WA 99201	Copy To: Steve Demus, Jonathan Espinoza	Company: UPRR	
Email:	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221	Regulatory Agency
Phone:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938	State / Location
Requested Due Date: <u>10-Day Standard</u>	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross	WA / Freeman
	Project #: 1497	Pace Profile #: 36447 / 4	

ITEM #	SAMPLE ID <i>24 DAT</i> One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique	MATRIX CODE <small>(see valid codes to left)</small>	SAMPLE TYPE <small>(G=GRAB C=COMP)</small>	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives											Analysis Test	Y/N	Requested Analysis/Filtered (Y/N)						
				DATE	TIME			Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, Nitrate 300.0	2540 TDS				TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	4500 Total Phosphorus
1	RC02-SWL-142-052119	WTG		5/21	815	-13		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
2	RC02-SWL-142-052119(2)				845			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
3	TB-052119				700								X														
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Short hold analyses are in bold	<i>JL Jacobs</i>	5/21/19	1600	<i>Jonathan Espinoza</i> PACE	5/22/19	850	3.4 Y N Y
*Field filtered by client							

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on Ice (Y/N)	Custody Sealed (Y/N)	Cooler (Y/N)	Samples intact (Y/N)
PRINT Name of SAMPLER:	<i>Jonathan Espinoza</i>					
SIGNATURE of SAMPLER:	<i>JL</i>	DATE Signed:	<i>5/21/19</i>			

Sample Condition Upon Receipt **Client Name:** CHQM Hill **Project #:** WO#: 10475929

Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception

Tracking Number: 7475 9397 8581

Custody Seal on Cooler/Box Present? Yes No **Seals Intact?** Yes No **Biological Tissue Frozen?** Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other: PB **Temp Blank?** Yes No

Thermometer: T1(0461) T2(1336) T3(0459)
 T4(0254) T5(0048) **Type of Ice:** Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: <u>3.3</u> °C	Average Corrected Temp (no temp blank only): _____ °C	See Exceptions <input type="checkbox"/>
Correction Factor: <u>+0.1</u>	Cooler Temp Corrected w/temp blank: <u>3.4</u> °C		

USDA Regulated Soil: N/A, water sample/Other: _____ **Date/Initials of Person Examining Contents:** ERZ 5/22/19

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

	COMMENTS:
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input checked="" type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6. <u>24 hr TAT</u>
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception <input type="checkbox"/>
All containers needing acid/base preservation have been checked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12. Sample # <input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ <input checked="" type="checkbox"/> H ₂ SO ₄ <input checked="" type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No See Exception <input type="checkbox"/>
JMG 052219 Exceptions (VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFA5) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Chlorine? <input type="checkbox"/> No pH Paper Lot# <input type="checkbox"/>
	Res. Chlorine 0-6 Roll <u>203619</u> 0-6 Strip <u>10D3581</u> 0-14 Strip
Headspace in VOA Vials (greater than 6mm)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception <input checked="" type="checkbox"/>
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. Pace Trip Blank Lot # (if purchased): <u>8-333-002</u>
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** Yes No

Person Contacted: Brad / Mark Date/Time: 05/22/19

Comments/Resolution: Notified client 24 hour rush cannot be met. WA cert not required for RSK/Sulfide, drinking water certs not needed.

Project Manager Review: _____ **Date:** 05/22/19

Note: Whenever there is a discrepancy affecting compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect container, etc.)

Labeled by: EPV



Document Name:
Headspace Exception

Document Revised: 17Dec2018
Page 1 of 1

Document No.:
F-MN-C-276-Rev.01

Issuing Authority:
Pace Minnesota Quality Office

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
RCOZ-SWL-142-052119	0	2	1	3	N
RCOZ-SWL-142-052119(2)	0	1	2	3	N
TB-052119	1	0	1	2	N



12125363

Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Cert. Needed: Yes

Owner Received Date: 5/22/2019 Results Requested By: 5/30/2019

Workorder: 10475929

Workorder Name: 1497 Freeman WA-Grain Handling

Report To		Subcontract To					Requested Analysis																												
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426		Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042					<div style="display: flex; justify-content: space-between;"> 5632354 / 5310 TOC LAB USE ONLY </div>																												
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers																													
1	RC02-SWL-142-052119	PS	5/21/2019 08:15	10475929001	Water	2																													
2	RC02-SWL-142-052119(2)	PS	5/21/2019 08:45	10475929002	Water	2																													
3																																			
4																																			
5																																			

Transfers						Comments					
Released By	Date/Time	Received By	Date/Time								
<i>[Signature]</i>	5/22/19 12:45	<i>[Signature]</i>	5/22/19 1845								
<i>[Signature]</i>	5/22/19 2330	B. Matthews	5/23/19 0445								

Cooler Temperature on Receipt °C
 Custody Seal or N
 Received on Ice or N
 Samples Intact or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.



Document Name: Sample Condition Upon Receipt Form

Document Revised: 30Apr2019

Page 1 of 1

Document No.: F-VM-C-001-rev.13

Issuing Authority: Pace Virginia Minnesota Quality Office

Sample Condition Upon Receipt

Client Name:

Pace WA

Project #:

WO#: 12125363

PM: CLJ

Due Date: 05/31/19

CLIENT: PACE MPLS

Courier: Fed Ex, UPS, USPS, Client, Commercial, Pace, Other:

Tracking Number:

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Optional: Proj. Due Date: Proj. Name:

Packing Material: Bubble Wrap, Bubble Bags, None, Other: Temp Blank? Yes No

Thermometer Used: 140792808 Type of Ice: Wet, Blue, None, Samples on ice, cooling process has begun

Cooler Temp Read °C: -0.2 Cooler Temp Corrected °C: 0.1 Biological Tissue Frozen? Yes No N/A

Temp should be above freezing to 6 °C Correction Factor: 0.3 Date and Initials of Person Examining Contents: 5/22/19 DC

Comments:

Bm 5/23/19

Table with 16 rows of checklist items and checkboxes for 'Yes', 'No', and 'N/A'. Includes items like 'Chain of Custody Present?', 'Samples Arrived within Hold Time?', and 'All containers needing acid/base preservation properly preserved?'.

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? Yes No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Nikki Jarve

Date: 5/23/19

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Chain of Custody

WO#: 20105228



Analytica
www.pacelabs.com

Samples were sent directly to the Subcontracting Laboratory.

State Of Origin
Cert. Needed:

Workorder: 10475929 Workorder Name: 1497 Freeman WA-Grain Handling

Owner Received Date: 5/22/2019 Results Requested By: 5/30/2019

Report To		Subcontract To				Requested Analysis																								
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426		Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333				<div style="display: flex; justify-content: space-between;"> 5636267 / 4500 Sulfide LAB USE ONLY </div>																								
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix											Preserved Containers														
1	RC02-SWL-142-052119	PS	5/21/2019 08:15	10475929001	Water											Other BPZZ														
2	RC02-SWL-142-052119(2)	PS	5/21/2019 08:45	10475929002	Water											1														
3																														
4																														

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	<i>[Signature]</i>	5/22/19 17:10			
2	<i>[Signature]</i>	5-23-19	0835		
3				5-23-19	0835

Cooler Temperature on Receipt 4-2°C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

WO#: 20105228

PM: CMM Due Date: 05/30/19
CLIENT: PASI-MINN



1000 Riverbend Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon Rec

Projec

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 05-23-19M

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8 500 ml
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13 If No, was preservative added? <input type="checkbox"/> Yes <input type="checkbox"/> No If added record lot no.: HNO3 _____ H2SO4 _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	15

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

May 31, 2019

David Hodson
Jacobs
155 Grand Ave
#800
Oakland, CA 94612

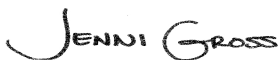
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10476170

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on May 23, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, Jacobs
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10476170

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #: 74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Montana Certificate #CERT0103
Alaska Certification UST-107
Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203
Wisconsin DNR Certification #: 998027470
WA Department of Ecology Lab ID# C1007

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC):
E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC):
T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10476170001	RC02-192-TD-052219	Water	05/22/19 11:10	05/23/19 08:45
10476170002	RC02-192-TD-052219(2)	Water	05/22/19 12:00	05/23/19 08:45
10476170003	DUP1-052219	Water	05/22/19 08:00	05/23/19 08:45
10476170004	TB-052219	Water	05/22/19 07:00	05/23/19 08:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10476170001	RC02-192-TD-052219	EPA 6010D	DM	16	PASI-M
		EPA 7470A	BTS	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JER	1	PASI-M
		SM 4500-S-2 D	GJE	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	KEO	1	PASI-M
		EPA 410.4	KEO	1	PASI-M
10476170002	RC02-192-TD-052219(2)	SM 5310C	JK1	1	PASI-V
		RSK 175	AJR	3	PASI-M
		EPA 6010D	DM	16	PASI-M
		EPA 7470A	BTS	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JER	1	PASI-M
		SM 4500-S-2 D	GJE	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
10476170003	DUP1-052219	EPA 353.2	KEO	1	PASI-M
		EPA 410.4	KEO	1	PASI-M
		SM 5310C	JK1	1	PASI-V
		RSK 175	AJR	3	PASI-M
		EPA 6010D	DM	16	PASI-M
		EPA 7470A	BTS	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JER	1	PASI-M
10476170004	TB-052219	SM 4500-S-2 D	GJE	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	KEO	1	PASI-M
		EPA 410.4	KEO	1	PASI-M
		SM 5310C	JK1	1	PASI-V
		EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10476170001	RC02-192-TD-052219					
EPA 6010D	Barium, Dissolved	26.0	ug/L	10.0	05/31/19 10:31	
EPA 6010D	Beryllium, Dissolved	0.51J	ug/L	5.0	05/31/19 10:31	B
EPA 6010D	Cadmium, Dissolved	0.56J	ug/L	3.0	05/31/19 10:31	B
EPA 6010D	Cobalt, Dissolved	1.7J	ug/L	10.0	05/31/19 10:31	B
EPA 6010D	Copper, Dissolved	9.3J	ug/L	10.0	05/31/19 10:31	
EPA 6010D	Lead, Dissolved	2.4J	ug/L	10.0	05/31/19 10:31	
EPA 6010D	Molybdenum, Dissolved	2.0J	ug/L	15.0	05/31/19 10:31	
EPA 6010D	Nickel, Dissolved	5.7J	ug/L	20.0	05/31/19 10:31	
EPA 6010D	Vanadium, Dissolved	8.4J	ug/L	15.0	05/31/19 10:31	
EPA 6010D	Zinc, Dissolved	777	ug/L	20.0	05/31/19 10:31	
EPA 8260B	Carbon disulfide	0.68J	ug/L	1.0	05/25/19 16:41	
EPA 8260B	Carbon tetrachloride	253	ug/L	1.0	05/26/19 14:20	
EPA 8260B	Chloroform	18.1	ug/L	1.0	05/25/19 16:41	
EPA 8260B	Toluene	11.9	ug/L	0.50	05/25/19 16:41	
SM 2320B	Alkalinity, Total as CaCO3	167	mg/L	5.0	05/30/19 11:05	
SM 2540C	Total Dissolved Solids	277	mg/L	10.0	05/29/19 13:11	
EPA 300.0	Chloride	5.5	mg/L	1.2	05/23/19 20:46	
EPA 300.0	Nitrate as N	3.8	mg/L	0.10	05/23/19 20:46	
EPA 300.0	Sulfate	22.4	mg/L	1.2	05/23/19 20:46	
EPA 353.2	Nitrogen, NO2 plus NO3	3.7	mg/L	1.0	05/23/19 16:43	
SM 5310C	Total Organic Carbon	0.87J	mg/L	1.0	05/28/19 20:30	
10476170002	RC02-192-TD-052219(2)					
EPA 6010D	Barium, Dissolved	25.0	ug/L	10.0	05/31/19 10:33	
EPA 6010D	Beryllium, Dissolved	0.35J	ug/L	5.0	05/31/19 10:33	B
EPA 6010D	Cobalt, Dissolved	2.6J	ug/L	10.0	05/31/19 10:33	B
EPA 6010D	Copper, Dissolved	1.3J	ug/L	10.0	05/31/19 10:33	
EPA 6010D	Lead, Dissolved	2.4J	ug/L	10.0	05/31/19 10:33	
EPA 6010D	Molybdenum, Dissolved	4.4J	ug/L	15.0	05/31/19 10:33	
EPA 6010D	Nickel, Dissolved	1.5J	ug/L	20.0	05/31/19 10:33	
EPA 6010D	Vanadium, Dissolved	9.0J	ug/L	15.0	05/31/19 10:33	
EPA 6010D	Zinc, Dissolved	647	ug/L	20.0	05/31/19 10:33	
EPA 8260B	Acetone	9.8J	ug/L	20.0	05/25/19 17:05	
EPA 8260B	Carbon disulfide	0.71J	ug/L	1.0	05/25/19 17:05	
EPA 8260B	Carbon tetrachloride	244	ug/L	1.0	05/26/19 15:07	
EPA 8260B	Chloroform	16.8	ug/L	1.0	05/25/19 17:05	
EPA 8260B	Toluene	7.6	ug/L	0.50	05/25/19 17:05	
SM 2320B	Alkalinity, Total as CaCO3	161	mg/L	5.0	05/30/19 11:11	
SM 2540C	Total Dissolved Solids	274	mg/L	10.0	05/29/19 13:11	
EPA 300.0	Chloride	5.5	mg/L	1.2	05/23/19 21:16	
EPA 300.0	Nitrate as N	3.8	mg/L	0.10	05/23/19 21:16	
EPA 300.0	Sulfate	22.3	mg/L	1.2	05/23/19 21:16	
EPA 353.2	Nitrogen, NO2 plus NO3	3.6	mg/L	1.0	05/23/19 16:48	
SM 5310C	Total Organic Carbon	0.94J	mg/L	1.0	05/28/19 20:46	
10476170003	DUP1-052219					
EPA 6010D	Barium, Dissolved	25.0	ug/L	10.0	05/31/19 10:34	
EPA 6010D	Beryllium, Dissolved	0.27J	ug/L	5.0	05/31/19 10:34	B

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10476170003	DUP1-052219					
EPA 6010D	Cadmium, Dissolved	0.31J	ug/L	3.0	05/31/19 10:34	B
EPA 6010D	Cobalt, Dissolved	2.2J	ug/L	10.0	05/31/19 10:34	B
EPA 6010D	Lead, Dissolved	3.2J	ug/L	10.0	05/31/19 10:34	
EPA 6010D	Molybdenum, Dissolved	4.7J	ug/L	15.0	05/31/19 10:34	
EPA 6010D	Nickel, Dissolved	1.8J	ug/L	20.0	05/31/19 10:34	
EPA 6010D	Vanadium, Dissolved	9.2J	ug/L	15.0	05/31/19 10:34	
EPA 6010D	Zinc, Dissolved	647	ug/L	20.0	05/31/19 10:34	
EPA 8260B	Carbon disulfide	0.61J	ug/L	1.0	05/25/19 17:28	
EPA 8260B	Carbon tetrachloride	255	ug/L	1.0	05/26/19 15:54	
EPA 8260B	Chloroform	16.6	ug/L	1.0	05/25/19 17:28	
EPA 8260B	Toluene	7.1	ug/L	0.50	05/25/19 17:28	
SM 2320B	Alkalinity, Total as CaCO ₃	171	mg/L	5.0	05/30/19 12:26	
SM 2540C	Total Dissolved Solids	273	mg/L	10.0	05/29/19 13:11	
EPA 300.0	Chloride	5.5	mg/L	1.2	05/23/19 21:31	
EPA 300.0	Nitrate as N	3.8	mg/L	0.10	05/23/19 21:31	
EPA 300.0	Sulfate	22.2	mg/L	1.2	05/23/19 21:31	
EPA 353.2	Nitrogen, NO ₂ plus NO ₃	3.5	mg/L	1.0	05/23/19 16:52	
SM 5310C	Total Organic Carbon	0.77J	mg/L	1.0	05/28/19 20:14	
10476170004	TB-052219					
EPA 8260B	Acetone	19.8J	ug/L	20.0	05/25/19 13:32	
EPA 8260B	tert-Butyl Alcohol	5.0J	ug/L	10.0	05/25/19 13:32	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

Method: RSK 175

Description: RSK 175 GCV Headspace

Client: UPRR_Jacobs

Date: May 31, 2019

General Information:

2 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

Method: EPA 6010D

Description: 6010D MET ICP, Dissolved

Client: UPRR_Jacobs

Date: May 31, 2019

General Information:

3 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 608650

B: Analyte was detected in the associated method blank.

- BLANK for HBN 608650 [MPRP/930 (Lab ID: 3289949)]
 - Beryllium, Dissolved
 - Cadmium, Dissolved
 - Cobalt, Dissolved

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

Method: EPA 7470A

Description: 7470A Mercury, Dissolved

Client: UPRR_Jacobs

Date: May 31, 2019

General Information:

3 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: May 31, 2019

General Information:

4 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 608436

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10475457011

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3289002)
 - Acrolein
 - Chloroethane
- MSD (Lab ID: 3289003)
 - Acrolein
 - Chloroethane

R1: RPD value was outside control limits.

- MSD (Lab ID: 3289003)
 - Chloromethane

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: May 31, 2019

Analyte Comments:

QC Batch: 608436

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3289000)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- DUP1-052219 (Lab ID: 10476170003)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3289001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3289002)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3289003)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- RC02-192-TD-052219 (Lab ID: 10476170001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- RC02-192-TD-052219(2) (Lab ID: 10476170002)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- TB-052219 (Lab ID: 10476170004)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

Method: SM 2320B

Description: 2320B Alkalinity

Client: UPRR_Jacobs

Date: May 31, 2019

General Information:

3 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 609224

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10476067001,10476099001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3292599)
 - Alkalinity, Total as CaCO₃
- MSD (Lab ID: 3292600)
 - Alkalinity, Total as CaCO₃

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

Method: SM 2540C

Description: 2540C Total Dissolved Solids

Client: UPRR_Jacobs

Date: May 31, 2019

General Information:

3 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

Method: SM 4500-S-2 D

Description: 4500S2D Sulfide, Total

Client: UPRR_Jacobs

Date: May 31, 2019

General Information:

3 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 143534

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10475929001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 629671)
- Sulfide, Total

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

Method: EPA 300.0

Description: 300.0 IC Anions

Client: UPRR_Jacobs

Date: May 31, 2019

General Information:

3 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

Method: EPA 353.2

Description: 353.2 Nitrate + Nitrite

Client: UPRR_Jacobs

Date: May 31, 2019

General Information:

3 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

Method: EPA 410.4

Description: 410.4 COD

Client: UPRR_Jacobs

Date: May 31, 2019

General Information:

3 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

Method: SM 5310C

Description: 5310C TOC

Client: UPRR_Jacobs

Date: May 31, 2019

General Information:

3 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10476170

Sample: RC02-192-TD-052219 Lab ID: 10476170001 Collected: 05/22/19 11:10 Received: 05/23/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	05/30/19 09:58	05/31/19 10:31	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	05/30/19 09:58	05/31/19 10:31	7440-38-2	
Barium, Dissolved	26.0	ug/L	10.0	0.18	1	05/30/19 09:58	05/31/19 10:31	7440-39-3	
Beryllium, Dissolved	0.51J	ug/L	5.0	0.12	1	05/30/19 09:58	05/31/19 10:31	7440-41-7	B
Cadmium, Dissolved	0.56J	ug/L	3.0	0.26	1	05/30/19 09:58	05/31/19 10:31	7440-43-9	B
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	05/30/19 09:58	05/31/19 10:31	7440-47-3	
Cobalt, Dissolved	1.7J	ug/L	10.0	0.50	1	05/30/19 09:58	05/31/19 10:31	7440-48-4	B
Copper, Dissolved	9.3J	ug/L	10.0	1.2	1	05/30/19 09:58	05/31/19 10:31	7440-50-8	
Lead, Dissolved	2.4J	ug/L	10.0	2.0	1	05/30/19 09:58	05/31/19 10:31	7439-92-1	
Molybdenum, Dissolved	2.0J	ug/L	15.0	1.1	1	05/30/19 09:58	05/31/19 10:31	7439-98-7	
Nickel, Dissolved	5.7J	ug/L	20.0	1.1	1	05/30/19 09:58	05/31/19 10:31	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	05/30/19 09:58	05/31/19 10:31	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	05/30/19 09:58	05/31/19 10:31	7440-22-4	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	05/30/19 09:58	05/31/19 10:31	7440-28-0	
Vanadium, Dissolved	8.4J	ug/L	15.0	0.29	1	05/30/19 09:58	05/31/19 10:31	7440-62-2	
Zinc, Dissolved	777	ug/L	20.0	2.5	1	05/30/19 09:58	05/31/19 10:31	7440-66-6	
7470A Mercury, Dissolved									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	05/30/19 12:55	05/30/19 15:59	7439-97-6	
8260B MSV Low Level									
Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/25/19 16:41	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/25/19 16:41	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/25/19 16:41	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/25/19 16:41	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/25/19 16:41	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/25/19 16:41	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		05/25/19 16:41	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/25/19 16:41	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		05/25/19 16:41	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/25/19 16:41	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		05/25/19 16:41	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		05/25/19 16:41	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/25/19 16:41	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		05/25/19 16:41	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/25/19 16:41	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	1.0	0.22	1		05/25/19 16:41	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/25/19 16:41	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/25/19 16:41	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/25/19 16:41	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/25/19 16:41	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/25/19 16:41	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/25/19 16:41	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/25/19 16:41	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/25/19 16:41	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/25/19 16:41	594-20-7	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

Sample: RC02-192-TD-052219 Lab ID: 10476170001 Collected: 05/22/19 11:10 Received: 05/23/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/25/19 16:41	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/25/19 16:41	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/25/19 16:41	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/25/19 16:41	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/25/19 16:41	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		05/25/19 16:41	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		05/25/19 16:41	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/25/19 16:41	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/25/19 16:41	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		05/25/19 16:41	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/25/19 16:41	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/25/19 16:41	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/25/19 16:41	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/25/19 16:41	74-83-9	
Carbon disulfide	0.68J	ug/L	1.0	0.078	1		05/25/19 16:41	75-15-0	
Carbon tetrachloride	253	ug/L	1.0	0.38	2		05/26/19 14:20	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/25/19 16:41	108-90-7	
Chloroethane	<0.49	ug/L	4.0	0.49	1		05/25/19 16:41	75-00-3	
Chloroform	18.1	ug/L	1.0	0.45	1		05/25/19 16:41	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/25/19 16:41	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		05/25/19 16:41	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/25/19 16:41	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/25/19 16:41	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/25/19 16:41	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/25/19 16:41	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/25/19 16:41	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/25/19 16:41	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/25/19 16:41	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		05/25/19 16:41	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		05/25/19 16:41	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/25/19 16:41	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/25/19 16:41	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/25/19 16:41	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/25/19 16:41	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/25/19 16:41	109-99-9	
Toluene	11.9	ug/L	0.50	0.083	1		05/25/19 16:41	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/25/19 16:41	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/25/19 16:41	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/25/19 16:41	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/25/19 16:41	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/25/19 16:41	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/25/19 16:41	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/25/19 16:41	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/25/19 16:41	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		05/25/19 16:41	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/25/19 16:41	103-65-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10476170

Sample: RC02-192-TD-052219 **Lab ID:** 10476170001 Collected: 05/22/19 11:10 Received: 05/23/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level Analytical Method: EPA 8260B									
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/25/19 16:41	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		05/25/19 16:41	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/25/19 16:41	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/25/19 16:41	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/25/19 16:41	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/25/19 16:41	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/25/19 16:41	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		05/25/19 16:41	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/25/19 16:41	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	95	%	75-136		1		05/25/19 16:41	17060-07-0	
Toluene-d8 (S)	101	%	75-125		1		05/25/19 16:41	2037-26-5	
4-Bromofluorobenzene (S)	93	%	75-125		1		05/25/19 16:41	460-00-4	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	167	mg/L	5.0	2.0	1		05/30/19 11:05		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	277	mg/L	10.0	5.0	1		05/29/19 13:11		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		05/28/19 15:24	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	5.5	mg/L	1.2	0.12	1		05/23/19 20:46	16887-00-6	
Nitrate as N	3.8	mg/L	0.10	0.012	1		05/23/19 20:46	14797-55-8	
Sulfate	22.4	mg/L	1.2	0.28	1		05/23/19 20:46	14808-79-8	
353.2 Nitrate + Nitrite Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	3.7	mg/L	1.0	0.18	10		05/23/19 16:43		
410.4 COD Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	05/29/19 11:34	05/29/19 15:53		
5310C TOC Analytical Method: SM 5310C									
Total Organic Carbon	0.87J	mg/L	1.0	0.39	1		05/28/19 20:30	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10476170

Sample: RC02-192-TD-052219(2) Lab ID: 10476170002 Collected: 05/22/19 12:00 Received: 05/23/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace		Analytical Method: RSK 175							
Methane	<4.9	ug/L	10.0	4.9	1		05/23/19 14:27	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		05/23/19 14:27	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		05/23/19 14:27	74-85-1	
6010D MET ICP, Dissolved		Analytical Method: EPA 6010D Preparation Method: EPA 3010							
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	05/30/19 09:58	05/31/19 10:33	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	05/30/19 09:58	05/31/19 10:33	7440-38-2	
Barium, Dissolved	25.0	ug/L	10.0	0.18	1	05/30/19 09:58	05/31/19 10:33	7440-39-3	
Beryllium, Dissolved	0.35J	ug/L	5.0	0.12	1	05/30/19 09:58	05/31/19 10:33	7440-41-7	B
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	05/30/19 09:58	05/31/19 10:33	7440-43-9	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	05/30/19 09:58	05/31/19 10:33	7440-47-3	
Cobalt, Dissolved	2.6J	ug/L	10.0	0.50	1	05/30/19 09:58	05/31/19 10:33	7440-48-4	B
Copper, Dissolved	1.3J	ug/L	10.0	1.2	1	05/30/19 09:58	05/31/19 10:33	7440-50-8	
Lead, Dissolved	2.4J	ug/L	10.0	2.0	1	05/30/19 09:58	05/31/19 10:33	7439-92-1	
Molybdenum, Dissolved	4.4J	ug/L	15.0	1.1	1	05/30/19 09:58	05/31/19 10:33	7439-98-7	
Nickel, Dissolved	1.5J	ug/L	20.0	1.1	1	05/30/19 09:58	05/31/19 10:33	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	05/30/19 09:58	05/31/19 10:33	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	05/30/19 09:58	05/31/19 10:33	7440-22-4	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	05/30/19 09:58	05/31/19 10:33	7440-28-0	
Vanadium, Dissolved	9.0J	ug/L	15.0	0.29	1	05/30/19 09:58	05/31/19 10:33	7440-62-2	
Zinc, Dissolved	647	ug/L	20.0	2.5	1	05/30/19 09:58	05/31/19 10:33	7440-66-6	
7470A Mercury, Dissolved		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	05/30/19 12:55	05/30/19 16:01	7439-97-6	
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/25/19 17:05	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/25/19 17:05	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/25/19 17:05	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/25/19 17:05	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/25/19 17:05	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/25/19 17:05	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		05/25/19 17:05	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/25/19 17:05	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		05/25/19 17:05	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/25/19 17:05	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		05/25/19 17:05	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		05/25/19 17:05	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/25/19 17:05	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		05/25/19 17:05	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/25/19 17:05	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	1.0	0.22	1		05/25/19 17:05	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/25/19 17:05	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/25/19 17:05	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/25/19 17:05	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/25/19 17:05	541-73-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10476170

Sample: RC02-192-TD-052219(2) Lab ID: 10476170002 Collected: 05/22/19 12:00 Received: 05/23/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/25/19 17:05	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/25/19 17:05	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/25/19 17:05	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/25/19 17:05	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/25/19 17:05	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/25/19 17:05	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/25/19 17:05	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/25/19 17:05	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/25/19 17:05	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/25/19 17:05	108-10-1	
Acetone	9.8J	ug/L	20.0	9.2	1		05/25/19 17:05	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		05/25/19 17:05	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/25/19 17:05	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/25/19 17:05	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		05/25/19 17:05	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/25/19 17:05	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/25/19 17:05	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/25/19 17:05	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/25/19 17:05	74-83-9	
Carbon disulfide	0.71J	ug/L	1.0	0.078	1		05/25/19 17:05	75-15-0	
Carbon tetrachloride	244	ug/L	1.0	0.38	2		05/26/19 15:07	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/25/19 17:05	108-90-7	
Chloroethane	<0.49	ug/L	4.0	0.49	1		05/25/19 17:05	75-00-3	
Chloroform	16.8	ug/L	1.0	0.45	1		05/25/19 17:05	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/25/19 17:05	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		05/25/19 17:05	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/25/19 17:05	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/25/19 17:05	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/25/19 17:05	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/25/19 17:05	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/25/19 17:05	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/25/19 17:05	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/25/19 17:05	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		05/25/19 17:05	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		05/25/19 17:05	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/25/19 17:05	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/25/19 17:05	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/25/19 17:05	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/25/19 17:05	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/25/19 17:05	109-99-9	
Toluene	7.6	ug/L	0.50	0.083	1		05/25/19 17:05	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/25/19 17:05	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/25/19 17:05	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/25/19 17:05	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/25/19 17:05	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/25/19 17:05	1330-20-7	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

Sample: RC02-192-TD-052219(2) **Lab ID:** 10476170002 Collected: 05/22/19 12:00 Received: 05/23/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/25/19 17:05	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/25/19 17:05	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/25/19 17:05	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		05/25/19 17:05	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/25/19 17:05	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/25/19 17:05	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		05/25/19 17:05	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/25/19 17:05	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/25/19 17:05	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/25/19 17:05	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/25/19 17:05	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/25/19 17:05	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		05/25/19 17:05	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/25/19 17:05	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	94	%	75-136		1		05/25/19 17:05	17060-07-0	
Toluene-d8 (S)	98	%	75-125		1		05/25/19 17:05	2037-26-5	
4-Bromofluorobenzene (S)	92	%	75-125		1		05/25/19 17:05	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	161	mg/L	5.0	2.0	1		05/30/19 11:11		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	274	mg/L	10.0	5.0	1		05/29/19 13:11		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		05/28/19 15:25	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	5.5	mg/L	1.2	0.12	1		05/23/19 21:16	16887-00-6	
Nitrate as N	3.8	mg/L	0.10	0.012	1		05/23/19 21:16	14797-55-8	
Sulfate	22.3	mg/L	1.2	0.28	1		05/23/19 21:16	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	3.6	mg/L	1.0	0.18	10		05/23/19 16:48		
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	05/29/19 11:34	05/29/19 15:53		
5310C TOC		Analytical Method: SM 5310C							
Total Organic Carbon	0.94J	mg/L	1.0	0.39	1		05/28/19 20:46	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10476170

Sample: DUP1-052219 **Lab ID: 10476170003** Collected: 05/22/19 08:00 Received: 05/23/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		05/23/19 14:41	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		05/23/19 14:41	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		05/23/19 14:41	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	05/30/19 09:58	05/31/19 10:34	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	05/30/19 09:58	05/31/19 10:34	7440-38-2	
Barium, Dissolved	25.0	ug/L	10.0	0.18	1	05/30/19 09:58	05/31/19 10:34	7440-39-3	
Beryllium, Dissolved	0.27J	ug/L	5.0	0.12	1	05/30/19 09:58	05/31/19 10:34	7440-41-7	B
Cadmium, Dissolved	0.31J	ug/L	3.0	0.26	1	05/30/19 09:58	05/31/19 10:34	7440-43-9	B
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	05/30/19 09:58	05/31/19 10:34	7440-47-3	
Cobalt, Dissolved	2.2J	ug/L	10.0	0.50	1	05/30/19 09:58	05/31/19 10:34	7440-48-4	B
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	05/30/19 09:58	05/31/19 10:34	7440-50-8	
Lead, Dissolved	3.2J	ug/L	10.0	2.0	1	05/30/19 09:58	05/31/19 10:34	7439-92-1	
Molybdenum, Dissolved	4.7J	ug/L	15.0	1.1	1	05/30/19 09:58	05/31/19 10:34	7439-98-7	
Nickel, Dissolved	1.8J	ug/L	20.0	1.1	1	05/30/19 09:58	05/31/19 10:34	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	05/30/19 09:58	05/31/19 10:34	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	05/30/19 09:58	05/31/19 10:34	7440-22-4	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	05/30/19 09:58	05/31/19 10:34	7440-28-0	
Vanadium, Dissolved	9.2J	ug/L	15.0	0.29	1	05/30/19 09:58	05/31/19 10:34	7440-62-2	
Zinc, Dissolved	647	ug/L	20.0	2.5	1	05/30/19 09:58	05/31/19 10:34	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	05/30/19 12:55	05/30/19 16:08	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/25/19 17:28	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/25/19 17:28	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/25/19 17:28	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/25/19 17:28	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/25/19 17:28	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/25/19 17:28	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		05/25/19 17:28	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/25/19 17:28	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		05/25/19 17:28	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/25/19 17:28	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		05/25/19 17:28	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		05/25/19 17:28	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/25/19 17:28	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		05/25/19 17:28	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/25/19 17:28	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	1.0	0.22	1		05/25/19 17:28	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/25/19 17:28	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/25/19 17:28	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/25/19 17:28	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/25/19 17:28	541-73-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10476170

Sample: DUP1-052219 Lab ID: 10476170003 Collected: 05/22/19 08:00 Received: 05/23/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/25/19 17:28	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/25/19 17:28	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/25/19 17:28	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/25/19 17:28	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/25/19 17:28	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/25/19 17:28	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/25/19 17:28	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/25/19 17:28	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/25/19 17:28	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/25/19 17:28	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		05/25/19 17:28	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		05/25/19 17:28	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/25/19 17:28	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/25/19 17:28	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		05/25/19 17:28	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/25/19 17:28	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/25/19 17:28	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/25/19 17:28	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/25/19 17:28	74-83-9	
Carbon disulfide	0.61J	ug/L	1.0	0.078	1		05/25/19 17:28	75-15-0	
Carbon tetrachloride	255	ug/L	1.0	0.38	2		05/26/19 15:54	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/25/19 17:28	108-90-7	
Chloroethane	<0.49	ug/L	4.0	0.49	1		05/25/19 17:28	75-00-3	
Chloroform	16.6	ug/L	1.0	0.45	1		05/25/19 17:28	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/25/19 17:28	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		05/25/19 17:28	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/25/19 17:28	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/25/19 17:28	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/25/19 17:28	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/25/19 17:28	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/25/19 17:28	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/25/19 17:28	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/25/19 17:28	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		05/25/19 17:28	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		05/25/19 17:28	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/25/19 17:28	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/25/19 17:28	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/25/19 17:28	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/25/19 17:28	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/25/19 17:28	109-99-9	
Toluene	7.1	ug/L	0.50	0.083	1		05/25/19 17:28	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/25/19 17:28	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/25/19 17:28	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/25/19 17:28	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/25/19 17:28	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/25/19 17:28	1330-20-7	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

Sample: DUP1-052219 **Lab ID: 10476170003** Collected: 05/22/19 08:00 Received: 05/23/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level Analytical Method: EPA 8260B									
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/25/19 17:28	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/25/19 17:28	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/25/19 17:28	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		05/25/19 17:28	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/25/19 17:28	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/25/19 17:28	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		05/25/19 17:28	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/25/19 17:28	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/25/19 17:28	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/25/19 17:28	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/25/19 17:28	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/25/19 17:28	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		05/25/19 17:28	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/25/19 17:28	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	94	%	75-136		1		05/25/19 17:28	17060-07-0	
Toluene-d8 (S)	100	%	75-125		1		05/25/19 17:28	2037-26-5	
4-Bromofluorobenzene (S)	90	%	75-125		1		05/25/19 17:28	460-00-4	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	171	mg/L	5.0	2.0	1		05/30/19 12:26		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	273	mg/L	10.0	5.0	1		05/29/19 13:11		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		05/28/19 15:23	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	5.5	mg/L	1.2	0.12	1		05/23/19 21:31	16887-00-6	
Nitrate as N	3.8	mg/L	0.10	0.012	1		05/23/19 21:31	14797-55-8	
Sulfate	22.2	mg/L	1.2	0.28	1		05/23/19 21:31	14808-79-8	
353.2 Nitrate + Nitrite Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	3.5	mg/L	1.0	0.18	10		05/23/19 16:52		
410.4 COD Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	05/29/19 11:34	05/29/19 15:53		
5310C TOC Analytical Method: SM 5310C									
Total Organic Carbon	0.77J	mg/L	1.0	0.39	1		05/28/19 20:14	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10476170

Sample: TB-052219 **Lab ID: 10476170004** Collected: 05/22/19 07:00 Received: 05/23/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/25/19 13:32	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/25/19 13:32	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/25/19 13:32	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/25/19 13:32	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/25/19 13:32	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/25/19 13:32	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		05/25/19 13:32	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/25/19 13:32	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		05/25/19 13:32	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/25/19 13:32	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		05/25/19 13:32	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		05/25/19 13:32	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/25/19 13:32	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		05/25/19 13:32	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/25/19 13:32	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	1.0	0.22	1		05/25/19 13:32	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/25/19 13:32	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/25/19 13:32	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/25/19 13:32	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/25/19 13:32	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/25/19 13:32	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/25/19 13:32	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/25/19 13:32	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/25/19 13:32	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/25/19 13:32	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/25/19 13:32	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/25/19 13:32	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/25/19 13:32	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/25/19 13:32	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/25/19 13:32	108-10-1	
Acetone	19.8J	ug/L	20.0	9.2	1		05/25/19 13:32	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		05/25/19 13:32	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/25/19 13:32	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/25/19 13:32	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		05/25/19 13:32	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/25/19 13:32	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/25/19 13:32	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/25/19 13:32	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/25/19 13:32	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		05/25/19 13:32	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		05/25/19 13:32	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/25/19 13:32	108-90-7	
Chloroethane	<0.49	ug/L	4.0	0.49	1		05/25/19 13:32	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		05/25/19 13:32	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/25/19 13:32	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		05/25/19 13:32	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

Sample: TB-052219 **Lab ID: 10476170004** Collected: 05/22/19 07:00 Received: 05/23/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/25/19 13:32	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/25/19 13:32	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/25/19 13:32	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/25/19 13:32	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/25/19 13:32	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/25/19 13:32	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/25/19 13:32	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		05/25/19 13:32	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		05/25/19 13:32	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/25/19 13:32	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/25/19 13:32	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/25/19 13:32	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/25/19 13:32	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/25/19 13:32	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		05/25/19 13:32	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/25/19 13:32	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/25/19 13:32	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/25/19 13:32	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/25/19 13:32	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/25/19 13:32	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/25/19 13:32	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/25/19 13:32	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/25/19 13:32	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		05/25/19 13:32	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/25/19 13:32	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/25/19 13:32	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		05/25/19 13:32	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/25/19 13:32	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/25/19 13:32	994-05-8	
tert-Butyl Alcohol	5.0J	ug/L	10.0	1.2	1		05/25/19 13:32	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/25/19 13:32	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/25/19 13:32	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	0.50	0.18	1		05/25/19 13:32	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/25/19 13:32	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	95	%	75-136		1		05/25/19 13:32	17060-07-0	
Toluene-d8 (S)	97	%	75-125		1		05/25/19 13:32	2037-26-5	
4-Bromofluorobenzene (S)	91	%	75-125		1		05/25/19 13:32	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

QC Batch: 608020

Analysis Method: RSK 175

QC Batch Method: RSK 175

Analysis Description: RSK 175 GCV HEADSPACE

Associated Lab Samples: 10476170002, 10476170003

METHOD BLANK: 3286701

Matrix: Water

Associated Lab Samples: 10476170002, 10476170003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	05/23/19 13:43	
Ethene	ug/L	<2.9	10.0	2.9	05/23/19 13:43	
Methane	ug/L	<4.9	10.0	4.9	05/23/19 13:43	

LABORATORY CONTROL SAMPLE & LCSD: 3286702

3286703

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	109	112	96	98	85-115	3	20	
Ethene	ug/L	106	102	104	96	99	85-115	3	20	
Methane	ug/L	60.7	57.0	57.2	94	94	85-115	0	20	

SAMPLE DUPLICATE: 3286772

Parameter	Units	10476170002 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<3.0	<3.0		20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	<4.9	<4.9		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

QC Batch: 608881 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470A Mercury Water Dissolved
Associated Lab Samples: 10476170001, 10476170002, 10476170003

METHOD BLANK: 3291078 Matrix: Water

Associated Lab Samples: 10476170001, 10476170002, 10476170003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.093	0.20	0.093	05/30/19 15:45	

LABORATORY CONTROL SAMPLE: 3291079

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.6	91	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3291080 3291081

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		10476537002 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Mercury, Dissolved	ug/L	<0.093	5	5	5.7	5.5	113	109	80-120	4	20		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

QC Batch: 608650 Analysis Method: EPA 6010D
 QC Batch Method: EPA 3010 Analysis Description: 6010D Water Dissolved
 Associated Lab Samples: 10476170001, 10476170002, 10476170003

METHOD BLANK: 3289949 Matrix: Water

Associated Lab Samples: 10476170001, 10476170002, 10476170003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	05/31/19 10:28	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	05/31/19 10:28	
Barium, Dissolved	ug/L	0.36J	10.0	0.18	05/31/19 10:28	
Beryllium, Dissolved	ug/L	0.33J	5.0	0.12	05/31/19 10:28	
Cadmium, Dissolved	ug/L	0.34J	3.0	0.26	05/31/19 10:28	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	05/31/19 10:28	
Cobalt, Dissolved	ug/L	0.64J	10.0	0.50	05/31/19 10:28	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	05/31/19 10:28	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	05/31/19 10:28	
Molybdenum, Dissolved	ug/L	<1.1	15.0	1.1	05/31/19 10:28	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	05/31/19 10:28	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	05/31/19 10:28	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	05/31/19 10:28	
Thallium, Dissolved	ug/L	<4.3	20.0	4.3	05/31/19 10:28	
Vanadium, Dissolved	ug/L	<0.29	15.0	0.29	05/31/19 10:28	
Zinc, Dissolved	ug/L	3.4J	20.0	2.5	05/31/19 10:28	

LABORATORY CONTROL SAMPLE: 3289950

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony, Dissolved	ug/L	1000	1040	104	80-120	
Arsenic, Dissolved	ug/L	1000	1030	103	80-120	
Barium, Dissolved	ug/L	1000	1060	106	80-120	
Beryllium, Dissolved	ug/L	1000	1050	105	80-120	
Cadmium, Dissolved	ug/L	1000	1070	107	80-120	
Chromium, Dissolved	ug/L	1000	1030	103	80-120	
Cobalt, Dissolved	ug/L	1000	1030	103	80-120	
Copper, Dissolved	ug/L	1000	1000	100	80-120	
Lead, Dissolved	ug/L	1000	1030	103	80-120	
Molybdenum, Dissolved	ug/L	1000	1070	107	80-120	
Nickel, Dissolved	ug/L	1000	1040	104	80-120	
Selenium, Dissolved	ug/L	1000	1070	107	80-120	
Silver, Dissolved	ug/L	500	516	103	80-120	
Thallium, Dissolved	ug/L	1000	1030	103	80-120	
Vanadium, Dissolved	ug/L	1000	1020	102	80-120	
Zinc, Dissolved	ug/L	1000	1050	105	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3289951		3289952		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		10476537002 Result	MS Spike Conc.	MSD Spike Conc.									
Antimony, Dissolved	ug/L	<7.0	1000	1000	1020	1020	102	102	75-125	0	20		
Arsenic, Dissolved	ug/L	<3.8	1000	1000	1020	1030	102	103	75-125	1	20		
Barium, Dissolved	ug/L	11.4	1000	1000	1030	1040	102	103	75-125	1	20		
Beryllium, Dissolved	ug/L	<0.12	1000	1000	1030	1050	103	105	75-125	1	20		
Cadmium, Dissolved	ug/L	<0.26	1000	1000	1000	1020	100	102	75-125	1	20		
Chromium, Dissolved	ug/L	<0.49	1000	1000	1020	1030	102	103	75-125	1	20		
Cobalt, Dissolved	ug/L	1.1J	1000	1000	972	982	97	98	75-125	1	20		
Copper, Dissolved	ug/L	<1.2	1000	1000	981	993	98	99	75-125	1	20		
Lead, Dissolved	ug/L	2.6J	1000	1000	980	993	98	99	75-125	1	20		
Molybdenum, Dissolved	ug/L	5.7J	1000	1000	1030	1040	102	103	75-125	1	20		
Nickel, Dissolved	ug/L	<1.1	1000	1000	977	987	98	99	75-125	1	20		
Selenium, Dissolved	ug/L	<5.8	1000	1000	1030	1040	103	104	75-125	1	20		
Silver, Dissolved	ug/L	<0.38	500	500	515	521	103	104	75-125	1	20		
Thallium, Dissolved	ug/L	<4.3	1000	1000	991	992	99	99	75-125	0	20		
Vanadium, Dissolved	ug/L	3.9J	1000	1000	997	1010	99	100	75-125	1	20		
Zinc, Dissolved	ug/L	456	1000	1000	1430	1450	97	99	75-125	2	20		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

QC Batch: 608436 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10476170001, 10476170002, 10476170003, 10476170004

METHOD BLANK: 3289000 Matrix: Water
Associated Lab Samples: 10476170001, 10476170002, 10476170003, 10476170004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	05/25/19 11:57	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	05/25/19 11:57	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	05/25/19 11:57	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	05/25/19 11:57	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	05/25/19 11:57	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	05/25/19 11:57	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	05/25/19 11:57	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	05/25/19 11:57	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	05/25/19 11:57	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	05/25/19 11:57	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	05/25/19 11:57	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	05/25/19 11:57	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	05/25/19 11:57	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	05/25/19 11:57	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	05/25/19 11:57	
1,2-Dichloroethane	ug/L	<0.22	1.0	0.22	05/25/19 11:57	MN
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	05/25/19 11:57	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	05/25/19 11:57	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	05/25/19 11:57	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	05/25/19 11:57	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	05/25/19 11:57	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	05/25/19 11:57	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	05/25/19 11:57	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	05/25/19 11:57	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	05/25/19 11:57	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	05/25/19 11:57	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	05/25/19 11:57	
2-Hexanone	ug/L	<0.88	5.0	0.88	05/25/19 11:57	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	05/25/19 11:57	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	05/25/19 11:57	
Acetone	ug/L	<9.2	20.0	9.2	05/25/19 11:57	
Acrolein	ug/L	<1.2	10.0	1.2	05/25/19 11:57	
Acrylonitrile	ug/L	<0.91	10.0	0.91	05/25/19 11:57	
Benzene	ug/L	<0.10	0.50	0.10	05/25/19 11:57	
Bromobenzene	ug/L	<0.21	0.50	0.21	05/25/19 11:57	
Bromochloromethane	ug/L	<0.27	1.0	0.27	05/25/19 11:57	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	05/25/19 11:57	
Bromoform	ug/L	<0.80	4.0	0.80	05/25/19 11:57	
Bromomethane	ug/L	<1.8	4.0	1.8	05/25/19 11:57	
Carbon disulfide	ug/L	<0.078	1.0	0.078	05/25/19 11:57	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	05/25/19 11:57	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

METHOD BLANK: 3289000

Matrix: Water

Associated Lab Samples: 10476170001, 10476170002, 10476170003, 10476170004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	05/25/19 11:57	
Chloroethane	ug/L	<0.49	4.0	0.49	05/25/19 11:57	MN
Chloroform	ug/L	<0.45	1.0	0.45	05/25/19 11:57	
Chloromethane	ug/L	<0.16	4.0	0.16	05/25/19 11:57	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	05/25/19 11:57	
cis-1,3-Dichloropropene	ug/L	<0.20	0.50	0.20	05/25/19 11:57	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	05/25/19 11:57	MN
Dibromomethane	ug/L	<0.16	1.0	0.16	05/25/19 11:57	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	05/25/19 11:57	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	05/25/19 11:57	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	05/25/19 11:57	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	05/25/19 11:57	
Ethylbenzene	ug/L	<0.14	0.50	0.14	05/25/19 11:57	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	05/25/19 11:57	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	05/25/19 11:57	
m&p-Xylene	ug/L	<0.31	1.0	0.31	05/25/19 11:57	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	05/25/19 11:57	
Methylene Chloride	ug/L	<0.98	4.0	0.98	05/25/19 11:57	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	05/25/19 11:57	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	05/25/19 11:57	
Naphthalene	ug/L	<0.48	1.0	0.48	05/25/19 11:57	
o-Xylene	ug/L	<0.16	0.50	0.16	05/25/19 11:57	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	05/25/19 11:57	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	05/25/19 11:57	
Styrene	ug/L	<0.19	0.50	0.19	05/25/19 11:57	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	05/25/19 11:57	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	05/25/19 11:57	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	05/25/19 11:57	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	05/25/19 11:57	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	05/25/19 11:57	
Toluene	ug/L	<0.083	0.50	0.083	05/25/19 11:57	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	05/25/19 11:57	
trans-1,3-Dichloropropene	ug/L	<0.18	0.50	0.18	05/25/19 11:57	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	05/25/19 11:57	
Trichloroethene	ug/L	<0.15	0.40	0.15	05/25/19 11:57	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	05/25/19 11:57	
Vinyl acetate	ug/L	<1.1	10.0	1.1	05/25/19 11:57	
Vinyl chloride	ug/L	<0.092	0.20	0.092	05/25/19 11:57	
Xylene (Total)	ug/L	<0.31	1.5	0.31	05/25/19 11:57	
1,2-Dichloroethane-d4 (S)	%	96	75-136		05/25/19 11:57	
4-Bromofluorobenzene (S)	%	92	75-125		05/25/19 11:57	
Toluene-d8 (S)	%	99	75-125		05/25/19 11:57	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

LABORATORY CONTROL SAMPLE: 3289001

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	19.5	97	68-141	
1,1,1-Trichloroethane	ug/L	20	18.8	94	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	17.2	86	73-125	
1,1,2-Trichloroethane	ug/L	20	20.0	100	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	18.6	93	69-132	
1,1-Dichloroethane	ug/L	20	18.8	94	73-125	
1,1-Dichloroethene	ug/L	20	18.5	93	71-126	
1,1-Dichloropropene	ug/L	20	18.7	93	73-126	
1,2,3-Trichlorobenzene	ug/L	20	19.4	97	72-126	
1,2,3-Trichloropropane	ug/L	20	17.6	88	75-126	
1,2,4-Trichlorobenzene	ug/L	20	18.3	91	71-134	
1,2,4-Trimethylbenzene	ug/L	20	19.3	97	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	45.4	91	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	19.6	98	75-129	
1,2-Dichlorobenzene	ug/L	20	18.5	93	75-129	
1,2-Dichloroethane	ug/L	20	19.5	98	75-125	
1,2-Dichloroethene (Total)	ug/L	40	38.8	97	74-125	N2
1,2-Dichloropropane	ug/L	20	18.9	94	75-125	
1,3,5-Trimethylbenzene	ug/L	20	18.8	94	75-127	
1,3-Dichlorobenzene	ug/L	20	18.6	93	75-126	
1,3-Dichloropropane	ug/L	20	19.3	97	75-125	
1,4-Dichlorobenzene	ug/L	20	18.2	91	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	374	93	72-129	
2,2,4-Trimethylpentane	ug/L	20	16.7	84	72-128	N2
2,2-Dichloropropane	ug/L	20	18.9	95	65-138	
2-Butanone (MEK)	ug/L	100	96.1	96	59-144	
2-Chlorotoluene	ug/L	20	17.5	88	75-127	
2-Hexanone	ug/L	100	88.9	89	73-134	
4-Chlorotoluene	ug/L	20	18.1	90	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	93.3	93	62-141	
Acetone	ug/L	100	115	115	60-137	
Acrolein	ug/L	200	229	114	60-141	
Acrylonitrile	ug/L	200	193	97	75-129	
Benzene	ug/L	20	19.0	95	73-125	
Bromobenzene	ug/L	20	18.3	91	73-125	
Bromochloromethane	ug/L	20	20.5	102	75-135	
Bromodichloromethane	ug/L	20	19.0	95	75-125	
Bromoform	ug/L	20	19.1	95	67-136	
Bromomethane	ug/L	20	18.8	94	30-150	
Carbon disulfide	ug/L	20	17.9	89	47-137	
Carbon tetrachloride	ug/L	20	18.3	91	75-125	
Chlorobenzene	ug/L	20	19.0	95	75-125	
Chloroethane	ug/L	20	22.3	111	63-136	
Chloroform	ug/L	20	18.5	93	73-128	
Chloromethane	ug/L	20	18.0	90	55-130	
cis-1,2-Dichloroethene	ug/L	20	19.4	97	75-125	
cis-1,3-Dichloropropene	ug/L	20	21.6	108	74-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

LABORATORY CONTROL SAMPLE: 3289001

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	22.1	111	75-125	
Dibromomethane	ug/L	20	21.4	107	75-125	
Dichlorodifluoromethane	ug/L	20	18.7	94	63-132	
Dichlorofluoromethane	ug/L	20	21.2	106	68-127	N2
Diisopropyl ether	ug/L	20	18.6	93	71-131	
Ethyl-tert-butyl ether	ug/L	20	19.5	97	75-125	
Ethylbenzene	ug/L	20	18.6	93	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.2	101	72-134	
Isopropylbenzene (Cumene)	ug/L	20	19.2	96	75-125	
m&p-Xylene	ug/L	40	38.7	97	75-126	
Methyl-tert-butyl ether	ug/L	20	18.9	94	75-125	
Methylene Chloride	ug/L	20	19.7	99	70-125	
n-Butylbenzene	ug/L	20	18.2	91	75-126	
n-Propylbenzene	ug/L	20	17.6	88	73-127	
Naphthalene	ug/L	20	18.0	90	63-128	
o-Xylene	ug/L	20	20.3	101	75-128	
p-Isopropyltoluene	ug/L	20	19.4	97	75-125	
sec-Butylbenzene	ug/L	20	19.0	95	75-126	
Styrene	ug/L	20	20.6	103	75-125	
tert-Amylmethyl ether	ug/L	20	18.6	93	75-125	
tert-Butyl Alcohol	ug/L	200	197	98	75-130	
tert-Butylbenzene	ug/L	20	19.0	95	75-131	
Tetrachloroethene	ug/L	20	19.5	98	74-125	
Tetrahydrofuran	ug/L	200	208	104	64-138	
Toluene	ug/L	20	18.0	90	74-125	
trans-1,2-Dichloroethene	ug/L	20	19.4	97	68-128	
trans-1,3-Dichloropropene	ug/L	20	20.9	104	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	30.7	61	60-127	
Trichloroethene	ug/L	20	20.6	103	75-127	
Trichlorofluoromethane	ug/L	20	22.2	111	72-133	
Vinyl acetate	ug/L	20	18.2	91	61-129	
Vinyl chloride	ug/L	20	21.8	109	75-128	
Xylene (Total)	ug/L	60	59.0	98	75-125	
1,2-Dichloroethane-d4 (S)	%			99	75-136	
4-Bromofluorobenzene (S)	%			91	75-125	
Toluene-d8 (S)	%			96	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3289002 3289003

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10475457011 Result	Spike Conc.	Spike Conc.	Conc.								
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	18.4	19.9	92	100	75-140	8	30		
1,1,1-Trichloroethane	ug/L	ND	20	20	19.6	19.5	98	97	74-136	1	30		
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	17.1	19.3	86	96	66-134	12	30		
1,1,2-Trichloroethane	ug/L	ND	20	20	18.6	20.2	93	101	75-126	9	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3289002			3289003							
Parameter	Units	10475457011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	ND	20	20	21.2	21.1	106	106	65-146	0	30	
1,1-Dichloroethane	ug/L	ND	20	20	18.8	18.3	94	91	68-132	3	30	
1,1-Dichloroethene	ug/L	ND	20	20	19.7	19.2	99	96	66-139	3	30	
1,1-Dichloropropene	ug/L	ND	20	20	19.3	19.2	96	96	67-134	1	30	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	21.2	22.1	106	111	67-129	4	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	18.1	20.4	90	102	69-128	12	30	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	21.7	21.8	108	109	65-140	1	30	
1,2,4-Trimethylbenzene	ug/L	ND	20	20	20.8	22.7	103	113	71-133	9	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	44.8	51.7	90	103	54-138	14	30	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	18.2	19.6	91	98	68-125	7	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	19.1	20.7	96	104	74-136	8	30	
1,2-Dichloroethane	ug/L	2.9	20	20	21.1	21.5	91	93	68-125	1	30	
1,2-Dichloroethene (Total)	ug/L	ND	40	40	38.8	37.6	97	94	71-126	3	30	N2
1,2-Dichloropropane	ug/L	ND	20	20	18.9	19.8	94	99	67-125	4	30	
1,3,5-Trimethylbenzene	ug/L	ND	20	20	20.1	21.9	100	109	68-137	9	30	
1,3-Dichlorobenzene	ug/L	ND	20	20	19.3	20.8	96	104	75-131	8	30	
1,3-Dichloropropane	ug/L	ND	20	20	18.2	19.4	91	97	71-125	6	30	
1,4-Dichlorobenzene	ug/L	ND	20	20	18.7	20.5	93	102	74-126	9	30	
1,4-Dioxane (p-Dioxane)	ug/L	ND	400	400	358	398	89	100	68-125	11	30	
2,2,4-Trimethylpentane	ug/L	ND	20	20	22.6	18.9	108	89	54-129	18	30	N2
2,2-Dichloropropane	ug/L	ND	20	20	19.8	19.5	99	98	69-139	1	30	
2-Butanone (MEK)	ug/L	9.1	100	100	89.6	99.1	81	90	54-144	10	30	
2-Chlorotoluene	ug/L	ND	20	20	18.7	20.3	94	102	75-134	8	30	
2-Hexanone	ug/L	ND	100	100	78.6	93.9	79	94	58-137	18	30	
4-Chlorotoluene	ug/L	ND	20	20	18.4	20.5	92	102	72-133	11	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	89.6	102	90	102	60-129	13	30	
Acetone	ug/L	ND	100	100	101	97.4	95	91	62-132	4	30	
Acrolein	ug/L	ND	200	200	484	489	242	245	30-150	1	30	M1
Acrylonitrile	ug/L	ND	200	200	183	195	92	98	68-125	6	30	
Benzene	ug/L	9.1	20	20	28.3	27.5	96	92	68-125	3	30	
Bromobenzene	ug/L	ND	20	20	18.6	19.7	93	99	73-126	6	30	
Bromochloromethane	ug/L	ND	20	20	19.0	19.6	95	98	66-143	3	30	
Bromodichloromethane	ug/L	ND	20	20	18.0	19.2	90	96	74-125	6	30	
Bromoform	ug/L	ND	20	20	17.5	19.7	87	98	64-134	12	30	
Bromomethane	ug/L	ND	20	20	19.4	22.6	97	113	30-150	15	30	
Carbon disulfide	ug/L	ND	20	20	19.9	17.8	99	89	43-147	11	30	
Carbon tetrachloride	ug/L	ND	20	20	19.2	19.5	96	97	71-143	1	30	
Chlorobenzene	ug/L	ND	20	20	18.6	19.8	93	99	75-125	6	30	
Chloroethane	ug/L	ND	20	20	28.6	27.0	143	135	75-129	6	30	M1
Chloroform	ug/L	ND	20	20	18.5	18.2	93	91	66-132	2	30	
Chloromethane	ug/L	ND	20	20	14.9	21.9	74	109	53-137	38	30	R1
cis-1,2-Dichloroethene	ug/L	ND	20	20	19.4	18.8	97	94	67-133	3	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	20.3	21.2	101	106	66-125	4	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

Parameter	Units	3289002		3289003		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		10475457011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Dibromochloromethane	ug/L	ND	20	20	20.1	21.9	100	109	62-132	9	30		
Dibromomethane	ug/L	ND	20	20	20.3	21.7	102	108	67-125	6	30		
Dichlorodifluoromethane	ug/L	ND	20	20	17.3	21.4	87	107	71-142	21	30		
Dichlorofluoromethane	ug/L	ND	20	20	19.0	23.5	95	117	70-131	21	30	N2	
Diisopropyl ether	ug/L	ND	20	20	17.4	17.9	87	89	63-131	3	30		
Ethyl-tert-butyl ether	ug/L	ND	20	20	18.5	19.4	92	97	66-128	5	30		
Ethylbenzene	ug/L	0.68	20	20	19.3	21.3	93	103	74-126	10	30		
Hexachloro-1,3-butadiene	ug/L	ND	20	20	27.6	21.5	138	107	68-143	25	30		
Isopropylbenzene (Cumene)	ug/L	0.62	20	20	21.2	23.7	103	116	74-130	11	30		
m&p-Xylene	ug/L	ND	40	40	38.6	41.6	97	104	69-132	7	30		
Methyl-tert-butyl ether	ug/L	ND	20	20	17.5	19.5	87	97	65-131	11	30		
Methylene Chloride	ug/L	ND	20	20	18.9	19.0	95	95	57-125	0	30		
n-Butylbenzene	ug/L	ND	20	20	21.9	21.3	109	106	71-131	3	30		
n-Propylbenzene	ug/L	ND	20	20	19.5	21.6	96	107	67-138	10	30		
Naphthalene	ug/L	ND	20	20	19.0	22.8	95	114	60-130	18	30		
o-Xylene	ug/L	ND	20	20	19.1	21.6	96	108	69-131	12	30		
p-Isopropyltoluene	ug/L	ND	20	20	22.6	23.1	113	115	72-133	2	30		
sec-Butylbenzene	ug/L	0.77	20	20	22.6	23.0	109	111	73-134	2	30		
Styrene	ug/L	ND	20	20	19.8	21.8	99	109	72-125	10	30		
tert-Amylmethyl ether	ug/L	ND	20	20	18.2	18.8	91	94	67-125	3	30		
tert-Butyl Alcohol	ug/L	ND	200	200	198	197	99	98	64-137	1	30		
tert-Butylbenzene	ug/L	ND	20	20	20.5	21.8	103	109	70-143	6	30		
Tetrachloroethene	ug/L	1.2	20	20	22.0	23.6	104	112	72-129	7	30		
Tetrahydrofuran	ug/L	ND	200	200	205	195	102	97	66-128	5	30		
Toluene	ug/L	ND	20	20	18.2	19.0	90	94	73-125	4	30		
trans-1,2-Dichloroethene	ug/L	ND	20	20	19.4	18.7	97	94	62-137	3	30		
trans-1,3-Dichloropropene	ug/L	ND	20	20	19.9	21.4	99	107	61-136	8	30		
trans-1,4-Dichloro-2-butene	ug/L	ND	50	50	28.4	36.1	57	72	45-128	24	30		
Trichloroethene	ug/L	ND	20	20	21.1	21.2	105	105	74-132	0	30		
Trichlorofluoromethane	ug/L	ND	20	20	19.9	24.6	100	123	75-139	21	30		
Vinyl acetate	ug/L	ND	20	20	16.3	18.2	81	91	51-135	11	30		
Vinyl chloride	ug/L	ND	20	20	19.9	23.8	100	119	68-146	18	30		
Xylene (Total)	ug/L	ND	60	60	57.8	63.2	96	105	67-137	9	30		
1,2-Dichloroethane-d4 (S)	%						97	101	75-136				
4-Bromofluorobenzene (S)	%						99	100	75-125				
Toluene-d8 (S)	%						98	97	75-125				

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

QC Batch: 609224 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10476170001, 10476170002, 10476170003

METHOD BLANK: 3292594 Matrix: Water

Associated Lab Samples: 10476170001, 10476170002, 10476170003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<2.0	5.0	2.0	05/30/19 07:46	

LABORATORY CONTROL SAMPLE & LCSD: 3292595 3292596

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	41.4	41.4	104	104	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3292597 3292598

Parameter	Units	10476067001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	195	40	40	236	237	102	105	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3292599 3292600

Parameter	Units	10476099001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	289	40	40	342	347	132	144	80-120	1	20	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

QC Batch: 609057

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 10476170001, 10476170002, 10476170003

METHOD BLANK: 3291613

Matrix: Water

Associated Lab Samples: 10476170001, 10476170002, 10476170003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	05/29/19 13:11	

LABORATORY CONTROL SAMPLE: 3291614

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1040	104	80-120	

SAMPLE DUPLICATE: 3291615

Parameter	Units	10475937008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	460	473	3	5	

SAMPLE DUPLICATE: 3291616

Parameter	Units	10476330001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	832	828	0	5	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

QC Batch: 143534 Analysis Method: SM 4500-S-2 D
 QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
 Associated Lab Samples: 10476170001, 10476170002, 10476170003

METHOD BLANK: 629668 Matrix: Water

Associated Lab Samples: 10476170001, 10476170002, 10476170003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	05/28/19 15:10	

LABORATORY CONTROL SAMPLE: 629669

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.2	0.19	96	90-110	

MATRIX SPIKE SAMPLE: 629671

Parameter	Units	10475929001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.2	0.12	57	75-125	M1

SAMPLE DUPLICATE: 629670

Parameter	Units	10475929001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10476170

QC Batch: 608153 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10476170001, 10476170002, 10476170003

METHOD BLANK: 3287321 Matrix: Water
Associated Lab Samples: 10476170001, 10476170002, 10476170003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.12	1.2	0.12	05/23/19 20:30	
Nitrate as N	mg/L	<0.012	0.10	0.012	05/23/19 20:30	
Sulfate	mg/L	<0.28	1.2	0.28	05/23/19 20:30	

LABORATORY CONTROL SAMPLE: 3287322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	13.1	104	90-110	
Nitrate as N	mg/L	1	0.97	97	90-110	
Sulfate	mg/L	12.5	12.4	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3287323 3287324

Parameter	Units	10476067001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	MSD % Rec					
Chloride	mg/L	4.8	12.5	12.5	17.7	17.6	104	103	103	90-110	0	20	
Nitrate as N	mg/L	0.48	1	1	1.5	1.5	104	103	103	90-110	1	20	
Sulfate	mg/L	9.6	12.5	12.5	22.7	22.5	105	103	103	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3287325 3287326

Parameter	Units	10476067002		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	MSD % Rec					
Chloride	mg/L	4.0	12.5	12.5	17.0	16.8	103	102	102	90-110	1	20	
Nitrate as N	mg/L	0.41	1	1	1.4	1.4	102	101	101	90-110	1	20	
Sulfate	mg/L	7.2	12.5	12.5	20.6	20.6	107	107	107	90-110	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

QC Batch: 608008 Analysis Method: EPA 353.2
 QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
 Associated Lab Samples: 10476170001, 10476170002, 10476170003

METHOD BLANK: 3286607 Matrix: Water

Associated Lab Samples: 10476170001, 10476170002, 10476170003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	05/23/19 16:04	

LABORATORY CONTROL SAMPLE: 3286608

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.95	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3286609 3286610

Parameter	Units	10476170001		3286609		3286610		% Rec Limits	RPD	Max RPD	Qual	
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec					MSD % Rec
Nitrogen, NO2 plus NO3	mg/L	3.7	10	10	13.6	13.7	99	100	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3286611 3286612

Parameter	Units	10476170002		3286611		3286612		% Rec Limits	RPD	Max RPD	Qual	
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec					MSD % Rec
Nitrogen, NO2 plus NO3	mg/L	3.6	10	10	13.0	12.8	94	92	90-110	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

QC Batch: 608980 Analysis Method: EPA 410.4
 QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
 Associated Lab Samples: 10476170001, 10476170002, 10476170003

METHOD BLANK: 3291329 Matrix: Water
 Associated Lab Samples: 10476170001, 10476170002, 10476170003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	05/29/19 15:46	

LABORATORY CONTROL SAMPLE: 3291330

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	296	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3291331 3291332

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		10475648001 Result	Spike Conc.	Spike Conc.	Result							Result
Chemical Oxygen Demand	mg/L	<17.0	250	250	260	257	98	97	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3291333 3291334

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		10475648002 Result	Spike Conc.	Spike Conc.	Result							Result
Chemical Oxygen Demand	mg/L	<17.0	250	250	241	236	96	94	90-110	2	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10476170

QC Batch: 166934 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C TOC
Associated Lab Samples: 10476170001, 10476170002, 10476170003

METHOD BLANK: 657819 Matrix: Water
Associated Lab Samples: 10476170001, 10476170002, 10476170003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.39	1.0	0.39	05/28/19 15:56	

LABORATORY CONTROL SAMPLE: 657820

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	24.9	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 657821 657822

Parameter	Units	MS		MSD		% Rec		% Rec Limits	RPD	Max RPD	Qual	
		10475607002 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec					% Rec
Total Organic Carbon	mg/L	ND	25	25	26.0	25.7	103	102	80-120	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 657823 657824

Parameter	Units	MS		MSD		% Rec		% Rec Limits	RPD	Max RPD	Qual	
		10475203001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec					% Rec
Total Organic Carbon	mg/L	8.2	25	25	32.9	32.7	99	98	80-120	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

PASI-N Pace Analytical Services - New Orleans

PASI-V Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476170

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10476170

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10476170002	RC02-192-TD-052219(2)	RSK 175	608020		
10476170003	DUP1-052219	RSK 175	608020		
10476170001	RC02-192-TD-052219	EPA 3010	608650	EPA 6010D	609564
10476170002	RC02-192-TD-052219(2)	EPA 3010	608650	EPA 6010D	609564
10476170003	DUP1-052219	EPA 3010	608650	EPA 6010D	609564
10476170001	RC02-192-TD-052219	EPA 7470A	608881	EPA 7470A	609413
10476170002	RC02-192-TD-052219(2)	EPA 7470A	608881	EPA 7470A	609413
10476170003	DUP1-052219	EPA 7470A	608881	EPA 7470A	609413
10476170001	RC02-192-TD-052219	EPA 8260B	608436		
10476170002	RC02-192-TD-052219(2)	EPA 8260B	608436		
10476170003	DUP1-052219	EPA 8260B	608436		
10476170004	TB-052219	EPA 8260B	608436		
10476170001	RC02-192-TD-052219	SM 2320B	609224		
10476170002	RC02-192-TD-052219(2)	SM 2320B	609224		
10476170003	DUP1-052219	SM 2320B	609224		
10476170001	RC02-192-TD-052219	SM 2540C	609057		
10476170002	RC02-192-TD-052219(2)	SM 2540C	609057		
10476170003	DUP1-052219	SM 2540C	609057		
10476170001	RC02-192-TD-052219	SM 4500-S-2 D	143534		
10476170002	RC02-192-TD-052219(2)	SM 4500-S-2 D	143534		
10476170003	DUP1-052219	SM 4500-S-2 D	143534		
10476170001	RC02-192-TD-052219	EPA 300.0	608153		
10476170002	RC02-192-TD-052219(2)	EPA 300.0	608153		
10476170003	DUP1-052219	EPA 300.0	608153		
10476170001	RC02-192-TD-052219	EPA 353.2	608008		
10476170002	RC02-192-TD-052219(2)	EPA 353.2	608008		
10476170003	DUP1-052219	EPA 353.2	608008		
10476170001	RC02-192-TD-052219	EPA 410.4	608980	EPA 410.4	609181
10476170002	RC02-192-TD-052219(2)	EPA 410.4	608980	EPA 410.4	609181
10476170003	DUP1-052219	EPA 410.4	608980	EPA 410.4	609181
10476170001	RC02-192-TD-052219	SM 5310C	166934		
10476170002	RC02-192-TD-052219(2)	SM 5310C	166934		
10476170003	DUP1-052219	SM 5310C	166934		

REPORT OF LABORATORY ANALYSIS

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WO# 10476170
10476170

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: CH2M Hill		Report To: Mark Ochsner, Brad Ostapkowicz		Attention: Anne Walsh	
Address: 999 W. Riverside Ave, Suite 500 Spokane, WA 99201		Copy To: Steve Demus, Jonathan Espinoza		Company: UPRR	
Email:		Copy To: David Hodson, UPRR-Sysdat@ghd.com		Address: 1400 W. 52nd Ave, Denver, CO 80221	
Phone:		Purchase Order # PEDD# 1497		Quote: Contract# 758938	
Requested Due Date: 10 Day Standard		Project Name: Freeman WA-Grain Handling Facility		Project Manager: Jennifer Gross	
Fax:		Project #: 1497		Profile #: 36447 / 4	

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 /, -) Sample Ids must be unique	MATRIX Drinking Water Water Waste Water Product Soil/Solid Oil Wipe Air Other Tissue	CODE DW WT WW P SL OL WP AR OT TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMPL)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES		ANALYSES TEST	REQUESTED ANALYSIS FILTERED (Y/N)										WA / FREEMAN			
						DATE	TIME			Unpreserved	H2SO4		HNO3	HCl	NaOH + Zn Acetate	Other	Low Level VOCs by 8260	6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, Nitrate 300.0	2540 TDS	TOC 5310		Sulfide 4500	Methane, Ethane, Ethene RSK175	CO2 410.4
1	RC02-192-TD-052219			WT6		5/22	1110	-	13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	001
2	RC02-192-TD-052219(2)						1200			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	002
3	DUP1-052219						800			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	003
4	TB-052219						700		2				X													004

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Short hold analyses are in bold	<i>J Li/Jacobs</i>	5/22/19	1600	<i>E. J. Fre</i>	5/23/19	0845	Y Y Y
*Field filtered by client							

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on	Ice (Y/N)	Custody Sealed	Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	<i>Jonathan Espinoza</i>						
SIGNATURE of SAMPLER:	<i>J Li</i>	DATE Signed:	5/22/19				

Sample Condition Upon Receipt

Client Name: CH2M Hill

Project #: **WO# : 10476170**

PM: JMG

Due Date: 05/24/19

CLIENT: UPRR_Jacobs

Courier:

- Fed Ex UPS USPS Client
 Pace SpeedDee Commercial See Exception

Tracking Number: 7485 9592 8120

Custody Seal on Cooler/Box Present? Yes No

Seals Intact? Yes No

Biological Tissue Frozen? Yes No N/A

Temp Blank? Yes No

Packing Material: Bubble Wrap

Bubble Bags

None

Other: _____

Thermometer:

- T1(0461) T2(1336) T3(0459)
 T4(0254) T5(0489)

Type of Ice:

- Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C

Cooler Temp Read w/temp blank: 7.5 °C

Average Corrected Temp (no temp blank only): _____ °C

Correction Factor: -0.1

Cooler Temp Corrected w/temp blank: 1.4 °C

USDA Regulated Soil: (N/A, water sample/Other: _____)

Date/Initials of Person Examining Contents: JE 5/23/19

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

		COMMENTS:
Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception <u>Did not receive any VSG for sample.</u>
Matrix: <input type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other		
All containers needing acid/base preservation have been checked?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ <input checked="" type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate <u>1-3: V1</u> <u>1-1</u>
Exceptions: <u>VOA</u> Coliform, <u>TOC</u> /DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exception Chlorine? <input type="checkbox"/> No pH Paper Lot#
Headspace in VOA Vials (greater than 6mm)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Res. Chlorine 0-6 Roll 0-5 Strip 0-14 Strip <u>2.3619</u>
Trip Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception
Trip Blank Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. Pace Trip Blank Lot # (if purchased): <u>204111</u>

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: Brad / Mark

Field Data Required? Yes No

Date/Time: 05/23/19

Comments/Resolution: Notified client cannot meet 24 hour rush. WA certs not required for RSK/sulfide, DW certs not needed. Notified that RSK vials missing for UOI.

Project Manager Review: _____

Date: 05/23/19

Note: Whenever there is a discrepancy affecting compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorr

Labeled by: KAT

	Document Name: Headspace Exception	Document Revised: 17Dec2018 Page 1 of 1
	Document No.: F-MN-C-276-Rev.01	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
PCO ₂ -192-TD-052219	1	2	0	3	N
PCO ₂ -192-TD-052219	1	2	0	3	N
DUPI-052219	0	0	3	3	N
TB-052219	0	0	2	2	N

Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA
 Cert. Needed: Yes



Workorder: 10476170 Workorder Name: 1497 Freeman WA-Grain Handling Owner Received Date: 5/23/2019 Results Requested By: 5/31/2019

Report To		Subcontract To				Requested Analysis																									
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426		Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042				5632354 / 5310 TOC																									
																LAB USE ONLY															
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix											Preserved Containers															
1	RC02-192-TD-052219	PS	5/22/2019 11:10	10476170001	Water											2															
2	RC02-192-TD-052219(2)	PS	5/22/2019 12:00	10476170002	Water											2															
3	DUP1-052219	PS	5/22/2019 08:00	10476170003	Water	2																									
4																															
5																															

Transfers						Comments									
Transfers	Released By	Date/Time	Received By	Date/Time											
1	<i>[Signature]</i>	5/23/19 17:50	<i>[Signature]</i>	5/23/19 18:45											
2	<i>[Signature]</i>	5/24/19	<i>[Signature]</i>	5/24/19 07:00											
3															

Cooler Temperature on Receipt 1.0 °C Custody Seal or N Received on Ice or N Samples Intact or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
 This chain of custody is considered complete as is since this information is available in the owner laboratory.



Document Name:
Sample Condition Upon Receipt Form
Document No.:
F-VM-C-001-rev.13

Document Revised: 30Apr2019
Page 1 of 1
Issuing Authority:
Pace Virginia Minnesota Quality Office

Sample Condition Upon Receipt

Client Name:

Project #:

WO# : 12125433

PM: CLJ

Due Date: 06/04/19

CLIENT: PACE MPLS

Pace WA

Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

Tracking Number: _____

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No

Optional: Proj. Due Date: _____ Proj. Name: _____

Packing Material: Bubble Wrap Bubble Bags None Other: _____ Temp Blank? Yes No

Thermometer Used: 140792808 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temp Read °C: 0.7 Cooler Temp Corrected °C: 1.0 Biological Tissue Frozen? Yes No N/A

Temp should be above freezing to 6 °C Correction Factor: 0.3 Date and Initials of Person Examining Contents: 5/24/19 DC

Bm 5/24/19

Comments:

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and Signature on COC?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5. If Fecal: <input type="checkbox"/> <8 hours <input type="checkbox"/> >8, <24 hours <input type="checkbox"/> >24 hours
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes Date/Time/ID/Analysis Matrix: <u>Wf</u>		
All containers needing acid/base preservation properly preserved?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. Note samples needing adjustment:
Headspace in Methyl Mercury Container	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased): _____		

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? Yes No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review:

Carrigan

Date: 5/24/19

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

PRE Chain of Custody

WO#: 2010533



Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Cert. Needed:

Owner Received Date: 5/23/2019 Results Requested By: 5/23/2019

Workorder: 10476170 Workorder Name: 1497 Freeman WA-Grain Handling

Report To: Jennifer Gross
Pace Analytical Seattle
596 Industry Drive,
Suite 602
Tukwila, WA 98188
Phone (206)957-2426

Subcontract To: Pace Analytical New Orleans
1000 Riverbend Blvd
Suite F
St. Rose, LA 70087
Phone (504)469-0333

Requested Analysis

5636267 / 4500 Sulfide

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers										LAB USE ONLY							
						Other	1	2	3	4	5	6	7	8	9		10						
1	RC02-192-TD-052219	PS	5/22/2019 11:10	10476170001	Water	BPZZ																	
2	RC02-192-TD-052219(2)	PS	5/22/2019 12:00	10476170002	Water																		X
3	DUP1-052219	PS	5/22/2019 08:00	10476170003	Water																		X
4																							X
5																							

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	<i>[Signature]</i>	5/23/19 1650			
2					
3					

Cooler Temperature on Receipt 2.0 °C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

WO#: 20105339

PM: CMM Due Date: 05/31/19

CLIENT: PASI-MINN



1000 Riverbend Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon R

Proj

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 05-24-19 M

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1	
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2	
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8	
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10	
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11	
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12	
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13	If No, was preservative added? <input type="checkbox"/> Yes <input type="checkbox"/> No If added record lot no.: HNO3 _____ H2SO4 _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14	
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	15	

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

May 31, 2019

David Hodson
Jacobs
155 Grand Ave
#800
Oakland, CA 94612

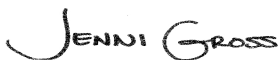
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10476537

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on May 25, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, Jacobs
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
 A2LA Certification #: 2926.01
 Alabama Certification #: 40770
 Alaska Contaminated Sites Certification #: 17-009
 Alaska DW Certification #: MN00064
 Arizona Certification #: AZ0014
 Arkansas DW Certification #: MN00064
 Arkansas WW Certification #: 88-0680
 California Certification #: 2929
 CNMI Saipan Certification #: MP0003
 Colorado Certification #: MN00064
 Connecticut Certification #: PH-0256
 EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
 Florida Certification #: E87605
 Georgia Certification #: 959
 Guam EPA Certification #: MN00064
 Hawaii Certification #: MN00064
 Idaho Certification #: MN00064
 Illinois Certification #: 200011
 Indiana Certification #: C-MN-01
 Iowa Certification #: 368
 Kansas Certification #: E-10167
 Kentucky DW Certification #: 90062
 Kentucky WW Certification #: 90062
 Louisiana DEQ Certification #: 03086
 Louisiana DW Certification #: MN00064
 Maine Certification #: MN00064
 Maryland Certification #: 322
 Massachusetts Certification #: M-MN064
 Michigan Certification #: 9909
 Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137
 Minnesota Petrofund Certification #: 1240
 Mississippi Certification #: MN00064
 Missouri Certification #: 10100
 Montana Certification #: CERT0092
 Nebraska Certification #: NE-OS-18-06
 Nevada Certification #: MN00064
 New Hampshire Certification #: 2081
 New Jersey Certification #: MN002
 New York Certification #: 11647
 North Carolina DW Certification #: 27700
 North Carolina WW Certification #: 530
 North Dakota Certification #: R-036
 Ohio DW Certification #: 41244
 Ohio VAP Certification #: CL101
 Oklahoma Certification #: 9507
 Oregon Primary Certification #: MN300001
 Oregon Secondary Certification #: MN200001
 Pennsylvania Certification #: 68-00563
 Puerto Rico Certification #: MN00064
 South Carolina Certification #:74003001
 Tennessee Certification #: TN02818
 Texas Certification #: T104704192
 Utah Certification #: MN00064
 Vermont Certification #: VT-027053137
 Virginia Certification #: 460163
 Washington Certification #: C486
 West Virginia DEP Certification #: 382
 West Virginia DW Certification #: 9952 C
 Wisconsin Certification #: 999407970
 Wyoming UST Certification #: via A2LA 2926.01

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
 Montana Certificate #CERT0103
 Alaska Certification UST-107
 Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203
 Wisconsin DNR Certification #: 998027470
 WA Department of Ecology Lab ID# C1007

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
 11277CA
 Florida Department of Health (NELAC): E87595
 Illinois Environmental Protection Agency: 0025721
 Kansas Department of Health and Environment (NELAC):
 E-10266
 Louisiana Dept. of Environmental Quality (NELAC/LELAP):
 02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202
 Texas Commission on Env. Quality (NELAC):
 T104704405-09-TX
 U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
 Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10476537001	MW26-052319	Water	05/23/19 18:00	05/25/19 09:30
10476537002	RC02-145.5-156-052419	Water	05/24/19 15:05	05/25/19 09:30
10476537003	RC02-145.5-156-052419 (2)	Water	05/24/19 16:00	05/25/19 09:30
10476537004	DUP2-052319	Water	05/23/19 11:00	05/25/19 09:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10476537001	MW26-052319	RSK 175	AJR	3	PASI-M
		EPA 6010D	DM	16	PASI-M
		EPA 7470A	BTS	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JER	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	AR3	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10476537002	RC02-145.5-156-052419	RSK 175	AJR	3	PASI-M
		EPA 6010D	DM	16	PASI-M
		EPA 7470A	BTS	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JER	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	AR3	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10476537003	RC02-145.5-156-052419 (2)	RSK 175	AJR	3	PASI-M
		EPA 6010D	DM	16	PASI-M
		EPA 7470A	BTS	1	PASI-M
		EPA 8260B	DS2	83	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JER	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	AR3	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10476537004	DUP2-052319	RSK 175	AJR	3	PASI-M
		EPA 6010D	DM	16	PASI-M
		EPA 7470A	BTS	1	PASI-M
		EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JER	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	AR3	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
10476537001	MW26-052319					
EPA 6010D	Barium, Dissolved	29.1	ug/L	10.0	05/31/19 10:55	
EPA 6010D	Chromium, Dissolved	0.73J	ug/L	10.0	05/31/19 10:55	
EPA 6010D	Cobalt, Dissolved	0.89J	ug/L	10.0	05/31/19 10:55	B
EPA 6010D	Copper, Dissolved	1.4J	ug/L	10.0	05/31/19 10:55	
EPA 6010D	Lead, Dissolved	2.0J	ug/L	10.0	05/31/19 10:55	
EPA 6010D	Molybdenum, Dissolved	1.2J	ug/L	15.0	05/31/19 10:55	
EPA 6010D	Vanadium, Dissolved	5.9J	ug/L	15.0	05/31/19 10:55	
EPA 6010D	Zinc, Dissolved	18.6J	ug/L	20.0	05/31/19 10:55	B
EPA 8260B	Toluene	0.85	ug/L	0.50	05/29/19 19:14	
SM 2320B	Alkalinity, Total as CaCO3	129	mg/L	5.0	05/29/19 10:46	
SM 2540C	Total Dissolved Solids	208	mg/L	10.0	05/29/19 14:53	
EPA 300.0	Chloride	1.5	mg/L	1.2	05/26/19 00:21	
EPA 300.0	Nitrate as N	0.16	mg/L	0.10	05/26/19 00:21	
EPA 300.0	Sulfate	3.0	mg/L	1.2	05/26/19 00:21	
EPA 353.2	Nitrogen, NO2 plus NO3	0.14	mg/L	0.10	05/31/19 14:26	FS
10476537002	RC02-145.5-156-052419					
EPA 6010D	Barium, Dissolved	11.4	ug/L	10.0	05/31/19 10:57	
EPA 6010D	Cobalt, Dissolved	1.1J	ug/L	10.0	05/31/19 10:57	B
EPA 6010D	Lead, Dissolved	2.6J	ug/L	10.0	05/31/19 10:57	
EPA 6010D	Molybdenum, Dissolved	5.7J	ug/L	15.0	05/31/19 10:57	
EPA 6010D	Vanadium, Dissolved	3.9J	ug/L	15.0	05/31/19 10:57	
EPA 6010D	Zinc, Dissolved	456	ug/L	20.0	05/31/19 10:57	
EPA 8260B	Carbon disulfide	0.70J	ug/L	1.0	05/29/19 18:50	
EPA 8260B	Carbon tetrachloride	324	ug/L	5.0	05/30/19 14:21	M1
EPA 8260B	Chloroform	49.8	ug/L	1.0	05/29/19 18:50	M1
EPA 8260B	Toluene	12.2	ug/L	0.50	05/29/19 18:50	
SM 2320B	Alkalinity, Total as CaCO3	173	mg/L	5.0	05/29/19 10:51	
SM 2540C	Total Dissolved Solids	273	mg/L	10.0	05/29/19 14:53	
EPA 300.0	Chloride	8.0	mg/L	1.2	05/26/19 00:36	
EPA 300.0	Nitrate as N	4.4	mg/L	0.10	05/26/19 00:36	M1
EPA 300.0	Sulfate	21.9	mg/L	1.2	05/26/19 00:36	
EPA 353.2	Nitrogen, NO2 plus NO3	4.2	mg/L	0.50	05/31/19 14:07	
SM 5310C	Total Organic Carbon	1.3	mg/L	1.0	05/30/19 12:46	
10476537003	RC02-145.5-156-052419 (2)					
EPA 6010D	Barium, Dissolved	8.9J	ug/L	10.0	05/31/19 11:06	
EPA 6010D	Beryllium, Dissolved	0.40J	ug/L	5.0	05/31/19 11:06	B
EPA 6010D	Cadmium, Dissolved	0.39J	ug/L	3.0	05/31/19 11:06	B
EPA 6010D	Cobalt, Dissolved	1.2J	ug/L	10.0	05/31/19 11:06	B
EPA 6010D	Lead, Dissolved	2.3J	ug/L	10.0	05/31/19 11:06	
EPA 6010D	Molybdenum, Dissolved	2.5J	ug/L	15.0	05/31/19 11:06	
EPA 6010D	Vanadium, Dissolved	5.8J	ug/L	15.0	05/31/19 11:06	
EPA 6010D	Zinc, Dissolved	220	ug/L	20.0	05/31/19 11:06	
EPA 8260B	Carbon disulfide	0.63J	ug/L	1.0	05/29/19 19:38	
EPA 8260B	Carbon tetrachloride	364	ug/L	5.0	05/30/19 14:44	
EPA 8260B	Chloroform	35.5	ug/L	1.0	05/29/19 19:38	
EPA 8260B	Toluene	2.0	ug/L	0.50	05/29/19 19:38	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10476537003	RC02-145.5-156-052419 (2)					
SM 2320B	Alkalinity, Total as CaCO ₃	162	mg/L	5.0	05/30/19 10:18	
SM 2540C	Total Dissolved Solids	283	mg/L	10.0	05/29/19 14:53	
EPA 300.0	Chloride	7.5	mg/L	1.2	05/26/19 00:51	
EPA 300.0	Nitrate as N	4.5	mg/L	0.10	05/26/19 00:51	
EPA 300.0	Sulfate	21.8	mg/L	1.2	05/26/19 00:51	
EPA 353.2	Nitrogen, NO ₂ plus NO ₃	2.1	mg/L	0.50	05/31/19 14:13	
SM 5310C	Total Organic Carbon	1.0	mg/L	1.0	05/30/19 13:35	
10476537004	DUP2-052319					
EPA 6010D	Barium, Dissolved	28.1	ug/L	10.0	05/31/19 11:15	
EPA 6010D	Beryllium, Dissolved	0.24J	ug/L	5.0	05/31/19 11:15	B
EPA 6010D	Cadmium, Dissolved	0.30J	ug/L	3.0	05/31/19 11:15	B
EPA 6010D	Chromium, Dissolved	0.53J	ug/L	10.0	05/31/19 11:15	
EPA 6010D	Cobalt, Dissolved	0.59J	ug/L	10.0	05/31/19 11:15	B
EPA 6010D	Copper, Dissolved	2.9J	ug/L	10.0	05/31/19 11:15	
EPA 6010D	Molybdenum, Dissolved	1.9J	ug/L	15.0	05/31/19 11:15	
EPA 6010D	Vanadium, Dissolved	4.8J	ug/L	15.0	05/31/19 11:15	
EPA 6010D	Zinc, Dissolved	24.0	ug/L	20.0	05/31/19 11:15	B
EPA 8260B	Toluene	0.70	ug/L	0.50	05/29/19 20:01	
SM 2320B	Alkalinity, Total as CaCO ₃	123	mg/L	5.0	05/30/19 07:37	
SM 2540C	Total Dissolved Solids	233	mg/L	10.0	05/29/19 14:53	
EPA 300.0	Chloride	1.5	mg/L	1.2	05/26/19 01:06	
EPA 300.0	Nitrate as N	0.15	mg/L	0.10	05/26/19 01:06	
EPA 300.0	Sulfate	3.2	mg/L	1.2	05/26/19 01:06	
EPA 353.2	Nitrogen, NO ₂ plus NO ₃	0.14	mg/L	0.10	05/31/19 14:28	FS
SM 5310C	Total Organic Carbon	2.3J	mg/L	5.0	05/30/19 12:12	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Method: RSK 175

Description: RSK 175 GCV Headspace

Client: UPRR_Jacobs

Date: May 31, 2019

General Information:

4 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 609165

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10476537002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3290358)
 - Ethane
 - Methane

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 608510

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- DUP (Lab ID: 3289438)
 - Methane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Method: EPA 6010D

Description: 6010D MET ICP, Dissolved

Client: UPRR_Jacobs

Date: May 31, 2019

General Information:

4 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 608650

B: Analyte was detected in the associated method blank.

- BLANK for HBN 608650 [MPRP/930 (Lab ID: 3289949)]
 - Beryllium, Dissolved
 - Cadmium, Dissolved
 - Cobalt, Dissolved
 - Zinc, Dissolved

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Method: EPA 7470A

Description: 7470A Mercury, Dissolved

Client: UPRR_Jacobs

Date: May 31, 2019

General Information:

4 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: May 31, 2019

General Information:

4 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 609154

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10476537002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3291992)
 - Carbon tetrachloride
 - Chloroform
 - Hexachloro-1,3-butadiene
 - Trichlorofluoromethane
 - sec-Butylbenzene
- MSD (Lab ID: 3291993)
 - Carbon tetrachloride

R1: RPD value was outside control limits.

- MSD (Lab ID: 3291993)
 - Chloromethane
 - Dichlorodifluoromethane
 - Dichlorofluoromethane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: May 31, 2019

QC Batch: 609154

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10476537002

R1: RPD value was outside control limits.

- Hexachloro-1,3-butadiene
- Trichlorofluoromethane

Additional Comments:

Analyte Comments:

QC Batch: 609154

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 3291992)
 - Carbon tetrachloride
- MSD (Lab ID: 3291993)
 - Carbon tetrachloride

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3291990)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- DUP2-052319 (Lab ID: 10476537004)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3291991)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3291992)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3291993)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MW26-052319 (Lab ID: 10476537001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- RC02-145.5-156-052419 (Lab ID: 10476537002)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: May 31, 2019

Analyte Comments:

QC Batch: 609154

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- RC02-145.5-156-052419 (2) (Lab ID: 10476537003)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Method: SM 2320B

Description: 2320B Alkalinity

Client: UPRR_Jacobs

Date: May 31, 2019

General Information:

4 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Method: SM 2540C

Description: 2540C Total Dissolved Solids

Client: UPRR_Jacobs

Date: May 31, 2019

General Information:

4 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Method: SM 4500-S-2 D

Description: 4500S2D Sulfide, Total

Client: UPRR_Jacobs

Date: May 31, 2019

General Information:

4 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 143683

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10476537002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 630444)
- Sulfide, Total

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Method: EPA 300.0

Description: 300.0 IC Anions

Client: UPRR_Jacobs

Date: May 31, 2019

General Information:

4 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 608476

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10476537002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3289366)
 - Nitrate as N
- MSD (Lab ID: 3289367)
 - Nitrate as N

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Method: EPA 353.2

Description: 353.2 Nitrate + Nitrite

Client: UPRR_Jacobs

Date: May 31, 2019

General Information:

4 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Method: EPA 410.4

Description: 410.4 COD

Client: UPRR_Jacobs

Date: May 31, 2019

General Information:

4 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Method: SM 5310C

Description: 5310C TOC

Client: UPRR_Jacobs

Date: May 31, 2019

General Information:

4 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10476537

Sample: MW26-052319 **Lab ID: 10476537001** Collected: 05/23/19 18:00 Received: 05/25/19 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		05/27/19 15:55	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		05/27/19 15:55	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		05/27/19 15:55	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	05/30/19 09:58	05/31/19 10:55	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	05/30/19 09:58	05/31/19 10:55	7440-38-2	
Barium, Dissolved	29.1	ug/L	10.0	0.18	1	05/30/19 09:58	05/31/19 10:55	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	05/30/19 09:58	05/31/19 10:55	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	05/30/19 09:58	05/31/19 10:55	7440-43-9	
Chromium, Dissolved	0.73J	ug/L	10.0	0.49	1	05/30/19 09:58	05/31/19 10:55	7440-47-3	
Cobalt, Dissolved	0.89J	ug/L	10.0	0.50	1	05/30/19 09:58	05/31/19 10:55	7440-48-4	B
Copper, Dissolved	1.4J	ug/L	10.0	1.2	1	05/30/19 09:58	05/31/19 10:55	7440-50-8	
Lead, Dissolved	2.0J	ug/L	10.0	2.0	1	05/30/19 09:58	05/31/19 10:55	7439-92-1	
Molybdenum, Dissolved	1.2J	ug/L	15.0	1.1	1	05/30/19 09:58	05/31/19 10:55	7439-98-7	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	05/30/19 09:58	05/31/19 10:55	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	05/30/19 09:58	05/31/19 10:55	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	05/30/19 09:58	05/31/19 10:55	7440-22-4	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	05/30/19 09:58	05/31/19 10:55	7440-28-0	
Vanadium, Dissolved	5.9J	ug/L	15.0	0.29	1	05/30/19 09:58	05/31/19 10:55	7440-62-2	
Zinc, Dissolved	18.6J	ug/L	20.0	2.5	1	05/30/19 09:58	05/31/19 10:55	7440-66-6	B
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	05/30/19 12:55	05/30/19 16:11	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/29/19 19:14	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/29/19 19:14	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/29/19 19:14	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/29/19 19:14	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/29/19 19:14	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/29/19 19:14	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	1.0	0.16	1		05/29/19 19:14	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/29/19 19:14	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		05/29/19 19:14	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/29/19 19:14	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		05/29/19 19:14	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		05/29/19 19:14	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/29/19 19:14	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		05/29/19 19:14	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/29/19 19:14	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		05/29/19 19:14	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/29/19 19:14	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/29/19 19:14	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/29/19 19:14	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/29/19 19:14	541-73-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10476537

Sample: MW26-052319 Lab ID: 10476537001 Collected: 05/23/19 18:00 Received: 05/25/19 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/29/19 19:14	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/29/19 19:14	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/29/19 19:14	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/29/19 19:14	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/29/19 19:14	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/29/19 19:14	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/29/19 19:14	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/29/19 19:14	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/29/19 19:14	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/29/19 19:14	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		05/29/19 19:14	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		05/29/19 19:14	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/29/19 19:14	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/29/19 19:14	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		05/29/19 19:14	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/29/19 19:14	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/29/19 19:14	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/29/19 19:14	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/29/19 19:14	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		05/29/19 19:14	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		05/29/19 19:14	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/29/19 19:14	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		05/29/19 19:14	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		05/29/19 19:14	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/29/19 19:14	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		05/29/19 19:14	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/29/19 19:14	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/29/19 19:14	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/29/19 19:14	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/29/19 19:14	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/29/19 19:14	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/29/19 19:14	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/29/19 19:14	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		05/29/19 19:14	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		05/29/19 19:14	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/29/19 19:14	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/29/19 19:14	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/29/19 19:14	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/29/19 19:14	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/29/19 19:14	109-99-9	
Toluene	0.85	ug/L	0.50	0.083	1		05/29/19 19:14	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/29/19 19:14	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/29/19 19:14	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/29/19 19:14	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/29/19 19:14	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/29/19 19:14	1330-20-7	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Sample: MW26-052319 **Lab ID: 10476537001** Collected: 05/23/19 18:00 Received: 05/25/19 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/29/19 19:14	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	1.0	0.20	1		05/29/19 19:14	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/29/19 19:14	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		05/29/19 19:14	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/29/19 19:14	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/29/19 19:14	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		05/29/19 19:14	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/29/19 19:14	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/29/19 19:14	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/29/19 19:14	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/29/19 19:14	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/29/19 19:14	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		05/29/19 19:14	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/29/19 19:14	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	101	%	75-136		1		05/29/19 19:14	17060-07-0	
Toluene-d8 (S)	102	%	75-125		1		05/29/19 19:14	2037-26-5	
4-Bromofluorobenzene (S)	98	%	75-125		1		05/29/19 19:14	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	129	mg/L	5.0	2.0	1		05/29/19 10:46		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	208	mg/L	10.0	5.0	1		05/29/19 14:53		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.027	mg/L	0.10	0.027	5		05/29/19 15:00	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	1.5	mg/L	1.2	0.12	1		05/26/19 00:21	16887-00-6	
Nitrate as N	0.16	mg/L	0.10	0.012	1		05/26/19 00:21	14797-55-8	
Sulfate	3.0	mg/L	1.2	0.28	1		05/26/19 00:21	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	0.14	mg/L	0.10	0.018	1		05/31/19 14:26		FS
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	05/30/19 11:52	05/31/19 16:02		
5310C TOC		Analytical Method: SM 5310C							
Total Organic Carbon	<2.0	mg/L	5.0	2.0	5		05/30/19 12:29	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10476537

Sample: RC02-145.5-156-052419 Lab ID: 10476537002 Collected: 05/24/19 15:05 Received: 05/25/19 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		05/29/19 18:27	74-82-8	M1
Ethane	<3.0	ug/L	10.0	3.0	1		05/29/19 18:27	74-84-0	M1
Ethene	<2.9	ug/L	10.0	2.9	1		05/29/19 18:27	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	05/30/19 09:58	05/31/19 10:57	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	05/30/19 09:58	05/31/19 10:57	7440-38-2	
Barium, Dissolved	11.4	ug/L	10.0	0.18	1	05/30/19 09:58	05/31/19 10:57	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	05/30/19 09:58	05/31/19 10:57	7440-41-7	
Cadmium, Dissolved	<0.26	ug/L	3.0	0.26	1	05/30/19 09:58	05/31/19 10:57	7440-43-9	
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	05/30/19 09:58	05/31/19 10:57	7440-47-3	
Cobalt, Dissolved	1.1J	ug/L	10.0	0.50	1	05/30/19 09:58	05/31/19 10:57	7440-48-4	B
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	05/30/19 09:58	05/31/19 10:57	7440-50-8	
Lead, Dissolved	2.6J	ug/L	10.0	2.0	1	05/30/19 09:58	05/31/19 10:57	7439-92-1	
Molybdenum, Dissolved	5.7J	ug/L	15.0	1.1	1	05/30/19 09:58	05/31/19 10:57	7439-98-7	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	05/30/19 09:58	05/31/19 10:57	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	05/30/19 09:58	05/31/19 10:57	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	05/30/19 09:58	05/31/19 10:57	7440-22-4	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	05/30/19 09:58	05/31/19 10:57	7440-28-0	
Vanadium, Dissolved	3.9J	ug/L	15.0	0.29	1	05/30/19 09:58	05/31/19 10:57	7440-62-2	
Zinc, Dissolved	456	ug/L	20.0	2.5	1	05/30/19 09:58	05/31/19 10:57	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	05/30/19 12:55	05/30/19 16:13	7439-97-6	
8260B MSV Low Level Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/29/19 18:50	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/29/19 18:50	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/29/19 18:50	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/29/19 18:50	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/29/19 18:50	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/29/19 18:50	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	1.0	0.16	1		05/29/19 18:50	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/29/19 18:50	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		05/29/19 18:50	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/29/19 18:50	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		05/29/19 18:50	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		05/29/19 18:50	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/29/19 18:50	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		05/29/19 18:50	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/29/19 18:50	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		05/29/19 18:50	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/29/19 18:50	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/29/19 18:50	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/29/19 18:50	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/29/19 18:50	541-73-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10476537

Sample: RC02-145.5-156-052419 Lab ID: 10476537002 Collected: 05/24/19 15:05 Received: 05/25/19 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/29/19 18:50	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/29/19 18:50	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/29/19 18:50	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/29/19 18:50	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/29/19 18:50	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/29/19 18:50	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/29/19 18:50	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/29/19 18:50	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/29/19 18:50	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/29/19 18:50	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		05/29/19 18:50	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		05/29/19 18:50	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/29/19 18:50	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/29/19 18:50	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		05/29/19 18:50	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/29/19 18:50	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/29/19 18:50	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/29/19 18:50	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/29/19 18:50	74-83-9	
Carbon disulfide	0.70J	ug/L	1.0	0.078	1		05/29/19 18:50	75-15-0	
Carbon tetrachloride	324	ug/L	5.0	1.9	10		05/30/19 14:21	56-23-5	M1
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/29/19 18:50	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		05/29/19 18:50	75-00-3	
Chloroform	49.8	ug/L	1.0	0.45	1		05/29/19 18:50	67-66-3	M1
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/29/19 18:50	74-87-3	R1
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		05/29/19 18:50	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/29/19 18:50	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/29/19 18:50	75-71-8	R1
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/29/19 18:50	75-43-4	N2,R1
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/29/19 18:50	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/29/19 18:50	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/29/19 18:50	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/29/19 18:50	87-68-3	M1,R1
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		05/29/19 18:50	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		05/29/19 18:50	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/29/19 18:50	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/29/19 18:50	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/29/19 18:50	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/29/19 18:50	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/29/19 18:50	109-99-9	
Toluene	12.2	ug/L	0.50	0.083	1		05/29/19 18:50	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/29/19 18:50	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/29/19 18:50	75-69-4	M1,R1
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/29/19 18:50	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/29/19 18:50	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/29/19 18:50	1330-20-7	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Sample: RC02-145.5-156-052419 **Lab ID:** 10476537002 Collected: 05/24/19 15:05 Received: 05/25/19 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/29/19 18:50	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	1.0	0.20	1		05/29/19 18:50	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/29/19 18:50	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		05/29/19 18:50	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/29/19 18:50	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/29/19 18:50	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		05/29/19 18:50	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/29/19 18:50	135-98-8	M1
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/29/19 18:50	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/29/19 18:50	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/29/19 18:50	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/29/19 18:50	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		05/29/19 18:50	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/29/19 18:50	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	96	%	75-136		1		05/29/19 18:50	17060-07-0	
Toluene-d8 (S)	100	%	75-125		1		05/29/19 18:50	2037-26-5	
4-Bromofluorobenzene (S)	98	%	75-125		1		05/29/19 18:50	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	173	mg/L	5.0	2.0	1		05/29/19 10:51		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	273	mg/L	10.0	5.0	1		05/29/19 14:53		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		05/29/19 15:04	18496-25-8	M1
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	8.0	mg/L	1.2	0.12	1		05/26/19 00:36	16887-00-6	
Nitrate as N	4.4	mg/L	0.10	0.012	1		05/26/19 00:36	14797-55-8	M1
Sulfate	21.9	mg/L	1.2	0.28	1		05/26/19 00:36	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	4.2	mg/L	0.50	0.088	5		05/31/19 14:07		
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	05/30/19 11:52	05/31/19 16:01		
5310C TOC		Analytical Method: SM 5310C							
Total Organic Carbon	1.3	mg/L	1.0	0.39	1		05/30/19 12:46	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10476537

Sample: RC02-145.5-156-052419 (2) Lab ID: 10476537003 Collected: 05/24/19 16:00 Received: 05/25/19 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace									
Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		05/29/19 18:13	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		05/29/19 18:13	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		05/29/19 18:13	74-85-1	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	05/30/19 09:58	05/31/19 11:06	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	05/30/19 09:58	05/31/19 11:06	7440-38-2	
Barium, Dissolved	8.9J	ug/L	10.0	0.18	1	05/30/19 09:58	05/31/19 11:06	7440-39-3	
Beryllium, Dissolved	0.40J	ug/L	5.0	0.12	1	05/30/19 09:58	05/31/19 11:06	7440-41-7	B
Cadmium, Dissolved	0.39J	ug/L	3.0	0.26	1	05/30/19 09:58	05/31/19 11:06	7440-43-9	B
Chromium, Dissolved	<0.49	ug/L	10.0	0.49	1	05/30/19 09:58	05/31/19 11:06	7440-47-3	
Cobalt, Dissolved	1.2J	ug/L	10.0	0.50	1	05/30/19 09:58	05/31/19 11:06	7440-48-4	B
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	05/30/19 09:58	05/31/19 11:06	7440-50-8	
Lead, Dissolved	2.3J	ug/L	10.0	2.0	1	05/30/19 09:58	05/31/19 11:06	7439-92-1	
Molybdenum, Dissolved	2.5J	ug/L	15.0	1.1	1	05/30/19 09:58	05/31/19 11:06	7439-98-7	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	05/30/19 09:58	05/31/19 11:06	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	05/30/19 09:58	05/31/19 11:06	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	05/30/19 09:58	05/31/19 11:06	7440-22-4	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	05/30/19 09:58	05/31/19 11:06	7440-28-0	
Vanadium, Dissolved	5.8J	ug/L	15.0	0.29	1	05/30/19 09:58	05/31/19 11:06	7440-62-2	
Zinc, Dissolved	220	ug/L	20.0	2.5	1	05/30/19 09:58	05/31/19 11:06	7440-66-6	
7470A Mercury, Dissolved									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	05/30/19 12:55	05/30/19 16:20	7439-97-6	
8260B MSV Low Level									
Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/29/19 19:38	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/29/19 19:38	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/29/19 19:38	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/29/19 19:38	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/29/19 19:38	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/29/19 19:38	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	1.0	0.16	1		05/29/19 19:38	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/29/19 19:38	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		05/29/19 19:38	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/29/19 19:38	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		05/29/19 19:38	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		05/29/19 19:38	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/29/19 19:38	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		05/29/19 19:38	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/29/19 19:38	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		05/29/19 19:38	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/29/19 19:38	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/29/19 19:38	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/29/19 19:38	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/29/19 19:38	541-73-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10476537

Sample: RC02-145.5-156-052419 (2) Lab ID: 10476537003 Collected: 05/24/19 16:00 Received: 05/25/19 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/29/19 19:38	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/29/19 19:38	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/29/19 19:38	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/29/19 19:38	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/29/19 19:38	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/29/19 19:38	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/29/19 19:38	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/29/19 19:38	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/29/19 19:38	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/29/19 19:38	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		05/29/19 19:38	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		05/29/19 19:38	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/29/19 19:38	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/29/19 19:38	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		05/29/19 19:38	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/29/19 19:38	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/29/19 19:38	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/29/19 19:38	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/29/19 19:38	74-83-9	
Carbon disulfide	0.63J	ug/L	1.0	0.078	1		05/29/19 19:38	75-15-0	
Carbon tetrachloride	364	ug/L	5.0	1.9	10		05/30/19 14:44	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/29/19 19:38	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		05/29/19 19:38	75-00-3	
Chloroform	35.5	ug/L	1.0	0.45	1		05/29/19 19:38	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/29/19 19:38	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		05/29/19 19:38	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/29/19 19:38	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/29/19 19:38	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/29/19 19:38	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/29/19 19:38	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/29/19 19:38	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/29/19 19:38	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/29/19 19:38	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		05/29/19 19:38	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		05/29/19 19:38	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/29/19 19:38	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/29/19 19:38	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/29/19 19:38	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/29/19 19:38	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/29/19 19:38	109-99-9	
Toluene	2.0	ug/L	0.50	0.083	1		05/29/19 19:38	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/29/19 19:38	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/29/19 19:38	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/29/19 19:38	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/29/19 19:38	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/29/19 19:38	1330-20-7	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Sample: RC02-145.5-156-052419 (2) **Lab ID:** 10476537003 Collected: 05/24/19 16:00 Received: 05/25/19 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/29/19 19:38	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	1.0	0.20	1		05/29/19 19:38	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/29/19 19:38	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		05/29/19 19:38	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/29/19 19:38	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/29/19 19:38	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		05/29/19 19:38	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/29/19 19:38	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/29/19 19:38	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/29/19 19:38	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/29/19 19:38	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/29/19 19:38	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		05/29/19 19:38	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/29/19 19:38	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	102	%	75-136		1		05/29/19 19:38	17060-07-0	
Toluene-d8 (S)	102	%	75-125		1		05/29/19 19:38	2037-26-5	
4-Bromofluorobenzene (S)	98	%	75-125		1		05/29/19 19:38	460-00-4	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	162	mg/L	5.0	2.0	1		05/30/19 10:18		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	283	mg/L	10.0	5.0	1		05/29/19 14:53		
4500S2D Sulfide, Total		Analytical Method: SM 4500-S-2 D							
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		05/29/19 15:23	18496-25-8	
300.0 IC Anions		Analytical Method: EPA 300.0							
Chloride	7.5	mg/L	1.2	0.12	1		05/26/19 00:51	16887-00-6	
Nitrate as N	4.5	mg/L	0.10	0.012	1		05/26/19 00:51	14797-55-8	
Sulfate	21.8	mg/L	1.2	0.28	1		05/26/19 00:51	14808-79-8	
353.2 Nitrate + Nitrite		Analytical Method: EPA 353.2							
Nitrogen, NO2 plus NO3	2.1	mg/L	0.50	0.088	5		05/31/19 14:13		
410.4 COD		Analytical Method: EPA 410.4 Preparation Method: EPA 410.4							
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	05/30/19 11:52	05/31/19 16:02		
5310C TOC		Analytical Method: SM 5310C							
Total Organic Carbon	1.0	mg/L	1.0	0.39	1		05/30/19 13:35	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10476537

Sample: DUP2-052319 Lab ID: 10476537004 Collected: 05/23/19 11:00 Received: 05/25/19 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace									
Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		05/27/19 16:03	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		05/27/19 16:03	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		05/27/19 16:03	74-85-1	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	05/30/19 09:58	05/31/19 11:15	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	05/30/19 09:58	05/31/19 11:15	7440-38-2	
Barium, Dissolved	28.1	ug/L	10.0	0.18	1	05/30/19 09:58	05/31/19 11:15	7440-39-3	
Beryllium, Dissolved	0.24J	ug/L	5.0	0.12	1	05/30/19 09:58	05/31/19 11:15	7440-41-7	B
Cadmium, Dissolved	0.30J	ug/L	3.0	0.26	1	05/30/19 09:58	05/31/19 11:15	7440-43-9	B
Chromium, Dissolved	0.53J	ug/L	10.0	0.49	1	05/30/19 09:58	05/31/19 11:15	7440-47-3	
Cobalt, Dissolved	0.59J	ug/L	10.0	0.50	1	05/30/19 09:58	05/31/19 11:15	7440-48-4	B
Copper, Dissolved	2.9J	ug/L	10.0	1.2	1	05/30/19 09:58	05/31/19 11:15	7440-50-8	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	05/30/19 09:58	05/31/19 11:15	7439-92-1	
Molybdenum, Dissolved	1.9J	ug/L	15.0	1.1	1	05/30/19 09:58	05/31/19 11:15	7439-98-7	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	05/30/19 09:58	05/31/19 11:15	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	05/30/19 09:58	05/31/19 11:15	7782-49-2	
Silver, Dissolved	<0.38	ug/L	10.0	0.38	1	05/30/19 09:58	05/31/19 11:15	7440-22-4	
Thallium, Dissolved	<4.3	ug/L	20.0	4.3	1	05/30/19 09:58	05/31/19 11:15	7440-28-0	
Vanadium, Dissolved	4.8J	ug/L	15.0	0.29	1	05/30/19 09:58	05/31/19 11:15	7440-62-2	
Zinc, Dissolved	24.0	ug/L	20.0	2.5	1	05/30/19 09:58	05/31/19 11:15	7440-66-6	B
7470A Mercury, Dissolved									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	05/30/19 12:55	05/30/19 16:22	7439-97-6	
8260B MSV Low Level									
Analytical Method: EPA 8260B									
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/29/19 20:01	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/29/19 20:01	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/29/19 20:01	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/29/19 20:01	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/29/19 20:01	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/29/19 20:01	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	1.0	0.16	1		05/29/19 20:01	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		05/29/19 20:01	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		05/29/19 20:01	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/29/19 20:01	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		05/29/19 20:01	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		05/29/19 20:01	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/29/19 20:01	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		05/29/19 20:01	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/29/19 20:01	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		05/29/19 20:01	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/29/19 20:01	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/29/19 20:01	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/29/19 20:01	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/29/19 20:01	541-73-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Sample: DUP2-052319 Lab ID: 10476537004 Collected: 05/23/19 11:00 Received: 05/25/19 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/29/19 20:01	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/29/19 20:01	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/29/19 20:01	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/29/19 20:01	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/29/19 20:01	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/29/19 20:01	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/29/19 20:01	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/29/19 20:01	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/29/19 20:01	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/29/19 20:01	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		05/29/19 20:01	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		05/29/19 20:01	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/29/19 20:01	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/29/19 20:01	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		05/29/19 20:01	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/29/19 20:01	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/29/19 20:01	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/29/19 20:01	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/29/19 20:01	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		05/29/19 20:01	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		05/29/19 20:01	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/29/19 20:01	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		05/29/19 20:01	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		05/29/19 20:01	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/29/19 20:01	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		05/29/19 20:01	124-48-1	
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/29/19 20:01	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/29/19 20:01	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/29/19 20:01	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/29/19 20:01	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/29/19 20:01	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/29/19 20:01	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/29/19 20:01	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		05/29/19 20:01	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		05/29/19 20:01	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/29/19 20:01	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/29/19 20:01	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/29/19 20:01	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/29/19 20:01	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/29/19 20:01	109-99-9	
Toluene	0.70	ug/L	0.50	0.083	1		05/29/19 20:01	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/29/19 20:01	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/29/19 20:01	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/29/19 20:01	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/29/19 20:01	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/29/19 20:01	1330-20-7	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Sample: DUP2-052319 **Lab ID: 10476537004** Collected: 05/23/19 11:00 Received: 05/25/19 09:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level									
Analytical Method: EPA 8260B									
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/29/19 20:01	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	1.0	0.20	1		05/29/19 20:01	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/29/19 20:01	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		05/29/19 20:01	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/29/19 20:01	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/29/19 20:01	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		05/29/19 20:01	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/29/19 20:01	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/29/19 20:01	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/29/19 20:01	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/29/19 20:01	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/29/19 20:01	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		05/29/19 20:01	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/29/19 20:01	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	97	%	75-136		1		05/29/19 20:01	17060-07-0	
Toluene-d8 (S)	100	%	75-125		1		05/29/19 20:01	2037-26-5	
4-Bromofluorobenzene (S)	99	%	75-125		1		05/29/19 20:01	460-00-4	
2320B Alkalinity									
Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	123	mg/L	5.0	2.0	1		05/30/19 07:37		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Total Dissolved Solids	233	mg/L	10.0	5.0	1		05/29/19 14:53		
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.027	mg/L	0.10	0.027	5		05/29/19 15:00	18496-25-8	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	1.5	mg/L	1.2	0.12	1		05/26/19 01:06	16887-00-6	
Nitrate as N	0.15	mg/L	0.10	0.012	1		05/26/19 01:06	14797-55-8	
Sulfate	3.2	mg/L	1.2	0.28	1		05/26/19 01:06	14808-79-8	
353.2 Nitrate + Nitrite									
Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	0.14	mg/L	0.10	0.018	1		05/31/19 14:28		FS
410.4 COD									
Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	05/30/19 11:52	05/31/19 16:02		
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	2.3J	mg/L	5.0	2.0	5		05/30/19 12:12	7440-44-0	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10476537

QC Batch: 608510 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 GCV HEADSPACE
Associated Lab Samples: 10476537001, 10476537004

METHOD BLANK: 3289433 Matrix: Water
Associated Lab Samples: 10476537001, 10476537004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	05/27/19 13:59	
Ethene	ug/L	<2.9	10.0	2.9	05/27/19 13:59	
Methane	ug/L	<4.9	10.0	4.9	05/27/19 13:59	

LABORATORY CONTROL SAMPLE & LCSD: 3289434

Parameter	Units	3289435								Qualifiers
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	
Ethane	ug/L	114	110	111	97	97	85-115	1	20	
Ethene	ug/L	106	102	103	96	97	85-115	1	20	
Methane	ug/L	60.7	56.6	56.1	93	93	85-115	1	20	

SAMPLE DUPLICATE: 3289438

Parameter	Units	10476552001		RPD	Max RPD	Qualifiers
		Result	Dup Result			
Ethane	ug/L	2940	2630	11	20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	4120	3600	13	20 E	

SAMPLE DUPLICATE: 3289439

Parameter	Units	10476552002		RPD	Max RPD	Qualifiers
		Result	Dup Result			
Ethane	ug/L	153	137	11	20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	300	272	10	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10476537

QC Batch: 609165 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 GCV HEADSPACE
Associated Lab Samples: 10476537002, 10476537003

METHOD BLANK: 3292032 Matrix: Water
Associated Lab Samples: 10476537002, 10476537003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	05/29/19 17:57	
Ethene	ug/L	<2.9	10.0	2.9	05/29/19 17:57	
Methane	ug/L	<4.9	10.0	4.9	05/29/19 17:57	

LABORATORY CONTROL SAMPLE & LCSD: 3292033

Parameter	Units	3292034								Max RPD	Qualifiers
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD			
Ethane	ug/L	114	117	110	103	97	85-115	6	20		
Ethene	ug/L	106	108	102	102	96	85-115	6	20		
Methane	ug/L	60.7	59.5	56.5	98	93	85-115	5	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3290358 3290359

Parameter	Units	3290358										Max RPD	Qual
		10476537002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD			
Ethane	ug/L	<3.0	114	114	177	155	156	136	30-150	13	20	M1	
Ethene	ug/L	<2.9	106	106	158	140	149	132	30-150	12	20		
Methane	ug/L	<4.9	60.7	60.7	92.0	80.1	152	132	30-150	14	20	M1	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

QC Batch: 608881 Analysis Method: EPA 7470A
 QC Batch Method: EPA 7470A Analysis Description: 7470A Mercury Water Dissolved
 Associated Lab Samples: 10476537001, 10476537002, 10476537003, 10476537004

METHOD BLANK: 3291078 Matrix: Water
 Associated Lab Samples: 10476537001, 10476537002, 10476537003, 10476537004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.093	0.20	0.093	05/30/19 15:45	

LABORATORY CONTROL SAMPLE: 3291079

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.6	91	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3291080 3291081

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		10476537002 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Mercury, Dissolved	ug/L	<0.093	5	5	5.7	5.5	113	109	80-120	4	20		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

QC Batch: 608650 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10476537001, 10476537002, 10476537003, 10476537004

METHOD BLANK: 3289949 Matrix: Water
Associated Lab Samples: 10476537001, 10476537002, 10476537003, 10476537004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	05/31/19 10:28	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	05/31/19 10:28	
Barium, Dissolved	ug/L	0.36J	10.0	0.18	05/31/19 10:28	
Beryllium, Dissolved	ug/L	0.33J	5.0	0.12	05/31/19 10:28	
Cadmium, Dissolved	ug/L	0.34J	3.0	0.26	05/31/19 10:28	
Chromium, Dissolved	ug/L	<0.49	10.0	0.49	05/31/19 10:28	
Cobalt, Dissolved	ug/L	0.64J	10.0	0.50	05/31/19 10:28	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	05/31/19 10:28	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	05/31/19 10:28	
Molybdenum, Dissolved	ug/L	<1.1	15.0	1.1	05/31/19 10:28	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	05/31/19 10:28	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	05/31/19 10:28	
Silver, Dissolved	ug/L	<0.38	10.0	0.38	05/31/19 10:28	
Thallium, Dissolved	ug/L	<4.3	20.0	4.3	05/31/19 10:28	
Vanadium, Dissolved	ug/L	<0.29	15.0	0.29	05/31/19 10:28	
Zinc, Dissolved	ug/L	3.4J	20.0	2.5	05/31/19 10:28	

LABORATORY CONTROL SAMPLE: 3289950

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony, Dissolved	ug/L	1000	1040	104	80-120	
Arsenic, Dissolved	ug/L	1000	1030	103	80-120	
Barium, Dissolved	ug/L	1000	1060	106	80-120	
Beryllium, Dissolved	ug/L	1000	1050	105	80-120	
Cadmium, Dissolved	ug/L	1000	1070	107	80-120	
Chromium, Dissolved	ug/L	1000	1030	103	80-120	
Cobalt, Dissolved	ug/L	1000	1030	103	80-120	
Copper, Dissolved	ug/L	1000	1000	100	80-120	
Lead, Dissolved	ug/L	1000	1030	103	80-120	
Molybdenum, Dissolved	ug/L	1000	1070	107	80-120	
Nickel, Dissolved	ug/L	1000	1040	104	80-120	
Selenium, Dissolved	ug/L	1000	1070	107	80-120	
Silver, Dissolved	ug/L	500	516	103	80-120	
Thallium, Dissolved	ug/L	1000	1030	103	80-120	
Vanadium, Dissolved	ug/L	1000	1020	102	80-120	
Zinc, Dissolved	ug/L	1000	1050	105	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Parameter	Units	3289951		3289952		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		10476537002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Antimony, Dissolved	ug/L	<7.0	1000	1000	1020	1020	102	102	75-125	0	20		
Arsenic, Dissolved	ug/L	<3.8	1000	1000	1020	1030	102	103	75-125	1	20		
Barium, Dissolved	ug/L	11.4	1000	1000	1030	1040	102	103	75-125	1	20		
Beryllium, Dissolved	ug/L	<0.12	1000	1000	1030	1050	103	105	75-125	1	20		
Cadmium, Dissolved	ug/L	<0.26	1000	1000	1000	1020	100	102	75-125	1	20		
Chromium, Dissolved	ug/L	<0.49	1000	1000	1020	1030	102	103	75-125	1	20		
Cobalt, Dissolved	ug/L	1.1J	1000	1000	972	982	97	98	75-125	1	20		
Copper, Dissolved	ug/L	<1.2	1000	1000	981	993	98	99	75-125	1	20		
Lead, Dissolved	ug/L	2.6J	1000	1000	980	993	98	99	75-125	1	20		
Molybdenum, Dissolved	ug/L	5.7J	1000	1000	1030	1040	102	103	75-125	1	20		
Nickel, Dissolved	ug/L	<1.1	1000	1000	977	987	98	99	75-125	1	20		
Selenium, Dissolved	ug/L	<5.8	1000	1000	1030	1040	103	104	75-125	1	20		
Silver, Dissolved	ug/L	<0.38	500	500	515	521	103	104	75-125	1	20		
Thallium, Dissolved	ug/L	<4.3	1000	1000	991	992	99	99	75-125	0	20		
Vanadium, Dissolved	ug/L	3.9J	1000	1000	997	1010	99	100	75-125	1	20		
Zinc, Dissolved	ug/L	456	1000	1000	1430	1450	97	99	75-125	2	20		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

QC Batch: 609154 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10476537001, 10476537002, 10476537003, 10476537004

METHOD BLANK: 3291990 Matrix: Water
Associated Lab Samples: 10476537001, 10476537002, 10476537003, 10476537004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	05/29/19 16:52	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	05/29/19 16:52	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	05/29/19 16:52	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	05/29/19 16:52	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	05/29/19 16:52	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	05/29/19 16:52	
1,1-Dichloroethene	ug/L	<0.16	1.0	0.16	05/29/19 16:52	MN
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	05/29/19 16:52	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	05/29/19 16:52	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	05/29/19 16:52	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	05/29/19 16:52	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	05/29/19 16:52	MN
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	05/29/19 16:52	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	05/29/19 16:52	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	05/29/19 16:52	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	05/29/19 16:52	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	05/29/19 16:52	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	05/29/19 16:52	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	05/29/19 16:52	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	05/29/19 16:52	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	05/29/19 16:52	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	05/29/19 16:52	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	05/29/19 16:52	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	05/29/19 16:52	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	05/29/19 16:52	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	05/29/19 16:52	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	05/29/19 16:52	
2-Hexanone	ug/L	<0.88	5.0	0.88	05/29/19 16:52	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	05/29/19 16:52	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	05/29/19 16:52	
Acetone	ug/L	<9.2	20.0	9.2	05/29/19 16:52	
Acrolein	ug/L	<1.2	10.0	1.2	05/29/19 16:52	
Acrylonitrile	ug/L	<0.91	10.0	0.91	05/29/19 16:52	
Benzene	ug/L	<0.10	0.50	0.10	05/29/19 16:52	
Bromobenzene	ug/L	<0.21	0.50	0.21	05/29/19 16:52	
Bromochloromethane	ug/L	<0.27	1.0	0.27	05/29/19 16:52	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	05/29/19 16:52	
Bromoform	ug/L	<0.80	4.0	0.80	05/29/19 16:52	
Bromomethane	ug/L	<1.8	4.0	1.8	05/29/19 16:52	
Carbon disulfide	ug/L	<0.078	1.0	0.078	05/29/19 16:52	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	05/29/19 16:52	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

METHOD BLANK: 3291990

Matrix: Water

Associated Lab Samples: 10476537001, 10476537002, 10476537003, 10476537004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	05/29/19 16:52	
Chloroethane	ug/L	<0.49	1.0	0.49	05/29/19 16:52	
Chloroform	ug/L	<0.45	1.0	0.45	05/29/19 16:52	
Chloromethane	ug/L	<0.16	4.0	0.16	05/29/19 16:52	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	05/29/19 16:52	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	05/29/19 16:52	MN
Dibromochloromethane	ug/L	<0.12	1.0	0.12	05/29/19 16:52	MN
Dibromomethane	ug/L	<0.16	1.0	0.16	05/29/19 16:52	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	05/29/19 16:52	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	05/29/19 16:52	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	05/29/19 16:52	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	05/29/19 16:52	
Ethylbenzene	ug/L	<0.14	0.50	0.14	05/29/19 16:52	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	05/29/19 16:52	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	05/29/19 16:52	MN
m&p-Xylene	ug/L	<0.31	1.0	0.31	05/29/19 16:52	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	05/29/19 16:52	
Methylene Chloride	ug/L	<0.98	4.0	0.98	05/29/19 16:52	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	05/29/19 16:52	MN
n-Propylbenzene	ug/L	<0.10	0.50	0.10	05/29/19 16:52	
Naphthalene	ug/L	<0.48	1.0	0.48	05/29/19 16:52	
o-Xylene	ug/L	<0.16	0.50	0.16	05/29/19 16:52	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	05/29/19 16:52	MN
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	05/29/19 16:52	
Styrene	ug/L	<0.19	0.50	0.19	05/29/19 16:52	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	05/29/19 16:52	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	05/29/19 16:52	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	05/29/19 16:52	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	05/29/19 16:52	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	05/29/19 16:52	
Toluene	ug/L	<0.083	0.50	0.083	05/29/19 16:52	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	05/29/19 16:52	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	05/29/19 16:52	MN
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	05/29/19 16:52	
Trichloroethene	ug/L	<0.15	0.40	0.15	05/29/19 16:52	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	05/29/19 16:52	
Vinyl acetate	ug/L	<1.1	10.0	1.1	05/29/19 16:52	
Vinyl chloride	ug/L	<0.092	0.20	0.092	05/29/19 16:52	
Xylene (Total)	ug/L	<0.31	1.5	0.31	05/29/19 16:52	
1,2-Dichloroethane-d4 (S)	%	99	75-136		05/29/19 16:52	
4-Bromofluorobenzene (S)	%	101	75-125		05/29/19 16:52	
Toluene-d8 (S)	%	102	75-125		05/29/19 16:52	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

LABORATORY CONTROL SAMPLE: 3291991

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	18.5	93	68-141	
1,1,1-Trichloroethane	ug/L	20	17.1	86	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	18.4	92	73-125	
1,1,2-Trichloroethane	ug/L	20	19.4	97	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	16.7	83	69-132	
1,1-Dichloroethane	ug/L	20	17.0	85	73-125	
1,1-Dichloroethene	ug/L	20	16.6	83	71-126	
1,1-Dichloropropene	ug/L	20	17.3	86	73-126	
1,2,3-Trichlorobenzene	ug/L	20	18.7	94	72-126	
1,2,3-Trichloropropane	ug/L	20	17.5	87	75-126	
1,2,4-Trichlorobenzene	ug/L	20	19.1	95	71-134	
1,2,4-Trimethylbenzene	ug/L	20	17.9	89	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	46.0	92	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	20.4	102	75-129	
1,2-Dichlorobenzene	ug/L	20	16.9	85	75-129	
1,2-Dichloroethane	ug/L	20	16.2	81	75-125	
1,2-Dichloroethene (Total)	ug/L	40	35.3	88	74-125	N2
1,2-Dichloropropane	ug/L	20	20.3	101	75-125	
1,3,5-Trimethylbenzene	ug/L	20	19.9	99	75-127	
1,3-Dichlorobenzene	ug/L	20	18.1	90	75-126	
1,3-Dichloropropane	ug/L	20	19.3	97	75-125	
1,4-Dichlorobenzene	ug/L	20	17.6	88	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	370	93	72-129	
2,2,4-Trimethylpentane	ug/L	20	16.1	81	72-128	N2
2,2-Dichloropropane	ug/L	20	17.2	86	65-138	
2-Butanone (MEK)	ug/L	100	94.9	95	59-144	
2-Chlorotoluene	ug/L	20	18.6	93	75-127	
2-Hexanone	ug/L	100	102	102	73-134	
4-Chlorotoluene	ug/L	20	18.4	92	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	101	101	62-141	
Acetone	ug/L	100	95.2	95	60-137	
Acrolein	ug/L	200	212	106	60-141	
Acrylonitrile	ug/L	200	185	92	75-129	
Benzene	ug/L	20	17.4	87	73-125	
Bromobenzene	ug/L	20	18.3	91	73-125	
Bromochloromethane	ug/L	20	18.4	92	75-135	
Bromodichloromethane	ug/L	20	19.1	95	75-125	
Bromoform	ug/L	20	18.6	93	67-136	
Bromomethane	ug/L	20	21.5	107	30-150	
Carbon disulfide	ug/L	20	17.7	88	47-137	
Carbon tetrachloride	ug/L	20	17.2	86	75-125	
Chlorobenzene	ug/L	20	17.2	86	75-125	
Chloroethane	ug/L	20	19.9	100	63-136	
Chloroform	ug/L	20	17.1	85	73-128	
Chloromethane	ug/L	20	17.8	89	55-130	
cis-1,2-Dichloroethene	ug/L	20	17.9	89	75-125	
cis-1,3-Dichloropropene	ug/L	20	17.8	89	74-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

LABORATORY CONTROL SAMPLE: 3291991

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	17.7	88	75-125	
Dibromomethane	ug/L	20	18.5	93	75-125	
Dichlorodifluoromethane	ug/L	20	17.2	86	63-132	
Dichlorofluoromethane	ug/L	20	17.8	89	68-127	N2
Diisopropyl ether	ug/L	20	18.5	93	71-131	
Ethyl-tert-butyl ether	ug/L	20	19.0	95	75-125	
Ethylbenzene	ug/L	20	18.8	94	75-125	
Hexachloro-1,3-butadiene	ug/L	20	18.1	90	72-134	
Isopropylbenzene (Cumene)	ug/L	20	18.0	90	75-125	
m&p-Xylene	ug/L	40	38.5	96	75-126	
Methyl-tert-butyl ether	ug/L	20	19.0	95	75-125	
Methylene Chloride	ug/L	20	18.1	90	70-125	
n-Butylbenzene	ug/L	20	17.8	89	75-126	
n-Propylbenzene	ug/L	20	18.5	93	73-127	
Naphthalene	ug/L	20	19.2	96	63-128	
o-Xylene	ug/L	20	19.0	95	75-128	
p-Isopropyltoluene	ug/L	20	18.6	93	75-125	
sec-Butylbenzene	ug/L	20	19.9	100	75-126	
Styrene	ug/L	20	18.8	94	75-125	
tert-Amylmethyl ether	ug/L	20	17.8	89	75-125	
tert-Butyl Alcohol	ug/L	200	183	92	75-130	
tert-Butylbenzene	ug/L	20	18.4	92	75-131	
Tetrachloroethene	ug/L	20	18.1	91	74-125	
Tetrahydrofuran	ug/L	200	198	99	64-138	
Toluene	ug/L	20	18.3	92	74-125	
trans-1,2-Dichloroethene	ug/L	20	17.5	87	68-128	
trans-1,3-Dichloropropene	ug/L	20	19.0	95	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	45.6	91	60-127	
Trichloroethene	ug/L	20	18.6	93	75-127	
Trichlorofluoromethane	ug/L	20	16.4	82	72-133	
Vinyl acetate	ug/L	20	18.1	91	61-129	
Vinyl chloride	ug/L	20	19.1	96	75-128	
Xylene (Total)	ug/L	60	57.5	96	75-125	
1,2-Dichloroethane-d4 (S)	%			95	75-136	
4-Bromofluorobenzene (S)	%			103	75-125	
Toluene-d8 (S)	%			101	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3291992 3291993

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10476537002 Result	Spike Conc.	Spike Conc.	3291993 Result								
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20.8	19.4	104	97	75-140	7	30		
1,1,1-Trichloroethane	ug/L	<0.14	20	20	19.7	19.3	99	96	74-136	2	30		
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	19.5	19.0	98	95	66-134	3	30		
1,1,2-Trichloroethane	ug/L	<0.18	20	20	22.2	19.7	111	99	75-126	12	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3291992												3291993											
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual										
		10476537002 Result	Spike Conc.	Spike Conc.	MS Conc.																		
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	20	20.1	21.0	101	105	65-146	4	30											
1,1-Dichloroethane	ug/L	<0.17	20	20	18.1	18.0	90	90	68-132	1	30												
1,1-Dichloroethene	ug/L	<0.16	20	20	19.3	18.5	96	93	66-139	4	30												
1,1-Dichloropropene	ug/L	<0.20	20	20	19.6	19.7	98	99	67-134	1	30												
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	24.0	20.7	120	104	67-129	15	30												
1,2,3-Trichloropropane	ug/L	<0.26	20	20	20.2	19.8	101	99	69-128	2	30												
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	25.4	20.3	127	102	65-140	22	30												
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	21.1	19.7	105	99	71-133	7	30												
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	49.7	49.1	99	98	54-138	1	30												
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	22.1	19.9	111	100	68-125	11	30												
1,2-Dichlorobenzene	ug/L	<0.14	20	20	19.9	18.4	99	92	74-136	8	30												
1,2-Dichloroethane	ug/L	<0.22	20	20	15.5	16.8	78	84	68-125	8	30												
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	37.4	37.6	94	94	71-126	1	30	N2											
1,2-Dichloropropane	ug/L	<0.16	20	20	22.2	20.1	111	101	67-125	10	30												
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	24.6	22.7	123	113	68-137	8	30												
1,3-Dichlorobenzene	ug/L	<0.16	20	20	20.7	19.6	104	98	75-131	6	30												
1,3-Dichloropropane	ug/L	<0.070	20	20	20.9	19.4	105	97	71-125	7	30												
1,4-Dichlorobenzene	ug/L	<0.17	20	20	20.5	19.1	102	95	74-126	7	30												
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	397	334	99	83	68-125	17	30												
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	25.7	20.9	128	105	54-129	21	30	N2											
2,2-Dichloropropane	ug/L	<0.17	20	20	21.5	20.7	108	103	69-139	4	30												
2-Butanone (MEK)	ug/L	<0.99	100	100	77.3	88.7	77	89	54-144	14	30												
2-Chlorotoluene	ug/L	<0.16	20	20	21.8	20.4	109	102	75-134	7	30												
2-Hexanone	ug/L	<0.88	100	100	105	104	105	104	58-137	1	30												
4-Chlorotoluene	ug/L	<0.13	20	20	21.5	20.0	108	100	72-133	7	30												
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	106	106	106	106	60-129	0	30												
Acetone	ug/L	<9.2	100	100	101	97.6	94	91	62-132	3	30												
Acrolein	ug/L	<1.2	200	200	264	275	132	138	30-150	4	30												
Acrylonitrile	ug/L	<0.91	200	200	167	183	84	91	68-125	9	30												
Benzene	ug/L	<0.10	20	20	18.1	18.6	91	93	68-125	3	30												
Bromobenzene	ug/L	<0.21	20	20	20.8	19.2	104	96	73-126	8	30												
Bromochloromethane	ug/L	<0.27	20	20	18.0	17.8	90	89	66-143	2	30												
Bromodichloromethane	ug/L	<0.22	20	20	20.7	18.9	103	94	74-125	9	30												
Bromoform	ug/L	<0.80	20	20	20.9	20.1	104	100	64-134	4	30												
Bromomethane	ug/L	<1.8	20	20	21.0	22.1	105	111	30-150	5	30												
Carbon disulfide	ug/L	0.70J	20	20	21.3	19.3	103	93	43-147	10	30												
Carbon tetrachloride	ug/L	324	20	20	378	440	270	580	71-143	15	30	E,M1											
Chlorobenzene	ug/L	<0.17	20	20	19.1	18.0	96	90	75-125	6	30												
Chloroethane	ug/L	<0.49	20	20	17.3	23.0	86	115	75-129	28	30												
Chloroform	ug/L	49.8	20	20	59.9	66.7	51	85	66-132	11	30	M1											
Chloromethane	ug/L	<0.16	20	20	14.4	20.4	72	102	53-137	35	30	R1											
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	18.3	18.7	92	93	67-133	2	30												
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	19.7	16.7	98	84	66-125	16	30												

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Parameter	Units	3291992		3291993		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		10476537002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Dibromochloromethane	ug/L	<0.12	20	20	19.4	18.0	97	90	62-132	8	30		
Dibromomethane	ug/L	<0.16	20	20	21.0	18.0	105	90	67-125	16	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	15.3	22.0	77	110	71-142	36	30	R1	
Dichlorofluoromethane	ug/L	<0.14	20	20	14.1	19.3	70	96	70-131	31	30	N2,R1	
Diisopropyl ether	ug/L	<0.13	20	20	17.9	18.2	89	91	63-131	2	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	17.9	19.6	89	98	66-128	9	30		
Ethylbenzene	ug/L	<0.14	20	20	22.1	21.1	111	106	74-126	5	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	33.5	21.2	168	106	68-143	45	30	M1,R1	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	21.8	20.4	109	102	74-130	7	30		
m&p-Xylene	ug/L	<0.31	40	40	45.3	42.7	113	107	69-132	6	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	17.7	19.1	88	96	65-131	8	30		
Methylene Chloride	ug/L	<0.98	20	20	18.1	17.9	90	90	57-125	1	30		
n-Butylbenzene	ug/L	<0.24	20	20	25.7	20.4	128	102	71-131	23	30		
n-Propylbenzene	ug/L	<0.10	20	20	23.5	21.1	117	106	67-138	10	30		
Naphthalene	ug/L	<0.48	20	20	21.3	21.6	106	108	60-130	1	30		
o-Xylene	ug/L	<0.16	20	20	21.3	20.7	107	104	69-131	3	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	24.7	20.9	123	105	72-133	16	30		
sec-Butylbenzene	ug/L	<0.15	20	20	27.9	23.1	140	116	73-134	19	30	M1	
Styrene	ug/L	<0.19	20	20	21.0	20.0	105	100	72-125	5	30		
tert-Amylmethyl ether	ug/L	<0.11	20	20	17.8	19.2	89	96	67-125	8	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	189	172	95	86	64-137	10	30		
tert-Butylbenzene	ug/L	<0.15	20	20	23.7	20.9	118	105	70-143	12	30		
Tetrachloroethene	ug/L	<0.17	20	20	22.4	21.2	112	106	72-129	6	30		
Tetrahydrofuran	ug/L	<2.2	200	200	207	203	103	101	66-128	2	30		
Toluene	ug/L	12.2	20	20	33.9	31.4	108	96	73-125	8	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	19.1	18.9	96	95	62-137	1	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	21.0	18.0	105	90	61-136	15	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	53.5	50.2	107	100	45-128	6	30		
Trichloroethene	ug/L	<0.15	20	20	22.3	19.7	112	98	74-132	12	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	14.1	20.1	70	101	75-139	35	30	M1,R1	
Vinyl acetate	ug/L	<1.1	20	20	17.8	17.6	89	88	51-135	1	30		
Vinyl chloride	ug/L	<0.092	20	20	16.2	22.1	81	110	68-146	30	30		
Xylene (Total)	ug/L	<0.31	60	60	66.6	63.5	111	106	67-137	5	30		
1,2-Dichloroethane-d4 (S)	%						87	101	75-136				
4-Bromofluorobenzene (S)	%						104	101	75-125				
Toluene-d8 (S)	%						101	102	75-125				

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10476537

QC Batch: 608894 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10476537001, 10476537002

METHOD BLANK: 3291133 Matrix: Water
Associated Lab Samples: 10476537001, 10476537002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<2.0	5.0	2.0	05/29/19 07:54	

LABORATORY CONTROL SAMPLE & LCSD: 3291134 3291135

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	41.0	41.0	102	103	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3291136 3291137

Parameter	Units	10475431010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	<5.0	40	40	42.0	39.4	100	94	80-120	7	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3291138 3291139

Parameter	Units	10476537002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	173	40	40	213	213	99	101	80-120	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10476537

QC Batch: 609222 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10476537003, 10476537004

METHOD BLANK: 3292580 Matrix: Water
Associated Lab Samples: 10476537003, 10476537004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<2.0	5.0	2.0	05/30/19 06:53	

LABORATORY CONTROL SAMPLE & LCSD: 3292581 3292582

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	38.8	38.8	97	97	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3292583 3292584

Parameter	Units	10476537003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	162	40	40	210	210	120	120	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3292585 3292586

Parameter	Units	10476537004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	123	40	40	164	169	102	116	80-120	3	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

QC Batch: 609059 Analysis Method: SM 2540C
 QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
 Associated Lab Samples: 10476537001, 10476537002, 10476537003, 10476537004

METHOD BLANK: 3291624 Matrix: Water
 Associated Lab Samples: 10476537001, 10476537002, 10476537003, 10476537004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	9.0J	10.0	5.0	05/29/19 14:53	

LABORATORY CONTROL SAMPLE: 3291625

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1020	102	80-120	

SAMPLE DUPLICATE: 3291626

Parameter	Units	10476537001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	208	208	0	5	

SAMPLE DUPLICATE: 3291627

Parameter	Units	10476537002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	273	269	1	5	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

QC Batch: 143683

Analysis Method: SM 4500-S-2 D

QC Batch Method: SM 4500-S-2 D

Analysis Description: 4500S2D Sulfide, Total

Associated Lab Samples: 10476537001, 10476537002, 10476537003, 10476537004

METHOD BLANK: 630402

Matrix: Water

Associated Lab Samples: 10476537001, 10476537002, 10476537003, 10476537004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	05/29/19 14:44	

LABORATORY CONTROL SAMPLE: 630403

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.2	0.19	96	90-110	

MATRIX SPIKE SAMPLE: 630444

Parameter	Units	10476537002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.2	0.10	49	75-125	M1

SAMPLE DUPLICATE: 630443

Parameter	Units	10476537002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.0054	<0.0054		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

QC Batch: 608476

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Associated Lab Samples: 10476537001, 10476537002, 10476537003, 10476537004

METHOD BLANK: 3289364

Matrix: Water

Associated Lab Samples: 10476537001, 10476537002, 10476537003, 10476537004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.12	1.2	0.12	05/25/19 23:20	
Nitrate as N	mg/L	<0.012	0.10	0.012	05/25/19 23:20	
Sulfate	mg/L	<0.28	1.2	0.28	05/25/19 23:20	

LABORATORY CONTROL SAMPLE: 3289365

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	13.0	104	90-110	
Nitrate as N	mg/L	1	1.0	100	90-110	
Sulfate	mg/L	12.5	12.8	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3289366 3289367

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10476537002 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	8.0	12.5	12.5	20.2	20.3	98	98	90-110	0	20		
Nitrate as N	mg/L	4.4	1	1	4.9	4.9	50	51	90-110	0	20	M1	
Sulfate	mg/L	21.9	12.5	12.5	33.2	33.4	91	92	90-110	0	20		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

QC Batch: 609586 Analysis Method: EPA 353.2
 QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
 Associated Lab Samples: 10476537001, 10476537002, 10476537003, 10476537004

METHOD BLANK: 3294330 Matrix: Water
 Associated Lab Samples: 10476537001, 10476537002, 10476537003, 10476537004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	05/31/19 13:28	FS

LABORATORY CONTROL SAMPLE: 3294331

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	0.95	95	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3294332 3294333

Parameter	Units	10476537002		3294332		3294333		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Result					
Nitrogen, NO2 plus NO3	mg/L	4.2	5	5	5	9.2	9.2	102	102	90-110	0	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3294334 3294335

Parameter	Units	10476577005		3294334		3294335		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Result					
Nitrogen, NO2 plus NO3	mg/L	14.9	20	20	20	35.4	35.8	102	104	90-110	1	20

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

QC Batch: 609256 Analysis Method: EPA 410.4

QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD

Associated Lab Samples: 10476537001, 10476537002, 10476537003, 10476537004

METHOD BLANK: 3292684 Matrix: Water

Associated Lab Samples: 10476537001, 10476537002, 10476537003, 10476537004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	05/31/19 16:00	

LABORATORY CONTROL SAMPLE: 3292685

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	298	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3292686 3292687

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10476537002 Result	Spike Conc.	Spike Conc.	Result								
Chemical Oxygen Demand	mg/L	<17.0	250	250	245	260	94	101	90-110	6	20		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

QC Batch: 167106 Analysis Method: SM 5310C
 QC Batch Method: SM 5310C Analysis Description: 5310C TOC
 Associated Lab Samples: 10476537001, 10476537002, 10476537003, 10476537004

METHOD BLANK: 658423 Matrix: Water
 Associated Lab Samples: 10476537001, 10476537002, 10476537003, 10476537004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.39	1.0	0.39	05/30/19 11:38	

LABORATORY CONTROL SAMPLE: 658424

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	24.9	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 658425 658426

Parameter	Units	658425		658426		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10476537002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Total Organic Carbon	mg/L	1.3	25	25	27.0	26.7	103	101	80-120	1	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 658427 658428

Parameter	Units	658427		658428		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10476289001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Total Organic Carbon	mg/L	2.0	25	25	27.6	27.2	102	101	80-120	2	20		

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

PASI-N Pace Analytical Services - New Orleans

PASI-V Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

FS The sample was filtered in the laboratory prior to analysis.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

R1 RPD value was outside control limits.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10476537001	MW26-052319	RSK 175	608510		
10476537002	RC02-145.5-156-052419	RSK 175	609165		
10476537003	RC02-145.5-156-052419 (2)	RSK 175	609165		
10476537004	DUP2-052319	RSK 175	608510		
10476537001	MW26-052319	EPA 3010	608650	EPA 6010D	609564
10476537002	RC02-145.5-156-052419	EPA 3010	608650	EPA 6010D	609564
10476537003	RC02-145.5-156-052419 (2)	EPA 3010	608650	EPA 6010D	609564
10476537004	DUP2-052319	EPA 3010	608650	EPA 6010D	609564
10476537001	MW26-052319	EPA 7470A	608881	EPA 7470A	609413
10476537002	RC02-145.5-156-052419	EPA 7470A	608881	EPA 7470A	609413
10476537003	RC02-145.5-156-052419 (2)	EPA 7470A	608881	EPA 7470A	609413
10476537004	DUP2-052319	EPA 7470A	608881	EPA 7470A	609413
10476537001	MW26-052319	EPA 8260B	609154		
10476537002	RC02-145.5-156-052419	EPA 8260B	609154		
10476537003	RC02-145.5-156-052419 (2)	EPA 8260B	609154		
10476537004	DUP2-052319	EPA 8260B	609154		
10476537001	MW26-052319	SM 2320B	608894		
10476537002	RC02-145.5-156-052419	SM 2320B	608894		
10476537003	RC02-145.5-156-052419 (2)	SM 2320B	609222		
10476537004	DUP2-052319	SM 2320B	609222		
10476537001	MW26-052319	SM 2540C	609059		
10476537002	RC02-145.5-156-052419	SM 2540C	609059		
10476537003	RC02-145.5-156-052419 (2)	SM 2540C	609059		
10476537004	DUP2-052319	SM 2540C	609059		
10476537001	MW26-052319	SM 4500-S-2 D	143683		
10476537002	RC02-145.5-156-052419	SM 4500-S-2 D	143683		
10476537003	RC02-145.5-156-052419 (2)	SM 4500-S-2 D	143683		
10476537004	DUP2-052319	SM 4500-S-2 D	143683		
10476537001	MW26-052319	EPA 300.0	608476		
10476537002	RC02-145.5-156-052419	EPA 300.0	608476		
10476537003	RC02-145.5-156-052419 (2)	EPA 300.0	608476		
10476537004	DUP2-052319	EPA 300.0	608476		
10476537001	MW26-052319	EPA 353.2	609586		
10476537002	RC02-145.5-156-052419	EPA 353.2	609586		
10476537003	RC02-145.5-156-052419 (2)	EPA 353.2	609586		
10476537004	DUP2-052319	EPA 353.2	609586		
10476537001	MW26-052319	EPA 410.4	609256	EPA 410.4	609597
10476537002	RC02-145.5-156-052419	EPA 410.4	609256	EPA 410.4	609597
10476537003	RC02-145.5-156-052419 (2)	EPA 410.4	609256	EPA 410.4	609597
10476537004	DUP2-052319	EPA 410.4	609256	EPA 410.4	609597
10476537001	MW26-052319	SM 5310C	167106		
10476537002	RC02-145.5-156-052419	SM 5310C	167106		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10476537

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10476537003	RC02-145.5-156-052419 (2)	SM 5310C	167106		
10476537004	DUP2-052319	SM 5310C	167106		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt - ESI Tech Specs

Client Name: CH2M Hill-UPRR Project #: _____

WO#: 10476537
 PM: JMG Due Date: 06/11/19
 CLIENT: UPRR_Jacobs

Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception

Tracking Number: 4638 0196 9192/9207

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other: _____ Temp Blank? Yes No

Thermometer: T1(0461) T2(1336) T3(0459)
 T4(0254) T5(0048) Type of Ice: Wet Blue None Dry Melted

Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: 6.2, 0.5 °C Average Corrected Temp See Exceptions
 Correction Factor: 1.00 Cooler Temp Corrected w/temp blank: 0.3, 0.6 °C (no temp blank only):

USDA Regulated Soil: (N/A, water sample/Other: _____) Date/Initials of Person Examining Contents: HP 5/25/19
 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No
 Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No
 If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.


		COMMENTS:
Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6. <u>24 hr rush</u>
Sufficient Sample Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Triple Volume Provided for MS/MSD (if more than 10 samples)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: See Exception <input type="checkbox"/>
Field Filtered Volume Received for Dissolved Tests?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12. Sample # <input type="checkbox"/> NaOH <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
Is sufficient information available to reconcile the samples to the COC? Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Positive for Res. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No See Exception <input type="checkbox"/> Chlorine? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No pH Paper Lot# <input type="checkbox"/>
All containers needing acid/base preservation have been checked?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Res. Chlorine 0-6 Roll <u>203619</u> 0-6 Strip <u>10D3581</u> 0-14 Strip
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. See Exception <input checked="" type="checkbox"/>
Exceptions (VOA) Coliform, (TOC) DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS *If adding preservative to a container it must be added to associated field and equipment blanks (verify with PM first)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. Pace Trip Blank Lot # (if purchased):
Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
3 Trip Blanks Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

CLIENT NOTIFICATION/RESOLUTION Person Contacted: Mark Date/Time: 06/27/18 Field Data Required? Yes No

Temp Log: Temp must be maintained at <6°C during login, record temp every 20 mins	05/29/19 Jon - sample 003 should be 145.5
Opened Time: <u>1030</u> Temp: <u>6.2, 0.5</u> Corrected Temp: <u>0.3, 0.6</u>	not 14.5. JMG 05/29/19
Time: <u>1050</u> put in cooler	
Time: _____ Temp: _____ Corrected Temp: _____	

Project Manager Review: _____ Date: 05/28/19
 Note: Whenever there is a discrepancy affecting North Carolina compliance if this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Labeled by: HP

	Document Name: Headspace Exception	Document Revised: 17Dec2018 Page 1 of 1
	Document No.: F-MN-C-276-Rev.01	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
MW-26-052319	0	2	1	3	N
RC02-145.5-156-05/19	0	5	4	9	N
" " (2)	0	0	3	3	N
DUP2-052319	0	3	0	3	N



Document Name:
Sample Condition Upon Receipt Form

Document Revised: 30Apr2019
Page 1 of 1

Document No.:
F-VM-C-001-rev.13

Issuing Authority:
Pace Virginia Minnesota Quality Office

**Sample Condition
Upon Receipt**

Client Name:

Pace WA

Project #:

WO# : 12125536

PM: CLJ

Due Date: 05/31/19

CLIENT: PACE MPLS

Courier: Fed Ex UPS USPS Client
 Commercial Pace Other:

Tracking Number:

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No

Optional: Proj. Due Date: Proj. Name:

Packing Material: Bubble Wrap Bubble Bags None Other:

Temp Blank? Yes No

Thermometer Used: 140792808

Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temp Read °C: 0.3 Cooler Temp Corrected °C: 0.6

Biological Tissue Frozen? Yes No NA

Temp should be above freezing to 6 °C Correction Factor: 0.3

Date and Initials of Person Examining Contents: 5/28/19 DL

Comments:

Bm 5/29/19

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and Signature on COC?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5. If Fecal: <input type="checkbox"/> <8 hours <input type="checkbox"/> >8, <24 hours <input type="checkbox"/> >24 hours
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>		
All containers needing acid/base preservation properly preserved?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. Note samples needing adjustment:
Headspace in Methyl Mercury Container	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? Yes No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Nikki Jarve

Date: 5/29/19

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



1000 Riverbend Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon Receipt **WO# : 20105626**

PM: CMM Due Date: 05/31/19
Project CLIENT: PASI-MINN

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 5/29/19 [Signature]

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	5
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	15

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

June 28, 2019

David Hodson
Jacobs
155 Grand Ave
#800
Oakland, CA 94612

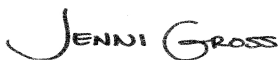
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479205

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 14, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, Jacobs
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
 A2LA Certification #: 2926.01
 Alabama Certification #: 40770
 Alaska Contaminated Sites Certification #: 17-009
 Alaska DW Certification #: MN00064
 Arizona Certification #: AZ0014
 Arkansas DW Certification #: MN00064
 Arkansas WW Certification #: 88-0680
 California Certification #: 2929
 CNMI Saipan Certification #: MP0003
 Colorado Certification #: MN00064
 Connecticut Certification #: PH-0256
 EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
 Florida Certification #: E87605
 Georgia Certification #: 959
 Guam EPA Certification #: MN00064
 Hawaii Certification #: MN00064
 Idaho Certification #: MN00064
 Illinois Certification #: 200011
 Indiana Certification #: C-MN-01
 Iowa Certification #: 368
 Kansas Certification #: E-10167
 Kentucky DW Certification #: 90062
 Kentucky WW Certification #: 90062
 Louisiana DEQ Certification #: 03086
 Louisiana DW Certification #: MN00064
 Maine Certification #: MN00064
 Maryland Certification #: 322
 Massachusetts Certification #: M-MN064
 Michigan Certification #: 9909
 Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137
 Minnesota Petrofund Certification #: 1240
 Mississippi Certification #: MN00064
 Missouri Certification #: 10100
 Montana Certification #: CERT0092
 Nebraska Certification #: NE-OS-18-06
 Nevada Certification #: MN00064
 New Hampshire Certification #: 2081
 New Jersey Certification #: MN002
 New York Certification #: 11647
 North Carolina DW Certification #: 27700
 North Carolina WW Certification #: 530
 North Dakota Certification #: R-036
 Ohio DW Certification #: 41244
 Ohio VAP Certification #: CL101
 Oklahoma Certification #: 9507
 Oregon Primary Certification #: MN300001
 Oregon Secondary Certification #: MN200001
 Pennsylvania Certification #: 68-00563
 Puerto Rico Certification #: MN00064
 South Carolina Certification #: 74003001
 Tennessee Certification #: TN02818
 Texas Certification #: T104704192
 Utah Certification #: MN00064
 Vermont Certification #: VT-027053137
 Virginia Certification #: 460163
 Washington Certification #: C486
 West Virginia DEP Certification #: 382
 West Virginia DW Certification #: 9952 C
 Wisconsin Certification #: 999407970
 Wyoming UST Certification #: via A2LA 2926.01

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
 Montana Certificate #CERT0103
 Alaska Certification UST-107
 Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203
 Wisconsin DNR Certification #: 998027470
 WA Department of Ecology Lab ID# C1007

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
 11277CA
 Florida Department of Health (NELAC): E87595
 Illinois Environmental Protection Agency: 0025721
 Kansas Department of Health and Environment (NELAC):
 E-10266
 Louisiana Dept. of Environmental Quality (NELAC/LELAP):
 02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202
 Texas Commission on Env. Quality (NELAC):
 T104704405-09-TX
 U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
 Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10479205001	Silva-GW-061319	Water	06/13/19 09:00	06/14/19 09:40
10479205002	Asher-GW-061319	Water	06/13/19 09:45	06/14/19 09:40
10479205003	Stark-GW-061319	Water	06/13/19 10:30	06/14/19 09:40
10479205004	Reed-GW-061319	Water	06/13/19 11:00	06/14/19 09:40
10479205005	TB-061319	Water	06/13/19 07:00	06/14/19 09:40

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10479205001	Silva-GW-061319	RSK 175	AJR	3	PASI-M
		EPA 6010D	BD1	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JER	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10479205002	Asher-GW-061319	RSK 175	AJR	3	PASI-M
		EPA 6010D	BD1	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JER	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10479205003	Stark-GW-061319	RSK 175	AJR	3	PASI-M
		EPA 6010D	BD1	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JER	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10479205004	Reed-GW-061319	RSK 175	AJR	3	PASI-M
		EPA 6010D	BD1	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JER	1	PASI-M
		SM 4500-S-2 D	PNT	1	PASI-N
		EPA 300.0	KEO	3	PASI-M

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479205

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	AJS	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10479205005	TB-061319	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10479205001	Silva-GW-061319					
EPA 6010D	Barium, Dissolved	28.1	ug/L	10.0	06/20/19 10:48	
EPA 6010D	Chromium, Dissolved	0.83J	ug/L	10.0	06/20/19 10:48	
EPA 6010D	Cobalt, Dissolved	1.5J	ug/L	10.0	06/20/19 10:48	
EPA 6010D	Copper, Dissolved	12.0	ug/L	10.0	06/20/19 10:48	
EPA 6010D	Lead, Dissolved	2.9J	ug/L	10.0	06/20/19 10:48	
EPA 6010D	Nickel, Dissolved	1.9J	ug/L	20.0	06/20/19 10:48	
EPA 6010D	Vanadium, Dissolved	9.1J	ug/L	15.0	06/20/19 10:48	
EPA 6010D	Zinc, Dissolved	33.4	ug/L	20.0	06/20/19 10:48	
SM 2320B	Alkalinity, Total as CaCO3	172	mg/L	5.0	06/25/19 10:21	
SM 2540C	Total Dissolved Solids	247	mg/L	10.0	06/19/19 09:39	
EPA 300.0	Chloride	2.3	mg/L	1.2	06/14/19 15:28	M1
EPA 300.0	Nitrate as N	2.3	mg/L	0.10	06/14/19 15:28	M1
EPA 300.0	Sulfate	10.6	mg/L	1.2	06/14/19 15:28	M1
EPA 353.2	Nitrogen, NO2 plus NO3	2.4	mg/L	0.50	06/20/19 12:10	M1
SM 5310C	Total Organic Carbon	0.47J	mg/L	1.0	06/21/19 10:06	
10479205002	Asher-GW-061319					
EPA 6010D	Barium, Dissolved	80.2	ug/L	10.0	06/20/19 11:00	
EPA 6010D	Beryllium, Dissolved	0.18J	ug/L	5.0	06/20/19 11:00	
EPA 6010D	Copper, Dissolved	39.0	ug/L	10.0	06/20/19 11:00	
EPA 6010D	Lead, Dissolved	2.9J	ug/L	10.0	06/20/19 11:00	
EPA 6010D	Vanadium, Dissolved	10J	ug/L	15.0	06/20/19 11:00	
EPA 6010D	Zinc, Dissolved	22.0	ug/L	20.0	06/20/19 11:00	
SM 2320B	Alkalinity, Total as CaCO3	233	mg/L	5.0	06/25/19 10:27	
SM 2540C	Total Dissolved Solids	384	mg/L	10.0	06/19/19 09:39	
EPA 300.0	Chloride	9.2	mg/L	1.2	06/14/19 17:12	
EPA 300.0	Nitrate as N	6.0	mg/L	0.10	06/14/19 17:12	
EPA 300.0	Sulfate	40.6	mg/L	1.2	06/14/19 17:12	
EPA 353.2	Nitrogen, NO2 plus NO3	6.6	mg/L	1.0	06/20/19 12:15	M6
SM 5310C	Total Organic Carbon	1.3	mg/L	1.0	06/21/19 10:20	
10479205003	Stark-GW-061319					
EPA 6010D	Barium, Dissolved	31.3	ug/L	10.0	06/20/19 11:02	
EPA 6010D	Cobalt, Dissolved	1.3J	ug/L	10.0	06/20/19 11:02	
EPA 6010D	Copper, Dissolved	191	ug/L	10.0	06/20/19 11:02	
EPA 6010D	Nickel, Dissolved	6.0J	ug/L	20.0	06/20/19 11:02	
EPA 6010D	Vanadium, Dissolved	4.2J	ug/L	15.0	06/20/19 11:02	
EPA 6010D	Zinc, Dissolved	30.8	ug/L	20.0	06/20/19 11:02	
SM 2320B	Alkalinity, Total as CaCO3	127	mg/L	5.0	06/25/19 10:34	
SM 2540C	Total Dissolved Solids	253	mg/L	10.0	06/19/19 09:39	
EPA 300.0	Chloride	1.4	mg/L	1.2	06/14/19 17:28	
EPA 300.0	Nitrate as N	10.8	mg/L	0.20	06/14/19 19:02	
EPA 300.0	Sulfate	14.2	mg/L	1.2	06/14/19 17:28	
EPA 353.2	Nitrogen, NO2 plus NO3	11.3	mg/L	1.0	06/20/19 12:19	
10479205004	Reed-GW-061319					
EPA 6010D	Barium, Dissolved	46.3	ug/L	10.0	06/20/19 11:03	
EPA 6010D	Beryllium, Dissolved	0.13J	ug/L	5.0	06/20/19 11:03	
EPA 6010D	Copper, Dissolved	1.3J	ug/L	10.0	06/20/19 11:03	

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10479205004	Reed-GW-061319					
EPA 6010D	Lead, Dissolved	2.5J	ug/L	10.0	06/20/19 11:03	
EPA 6010D	Vanadium, Dissolved	22.6	ug/L	15.0	06/20/19 11:03	
EPA 6010D	Zinc, Dissolved	23.4	ug/L	20.0	06/20/19 11:03	
SM 2320B	Alkalinity, Total as CaCO3	141	mg/L	5.0	06/25/19 10:41	
SM 2540C	Total Dissolved Solids	192	mg/L	10.0	06/19/19 09:39	
EPA 300.0	Chloride	1.3	mg/L	1.2	06/14/19 17:58	
EPA 300.0	Nitrate as N	0.35	mg/L	0.10	06/14/19 17:58	
EPA 300.0	Sulfate	6.9	mg/L	1.2	06/14/19 17:58	
EPA 353.2	Nitrogen, NO2 plus NO3	0.41	mg/L	0.10	06/20/19 11:26	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Method: RSK 175

Description: RSK 175 GCV Headspace

Client: UPRR_Jacobs

Date: June 28, 2019

General Information:

4 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 613735

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 3316443)
- Methane

Additional Comments:

Analyte Comments:

QC Batch: 613735

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- DUP (Lab ID: 3316443)
- Methane
- DUP (Lab ID: 3316444)
- Methane

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Method: EPA 6010D

Description: 6010D MET ICP, Dissolved

Client: UPRR_Jacobs

Date: June 28, 2019

General Information:

4 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Method: EPA 7470A

Description: 7470A Mercury, Dissolved

Client: UPRR_Jacobs

Date: June 28, 2019

General Information:

4 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 28, 2019

General Information:

1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

QC Batch: 613563

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 3315197)
 - Chloroethane
- MS (Lab ID: 3317288)
 - Chloroethane
- MSD (Lab ID: 3317289)
 - Chloroethane

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 613563

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- LCS (Lab ID: 3315197)
 - Chloroethane

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 28, 2019

QC Batch: 613563

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10479601001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 3317288)
 - Chloroethane
- MSD (Lab ID: 3317289)
 - Chloroethane

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3317288)
 - 2-Hexanone
 - sec-Butylbenzene
- MSD (Lab ID: 3317289)
 - 4-Methyl-2-pentanone (MIBK)
 - Naphthalene
 - sec-Butylbenzene

R1: RPD value was outside control limits.

- MSD (Lab ID: 3317289)
 - Acrolein

Additional Comments:

Analyte Comments:

QC Batch: 613563

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3315196)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3315197)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3317288)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3317289)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- TB-061319 (Lab ID: 10479205005)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Method: SM 2320B

Description: 2320B Alkalinity

Client: UPRR_Jacobs

Date: June 28, 2019

General Information:

4 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 615232

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10479324010,10479324011

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 3323996)
 - Alkalinity, Total as CaCO₃
- MSD (Lab ID: 3323998)
 - Alkalinity, Total as CaCO₃

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Method: SM 2540C

Description: 2540C Total Dissolved Solids

Client: UPRR_Jacobs

Date: June 28, 2019

General Information:

4 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Method: SM 4500-S-2 D

Description: 4500S2D Sulfide, Total

Client: UPRR_Jacobs

Date: June 28, 2019

General Information:

4 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 146172

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 20108589001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 644425)
- Sulfide, Total

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Method: EPA 300.0

Description: 300.0 IC Anions

Client: UPRR_Jacobs

Date: June 28, 2019

General Information:

4 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 613054

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10479205001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3312411)
 - Nitrate as N
 - Sulfate
- MSD (Lab ID: 3312412)
 - Chloride
 - Nitrate as N
 - Sulfate

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Method: EPA 353.2

Description: 353.2 Nitrate + Nitrite

Client: UPRR_Jacobs

Date: June 28, 2019

General Information:

4 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 614352

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10479205001,10479205002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 3318807)
 - Nitrogen, NO2 plus NO3

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

- MS (Lab ID: 3318808)
 - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 3318809)
 - Nitrogen, NO2 plus NO3

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Method: EPA 410.4

Description: 410.4 COD

Client: UPRR_Jacobs

Date: June 28, 2019

General Information:

4 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 615601

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10479205001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 3325720)
 - Chemical Oxygen Demand

R1: RPD value was outside control limits.

- MSD (Lab ID: 3325720)
 - Chemical Oxygen Demand

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Method: SM 5310C

Description: 5310C TOC

Client: UPRR_Jacobs

Date: June 28, 2019

General Information:

4 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Sample: Silva-GW-061319 **Lab ID: 10479205001** Collected: 06/13/19 09:00 Received: 06/14/19 09:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		06/18/19 17:22	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		06/18/19 17:22	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		06/18/19 17:22	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	06/18/19 09:56	06/20/19 10:48	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	06/18/19 09:56	06/20/19 10:48	7440-38-2	
Barium, Dissolved	28.1	ug/L	10.0	0.60	1	06/18/19 09:56	06/20/19 10:48	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	06/18/19 09:56	06/20/19 10:48	7440-41-7	
Cadmium, Dissolved	<0.28	ug/L	3.0	0.28	1	06/18/19 09:56	06/20/19 10:48	7440-43-9	
Chromium, Dissolved	0.83J	ug/L	10.0	0.66	1	06/18/19 09:56	06/20/19 10:48	7440-47-3	
Cobalt, Dissolved	1.5J	ug/L	10.0	0.50	1	06/18/19 09:56	06/20/19 10:48	7440-48-4	
Copper, Dissolved	12.0	ug/L	10.0	1.2	1	06/18/19 09:56	06/20/19 10:48	7440-50-8	
Lead, Dissolved	2.9J	ug/L	10.0	2.0	1	06/18/19 09:56	06/20/19 10:48	7439-92-1	
Molybdenum, Dissolved	<3.8	ug/L	15.0	3.8	1	06/18/19 09:56	06/20/19 10:48	7439-98-7	
Nickel, Dissolved	1.9J	ug/L	20.0	1.1	1	06/18/19 09:56	06/20/19 10:48	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	06/18/19 09:56	06/20/19 10:48	7782-49-2	
Silver, Dissolved	<0.40	ug/L	10.0	0.40	1	06/18/19 09:56	06/20/19 10:48	7440-22-4	
Thallium, Dissolved	<5.5	ug/L	20.0	5.5	1	06/18/19 09:56	06/20/19 10:48	7440-28-0	
Vanadium, Dissolved	9.1J	ug/L	15.0	0.43	1	06/18/19 09:56	06/20/19 10:48	7440-62-2	
Zinc, Dissolved	33.4	ug/L	20.0	6.3	1	06/18/19 09:56	06/20/19 10:48	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	06/19/19 20:04	06/24/19 19:07	7439-97-6	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	172	mg/L	5.0	2.0	1		06/25/19 10:21		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	247	mg/L	10.0	5.0	1		06/19/19 09:39		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		06/18/19 13:09	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	2.3	mg/L	1.2	0.12	1		06/14/19 15:28	16887-00-6	M1
Nitrate as N	2.3	mg/L	0.10	0.012	1		06/14/19 15:28	14797-55-8	M1
Sulfate	10.6	mg/L	1.2	0.28	1		06/14/19 15:28	14808-79-8	M1
353.2 Nitrate + Nitrite Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	2.4	mg/L	0.50	0.088	5		06/20/19 12:10		M1
410.4 COD Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	06/26/19 12:12	06/26/19 17:11		M1,R1

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Sample: Silva-GW-061319 **Lab ID: 10479205001** Collected: 06/13/19 09:00 Received: 06/14/19 09:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	0.47J	mg/L	1.0	0.39	1		06/21/19 10:06	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Sample: Asher-GW-061319 **Lab ID: 10479205002** Collected: 06/13/19 09:45 Received: 06/14/19 09:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		06/18/19 17:30	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		06/18/19 17:30	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		06/18/19 17:30	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	06/18/19 09:56	06/20/19 11:00	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	06/18/19 09:56	06/20/19 11:00	7440-38-2	
Barium, Dissolved	80.2	ug/L	10.0	0.60	1	06/18/19 09:56	06/20/19 11:00	7440-39-3	
Beryllium, Dissolved	0.18J	ug/L	5.0	0.12	1	06/18/19 09:56	06/20/19 11:00	7440-41-7	
Cadmium, Dissolved	<0.28	ug/L	3.0	0.28	1	06/18/19 09:56	06/20/19 11:00	7440-43-9	
Chromium, Dissolved	<0.66	ug/L	10.0	0.66	1	06/18/19 09:56	06/20/19 11:00	7440-47-3	
Cobalt, Dissolved	<0.50	ug/L	10.0	0.50	1	06/18/19 09:56	06/20/19 11:00	7440-48-4	
Copper, Dissolved	39.0	ug/L	10.0	1.2	1	06/18/19 09:56	06/20/19 11:00	7440-50-8	
Lead, Dissolved	2.9J	ug/L	10.0	2.0	1	06/18/19 09:56	06/20/19 11:00	7439-92-1	
Molybdenum, Dissolved	<3.8	ug/L	15.0	3.8	1	06/18/19 09:56	06/20/19 11:00	7439-98-7	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	06/18/19 09:56	06/20/19 11:00	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	06/18/19 09:56	06/20/19 11:00	7782-49-2	
Silver, Dissolved	<0.40	ug/L	10.0	0.40	1	06/18/19 09:56	06/20/19 11:00	7440-22-4	
Thallium, Dissolved	<5.5	ug/L	20.0	5.5	1	06/18/19 09:56	06/20/19 11:00	7440-28-0	
Vanadium, Dissolved	10J	ug/L	15.0	0.43	1	06/18/19 09:56	06/20/19 11:00	7440-62-2	
Zinc, Dissolved	22.0	ug/L	20.0	6.3	1	06/18/19 09:56	06/20/19 11:00	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	06/19/19 20:04	06/24/19 19:10	7439-97-6	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	233	mg/L	5.0	2.0	1		06/25/19 10:27		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	384	mg/L	10.0	5.0	1		06/19/19 09:39		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		06/18/19 13:10	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	9.2	mg/L	1.2	0.12	1		06/14/19 17:12	16887-00-6	
Nitrate as N	6.0	mg/L	0.10	0.012	1		06/14/19 17:12	14797-55-8	
Sulfate	40.6	mg/L	1.2	0.28	1		06/14/19 17:12	14808-79-8	
353.2 Nitrate + Nitrite Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	6.6	mg/L	1.0	0.18	10		06/20/19 12:15		M6
410.4 COD Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	06/26/19 12:12	06/26/19 17:12		

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Sample: Asher-GW-061319 **Lab ID: 10479205002** Collected: 06/13/19 09:45 Received: 06/14/19 09:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	1.3	mg/L	1.0	0.39	1		06/21/19 10:20	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Sample: Stark-GW-061319 **Lab ID: 10479205003** Collected: 06/13/19 10:30 Received: 06/14/19 09:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		06/18/19 17:37	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		06/18/19 17:37	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		06/18/19 17:37	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	06/18/19 09:56	06/20/19 11:02	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	06/18/19 09:56	06/20/19 11:02	7440-38-2	
Barium, Dissolved	31.3	ug/L	10.0	0.60	1	06/18/19 09:56	06/20/19 11:02	7440-39-3	
Beryllium, Dissolved	<0.12	ug/L	5.0	0.12	1	06/18/19 09:56	06/20/19 11:02	7440-41-7	
Cadmium, Dissolved	<0.28	ug/L	3.0	0.28	1	06/18/19 09:56	06/20/19 11:02	7440-43-9	
Chromium, Dissolved	<0.66	ug/L	10.0	0.66	1	06/18/19 09:56	06/20/19 11:02	7440-47-3	
Cobalt, Dissolved	1.3J	ug/L	10.0	0.50	1	06/18/19 09:56	06/20/19 11:02	7440-48-4	
Copper, Dissolved	191	ug/L	10.0	1.2	1	06/18/19 09:56	06/20/19 11:02	7440-50-8	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	06/18/19 09:56	06/20/19 11:02	7439-92-1	
Molybdenum, Dissolved	<3.8	ug/L	15.0	3.8	1	06/18/19 09:56	06/20/19 11:02	7439-98-7	
Nickel, Dissolved	6.0J	ug/L	20.0	1.1	1	06/18/19 09:56	06/20/19 11:02	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	06/18/19 09:56	06/20/19 11:02	7782-49-2	
Silver, Dissolved	<0.40	ug/L	10.0	0.40	1	06/18/19 09:56	06/20/19 11:02	7440-22-4	
Thallium, Dissolved	<5.5	ug/L	20.0	5.5	1	06/18/19 09:56	06/20/19 11:02	7440-28-0	
Vanadium, Dissolved	4.2J	ug/L	15.0	0.43	1	06/18/19 09:56	06/20/19 11:02	7440-62-2	
Zinc, Dissolved	30.8	ug/L	20.0	6.3	1	06/18/19 09:56	06/20/19 11:02	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	06/19/19 20:04	06/24/19 19:17	7439-97-6	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	127	mg/L	5.0	2.0	1		06/25/19 10:34		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	253	mg/L	10.0	5.0	1		06/19/19 09:39		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		06/18/19 13:10	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	1.4	mg/L	1.2	0.12	1		06/14/19 17:28	16887-00-6	
Nitrate as N	10.8	mg/L	0.20	0.025	2		06/14/19 19:02	14797-55-8	
Sulfate	14.2	mg/L	1.2	0.28	1		06/14/19 17:28	14808-79-8	
353.2 Nitrate + Nitrite Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	11.3	mg/L	1.0	0.18	10		06/20/19 12:19		
410.4 COD Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	06/26/19 12:12	06/26/19 17:12		

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Sample: Stark-GW-061319 **Lab ID: 10479205003** Collected: 06/13/19 10:30 Received: 06/14/19 09:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	<0.39	mg/L	1.0	0.39	1		06/21/19 10:34	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Sample: Reed-GW-061319 **Lab ID: 10479205004** Collected: 06/13/19 11:00 Received: 06/14/19 09:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		06/18/19 17:44	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		06/18/19 17:44	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		06/18/19 17:44	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	06/18/19 09:56	06/20/19 11:03	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	06/18/19 09:56	06/20/19 11:03	7440-38-2	
Barium, Dissolved	46.3	ug/L	10.0	0.60	1	06/18/19 09:56	06/20/19 11:03	7440-39-3	
Beryllium, Dissolved	0.13J	ug/L	5.0	0.12	1	06/18/19 09:56	06/20/19 11:03	7440-41-7	
Cadmium, Dissolved	<0.28	ug/L	3.0	0.28	1	06/18/19 09:56	06/20/19 11:03	7440-43-9	
Chromium, Dissolved	<0.66	ug/L	10.0	0.66	1	06/18/19 09:56	06/20/19 11:03	7440-47-3	
Cobalt, Dissolved	<0.50	ug/L	10.0	0.50	1	06/18/19 09:56	06/20/19 11:03	7440-48-4	
Copper, Dissolved	1.3J	ug/L	10.0	1.2	1	06/18/19 09:56	06/20/19 11:03	7440-50-8	
Lead, Dissolved	2.5J	ug/L	10.0	2.0	1	06/18/19 09:56	06/20/19 11:03	7439-92-1	
Molybdenum, Dissolved	<3.8	ug/L	15.0	3.8	1	06/18/19 09:56	06/20/19 11:03	7439-98-7	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	06/18/19 09:56	06/20/19 11:03	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	06/18/19 09:56	06/20/19 11:03	7782-49-2	
Silver, Dissolved	<0.40	ug/L	10.0	0.40	1	06/18/19 09:56	06/20/19 11:03	7440-22-4	
Thallium, Dissolved	<5.5	ug/L	20.0	5.5	1	06/18/19 09:56	06/20/19 11:03	7440-28-0	
Vanadium, Dissolved	22.6	ug/L	15.0	0.43	1	06/18/19 09:56	06/20/19 11:03	7440-62-2	
Zinc, Dissolved	23.4	ug/L	20.0	6.3	1	06/18/19 09:56	06/20/19 11:03	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	06/19/19 20:04	06/24/19 19:24	7439-97-6	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	141	mg/L	5.0	2.0	1		06/25/19 10:41		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	192	mg/L	10.0	5.0	1		06/19/19 09:39		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		06/18/19 13:12	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	1.3	mg/L	1.2	0.12	1		06/14/19 17:58	16887-00-6	
Nitrate as N	0.35	mg/L	0.10	0.012	1		06/14/19 17:58	14797-55-8	
Sulfate	6.9	mg/L	1.2	0.28	1		06/14/19 17:58	14808-79-8	
353.2 Nitrate + Nitrite Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	0.41	mg/L	0.10	0.018	1		06/20/19 11:26		
410.4 COD Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	06/26/19 12:12	06/26/19 17:13		

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Sample: Reed-GW-061319 **Lab ID: 10479205004** Collected: 06/13/19 11:00 Received: 06/14/19 09:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	<0.39	mg/L	1.0	0.39	1		06/21/19 10:48	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Sample: **TB-061319** Lab ID: **10479205005** Collected: 06/13/19 07:00 Received: 06/14/19 09:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		06/17/19 18:20	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		06/17/19 18:20	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		06/17/19 18:20	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		06/17/19 18:20	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		06/17/19 18:20	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		06/17/19 18:20	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	1.0	0.16	1		06/17/19 18:20	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		06/17/19 18:20	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		06/17/19 18:20	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		06/17/19 18:20	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		06/17/19 18:20	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		06/17/19 18:20	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		06/17/19 18:20	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		06/17/19 18:20	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		06/17/19 18:20	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		06/17/19 18:20	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		06/17/19 18:20	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		06/17/19 18:20	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		06/17/19 18:20	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		06/17/19 18:20	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		06/17/19 18:20	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		06/17/19 18:20	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		06/17/19 18:20	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		06/17/19 18:20	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		06/17/19 18:20	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		06/17/19 18:20	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		06/17/19 18:20	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		06/17/19 18:20	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		06/17/19 18:20	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		06/17/19 18:20	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		06/17/19 18:20	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		06/17/19 18:20	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		06/17/19 18:20	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		06/17/19 18:20	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		06/17/19 18:20	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		06/17/19 18:20	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		06/17/19 18:20	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		06/17/19 18:20	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		06/17/19 18:20	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		06/17/19 18:20	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		06/17/19 18:20	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		06/17/19 18:20	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		06/17/19 18:20	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		06/17/19 18:20	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		06/17/19 18:20	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		06/17/19 18:20	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Sample: TB-061319 **Lab ID: 10479205005** Collected: 06/13/19 07:00 Received: 06/14/19 09:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		06/17/19 18:20	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		06/17/19 18:20	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		06/17/19 18:20	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		06/17/19 18:20	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		06/17/19 18:20	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		06/17/19 18:20	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		06/17/19 18:20	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		06/17/19 18:20	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		06/17/19 18:20	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		06/17/19 18:20	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		06/17/19 18:20	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		06/17/19 18:20	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		06/17/19 18:20	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		06/17/19 18:20	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		06/17/19 18:20	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		06/17/19 18:20	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		06/17/19 18:20	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		06/17/19 18:20	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		06/17/19 18:20	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		06/17/19 18:20	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		06/17/19 18:20	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	1.0	0.20	1		06/17/19 18:20	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		06/17/19 18:20	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		06/17/19 18:20	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		06/17/19 18:20	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		06/17/19 18:20	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		06/17/19 18:20	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/17/19 18:20	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		06/17/19 18:20	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		06/17/19 18:20	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/17/19 18:20	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		06/17/19 18:20	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		06/17/19 18:20	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		06/17/19 18:20	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%	75-136		1		06/17/19 18:20	17060-07-0	
Toluene-d8 (S)	101	%	75-125		1		06/17/19 18:20	2037-26-5	
4-Bromofluorobenzene (S)	98	%	75-125		1		06/17/19 18:20	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479205

QC Batch: 613735 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 GCV HEADSPACE
Associated Lab Samples: 10479205001, 10479205002, 10479205003, 10479205004

METHOD BLANK: 3315931 Matrix: Water
Associated Lab Samples: 10479205001, 10479205002, 10479205003, 10479205004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	06/18/19 14:56	
Ethene	ug/L	<2.9	10.0	2.9	06/18/19 14:56	
Methane	ug/L	<4.9	10.0	4.9	06/18/19 14:56	

LABORATORY CONTROL SAMPLE & LCSD: 3315932

Parameter	Units	3315933								Qualifiers
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	
Ethane	ug/L	114	115	118	101	104	85-115	2	20	
Ethene	ug/L	106	107	109	101	103	85-115	2	20	
Methane	ug/L	60.7	60.2	60.3	99	99	85-115	0	20	

SAMPLE DUPLICATE: 3316443

Parameter	Units	10479656003		RPD	Max RPD	Qualifiers
		Result	Dup Result			
Ethane	ug/L	632	534	17	20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	11600	9260	22	20	D6,E

SAMPLE DUPLICATE: 3316444

Parameter	Units	10479656004		RPD	Max RPD	Qualifiers
		Result	Dup Result			
Ethane	ug/L	5.8J	6.1J		20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	7870	8070	3	20	E

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

QC Batch: 613970 Analysis Method: EPA 7470A
 QC Batch Method: EPA 7470A Analysis Description: 7470A Mercury Water Dissolved
 Associated Lab Samples: 10479205001, 10479205002, 10479205003, 10479205004

METHOD BLANK: 3317210 Matrix: Water
 Associated Lab Samples: 10479205001, 10479205002, 10479205003, 10479205004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.093	0.20	0.093	06/24/19 18:55	

LABORATORY CONTROL SAMPLE: 3317211

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.0	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3317212 3317213

Parameter	Units	3317212		3317213		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10479205002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Mercury, Dissolved	ug/L	<0.093	5	5	5.2	5.2	103	104	80-120	1	20		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

QC Batch: 613599

Analysis Method: EPA 6010D

QC Batch Method: EPA 3010

Analysis Description: 6010D Water Dissolved

Associated Lab Samples: 10479205001, 10479205002, 10479205003, 10479205004

METHOD BLANK: 3315488

Matrix: Water

Associated Lab Samples: 10479205001, 10479205002, 10479205003, 10479205004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	06/20/19 10:35	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	06/20/19 10:35	
Barium, Dissolved	ug/L	<0.60	10.0	0.60	06/20/19 10:35	
Beryllium, Dissolved	ug/L	<0.12	5.0	0.12	06/20/19 10:35	
Cadmium, Dissolved	ug/L	<0.28	3.0	0.28	06/20/19 10:35	
Chromium, Dissolved	ug/L	<0.66	10.0	0.66	06/20/19 10:35	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	06/20/19 10:35	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	06/20/19 10:35	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	06/20/19 10:35	
Molybdenum, Dissolved	ug/L	<3.8	15.0	3.8	06/20/19 10:35	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	06/20/19 10:35	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	06/20/19 10:35	
Silver, Dissolved	ug/L	<0.40	10.0	0.40	06/20/19 10:35	
Thallium, Dissolved	ug/L	<5.5	20.0	5.5	06/20/19 10:35	
Vanadium, Dissolved	ug/L	<0.43	15.0	0.43	06/20/19 10:35	
Zinc, Dissolved	ug/L	<6.3	20.0	6.3	06/20/19 10:35	

LABORATORY CONTROL SAMPLE: 3315489

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony, Dissolved	ug/L	1000	1010	101	80-120	
Arsenic, Dissolved	ug/L	1000	1020	102	80-120	
Barium, Dissolved	ug/L	1000	1010	101	80-120	
Beryllium, Dissolved	ug/L	1000	1030	103	80-120	
Cadmium, Dissolved	ug/L	1000	1030	103	80-120	
Chromium, Dissolved	ug/L	1000	1010	101	80-120	
Cobalt, Dissolved	ug/L	1000	1010	101	80-120	
Copper, Dissolved	ug/L	1000	983	98	80-120	
Lead, Dissolved	ug/L	1000	1020	102	80-120	
Molybdenum, Dissolved	ug/L	1000	1000	100	80-120	
Nickel, Dissolved	ug/L	1000	1010	101	80-120	
Selenium, Dissolved	ug/L	1000	1050	105	80-120	
Silver, Dissolved	ug/L	500	505	101	80-120	
Thallium, Dissolved	ug/L	1000	987	99	80-120	
Vanadium, Dissolved	ug/L	1000	1000	100	80-120	
Zinc, Dissolved	ug/L	1000	1020	102	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Parameter	Units	10479205001		3315490		3315491		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Antimony, Dissolved	ug/L	<7.0	1000	1000	1010	994	101	99	75-125	2	20			
Arsenic, Dissolved	ug/L	<3.8	1000	1000	1030	1010	103	101	75-125	2	20			
Barium, Dissolved	ug/L	28.1	1000	1000	1040	1020	101	100	75-125	2	20			
Beryllium, Dissolved	ug/L	<0.12	1000	1000	1040	1020	104	102	75-125	2	20			
Cadmium, Dissolved	ug/L	<0.28	1000	1000	1020	1000	102	100	75-125	2	20			
Chromium, Dissolved	ug/L	0.83J	1000	1000	1010	992	101	99	75-125	2	20			
Cobalt, Dissolved	ug/L	1.5J	1000	1000	995	978	99	98	75-125	2	20			
Copper, Dissolved	ug/L	12.0	1000	1000	1010	998	100	99	75-125	1	20			
Lead, Dissolved	ug/L	2.9J	1000	1000	1010	992	100	99	75-125	2	20			
Molybdenum, Dissolved	ug/L	<3.8	1000	1000	1010	1000	101	100	75-125	1	20			
Nickel, Dissolved	ug/L	1.9J	1000	1000	987	973	98	97	75-125	1	20			
Selenium, Dissolved	ug/L	<5.8	1000	1000	1050	1030	105	103	75-125	2	20			
Silver, Dissolved	ug/L	<0.40	500	500	511	504	102	101	75-125	1	20			
Thallium, Dissolved	ug/L	<5.5	1000	1000	994	984	99	98	75-125	1	20			
Vanadium, Dissolved	ug/L	9.1J	1000	1000	1020	998	101	99	75-125	2	20			
Zinc, Dissolved	ug/L	33.4	1000	1000	1040	1020	101	99	75-125	2	20			

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

QC Batch: 613563

Analysis Method: EPA 8260B

QC Batch Method: EPA 8260B

Analysis Description: 8260 MSV LL Water

Associated Lab Samples: 10479205005

METHOD BLANK: 3315196

Matrix: Water

Associated Lab Samples: 10479205005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	06/17/19 17:56	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	06/17/19 17:56	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	06/17/19 17:56	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	06/17/19 17:56	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	06/17/19 17:56	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	06/17/19 17:56	
1,1-Dichloroethene	ug/L	<0.16	1.0	0.16	06/17/19 17:56	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	06/17/19 17:56	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	06/17/19 17:56	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	06/17/19 17:56	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	06/17/19 17:56	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	06/17/19 17:56	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	06/17/19 17:56	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	06/17/19 17:56	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	06/17/19 17:56	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	06/17/19 17:56	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	06/17/19 17:56	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	06/17/19 17:56	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	06/17/19 17:56	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	06/17/19 17:56	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	06/17/19 17:56	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	06/17/19 17:56	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	06/17/19 17:56	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	06/17/19 17:56	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	06/17/19 17:56	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	06/17/19 17:56	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	06/17/19 17:56	
2-Hexanone	ug/L	<0.88	5.0	0.88	06/17/19 17:56	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	06/17/19 17:56	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	06/17/19 17:56	
Acetone	ug/L	<9.2	20.0	9.2	06/17/19 17:56	
Acrolein	ug/L	<1.2	10.0	1.2	06/17/19 17:56	
Acrylonitrile	ug/L	<0.91	10.0	0.91	06/17/19 17:56	
Benzene	ug/L	<0.10	0.50	0.10	06/17/19 17:56	
Bromobenzene	ug/L	<0.21	0.50	0.21	06/17/19 17:56	
Bromochloromethane	ug/L	<0.27	1.0	0.27	06/17/19 17:56	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	06/17/19 17:56	
Bromoform	ug/L	<0.80	4.0	0.80	06/17/19 17:56	
Bromomethane	ug/L	<1.8	4.0	1.8	06/17/19 17:56	
Carbon disulfide	ug/L	<0.078	1.0	0.078	06/17/19 17:56	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	06/17/19 17:56	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

METHOD BLANK: 3315196

Matrix: Water

Associated Lab Samples: 10479205005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	06/17/19 17:56	
Chloroethane	ug/L	<0.49	1.0	0.49	06/17/19 17:56	
Chloroform	ug/L	<0.45	1.0	0.45	06/17/19 17:56	
Chloromethane	ug/L	<0.16	4.0	0.16	06/17/19 17:56	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	06/17/19 17:56	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	06/17/19 17:56	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	06/17/19 17:56	
Dibromomethane	ug/L	<0.16	1.0	0.16	06/17/19 17:56	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	06/17/19 17:56	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	06/17/19 17:56	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	06/17/19 17:56	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	06/17/19 17:56	
Ethylbenzene	ug/L	<0.14	0.50	0.14	06/17/19 17:56	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	06/17/19 17:56	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	06/17/19 17:56	
m&p-Xylene	ug/L	<0.31	1.0	0.31	06/17/19 17:56	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	06/17/19 17:56	
Methylene Chloride	ug/L	<0.98	4.0	0.98	06/17/19 17:56	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	06/17/19 17:56	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	06/17/19 17:56	
Naphthalene	ug/L	<0.48	1.0	0.48	06/17/19 17:56	
o-Xylene	ug/L	<0.16	0.50	0.16	06/17/19 17:56	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	06/17/19 17:56	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	06/17/19 17:56	
Styrene	ug/L	<0.19	0.50	0.19	06/17/19 17:56	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	06/17/19 17:56	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	06/17/19 17:56	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	06/17/19 17:56	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	06/17/19 17:56	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	06/17/19 17:56	
Toluene	ug/L	<0.083	0.50	0.083	06/17/19 17:56	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	06/17/19 17:56	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	06/17/19 17:56	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	06/17/19 17:56	
Trichloroethene	ug/L	<0.15	0.40	0.15	06/17/19 17:56	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	06/17/19 17:56	
Vinyl acetate	ug/L	<1.1	10.0	1.1	06/17/19 17:56	
Vinyl chloride	ug/L	<0.092	0.20	0.092	06/17/19 17:56	
Xylene (Total)	ug/L	<0.31	1.5	0.31	06/17/19 17:56	
1,2-Dichloroethane-d4 (S)	%	102	75-136		06/17/19 17:56	
4-Bromofluorobenzene (S)	%	97	75-125		06/17/19 17:56	
Toluene-d8 (S)	%	101	75-125		06/17/19 17:56	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

LABORATORY CONTROL SAMPLE: 3315197

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	18.8	94	68-141	
1,1,1-Trichloroethane	ug/L	20	20.6	103	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	19.9	99	73-125	
1,1,2-Trichloroethane	ug/L	20	21.0	105	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	20.9	104	69-132	
1,1-Dichloroethane	ug/L	20	19.9	99	73-125	
1,1-Dichloroethene	ug/L	20	18.8	94	71-126	
1,1-Dichloropropene	ug/L	20	20.4	102	73-126	
1,2,3-Trichlorobenzene	ug/L	20	19.7	98	72-126	
1,2,3-Trichloropropane	ug/L	20	19.4	97	75-126	
1,2,4-Trichlorobenzene	ug/L	20	19.3	96	71-134	
1,2,4-Trimethylbenzene	ug/L	20	18.4	92	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	46.8	94	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	20.7	104	75-129	
1,2-Dichlorobenzene	ug/L	20	18.0	90	75-129	
1,2-Dichloroethane	ug/L	20	19.3	96	75-125	
1,2-Dichloroethene (Total)	ug/L	40	39.5	99	74-125	N2
1,2-Dichloropropane	ug/L	20	21.7	108	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.8	104	75-127	
1,3-Dichlorobenzene	ug/L	20	19.1	96	75-126	
1,3-Dichloropropane	ug/L	20	20.8	104	75-125	
1,4-Dichlorobenzene	ug/L	20	18.5	93	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	432	108	72-129	
2,2,4-Trimethylpentane	ug/L	20	19.9	99	72-128	N2
2,2-Dichloropropane	ug/L	20	22.7	114	65-138	
2-Butanone (MEK)	ug/L	100	103	103	59-144	
2-Chlorotoluene	ug/L	20	19.5	98	75-127	
2-Hexanone	ug/L	100	106	106	73-134	
4-Chlorotoluene	ug/L	20	19.2	96	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	104	104	62-141	
Acetone	ug/L	100	100	100	60-137	
Acrolein	ug/L	200	173	86	60-141	
Acrylonitrile	ug/L	200	207	104	75-129	
Benzene	ug/L	20	19.7	98	73-125	
Bromobenzene	ug/L	20	19.4	97	73-125	
Bromochloromethane	ug/L	20	20.0	100	75-135	
Bromodichloromethane	ug/L	20	19.9	99	75-125	
Bromoform	ug/L	20	20.4	102	67-136	
Bromomethane	ug/L	20	22.1	110	30-150	
Carbon disulfide	ug/L	20	16.5	83	47-137	
Carbon tetrachloride	ug/L	20	22.1	111	75-125	
Chlorobenzene	ug/L	20	17.9	90	75-125	
Chloroethane	ug/L	20	38.2	191	63-136	CH,L3
Chloroform	ug/L	20	19.6	98	73-128	
Chloromethane	ug/L	20	24.2	121	55-130	
cis-1,2-Dichloroethene	ug/L	20	20.0	100	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.1	96	74-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

LABORATORY CONTROL SAMPLE: 3315197

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	18.5	93	75-125	
Dibromomethane	ug/L	20	19.7	98	75-125	
Dichlorodifluoromethane	ug/L	20	23.2	116	63-132	
Dichlorofluoromethane	ug/L	20	21.9	109	68-127	N2
Diisopropyl ether	ug/L	20	19.0	95	71-131	
Ethyl-tert-butyl ether	ug/L	20	19.2	96	75-125	
Ethylbenzene	ug/L	20	19.9	100	75-125	
Hexachloro-1,3-butadiene	ug/L	20	18.6	93	72-134	
Isopropylbenzene (Cumene)	ug/L	20	18.4	92	75-125	
m&p-Xylene	ug/L	40	38.8	97	75-126	
Methyl-tert-butyl ether	ug/L	20	20.0	100	75-125	
Methylene Chloride	ug/L	20	19.7	99	70-125	
n-Butylbenzene	ug/L	20	19.9	99	75-126	
n-Propylbenzene	ug/L	20	19.4	97	73-127	
Naphthalene	ug/L	20	19.8	99	63-128	
o-Xylene	ug/L	20	18.2	91	75-128	
p-Isopropyltoluene	ug/L	20	20.1	101	75-125	
sec-Butylbenzene	ug/L	20	21.7	109	75-126	
Styrene	ug/L	20	19.3	96	75-125	
tert-Amylmethyl ether	ug/L	20	17.5	87	75-125	
tert-Butyl Alcohol	ug/L	200	207	103	75-130	
tert-Butylbenzene	ug/L	20	19.2	96	75-131	
Tetrachloroethene	ug/L	20	17.9	90	74-125	
Tetrahydrofuran	ug/L	200	216	108	64-138	
Toluene	ug/L	20	19.0	95	74-125	
trans-1,2-Dichloroethene	ug/L	20	19.5	98	68-128	
trans-1,3-Dichloropropene	ug/L	20	18.6	93	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	48.9	98	60-127	
Trichloroethene	ug/L	20	20.4	102	75-127	
Trichlorofluoromethane	ug/L	20	21.4	107	72-133	
Vinyl acetate	ug/L	20	19.6	98	61-129	
Vinyl chloride	ug/L	20	23.8	119	75-128	
Xylene (Total)	ug/L	60	57.0	95	75-125	
1,2-Dichloroethane-d4 (S)	%			108	75-136	
4-Bromofluorobenzene (S)	%			98	75-125	
Toluene-d8 (S)	%			96	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3317288 3317289

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10479601001 Result	Spike Conc.	Spike Conc.	Conc.								
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20.8	21.7	104	109	75-140	4	30		
1,1,1-Trichloroethane	ug/L	<0.14	20	20	21.4	24.3	107	121	74-136	12	30		
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	22.2	23.9	111	119	66-134	7	30		
1,1,2-Trichloroethane	ug/L	<0.18	20	20	23.5	23.8	118	119	75-126	1	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3317288		3317289									
Parameter	Units	10479601001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	RPD	RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits				
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	22.2	26.0	111	130	65-146	16	30		
1,1-Dichloroethane	ug/L	<0.17	20	20	20.5	22.6	103	113	68-132	9	30		
1,1-Dichloroethene	ug/L	<0.16	20	20	20.5	22.6	102	113	66-139	10	30		
1,1-Dichloropropene	ug/L	<0.20	20	20	21.8	24.4	109	122	67-134	11	30		
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	24.0	25.2	120	126	67-129	5	30		
1,2,3-Trichloropropane	ug/L	<0.26	20	20	22.3	24.0	112	120	69-128	7	30		
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	23.6	24.3	118	122	65-140	3	30		
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	21.4	23.7	107	118	71-133	10	30		
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	52.6	57.6	105	115	54-138	9	30		
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	23.2	23.9	116	120	68-125	3	30		
1,2-Dichlorobenzene	ug/L	<0.14	20	20	20.3	22.1	102	110	74-136	8	30		
1,2-Dichloroethane	ug/L	<0.22	20	20	19.0	20.8	95	104	68-125	9	30		
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	39.9	46.2	100	115	71-126	14	30	N2	
1,2-Dichloropropane	ug/L	<0.16	20	20	24.7	24.7	123	124	67-125	0	30		
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	24.9	27.3	125	137	68-137	9	30		
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.4	23.3	107	117	75-131	9	30		
1,3-Dichloropropane	ug/L	<0.070	20	20	23.1	23.6	116	118	71-125	2	30		
1,4-Dichlorobenzene	ug/L	<0.17	20	20	20.8	22.5	104	113	74-126	8	30		
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	432	445	108	111	68-125	3	30		
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	24.0	23.5	120	117	54-129	2	30	N2	
2,2-Dichloropropane	ug/L	<0.17	20	20	24.6	25.8	123	129	69-139	5	30		
2-Butanone (MEK)	ug/L	<0.99	100	100	109	115	109	115	54-144	5	30		
2-Chlorotoluene	ug/L	<0.16	20	20	22.5	24.8	112	124	75-134	10	30		
2-Hexanone	ug/L	<0.88	100	100	142	133	142	133	58-137	6	30	M1	
4-Chlorotoluene	ug/L	<0.13	20	20	21.8	24.4	109	122	72-133	11	30		
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	114	132	114	132	60-129	15	30	M1	
Acetone	ug/L	<9.2	100	100	129	105	122	98	62-132	21	30		
Acrolein	ug/L	<1.2	200	200	167	267	84	133	30-150	46	30	R1	
Acrylonitrile	ug/L	<0.91	200	200	191	231	96	115	68-125	19	30		
Benzene	ug/L	0.10J	20	20	21.4	22.5	107	112	68-125	5	30		
Bromobenzene	ug/L	<0.21	20	20	21.1	23.1	105	116	73-126	9	30		
Bromochloromethane	ug/L	<0.27	20	20	19.2	21.9	96	110	66-143	13	30		
Bromodichloromethane	ug/L	<0.22	20	20	22.7	22.8	113	114	74-125	0	30		
Bromoform	ug/L	<0.80	20	20	21.2	23.0	106	115	64-134	8	30		
Bromomethane	ug/L	<1.8	20	20	19.7	20.1	98	100	30-150	2	30		
Carbon disulfide	ug/L	0.39J	20	20	19.6	20.2	96	99	43-147	3	30		
Carbon tetrachloride	ug/L	<0.19	20	20	23.7	26.5	118	133	71-143	11	30		
Chlorobenzene	ug/L	<0.17	20	20	20.1	20.8	101	104	75-125	3	30		
Chloroethane	ug/L	<0.49	20	20	32.9	30.2	164	151	75-129	8	30	CH,M0	
Chloroform	ug/L	<0.45	20	20	18.9	21.4	94	107	66-132	12	30		
Chloromethane	ug/L	<0.16	20	20	21.1	21.9	105	110	53-137	4	30		
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	19.9	24.1	100	120	67-133	19	30		
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	21.1	21.3	106	106	66-125	1	30		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3317288 3317289												
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		10479601001 Result	Spike Conc.	Spike Conc.	MS Result							
Dibromochloromethane	ug/L	<0.12	20	20	20.2	20.9	101	105	62-132	4	30	
Dibromomethane	ug/L	<0.16	20	20	20.8	20.5	104	103	67-125	1	30	
Dichlorodifluoromethane	ug/L	<0.23	20	20	22.2	23.7	111	119	71-142	7	30	
Dichlorofluoromethane	ug/L	<0.14	20	20	19.9	22.2	100	111	70-131	11	30	N2
Diisopropyl ether	ug/L	<0.13	20	20	19.6	22.8	98	114	63-131	15	30	
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	18.2	21.7	91	109	66-128	18	30	
Ethylbenzene	ug/L	0.26J	20	20	23.1	24.6	114	122	74-126	7	30	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	26.5	22.7	132	113	68-143	15	30	
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	21.5	23.6	108	118	74-130	9	30	
m&p-Xylene	ug/L	<0.31	40	40	45.3	48.8	113	122	69-132	8	30	
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.0	23.2	95	116	65-131	20	30	
Methylene Chloride	ug/L	<0.98	20	20	18.2	20.8	91	104	57-125	14	30	
n-Butylbenzene	ug/L	<0.24	20	20	25.1	25.2	126	126	71-131	0	30	
n-Propylbenzene	ug/L	<0.10	20	20	24.1	25.5	121	128	67-138	6	30	
Naphthalene	ug/L	<0.48	20	20	22.5	26.1	113	131	60-130	15	30	M1
o-Xylene	ug/L	<0.16	20	20	21.5	23.8	107	119	69-131	10	30	
p-Isopropyltoluene	ug/L	<0.15	20	20	24.3	24.9	121	124	72-133	2	30	
sec-Butylbenzene	ug/L	<0.15	20	20	27.5	27.7	137	138	73-134	1	30	M1
Styrene	ug/L	<0.19	20	20	21.6	23.0	108	115	72-125	7	30	
tert-Amylmethyl ether	ug/L	<0.11	20	20	18.9	21.2	94	106	67-125	11	30	
tert-Butyl Alcohol	ug/L	<1.2	200	200	207	219	104	110	64-137	6	30	
tert-Butylbenzene	ug/L	<0.15	20	20	22.9	24.4	115	122	70-143	6	30	
Tetrachloroethene	ug/L	<0.17	20	20	22.0	23.7	110	118	72-129	7	30	
Tetrahydrofuran	ug/L	<2.2	200	200	223	233	111	116	66-128	4	30	
Toluene	ug/L	0.36J	20	20	22.0	22.4	108	110	73-125	2	30	
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	20.0	22.1	100	110	62-137	10	30	
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	21.2	21.7	106	108	61-136	2	30	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	55.6	61.5	111	123	45-128	10	30	
Trichloroethene	ug/L	<0.15	20	20	23.4	19.5	117	98	74-132	18	30	
Trichlorofluoromethane	ug/L	<0.23	20	20	19.5	21.7	97	108	75-139	11	30	
Vinyl acetate	ug/L	<1.1	20	20	20.2	23.8	101	119	51-135	16	30	
Vinyl chloride	ug/L	<0.092	20	20	22.8	24.5	114	123	68-146	7	30	
Xylene (Total)	ug/L	<0.31	60	60	66.8	72.6	111	121	67-137	8	30	
1,2-Dichloroethane-d4 (S)	%						91	102	75-136			
4-Bromofluorobenzene (S)	%						102	101	75-125			
Toluene-d8 (S)	%						97	98	75-125			

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479205

QC Batch: 615232 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10479205001, 10479205002, 10479205003, 10479205004

METHOD BLANK: 3323992 Matrix: Water
Associated Lab Samples: 10479205001, 10479205002, 10479205003, 10479205004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<2.0	5.0	2.0	06/25/19 07:17	

LABORATORY CONTROL SAMPLE & LCSD: 3323993 3323994

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	42.8	42.6	107	107	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3323995 3323996

Parameter	Units	10479324010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	457	40	40	503	516	116	148	80-120	2	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3323997 3323998

Parameter	Units	10479324011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	537	40	40	576	590	97	134	80-120	2	20	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

QC Batch: 613831

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 10479205001, 10479205002, 10479205003, 10479205004

METHOD BLANK: 3316469

Matrix: Water

Associated Lab Samples: 10479205001, 10479205002, 10479205003, 10479205004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	06/19/19 09:39	

LABORATORY CONTROL SAMPLE: 3316470

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1010	101	80-120	

SAMPLE DUPLICATE: 3316471

Parameter	Units	10479205001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	247	249	1	5	

SAMPLE DUPLICATE: 3316472

Parameter	Units	10479312003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	274	278	1	5	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

QC Batch: 146172 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 10479205001, 10479205002, 10479205003, 10479205004

METHOD BLANK: 644422 Matrix: Water
Associated Lab Samples: 10479205001, 10479205002, 10479205003, 10479205004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	06/18/19 13:38	

LABORATORY CONTROL SAMPLE: 644423

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.2	0.18	92	90-110	

MATRIX SPIKE SAMPLE: 644425

Parameter	Units	20108589001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.038	0.2	0.12	43	75-125	M1

SAMPLE DUPLICATE: 644424

Parameter	Units	20108589001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.038	0.038	0	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

QC Batch: 613054 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10479205001, 10479205002, 10479205003, 10479205004

METHOD BLANK: 3312409 Matrix: Water
Associated Lab Samples: 10479205001, 10479205002, 10479205003, 10479205004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.12	1.2	0.12	06/14/19 15:13	
Nitrate as N	mg/L	<0.012	0.10	0.012	06/14/19 15:13	
Sulfate	mg/L	<0.28	1.2	0.28	06/14/19 15:13	

LABORATORY CONTROL SAMPLE: 3312410

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.6	101	90-110	
Nitrate as N	mg/L	1	0.96	96	90-110	
Sulfate	mg/L	12.5	12.7	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3312411 3312412

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		10479205001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Chloride	mg/L	2.3	12.5	12.5	13.7	13.3	91	88	90-110	3	20	M1	
Nitrate as N	mg/L	2.3	1	1	2.9	2.8	60	51	90-110	3	20	M1	
Sulfate	mg/L	10.6	12.5	12.5	21.7	21.0	89	83	90-110	3	20	M1	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479205

QC Batch: 614352 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10479205001, 10479205002, 10479205003, 10479205004

METHOD BLANK: 3318804 Matrix: Water
Associated Lab Samples: 10479205001, 10479205002, 10479205003, 10479205004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	06/20/19 11:49	FS

LABORATORY CONTROL SAMPLE: 3318805

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	1.1	107	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3318806 3318807

Parameter	Units	10479205001		10479205002		10479205003		10479205004		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Nitrogen, NO2 plus NO3	mg/L	2.4	5	5	7.9	8.1	109	113	90-110	2	20	M1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3318808 3318809

Parameter	Units	10479205002		10479205003		10479205004		% Rec Limits	RPD	Max RPD	Qual	
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec					MSD % Rec
Nitrogen, NO2 plus NO3	mg/L	6.6	10	10	14.7	17.8	81	112	90-110	19	20	M6

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

QC Batch: 615601

Analysis Method: EPA 410.4

QC Batch Method: EPA 410.4

Analysis Description: 410.4 COD

Associated Lab Samples: 10479205001, 10479205002, 10479205003, 10479205004

METHOD BLANK: 3325717

Matrix: Water

Associated Lab Samples: 10479205001, 10479205002, 10479205003, 10479205004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	06/26/19 17:10	

LABORATORY CONTROL SAMPLE: 3325718

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	302	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3325719 3325720

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10479205001 Result	Spike Conc.	Spike Conc.	Conc.								
Chemical Oxygen Demand	mg/L	<17.0	250	250	250	250	435	98	172	90-110	54	20	M1,R1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

QC Batch: 168491

Analysis Method: SM 5310C

QC Batch Method: SM 5310C

Analysis Description: 5310C TOC

Associated Lab Samples: 10479205001, 10479205002, 10479205003, 10479205004

METHOD BLANK: 664850

Matrix: Water

Associated Lab Samples: 10479205001, 10479205002, 10479205003, 10479205004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.39	1.0	0.39	06/20/19 13:20	

LABORATORY CONTROL SAMPLE: 664851

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	26.4	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 664852 664853

Parameter	Units	664852		664853		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10479261002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Total Organic Carbon	mg/L	19.3	50	50	70.3	69.4	102	100	80-120	1	20		

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479205

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
 ND - Not Detected at or above adjusted reporting limit.
 TNTC - Too Numerous To Count
 J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
 MDL - Adjusted Method Detection Limit.
 PQL - Practical Quantitation Limit.
 RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.
 S - Surrogate
 1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
 Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
 LCS(D) - Laboratory Control Sample (Duplicate)
 MS(D) - Matrix Spike (Duplicate)
 DUP - Sample Duplicate
 RPD - Relative Percent Difference
 NC - Not Calculable.
 SG - Silica Gel - Clean-Up
 U - Indicates the compound was analyzed for, but not detected.
 N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
 Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
 TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis
 PASI-N Pace Analytical Services - New Orleans
 PASI-V Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

CH The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
 D6 The precision between the sample and sample duplicate exceeded laboratory control limits.
 E Analyte concentration exceeded the calibration range. The reported result is estimated.
 FS The sample was filtered in the laboratory prior to analysis.
 L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
 M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
 M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
 M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.
 N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
 R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479205

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479205

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10479205001	Silva-GW-061319	RSK 175	613735		
10479205002	Asher-GW-061319	RSK 175	613735		
10479205003	Stark-GW-061319	RSK 175	613735		
10479205004	Reed-GW-061319	RSK 175	613735		
10479205001	Silva-GW-061319	EPA 3010	613599	EPA 6010D	613926
10479205002	Asher-GW-061319	EPA 3010	613599	EPA 6010D	613926
10479205003	Stark-GW-061319	EPA 3010	613599	EPA 6010D	613926
10479205004	Reed-GW-061319	EPA 3010	613599	EPA 6010D	613926
10479205001	Silva-GW-061319	EPA 7470A	613970	EPA 7470A	614334
10479205002	Asher-GW-061319	EPA 7470A	613970	EPA 7470A	614334
10479205003	Stark-GW-061319	EPA 7470A	613970	EPA 7470A	614334
10479205004	Reed-GW-061319	EPA 7470A	613970	EPA 7470A	614334
10479205005	TB-061319	EPA 8260B	613563		
10479205001	Silva-GW-061319	SM 2320B	615232		
10479205002	Asher-GW-061319	SM 2320B	615232		
10479205003	Stark-GW-061319	SM 2320B	615232		
10479205004	Reed-GW-061319	SM 2320B	615232		
10479205001	Silva-GW-061319	SM 2540C	613831		
10479205002	Asher-GW-061319	SM 2540C	613831		
10479205003	Stark-GW-061319	SM 2540C	613831		
10479205004	Reed-GW-061319	SM 2540C	613831		
10479205001	Silva-GW-061319	SM 4500-S-2 D	146172		
10479205002	Asher-GW-061319	SM 4500-S-2 D	146172		
10479205003	Stark-GW-061319	SM 4500-S-2 D	146172		
10479205004	Reed-GW-061319	SM 4500-S-2 D	146172		
10479205001	Silva-GW-061319	EPA 300.0	613054		
10479205002	Asher-GW-061319	EPA 300.0	613054		
10479205003	Stark-GW-061319	EPA 300.0	613054		
10479205004	Reed-GW-061319	EPA 300.0	613054		
10479205001	Silva-GW-061319	EPA 353.2	614352		
10479205002	Asher-GW-061319	EPA 353.2	614352		
10479205003	Stark-GW-061319	EPA 353.2	614352		
10479205004	Reed-GW-061319	EPA 353.2	614352		
10479205001	Silva-GW-061319	EPA 410.4	615601	EPA 410.4	615814
10479205002	Asher-GW-061319	EPA 410.4	615601	EPA 410.4	615814
10479205003	Stark-GW-061319	EPA 410.4	615601	EPA 410.4	615814
10479205004	Reed-GW-061319	EPA 410.4	615601	EPA 410.4	615814
10479205001	Silva-GW-061319	SM 5310C	168491		
10479205002	Asher-GW-061319	SM 5310C	168491		
10479205003	Stark-GW-061319	SM 5310C	168491		
10479205004	Reed-GW-061319	SM 5310C	168491		

REPORT OF LABORATORY ANALYSIS

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1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:		Regulatory Agency	
Company: CH2M Hill		Report To: Mark Ochsner, Brad Ostapkowicz		Attention: Anne Walsh			
Address: 999 W. Riverside Ave, Suite 500 Spokane, WA 99201		Copy To: Steve Demus, Jonathan Espinoza		Company: UPRR			
Email:		Copy To: David Hodson, UPRR-Sysdat@ghd.com		Address: 1400 W. 52nd Ave, Denver, CO 80221			
Phone:		Purchase Order # PEDD# 1497		Pace Quote: Contract# 758938			
Requested Due Date: 10 Day Standard		Project Name: Freeman WA-Grain Handling Facility		Pace Project Manager: Jennifer Gross		State / Location	
		Project #: 1497		Pace Profile #: 36447 / 4		WA / Freeman	

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 /, -,) Sample IDs must be unique	MATRIX Drinking Water DW Water WT Waste Water WW Product P Soil/Solid SL Oil OL Wipe WP Air AR Other OT Tissue TS	CODE DW WT WW P SL OL WP AR OT TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (S-GRAB C-COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analysis Test Y/N	Requested Analysis Filtered (Y/N)												MIMS/MSD Requested	VOCs on separate CoCs
						DATE	TIME			Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Low Level VOCs by 8260		60107470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, Nitrate 300.0	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate-Nitrite 353.2	4500 Total Phosphorus	6010 Total Iron			
1	Silva-GW-061319			NOTE		2019	6/13	900	-	10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	001	
2	Asher-GW-061319							945			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	002	
3	Stark-GW-061319							1030			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	003	
4	Reed-GW-061319							1100			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	004	
5	TB-061319							700		3					X															005	
6																															
7																															
8																															
9																															
10																															
11																															
12																															

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in bold	J. C. Jacobs	6/13/19	1500	Jon Espinoza	6/14/19	940	25	X	X	X
*Field filtered by client										

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on Ice (Y/N)	Custody Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	Jonathan Espinoza					
SIGNATURE of SAMPLER:	J. C. Jacobs					
DATE Signed: 6/13/19						

Sample Condition Upon Receipt

Client Name: CH2M HILL - UPRR

Project #: **WO# : 10479205**
PM: JMG **Due Date:** 06/21/19
CLIENT: UPRR_Jacobs

Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception

Tracking Number: 4934 3730 1870

Custody Seal on Cooler/Box Present? Yes No **Seals Intact?** Yes No **Biological Tissue Frozen?** Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other: PS **Temp Blank?** Yes No

Thermometer: T1(0461) T2(1336) T3(0459) T4(0254) T5(0489) **Type of Ice:** Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: _____ °C	Average Corrected Temp (no temp blank only): <u>25</u> °C	See Exceptions <input checked="" type="checkbox"/>
Correction Factor: <u>-0.1</u>	Cooler Temp Corrected w/temp blank: _____ °C		

USDA Regulated Soil: (N/A, water sample/Other: _____) **Date/Initials of Person Examining Contents:** GPT 06/14/19
 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No
 Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No
If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

	COMMENTS:
Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Short Hold Time Analysis (<72 hr)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Field Filtered Volume Received for Dissolved Tests?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Is sufficient information available to reconcile the samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	
All containers needing acid/base preservation have been checked?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Exceptions: <u>VOA</u> , Coliform, <u>TOC/DOC</u> Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Trip Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Trip Blank Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A

5. Fecal Coliform HPC Total Coliform/E coli BOD/cBOD Hex Chrome Turbidity Nitrate Nitrite Orthophos Other

10. Is sediment visible in the dissolved container? Yes No

11. If no, write ID/ Date/Time on Container Below: _____ See Exception

12. Sample # 1-4: 1/4 1/4 1/4
 NaOH HNO₃ H₂SO₄ Zinc Acetate

Positive for Res. Yes No **pH Paper Lot#** _____ See Exception

Res. Chlorine Yes No

0-6 Roll	0-6 Strip	0-14 Strip
<u>203619</u>		<u>10D3581</u>

13. _____ See Exception

14. Pace Trip Blank Lot # (if purchased): 209352

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: Mark Ochsner **Field Data Required?** Yes No
 Date/Time: 06/27/18
 Comments/Resolution: WA certs not required for RSK or sulfide.

Project Manager Review:

Note: Whenever there is a discrepancy affecting North Carolina samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers). JENNI GROSS Date: 06/14/19

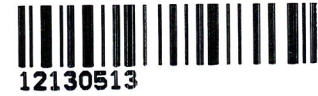
Labeled by: GPT

Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Cert. Needed: Yes



Workorder: 10479205

Workorder Name: 1497 Freeman WA-Grain Handling

Owner Received Date: 6/14/2019 Results Requested By: 6/28/2019

Report To		Subcontract To				Requested Analysis																								
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426		Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042				<div style="display: flex; justify-content: space-between;"> 5632354 / 5310 TOC LAB USE ONLY </div>																								
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix											Preserved Containers														
1	Silva-GW-061319	PS	6/13/2019 09:00	10479205001	Water											2														
2	Asher-GW-061319	PS	6/13/2019 09:45	10479205002	Water											2														
3	Stark-GW-061319	PS	6/13/2019 10:30	10479205003	Water											2														
4	Reed-GW-061319	PS	6/13/2019 11:00	10479205004	Water	2																								
5																														
Transfers											Comments																			
Released By	Date/Time	Received By	Date/Time																											
<i>[Signature]</i>	6/14/19 1540	<i>[Signature]</i>	6/14/19																											
<i>[Signature]</i>	6/14/19 2355	B Mathews	6/17/19 0700																											
3																														
Cooler Temperature on Receipt 2.4 °C				Custody Seal <input checked="" type="checkbox"/> or N				Received on Ice <input checked="" type="checkbox"/> or N				Samples Intact <input checked="" type="checkbox"/> or N																		

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.



Document Name: Sample Condition Upon Receipt Form

Document Revised: 30Apr2019 Page 1 of 1

Document No.: F-VM-C-001-rev.13

Issuing Authority: Pace Virginia Minnesota Quality Office

Sample Condition Upon Receipt

Client Name:

Project #:

WO#: 12130513

PM: CLJ Due Date: 06/28/19 CLIENT: PACE MPLS

Courier: [] Fed Ex [] UPS [] USPS [] Client [] Commercial [] Race [] Other:

Tracking Number:

Custody Seal on Cooler/Box Present? [x] Yes [] No Seals Intact? [x] Yes [] No Optional: Proj. Due Date: Proj. Name:

Packing Material: [x] Bubble Wrap [x] Bubble Bags [] None [] Other: Temp Blank? [x] Yes [] No

Thermometer Used: [x] 140792808 Type of Ice: [] Wet [] Blue [] None [x] Samples on ice, cooling process has begun

Cooler Temp Read °C: 2.1 Cooler Temp Corrected °C: 2.4 Biological Tissue Frozen? [] Yes [] No [x] NA

Temp should be above freezing to 6 °C Correction Factor: 0.3 Date and Initials of Person Examining Contents: 6/14/19 Bm

Table with 16 rows of checklist items and a comments column. Items include Chain of Custody Present, Samples Arrived within Hold Time, Short Hold Time Analysis, etc.

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? [] Yes [] No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Nikki Jarve

Date: 6/17/19

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DLHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

WO#: 20108507



PRE
Chain of Custody _____

Samples were sent directly to the Subcontracting



Cert. Needed: Yes No

IA
Owner Received Date: 6/14/2019 Results Requested By: 6/28/2019

Workorder: 10479205 Workorder Name: 1497 Freeman WA-Grain Handling

Report To		Subcontract To					Requested Analysis																												
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426		Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone (504)469-0333					<div style="display: flex; justify-content: space-between;"> 5696267 / 4500 Sulfide LAB USE ONLY </div>																												
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers																													
1	Silva-GW-061319	PS	6/13/2019 09:00	10479205001	Water	1																													
2	Asher-GW-061319	PS	6/13/2019 09:45	10479205002	Water	1																													
3	Stark-GW-061319	PS	6/13/2019 10:30	10479205003	Water	1																													
4	Reed-GW-061319	PS	6/13/2019 11:00	10479205004	Water	1																													
5																																			

Transfers						Comments											
Transfers	Released By	Date/Time	Received By	Date/Time													
1		6/14/19 1545	FedEx														
2	FedEx	6-15-19 1040	PAC	6-15-19 10:40													
3																	

Cooler Temperature on Receipt 2.7 °C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.



1000 Riverbend Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon Receipt

Project #: **20**

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 6-15-19

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	1	
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2	
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4	
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	5	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8	
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	9	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10	
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11	
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12	
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13	If No, was preservative added? <input type="checkbox"/> Yes <input type="checkbox"/> No If added record lot no.: HNO3 _____ H2SO4 _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14	
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	15	

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

June 20, 2019

David Hodson
Jacobs
155 Grand Ave
#800
Oakland, CA 94612

RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479213

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 14, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, Jacobs
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479213

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Vermont Certification #: VT-027053137

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479213

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10479213001	Silva-GW-061319	Water	06/13/19 09:00	06/14/19 09:40

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479213

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10479213001	Silva-GW-061319	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479213

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 20, 2019

General Information:

1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

QC Batch: 613563

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 3315197)
 - Chloroethane
- MS (Lab ID: 3317288)
 - Chloroethane
- MSD (Lab ID: 3317289)
 - Chloroethane

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 613563

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- LCS (Lab ID: 3315197)
 - Chloroethane

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479213

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 20, 2019

QC Batch: 613563

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10479601001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 3317288)
 - Chloroethane
- MSD (Lab ID: 3317289)
 - Chloroethane

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3317288)
 - 2-Hexanone
 - sec-Butylbenzene
- MSD (Lab ID: 3317289)
 - 4-Methyl-2-pentanone (MIBK)
 - Naphthalene
 - sec-Butylbenzene

R1: RPD value was outside control limits.

- MSD (Lab ID: 3317289)
 - Acrolein

Additional Comments:

Analyte Comments:

QC Batch: 613563

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3315196)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3315197)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3317288)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3317289)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- Silva-GW-061319 (Lab ID: 10479213001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479213

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 20, 2019

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Project No.: 10479213

Sample: **Silva-GW-061319** Lab ID: **10479213001** Collected: 06/13/19 09:00 Received: 06/14/19 09:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		06/17/19 18:43	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		06/17/19 18:43	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		06/17/19 18:43	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		06/17/19 18:43	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		06/17/19 18:43	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		06/17/19 18:43	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	1.0	0.16	1		06/17/19 18:43	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		06/17/19 18:43	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		06/17/19 18:43	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		06/17/19 18:43	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		06/17/19 18:43	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		06/17/19 18:43	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		06/17/19 18:43	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		06/17/19 18:43	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		06/17/19 18:43	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		06/17/19 18:43	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		06/17/19 18:43	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		06/17/19 18:43	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		06/17/19 18:43	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		06/17/19 18:43	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		06/17/19 18:43	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		06/17/19 18:43	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		06/17/19 18:43	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		06/17/19 18:43	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		06/17/19 18:43	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		06/17/19 18:43	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		06/17/19 18:43	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		06/17/19 18:43	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		06/17/19 18:43	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		06/17/19 18:43	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		06/17/19 18:43	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		06/17/19 18:43	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		06/17/19 18:43	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		06/17/19 18:43	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		06/17/19 18:43	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		06/17/19 18:43	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		06/17/19 18:43	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		06/17/19 18:43	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		06/17/19 18:43	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		06/17/19 18:43	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		06/17/19 18:43	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		06/17/19 18:43	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		06/17/19 18:43	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		06/17/19 18:43	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		06/17/19 18:43	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		06/17/19 18:43	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10479213

Sample: Silva-GW-061319 **Lab ID: 10479213001** Collected: 06/13/19 09:00 Received: 06/14/19 09:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		06/17/19 18:43	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		06/17/19 18:43	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		06/17/19 18:43	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		06/17/19 18:43	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		06/17/19 18:43	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		06/17/19 18:43	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		06/17/19 18:43	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		06/17/19 18:43	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		06/17/19 18:43	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		06/17/19 18:43	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		06/17/19 18:43	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		06/17/19 18:43	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		06/17/19 18:43	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		06/17/19 18:43	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		06/17/19 18:43	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		06/17/19 18:43	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		06/17/19 18:43	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		06/17/19 18:43	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		06/17/19 18:43	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		06/17/19 18:43	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		06/17/19 18:43	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	1.0	0.20	1		06/17/19 18:43	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		06/17/19 18:43	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		06/17/19 18:43	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		06/17/19 18:43	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		06/17/19 18:43	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		06/17/19 18:43	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/17/19 18:43	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		06/17/19 18:43	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		06/17/19 18:43	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/17/19 18:43	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		06/17/19 18:43	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		06/17/19 18:43	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		06/17/19 18:43	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	101	%	75-136		1		06/17/19 18:43	17060-07-0	
Toluene-d8 (S)	101	%	75-125		1		06/17/19 18:43	2037-26-5	
4-Bromofluorobenzene (S)	98	%	75-125		1		06/17/19 18:43	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479213

QC Batch: 613563

Analysis Method: EPA 8260B

QC Batch Method: EPA 8260B

Analysis Description: 8260 MSV LL Water

Associated Lab Samples: 10479213001

METHOD BLANK: 3315196

Matrix: Water

Associated Lab Samples: 10479213001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	06/17/19 17:56	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	06/17/19 17:56	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	06/17/19 17:56	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	06/17/19 17:56	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	06/17/19 17:56	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	06/17/19 17:56	
1,1-Dichloroethene	ug/L	<0.16	1.0	0.16	06/17/19 17:56	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	06/17/19 17:56	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	06/17/19 17:56	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	06/17/19 17:56	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	06/17/19 17:56	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	06/17/19 17:56	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	06/17/19 17:56	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	06/17/19 17:56	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	06/17/19 17:56	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	06/17/19 17:56	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	06/17/19 17:56	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	06/17/19 17:56	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	06/17/19 17:56	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	06/17/19 17:56	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	06/17/19 17:56	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	06/17/19 17:56	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	06/17/19 17:56	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	06/17/19 17:56	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	06/17/19 17:56	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	06/17/19 17:56	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	06/17/19 17:56	
2-Hexanone	ug/L	<0.88	5.0	0.88	06/17/19 17:56	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	06/17/19 17:56	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	06/17/19 17:56	
Acetone	ug/L	<9.2	20.0	9.2	06/17/19 17:56	
Acrolein	ug/L	<1.2	10.0	1.2	06/17/19 17:56	
Acrylonitrile	ug/L	<0.91	10.0	0.91	06/17/19 17:56	
Benzene	ug/L	<0.10	0.50	0.10	06/17/19 17:56	
Bromobenzene	ug/L	<0.21	0.50	0.21	06/17/19 17:56	
Bromochloromethane	ug/L	<0.27	1.0	0.27	06/17/19 17:56	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	06/17/19 17:56	
Bromoform	ug/L	<0.80	4.0	0.80	06/17/19 17:56	
Bromomethane	ug/L	<1.8	4.0	1.8	06/17/19 17:56	
Carbon disulfide	ug/L	<0.078	1.0	0.078	06/17/19 17:56	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	06/17/19 17:56	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479213

METHOD BLANK: 3315196

Matrix: Water

Associated Lab Samples: 10479213001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	06/17/19 17:56	
Chloroethane	ug/L	<0.49	1.0	0.49	06/17/19 17:56	
Chloroform	ug/L	<0.45	1.0	0.45	06/17/19 17:56	
Chloromethane	ug/L	<0.16	4.0	0.16	06/17/19 17:56	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	06/17/19 17:56	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	06/17/19 17:56	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	06/17/19 17:56	
Dibromomethane	ug/L	<0.16	1.0	0.16	06/17/19 17:56	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	06/17/19 17:56	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	06/17/19 17:56	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	06/17/19 17:56	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	06/17/19 17:56	
Ethylbenzene	ug/L	<0.14	0.50	0.14	06/17/19 17:56	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	06/17/19 17:56	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	06/17/19 17:56	
m&p-Xylene	ug/L	<0.31	1.0	0.31	06/17/19 17:56	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	06/17/19 17:56	
Methylene Chloride	ug/L	<0.98	4.0	0.98	06/17/19 17:56	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	06/17/19 17:56	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	06/17/19 17:56	
Naphthalene	ug/L	<0.48	1.0	0.48	06/17/19 17:56	
o-Xylene	ug/L	<0.16	0.50	0.16	06/17/19 17:56	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	06/17/19 17:56	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	06/17/19 17:56	
Styrene	ug/L	<0.19	0.50	0.19	06/17/19 17:56	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	06/17/19 17:56	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	06/17/19 17:56	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	06/17/19 17:56	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	06/17/19 17:56	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	06/17/19 17:56	
Toluene	ug/L	<0.083	0.50	0.083	06/17/19 17:56	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	06/17/19 17:56	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	06/17/19 17:56	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	06/17/19 17:56	
Trichloroethene	ug/L	<0.15	0.40	0.15	06/17/19 17:56	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	06/17/19 17:56	
Vinyl acetate	ug/L	<1.1	10.0	1.1	06/17/19 17:56	
Vinyl chloride	ug/L	<0.092	0.20	0.092	06/17/19 17:56	
Xylene (Total)	ug/L	<0.31	1.5	0.31	06/17/19 17:56	
1,2-Dichloroethane-d4 (S)	%	102	75-136		06/17/19 17:56	
4-Bromofluorobenzene (S)	%	97	75-125		06/17/19 17:56	
Toluene-d8 (S)	%	101	75-125		06/17/19 17:56	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479213

LABORATORY CONTROL SAMPLE: 3315197

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	18.8	94	68-141	
1,1,1-Trichloroethane	ug/L	20	20.6	103	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	19.9	99	73-125	
1,1,2-Trichloroethane	ug/L	20	21.0	105	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	20.9	104	69-132	
1,1-Dichloroethane	ug/L	20	19.9	99	73-125	
1,1-Dichloroethene	ug/L	20	18.8	94	71-126	
1,1-Dichloropropene	ug/L	20	20.4	102	73-126	
1,2,3-Trichlorobenzene	ug/L	20	19.7	98	72-126	
1,2,3-Trichloropropane	ug/L	20	19.4	97	75-126	
1,2,4-Trichlorobenzene	ug/L	20	19.3	96	71-134	
1,2,4-Trimethylbenzene	ug/L	20	18.4	92	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	46.8	94	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	20.7	104	75-129	
1,2-Dichlorobenzene	ug/L	20	18.0	90	75-129	
1,2-Dichloroethane	ug/L	20	19.3	96	75-125	
1,2-Dichloroethene (Total)	ug/L	40	39.5	99	74-125	N2
1,2-Dichloropropane	ug/L	20	21.7	108	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.8	104	75-127	
1,3-Dichlorobenzene	ug/L	20	19.1	96	75-126	
1,3-Dichloropropane	ug/L	20	20.8	104	75-125	
1,4-Dichlorobenzene	ug/L	20	18.5	93	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	432	108	72-129	
2,2,4-Trimethylpentane	ug/L	20	19.9	99	72-128	N2
2,2-Dichloropropane	ug/L	20	22.7	114	65-138	
2-Butanone (MEK)	ug/L	100	103	103	59-144	
2-Chlorotoluene	ug/L	20	19.5	98	75-127	
2-Hexanone	ug/L	100	106	106	73-134	
4-Chlorotoluene	ug/L	20	19.2	96	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	104	104	62-141	
Acetone	ug/L	100	100	100	60-137	
Acrolein	ug/L	200	173	86	60-141	
Acrylonitrile	ug/L	200	207	104	75-129	
Benzene	ug/L	20	19.7	98	73-125	
Bromobenzene	ug/L	20	19.4	97	73-125	
Bromochloromethane	ug/L	20	20.0	100	75-135	
Bromodichloromethane	ug/L	20	19.9	99	75-125	
Bromoform	ug/L	20	20.4	102	67-136	
Bromomethane	ug/L	20	22.1	110	30-150	
Carbon disulfide	ug/L	20	16.5	83	47-137	
Carbon tetrachloride	ug/L	20	22.1	111	75-125	
Chlorobenzene	ug/L	20	17.9	90	75-125	
Chloroethane	ug/L	20	38.2	191	63-136	CH,L3
Chloroform	ug/L	20	19.6	98	73-128	
Chloromethane	ug/L	20	24.2	121	55-130	
cis-1,2-Dichloroethene	ug/L	20	20.0	100	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.1	96	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479213

LABORATORY CONTROL SAMPLE: 3315197

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	18.5	93	75-125	
Dibromomethane	ug/L	20	19.7	98	75-125	
Dichlorodifluoromethane	ug/L	20	23.2	116	63-132	
Dichlorofluoromethane	ug/L	20	21.9	109	68-127	N2
Diisopropyl ether	ug/L	20	19.0	95	71-131	
Ethyl-tert-butyl ether	ug/L	20	19.2	96	75-125	
Ethylbenzene	ug/L	20	19.9	100	75-125	
Hexachloro-1,3-butadiene	ug/L	20	18.6	93	72-134	
Isopropylbenzene (Cumene)	ug/L	20	18.4	92	75-125	
m&p-Xylene	ug/L	40	38.8	97	75-126	
Methyl-tert-butyl ether	ug/L	20	20.0	100	75-125	
Methylene Chloride	ug/L	20	19.7	99	70-125	
n-Butylbenzene	ug/L	20	19.9	99	75-126	
n-Propylbenzene	ug/L	20	19.4	97	73-127	
Naphthalene	ug/L	20	19.8	99	63-128	
o-Xylene	ug/L	20	18.2	91	75-128	
p-Isopropyltoluene	ug/L	20	20.1	101	75-125	
sec-Butylbenzene	ug/L	20	21.7	109	75-126	
Styrene	ug/L	20	19.3	96	75-125	
tert-Amylmethyl ether	ug/L	20	17.5	87	75-125	
tert-Butyl Alcohol	ug/L	200	207	103	75-130	
tert-Butylbenzene	ug/L	20	19.2	96	75-131	
Tetrachloroethene	ug/L	20	17.9	90	74-125	
Tetrahydrofuran	ug/L	200	216	108	64-138	
Toluene	ug/L	20	19.0	95	74-125	
trans-1,2-Dichloroethene	ug/L	20	19.5	98	68-128	
trans-1,3-Dichloropropene	ug/L	20	18.6	93	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	48.9	98	60-127	
Trichloroethene	ug/L	20	20.4	102	75-127	
Trichlorofluoromethane	ug/L	20	21.4	107	72-133	
Vinyl acetate	ug/L	20	19.6	98	61-129	
Vinyl chloride	ug/L	20	23.8	119	75-128	
Xylene (Total)	ug/L	60	57.0	95	75-125	
1,2-Dichloroethane-d4 (S)	%			108	75-136	
4-Bromofluorobenzene (S)	%			98	75-125	
Toluene-d8 (S)	%			96	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3317288 3317289

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10479601001 Result	Spike Conc.	Spike Conc.	Conc.								
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20.8	21.7	104	109	75-140	4	30		
1,1,1-Trichloroethane	ug/L	<0.14	20	20	21.4	24.3	107	121	74-136	12	30		
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	22.2	23.9	111	119	66-134	7	30		
1,1,2-Trichloroethane	ug/L	<0.18	20	20	23.5	23.8	118	119	75-126	1	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479213

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3317288		3317289								
Parameter	Units	10479601001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD		
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	22.2	26.0	111	130	65-146	16	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	20.5	22.6	103	113	68-132	9	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	20.5	22.6	102	113	66-139	10	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	21.8	24.4	109	122	67-134	11	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	24.0	25.2	120	126	67-129	5	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	22.3	24.0	112	120	69-128	7	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	23.6	24.3	118	122	65-140	3	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	21.4	23.7	107	118	71-133	10	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	52.6	57.6	105	115	54-138	9	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	23.2	23.9	116	120	68-125	3	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	20.3	22.1	102	110	74-136	8	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	19.0	20.8	95	104	68-125	9	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	39.9	46.2	100	115	71-126	14	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	24.7	24.7	123	124	67-125	0	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	24.9	27.3	125	137	68-137	9	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.4	23.3	107	117	75-131	9	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	23.1	23.6	116	118	71-125	2	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	20.8	22.5	104	113	74-126	8	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	432	445	108	111	68-125	3	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	24.0	23.5	120	117	54-129	2	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	24.6	25.8	123	129	69-139	5	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	109	115	109	115	54-144	5	30	
2-Chlorotoluene	ug/L	<0.16	20	20	22.5	24.8	112	124	75-134	10	30	
2-Hexanone	ug/L	<0.88	100	100	142	133	142	133	58-137	6	30	M1
4-Chlorotoluene	ug/L	<0.13	20	20	21.8	24.4	109	122	72-133	11	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	114	132	114	132	60-129	15	30	M1
Acetone	ug/L	<9.2	100	100	129	105	122	98	62-132	21	30	
Acrolein	ug/L	<1.2	200	200	167	267	84	133	30-150	46	30	R1
Acrylonitrile	ug/L	<0.91	200	200	191	231	96	115	68-125	19	30	
Benzene	ug/L	0.10J	20	20	21.4	22.5	107	112	68-125	5	30	
Bromobenzene	ug/L	<0.21	20	20	21.1	23.1	105	116	73-126	9	30	
Bromochloromethane	ug/L	<0.27	20	20	19.2	21.9	96	110	66-143	13	30	
Bromodichloromethane	ug/L	<0.22	20	20	22.7	22.8	113	114	74-125	0	30	
Bromoform	ug/L	<0.80	20	20	21.2	23.0	106	115	64-134	8	30	
Bromomethane	ug/L	<1.8	20	20	19.7	20.1	98	100	30-150	2	30	
Carbon disulfide	ug/L	0.39J	20	20	19.6	20.2	96	99	43-147	3	30	
Carbon tetrachloride	ug/L	<0.19	20	20	23.7	26.5	118	133	71-143	11	30	
Chlorobenzene	ug/L	<0.17	20	20	20.1	20.8	101	104	75-125	3	30	
Chloroethane	ug/L	<0.49	20	20	32.9	30.2	164	151	75-129	8	30	CH,M0
Chloroform	ug/L	<0.45	20	20	18.9	21.4	94	107	66-132	12	30	
Chloromethane	ug/L	<0.16	20	20	21.1	21.9	105	110	53-137	4	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	19.9	24.1	100	120	67-133	19	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	21.1	21.3	106	106	66-125	1	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479213

Parameter	Units	10479601001		3317288		3317289		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Dibromochloromethane	ug/L	<0.12	20	20	20.2	20.9	101	105	62-132	4	30			
Dibromomethane	ug/L	<0.16	20	20	20.8	20.5	104	103	67-125	1	30			
Dichlorodifluoromethane	ug/L	<0.23	20	20	22.2	23.7	111	119	71-142	7	30			
Dichlorofluoromethane	ug/L	<0.14	20	20	19.9	22.2	100	111	70-131	11	30	N2		
Diisopropyl ether	ug/L	<0.13	20	20	19.6	22.8	98	114	63-131	15	30			
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	18.2	21.7	91	109	66-128	18	30			
Ethylbenzene	ug/L	0.26J	20	20	23.1	24.6	114	122	74-126	7	30			
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	26.5	22.7	132	113	68-143	15	30			
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	21.5	23.6	108	118	74-130	9	30			
m&p-Xylene	ug/L	<0.31	40	40	45.3	48.8	113	122	69-132	8	30			
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.0	23.2	95	116	65-131	20	30			
Methylene Chloride	ug/L	<0.98	20	20	18.2	20.8	91	104	57-125	14	30			
n-Butylbenzene	ug/L	<0.24	20	20	25.1	25.2	126	126	71-131	0	30			
n-Propylbenzene	ug/L	<0.10	20	20	24.1	25.5	121	128	67-138	6	30			
Naphthalene	ug/L	<0.48	20	20	22.5	26.1	113	131	60-130	15	30	M1		
o-Xylene	ug/L	<0.16	20	20	21.5	23.8	107	119	69-131	10	30			
p-Isopropyltoluene	ug/L	<0.15	20	20	24.3	24.9	121	124	72-133	2	30			
sec-Butylbenzene	ug/L	<0.15	20	20	27.5	27.7	137	138	73-134	1	30	M1		
Styrene	ug/L	<0.19	20	20	21.6	23.0	108	115	72-125	7	30			
tert-Amylmethyl ether	ug/L	<0.11	20	20	18.9	21.2	94	106	67-125	11	30			
tert-Butyl Alcohol	ug/L	<1.2	200	200	207	219	104	110	64-137	6	30			
tert-Butylbenzene	ug/L	<0.15	20	20	22.9	24.4	115	122	70-143	6	30			
Tetrachloroethene	ug/L	<0.17	20	20	22.0	23.7	110	118	72-129	7	30			
Tetrahydrofuran	ug/L	<2.2	200	200	223	233	111	116	66-128	4	30			
Toluene	ug/L	0.36J	20	20	22.0	22.4	108	110	73-125	2	30			
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	20.0	22.1	100	110	62-137	10	30			
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	21.2	21.7	106	108	61-136	2	30			
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	55.6	61.5	111	123	45-128	10	30			
Trichloroethene	ug/L	<0.15	20	20	23.4	19.5	117	98	74-132	18	30			
Trichlorofluoromethane	ug/L	<0.23	20	20	19.5	21.7	97	108	75-139	11	30			
Vinyl acetate	ug/L	<1.1	20	20	20.2	23.8	101	119	51-135	16	30			
Vinyl chloride	ug/L	<0.092	20	20	22.8	24.5	114	123	68-146	7	30			
Xylene (Total)	ug/L	<0.31	60	60	66.8	72.6	111	121	67-137	8	30			
1,2-Dichloroethane-d4 (S)	%						91	102	75-136					
4-Bromofluorobenzene (S)	%						102	101	75-125					
Toluene-d8 (S)	%						97	98	75-125					

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479213

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

CH The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479213

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479213

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10479213001	Silva-GW-061319	EPA 8260B	613563		

REPORT OF LABORATORY ANALYSIS

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Document Name: Sample Condition Upon Receipt Form	Document Revised: 09May2019 Page 1 of 1
Document No.: F-MN-L-213-rev.28	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name:

Project #:

WO# : 10479213

Courier:

CH2M Hill - UPRR

PM: JMG

Due Date: 06/21/19

Fed Ex UPS USPS Client
 Pace SpeeDee Commercial See Exception

CLIENT: UPRR_Jacobs

Tracking Number: 4934 3730 1870

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other: PS Temp Blank? Yes No

Thermometer: T1(0461) T2(1336) T3(0459) T4(0254) T5(0489) Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: _____ °C	Average Corrected Temp (no temp blank only): <u>2.5</u> °C	See Exceptions <input checked="" type="checkbox"/>
Correction Factor: <u>-0.1</u>	Cooler Temp Corrected w/temp blank: _____ °C		

USDA Regulated Soil: (N/A, water sample/Other: _____) Date/Initials of Person Examining Contents: EPT 06/14/19
 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No
 If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

	COMMENTS:
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	
All containers needing acid/base preservation have been checked? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. Sample # <input type="checkbox"/> NaOH <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No See Exception
Exceptions: <u>VOA</u> , Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Chlorine? <input type="checkbox"/> No pH Paper Lot# <input type="checkbox"/>
	Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. <u>SHIPPED w/ WO: 10479205</u>
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): <u>209352</u>


CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____ Field Data Required? Yes No
 Comments/Resolution: _____

Project Manager Review:

Note: Whenever there is a discrepancy affecting No JENNI GROSS Date: 06/14/19
 hold, incorrect preservative, out of temp, incorrect containers), _____
 ice samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of

Labeled by: GRT

	Document Name: SCUR Exception Form – Coolers Above 6°C	Document Revised: 08Apr2019 Page 1 of 1
	Document No.: F-MN-C-298-Rev.02	Issuing Authority: Pace Minnesota Quality Office

During sample triage, this form is to be placed in each cooler that arrives above 6.0 degrees Celsius

SCUR Exceptions:

Workorder #: 10479213

Out of Temp Sample IDs	Container Type	# of Containers	PM Notified? <input type="checkbox"/> Yes <input type="checkbox"/> No															
			If yes, indicate who was contacted/date/time. If no, indicate reason why.															
			Multiple Cooler Project? <input type="checkbox"/> Yes <input type="checkbox"/> No <small>If you answered yes, fill out information to the left</small>															
			No Temp Blank															
			<table border="1"> <thead> <tr> <th>Read Temp</th> <th>Corrected Temp</th> <th>Average Temp</th> </tr> </thead> <tbody> <tr> <td align="center">2.6</td> <td align="center">2.5</td> <td align="center">2.5</td> </tr> <tr> <td align="center">3.9</td> <td align="center">3.8</td> <td></td> </tr> <tr> <td align="center">1.7</td> <td align="center">1.6</td> <td></td> </tr> <tr> <td align="center">2.3</td> <td align="center">2.2</td> <td></td> </tr> </tbody> </table>	Read Temp	Corrected Temp	Average Temp	2.6	2.5	2.5	3.9	3.8		1.7	1.6		2.3	2.2	
Read Temp	Corrected Temp	Average Temp																
2.6	2.5	2.5																
3.9	3.8																	
1.7	1.6																	
2.3	2.2																	

Tracking Number/Temperature

Other Issues		
Issue Type:	Container Type	# of Containers
Sample ID		

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition? <input type="checkbox"/> Yes <input type="checkbox"/> No	Initials
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	



Document Name:
Headspace Exception

Document Revised: 17Dec2018
Page 1 of 1

Document No.:
F-MN-C-276-Rev.01

Issuing Authority:
Pace Minnesota Quality Office

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
SILVA-GW-061319	0	3	0	3	N

June 20, 2019

David Hodson
Jacobs
155 Grand Ave
#800
Oakland, CA 94612

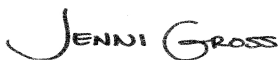
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479214

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 14, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, Jacobs
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479214

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #:74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Vermont Certification #: VT-027053137

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479214

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10479214001	Asher-GW-061319	Water	06/13/19 09:45	06/14/19 09:40

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479214

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10479214001	Asher-GW-061319	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479214

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 20, 2019

General Information:

1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

QC Batch: 613563

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 3315197)
 - Chloroethane
- MS (Lab ID: 3317288)
 - Chloroethane
- MSD (Lab ID: 3317289)
 - Chloroethane

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 613563

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- LCS (Lab ID: 3315197)
 - Chloroethane

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479214

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 20, 2019

QC Batch: 613563

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10479601001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 3317288)
 - Chloroethane
- MSD (Lab ID: 3317289)
 - Chloroethane

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3317288)
 - 2-Hexanone
 - sec-Butylbenzene
- MSD (Lab ID: 3317289)
 - 4-Methyl-2-pentanone (MIBK)
 - Naphthalene
 - sec-Butylbenzene

R1: RPD value was outside control limits.

- MSD (Lab ID: 3317289)
 - Acrolein

Additional Comments:

Analyte Comments:

QC Batch: 613563

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- Asher-GW-061319 (Lab ID: 10479214001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- BLANK (Lab ID: 3315196)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3315197)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3317288)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3317289)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479214

Method: EPA 8260B
Description: 8260B MSV Low Level
Client: UPRR_Jacobs
Date: June 20, 2019

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479214

Sample: Asher-GW-061319 Lab ID: 10479214001 Collected: 06/13/19 09:45 Received: 06/14/19 09:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		06/17/19 19:07	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		06/17/19 19:07	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		06/17/19 19:07	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		06/17/19 19:07	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		06/17/19 19:07	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		06/17/19 19:07	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	1.0	0.16	1		06/17/19 19:07	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		06/17/19 19:07	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		06/17/19 19:07	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		06/17/19 19:07	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		06/17/19 19:07	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		06/17/19 19:07	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		06/17/19 19:07	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		06/17/19 19:07	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		06/17/19 19:07	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		06/17/19 19:07	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		06/17/19 19:07	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		06/17/19 19:07	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		06/17/19 19:07	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		06/17/19 19:07	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		06/17/19 19:07	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		06/17/19 19:07	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		06/17/19 19:07	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		06/17/19 19:07	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		06/17/19 19:07	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		06/17/19 19:07	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		06/17/19 19:07	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		06/17/19 19:07	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		06/17/19 19:07	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		06/17/19 19:07	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		06/17/19 19:07	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		06/17/19 19:07	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		06/17/19 19:07	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		06/17/19 19:07	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		06/17/19 19:07	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		06/17/19 19:07	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		06/17/19 19:07	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		06/17/19 19:07	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		06/17/19 19:07	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		06/17/19 19:07	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		06/17/19 19:07	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		06/17/19 19:07	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		06/17/19 19:07	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		06/17/19 19:07	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		06/17/19 19:07	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		06/17/19 19:07	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10479214

Sample: Asher-GW-061319 **Lab ID: 10479214001** Collected: 06/13/19 09:45 Received: 06/14/19 09:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level									
Analytical Method: EPA 8260B									
Dibromomethane	<0.16	ug/L	1.0	0.16	1		06/17/19 19:07	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		06/17/19 19:07	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		06/17/19 19:07	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		06/17/19 19:07	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		06/17/19 19:07	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		06/17/19 19:07	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		06/17/19 19:07	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		06/17/19 19:07	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		06/17/19 19:07	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		06/17/19 19:07	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		06/17/19 19:07	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		06/17/19 19:07	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		06/17/19 19:07	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		06/17/19 19:07	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		06/17/19 19:07	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		06/17/19 19:07	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		06/17/19 19:07	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		06/17/19 19:07	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		06/17/19 19:07	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		06/17/19 19:07	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		06/17/19 19:07	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	1.0	0.20	1		06/17/19 19:07	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		06/17/19 19:07	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		06/17/19 19:07	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		06/17/19 19:07	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		06/17/19 19:07	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		06/17/19 19:07	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/17/19 19:07	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		06/17/19 19:07	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		06/17/19 19:07	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/17/19 19:07	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		06/17/19 19:07	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		06/17/19 19:07	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		06/17/19 19:07	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	102	%	75-136		1		06/17/19 19:07	17060-07-0	
Toluene-d8 (S)	101	%	75-125		1		06/17/19 19:07	2037-26-5	
4-Bromofluorobenzene (S)	98	%	75-125		1		06/17/19 19:07	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479214

QC Batch: 613563

Analysis Method: EPA 8260B

QC Batch Method: EPA 8260B

Analysis Description: 8260 MSV LL Water

Associated Lab Samples: 10479214001

METHOD BLANK: 3315196

Matrix: Water

Associated Lab Samples: 10479214001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	06/17/19 17:56	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	06/17/19 17:56	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	06/17/19 17:56	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	06/17/19 17:56	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	06/17/19 17:56	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	06/17/19 17:56	
1,1-Dichloroethene	ug/L	<0.16	1.0	0.16	06/17/19 17:56	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	06/17/19 17:56	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	06/17/19 17:56	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	06/17/19 17:56	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	06/17/19 17:56	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	06/17/19 17:56	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	06/17/19 17:56	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	06/17/19 17:56	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	06/17/19 17:56	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	06/17/19 17:56	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	06/17/19 17:56	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	06/17/19 17:56	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	06/17/19 17:56	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	06/17/19 17:56	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	06/17/19 17:56	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	06/17/19 17:56	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	06/17/19 17:56	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	06/17/19 17:56	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	06/17/19 17:56	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	06/17/19 17:56	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	06/17/19 17:56	
2-Hexanone	ug/L	<0.88	5.0	0.88	06/17/19 17:56	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	06/17/19 17:56	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	06/17/19 17:56	
Acetone	ug/L	<9.2	20.0	9.2	06/17/19 17:56	
Acrolein	ug/L	<1.2	10.0	1.2	06/17/19 17:56	
Acrylonitrile	ug/L	<0.91	10.0	0.91	06/17/19 17:56	
Benzene	ug/L	<0.10	0.50	0.10	06/17/19 17:56	
Bromobenzene	ug/L	<0.21	0.50	0.21	06/17/19 17:56	
Bromochloromethane	ug/L	<0.27	1.0	0.27	06/17/19 17:56	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	06/17/19 17:56	
Bromoform	ug/L	<0.80	4.0	0.80	06/17/19 17:56	
Bromomethane	ug/L	<1.8	4.0	1.8	06/17/19 17:56	
Carbon disulfide	ug/L	<0.078	1.0	0.078	06/17/19 17:56	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	06/17/19 17:56	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479214

METHOD BLANK: 3315196

Matrix: Water

Associated Lab Samples: 10479214001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	06/17/19 17:56	
Chloroethane	ug/L	<0.49	1.0	0.49	06/17/19 17:56	
Chloroform	ug/L	<0.45	1.0	0.45	06/17/19 17:56	
Chloromethane	ug/L	<0.16	4.0	0.16	06/17/19 17:56	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	06/17/19 17:56	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	06/17/19 17:56	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	06/17/19 17:56	
Dibromomethane	ug/L	<0.16	1.0	0.16	06/17/19 17:56	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	06/17/19 17:56	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	06/17/19 17:56	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	06/17/19 17:56	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	06/17/19 17:56	
Ethylbenzene	ug/L	<0.14	0.50	0.14	06/17/19 17:56	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	06/17/19 17:56	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	06/17/19 17:56	
m&p-Xylene	ug/L	<0.31	1.0	0.31	06/17/19 17:56	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	06/17/19 17:56	
Methylene Chloride	ug/L	<0.98	4.0	0.98	06/17/19 17:56	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	06/17/19 17:56	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	06/17/19 17:56	
Naphthalene	ug/L	<0.48	1.0	0.48	06/17/19 17:56	
o-Xylene	ug/L	<0.16	0.50	0.16	06/17/19 17:56	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	06/17/19 17:56	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	06/17/19 17:56	
Styrene	ug/L	<0.19	0.50	0.19	06/17/19 17:56	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	06/17/19 17:56	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	06/17/19 17:56	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	06/17/19 17:56	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	06/17/19 17:56	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	06/17/19 17:56	
Toluene	ug/L	<0.083	0.50	0.083	06/17/19 17:56	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	06/17/19 17:56	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	06/17/19 17:56	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	06/17/19 17:56	
Trichloroethene	ug/L	<0.15	0.40	0.15	06/17/19 17:56	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	06/17/19 17:56	
Vinyl acetate	ug/L	<1.1	10.0	1.1	06/17/19 17:56	
Vinyl chloride	ug/L	<0.092	0.20	0.092	06/17/19 17:56	
Xylene (Total)	ug/L	<0.31	1.5	0.31	06/17/19 17:56	
1,2-Dichloroethane-d4 (S)	%	102	75-136		06/17/19 17:56	
4-Bromofluorobenzene (S)	%	97	75-125		06/17/19 17:56	
Toluene-d8 (S)	%	101	75-125		06/17/19 17:56	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479214

LABORATORY CONTROL SAMPLE: 3315197

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	18.8	94	68-141	
1,1,1-Trichloroethane	ug/L	20	20.6	103	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	19.9	99	73-125	
1,1,2-Trichloroethane	ug/L	20	21.0	105	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	20.9	104	69-132	
1,1-Dichloroethane	ug/L	20	19.9	99	73-125	
1,1-Dichloroethene	ug/L	20	18.8	94	71-126	
1,1-Dichloropropene	ug/L	20	20.4	102	73-126	
1,2,3-Trichlorobenzene	ug/L	20	19.7	98	72-126	
1,2,3-Trichloropropane	ug/L	20	19.4	97	75-126	
1,2,4-Trichlorobenzene	ug/L	20	19.3	96	71-134	
1,2,4-Trimethylbenzene	ug/L	20	18.4	92	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	46.8	94	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	20.7	104	75-129	
1,2-Dichlorobenzene	ug/L	20	18.0	90	75-129	
1,2-Dichloroethane	ug/L	20	19.3	96	75-125	
1,2-Dichloroethene (Total)	ug/L	40	39.5	99	74-125	N2
1,2-Dichloropropane	ug/L	20	21.7	108	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.8	104	75-127	
1,3-Dichlorobenzene	ug/L	20	19.1	96	75-126	
1,3-Dichloropropane	ug/L	20	20.8	104	75-125	
1,4-Dichlorobenzene	ug/L	20	18.5	93	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	432	108	72-129	
2,2,4-Trimethylpentane	ug/L	20	19.9	99	72-128	N2
2,2-Dichloropropane	ug/L	20	22.7	114	65-138	
2-Butanone (MEK)	ug/L	100	103	103	59-144	
2-Chlorotoluene	ug/L	20	19.5	98	75-127	
2-Hexanone	ug/L	100	106	106	73-134	
4-Chlorotoluene	ug/L	20	19.2	96	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	104	104	62-141	
Acetone	ug/L	100	100	100	60-137	
Acrolein	ug/L	200	173	86	60-141	
Acrylonitrile	ug/L	200	207	104	75-129	
Benzene	ug/L	20	19.7	98	73-125	
Bromobenzene	ug/L	20	19.4	97	73-125	
Bromochloromethane	ug/L	20	20.0	100	75-135	
Bromodichloromethane	ug/L	20	19.9	99	75-125	
Bromoform	ug/L	20	20.4	102	67-136	
Bromomethane	ug/L	20	22.1	110	30-150	
Carbon disulfide	ug/L	20	16.5	83	47-137	
Carbon tetrachloride	ug/L	20	22.1	111	75-125	
Chlorobenzene	ug/L	20	17.9	90	75-125	
Chloroethane	ug/L	20	38.2	191	63-136	CH,L3
Chloroform	ug/L	20	19.6	98	73-128	
Chloromethane	ug/L	20	24.2	121	55-130	
cis-1,2-Dichloroethene	ug/L	20	20.0	100	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.1	96	74-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479214

LABORATORY CONTROL SAMPLE: 3315197

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	18.5	93	75-125	
Dibromomethane	ug/L	20	19.7	98	75-125	
Dichlorodifluoromethane	ug/L	20	23.2	116	63-132	
Dichlorofluoromethane	ug/L	20	21.9	109	68-127	N2
Diisopropyl ether	ug/L	20	19.0	95	71-131	
Ethyl-tert-butyl ether	ug/L	20	19.2	96	75-125	
Ethylbenzene	ug/L	20	19.9	100	75-125	
Hexachloro-1,3-butadiene	ug/L	20	18.6	93	72-134	
Isopropylbenzene (Cumene)	ug/L	20	18.4	92	75-125	
m&p-Xylene	ug/L	40	38.8	97	75-126	
Methyl-tert-butyl ether	ug/L	20	20.0	100	75-125	
Methylene Chloride	ug/L	20	19.7	99	70-125	
n-Butylbenzene	ug/L	20	19.9	99	75-126	
n-Propylbenzene	ug/L	20	19.4	97	73-127	
Naphthalene	ug/L	20	19.8	99	63-128	
o-Xylene	ug/L	20	18.2	91	75-128	
p-Isopropyltoluene	ug/L	20	20.1	101	75-125	
sec-Butylbenzene	ug/L	20	21.7	109	75-126	
Styrene	ug/L	20	19.3	96	75-125	
tert-Amylmethyl ether	ug/L	20	17.5	87	75-125	
tert-Butyl Alcohol	ug/L	200	207	103	75-130	
tert-Butylbenzene	ug/L	20	19.2	96	75-131	
Tetrachloroethene	ug/L	20	17.9	90	74-125	
Tetrahydrofuran	ug/L	200	216	108	64-138	
Toluene	ug/L	20	19.0	95	74-125	
trans-1,2-Dichloroethene	ug/L	20	19.5	98	68-128	
trans-1,3-Dichloropropene	ug/L	20	18.6	93	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	48.9	98	60-127	
Trichloroethene	ug/L	20	20.4	102	75-127	
Trichlorofluoromethane	ug/L	20	21.4	107	72-133	
Vinyl acetate	ug/L	20	19.6	98	61-129	
Vinyl chloride	ug/L	20	23.8	119	75-128	
Xylene (Total)	ug/L	60	57.0	95	75-125	
1,2-Dichloroethane-d4 (S)	%			108	75-136	
4-Bromofluorobenzene (S)	%			98	75-125	
Toluene-d8 (S)	%			96	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3317288 3317289

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10479601001 Result	Spike Conc.	Spike Conc.	Conc.								
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20.8	21.7	104	109	75-140	4	30		
1,1,1-Trichloroethane	ug/L	<0.14	20	20	21.4	24.3	107	121	74-136	12	30		
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	22.2	23.9	111	119	66-134	7	30		
1,1,2-Trichloroethane	ug/L	<0.18	20	20	23.5	23.8	118	119	75-126	1	30		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479214

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3317288			3317289							
Parameter	Units	10479601001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual	
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD		
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	22.2	26.0	111	130	65-146	16	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	20.5	22.6	103	113	68-132	9	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	20.5	22.6	102	113	66-139	10	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	21.8	24.4	109	122	67-134	11	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	24.0	25.2	120	126	67-129	5	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	22.3	24.0	112	120	69-128	7	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	23.6	24.3	118	122	65-140	3	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	21.4	23.7	107	118	71-133	10	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	52.6	57.6	105	115	54-138	9	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	23.2	23.9	116	120	68-125	3	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	20.3	22.1	102	110	74-136	8	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	19.0	20.8	95	104	68-125	9	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	39.9	46.2	100	115	71-126	14	30 N2	
1,2-Dichloropropane	ug/L	<0.16	20	20	24.7	24.7	123	124	67-125	0	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	24.9	27.3	125	137	68-137	9	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.4	23.3	107	117	75-131	9	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	23.1	23.6	116	118	71-125	2	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	20.8	22.5	104	113	74-126	8	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	432	445	108	111	68-125	3	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	24.0	23.5	120	117	54-129	2	30 N2	
2,2-Dichloropropane	ug/L	<0.17	20	20	24.6	25.8	123	129	69-139	5	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	109	115	109	115	54-144	5	30	
2-Chlorotoluene	ug/L	<0.16	20	20	22.5	24.8	112	124	75-134	10	30	
2-Hexanone	ug/L	<0.88	100	100	142	133	142	133	58-137	6	30 M1	
4-Chlorotoluene	ug/L	<0.13	20	20	21.8	24.4	109	122	72-133	11	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	114	132	114	132	60-129	15	30 M1	
Acetone	ug/L	<9.2	100	100	129	105	122	98	62-132	21	30	
Acrolein	ug/L	<1.2	200	200	167	267	84	133	30-150	46	30 R1	
Acrylonitrile	ug/L	<0.91	200	200	191	231	96	115	68-125	19	30	
Benzene	ug/L	0.10J	20	20	21.4	22.5	107	112	68-125	5	30	
Bromobenzene	ug/L	<0.21	20	20	21.1	23.1	105	116	73-126	9	30	
Bromochloromethane	ug/L	<0.27	20	20	19.2	21.9	96	110	66-143	13	30	
Bromodichloromethane	ug/L	<0.22	20	20	22.7	22.8	113	114	74-125	0	30	
Bromoform	ug/L	<0.80	20	20	21.2	23.0	106	115	64-134	8	30	
Bromomethane	ug/L	<1.8	20	20	19.7	20.1	98	100	30-150	2	30	
Carbon disulfide	ug/L	0.39J	20	20	19.6	20.2	96	99	43-147	3	30	
Carbon tetrachloride	ug/L	<0.19	20	20	23.7	26.5	118	133	71-143	11	30	
Chlorobenzene	ug/L	<0.17	20	20	20.1	20.8	101	104	75-125	3	30	
Chloroethane	ug/L	<0.49	20	20	32.9	30.2	164	151	75-129	8	30 CH,M0	
Chloroform	ug/L	<0.45	20	20	18.9	21.4	94	107	66-132	12	30	
Chloromethane	ug/L	<0.16	20	20	21.1	21.9	105	110	53-137	4	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	19.9	24.1	100	120	67-133	19	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	21.1	21.3	106	106	66-125	1	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479214

Parameter	Units	3317288		3317289		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		10479601001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Dibromochloromethane	ug/L	<0.12	20	20	20.2	20.9	101	105	62-132	4	30		
Dibromomethane	ug/L	<0.16	20	20	20.8	20.5	104	103	67-125	1	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	22.2	23.7	111	119	71-142	7	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	19.9	22.2	100	111	70-131	11	30	N2	
Diisopropyl ether	ug/L	<0.13	20	20	19.6	22.8	98	114	63-131	15	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	18.2	21.7	91	109	66-128	18	30		
Ethylbenzene	ug/L	0.26J	20	20	23.1	24.6	114	122	74-126	7	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	26.5	22.7	132	113	68-143	15	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	21.5	23.6	108	118	74-130	9	30		
m&p-Xylene	ug/L	<0.31	40	40	45.3	48.8	113	122	69-132	8	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.0	23.2	95	116	65-131	20	30		
Methylene Chloride	ug/L	<0.98	20	20	18.2	20.8	91	104	57-125	14	30		
n-Butylbenzene	ug/L	<0.24	20	20	25.1	25.2	126	126	71-131	0	30		
n-Propylbenzene	ug/L	<0.10	20	20	24.1	25.5	121	128	67-138	6	30		
Naphthalene	ug/L	<0.48	20	20	22.5	26.1	113	131	60-130	15	30	M1	
o-Xylene	ug/L	<0.16	20	20	21.5	23.8	107	119	69-131	10	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	24.3	24.9	121	124	72-133	2	30		
sec-Butylbenzene	ug/L	<0.15	20	20	27.5	27.7	137	138	73-134	1	30	M1	
Styrene	ug/L	<0.19	20	20	21.6	23.0	108	115	72-125	7	30		
tert-Amylmethyl ether	ug/L	<0.11	20	20	18.9	21.2	94	106	67-125	11	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	207	219	104	110	64-137	6	30		
tert-Butylbenzene	ug/L	<0.15	20	20	22.9	24.4	115	122	70-143	6	30		
Tetrachloroethene	ug/L	<0.17	20	20	22.0	23.7	110	118	72-129	7	30		
Tetrahydrofuran	ug/L	<2.2	200	200	223	233	111	116	66-128	4	30		
Toluene	ug/L	0.36J	20	20	22.0	22.4	108	110	73-125	2	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	20.0	22.1	100	110	62-137	10	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	21.2	21.7	106	108	61-136	2	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	55.6	61.5	111	123	45-128	10	30		
Trichloroethene	ug/L	<0.15	20	20	23.4	19.5	117	98	74-132	18	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	19.5	21.7	97	108	75-139	11	30		
Vinyl acetate	ug/L	<1.1	20	20	20.2	23.8	101	119	51-135	16	30		
Vinyl chloride	ug/L	<0.092	20	20	22.8	24.5	114	123	68-146	7	30		
Xylene (Total)	ug/L	<0.31	60	60	66.8	72.6	111	121	67-137	8	30		
1,2-Dichloroethane-d4 (S)	%						91	102	75-136				
4-Bromofluorobenzene (S)	%						102	101	75-125				
Toluene-d8 (S)	%						97	98	75-125				

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479214

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

CH The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479214

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479214

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10479214001	Asher-GW-061319	EPA 8260B	613563		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: CH2M Hill - UPRR Project #: **WO# : 10479214**

PM: JMG Due Date: 06/21/19
CLIENT: UPRR_Jacobs

Courier: Fed Ex UPS USPS Client
 Pace SpeeDee Commercial See Exception

Tracking Number: 4934 3730 1870

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other: PS Temp Blank? Yes No

Thermometer: T1(0461) T2(1336) T3(0459) T4(0254) T5(0489) Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: _____ °C	Average Corrected Temp See Exceptions (no temp blank only): <u>2.5</u> °C <input checked="" type="checkbox"/>
Correction Factor: <u>-0.1</u>	Cooler Temp Corrected w/temp blank: _____ °C	

USDA Regulated Soil: N/A, water sample/Other: _____ Date/Initials of Person Examining Contents: EPT 06/14/19

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

	COMMENTS:
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	
All containers needing acid/base preservation have been checked? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. Sample # <input type="checkbox"/> NaOH <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide) <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> See Exception
Exceptions: <u>VOA</u> , Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Chlorine? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> See Exception
	Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. <u>SHARED w/ WO: 10479205</u>
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): <u>209352</u>

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____ Field Data Required? Yes No

Comments/Resolution: _____


Project Manager Review:

JENNI GROSS

Date: 06/14/19

Note: Whenever there is a discrepancy affecting N hold, incorrect preservative, out of temp, incorrect containers), compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of

Labeled by: EPT

	Document Name: SCUR Exception Form - Coolers Above 6°C	Document Revised: 08Apr2019 Page 1 of 1
	Document No.: F-MN-C-298-Rev.02	Issuing Authority: Pace Minnesota Quality Office

During sample triage, this form is to be placed in each cooler that arrives above 6.0 degrees Celsius

SCUR Exceptions:

Workorder #: 10479214

Out of Temp Sample IDs	Container Type	# of Containers	PM Notified? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, indicate who was contacted/date/time. If no, indicate reason why.																		
			Multiple Cooler Project? <input type="checkbox"/> Yes <input type="checkbox"/> No <small>If you answered yes, fill out information to the left.</small> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="3" style="text-align: center;">No Temp Blank</th> </tr> <tr> <th style="width: 33%;">Read Temp</th> <th style="width: 33%;">Corrected Temp</th> <th style="width: 33%;">Average Temp</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">2.6</td><td style="text-align: center;">2.5</td><td style="text-align: center;">2.5</td></tr> <tr><td style="text-align: center;">3.9</td><td style="text-align: center;">3.8</td><td> </td></tr> <tr><td style="text-align: center;">1.7</td><td style="text-align: center;">1.6</td><td> </td></tr> <tr><td style="text-align: center;">2.3</td><td style="text-align: center;">2.2</td><td> </td></tr> </tbody> </table>	No Temp Blank			Read Temp	Corrected Temp	Average Temp	2.6	2.5	2.5	3.9	3.8		1.7	1.6		2.3	2.2	
No Temp Blank																					
Read Temp	Corrected Temp	Average Temp																			
2.6	2.5	2.5																			
3.9	3.8																				
1.7	1.6																				
2.3	2.2																				

Tracking Number/Temperature

Other Issues		
Issue Type:	Container Type	# of Containers
Sample ID		

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition?	Initials
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	



Document Name:
Headspace Exception

Document Revised: 17Dec2018
Page 1 of 1

Document No.:
F-MN-C-276-Rev.01

Issuing Authority:
Pace Minnesota Quality Office

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
ASTER-GW-06/319	0	1	2	3	N

June 20, 2019

David Hodson
Jacobs
155 Grand Ave
#800
Oakland, CA 94612

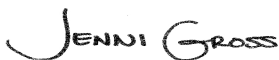
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479215

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 14, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, Jacobs
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479215

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #:74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Vermont Certification #: VT-027053137

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479215

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10479215001	Stark-GW-061319	Water	06/13/19 10:30	06/14/19 09:40

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479215

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10479215001	Stark-GW-061319	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479215

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 20, 2019

General Information:

1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

QC Batch: 613563

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 3315197)
 - Chloroethane
- MS (Lab ID: 3317288)
 - Chloroethane
- MSD (Lab ID: 3317289)
 - Chloroethane

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 613563

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- LCS (Lab ID: 3315197)
 - Chloroethane

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479215

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 20, 2019

QC Batch: 613563

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10479601001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 3317288)
 - Chloroethane
- MSD (Lab ID: 3317289)
 - Chloroethane

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3317288)
 - 2-Hexanone
 - sec-Butylbenzene
- MSD (Lab ID: 3317289)
 - 4-Methyl-2-pentanone (MIBK)
 - Naphthalene
 - sec-Butylbenzene

R1: RPD value was outside control limits.

- MSD (Lab ID: 3317289)
 - Acrolein

Additional Comments:

Analyte Comments:

QC Batch: 613563

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3315196)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3315197)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3317288)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3317289)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- Stark-GW-061319 (Lab ID: 10479215001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479215

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 20, 2019

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10479215

Sample: **Stark-GW-061319** Lab ID: **10479215001** Collected: 06/13/19 10:30 Received: 06/14/19 09:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		06/17/19 19:31	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		06/17/19 19:31	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		06/17/19 19:31	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		06/17/19 19:31	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		06/17/19 19:31	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		06/17/19 19:31	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	1.0	0.16	1		06/17/19 19:31	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		06/17/19 19:31	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		06/17/19 19:31	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		06/17/19 19:31	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		06/17/19 19:31	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		06/17/19 19:31	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		06/17/19 19:31	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		06/17/19 19:31	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		06/17/19 19:31	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		06/17/19 19:31	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		06/17/19 19:31	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		06/17/19 19:31	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		06/17/19 19:31	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		06/17/19 19:31	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		06/17/19 19:31	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		06/17/19 19:31	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		06/17/19 19:31	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		06/17/19 19:31	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		06/17/19 19:31	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		06/17/19 19:31	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		06/17/19 19:31	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		06/17/19 19:31	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		06/17/19 19:31	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		06/17/19 19:31	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		06/17/19 19:31	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		06/17/19 19:31	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		06/17/19 19:31	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		06/17/19 19:31	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		06/17/19 19:31	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		06/17/19 19:31	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		06/17/19 19:31	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		06/17/19 19:31	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		06/17/19 19:31	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		06/17/19 19:31	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		06/17/19 19:31	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		06/17/19 19:31	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		06/17/19 19:31	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		06/17/19 19:31	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		06/17/19 19:31	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		06/17/19 19:31	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Project No.: 10479215

Sample: Stark-GW-061319 **Lab ID: 10479215001** Collected: 06/13/19 10:30 Received: 06/14/19 09:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level									
Analytical Method: EPA 8260B									
Dibromomethane	<0.16	ug/L	1.0	0.16	1		06/17/19 19:31	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		06/17/19 19:31	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		06/17/19 19:31	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		06/17/19 19:31	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		06/17/19 19:31	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		06/17/19 19:31	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		06/17/19 19:31	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		06/17/19 19:31	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		06/17/19 19:31	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		06/17/19 19:31	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		06/17/19 19:31	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		06/17/19 19:31	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		06/17/19 19:31	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		06/17/19 19:31	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		06/17/19 19:31	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		06/17/19 19:31	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		06/17/19 19:31	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		06/17/19 19:31	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		06/17/19 19:31	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		06/17/19 19:31	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		06/17/19 19:31	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	1.0	0.20	1		06/17/19 19:31	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		06/17/19 19:31	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		06/17/19 19:31	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		06/17/19 19:31	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		06/17/19 19:31	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		06/17/19 19:31	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/17/19 19:31	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		06/17/19 19:31	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		06/17/19 19:31	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/17/19 19:31	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		06/17/19 19:31	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		06/17/19 19:31	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		06/17/19 19:31	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	98	%	75-136		1		06/17/19 19:31	17060-07-0	
Toluene-d8 (S)	99	%	75-125		1		06/17/19 19:31	2037-26-5	
4-Bromofluorobenzene (S)	99	%	75-125		1		06/17/19 19:31	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479215

QC Batch: 613563 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10479215001

METHOD BLANK: 3315196 Matrix: Water
Associated Lab Samples: 10479215001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	06/17/19 17:56	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	06/17/19 17:56	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	06/17/19 17:56	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	06/17/19 17:56	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	06/17/19 17:56	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	06/17/19 17:56	
1,1-Dichloroethene	ug/L	<0.16	1.0	0.16	06/17/19 17:56	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	06/17/19 17:56	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	06/17/19 17:56	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	06/17/19 17:56	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	06/17/19 17:56	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	06/17/19 17:56	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	06/17/19 17:56	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	06/17/19 17:56	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	06/17/19 17:56	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	06/17/19 17:56	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	06/17/19 17:56	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	06/17/19 17:56	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	06/17/19 17:56	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	06/17/19 17:56	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	06/17/19 17:56	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	06/17/19 17:56	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	06/17/19 17:56	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	06/17/19 17:56	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	06/17/19 17:56	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	06/17/19 17:56	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	06/17/19 17:56	
2-Hexanone	ug/L	<0.88	5.0	0.88	06/17/19 17:56	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	06/17/19 17:56	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	06/17/19 17:56	
Acetone	ug/L	<9.2	20.0	9.2	06/17/19 17:56	
Acrolein	ug/L	<1.2	10.0	1.2	06/17/19 17:56	
Acrylonitrile	ug/L	<0.91	10.0	0.91	06/17/19 17:56	
Benzene	ug/L	<0.10	0.50	0.10	06/17/19 17:56	
Bromobenzene	ug/L	<0.21	0.50	0.21	06/17/19 17:56	
Bromochloromethane	ug/L	<0.27	1.0	0.27	06/17/19 17:56	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	06/17/19 17:56	
Bromoform	ug/L	<0.80	4.0	0.80	06/17/19 17:56	
Bromomethane	ug/L	<1.8	4.0	1.8	06/17/19 17:56	
Carbon disulfide	ug/L	<0.078	1.0	0.078	06/17/19 17:56	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	06/17/19 17:56	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479215

METHOD BLANK: 3315196

Matrix: Water

Associated Lab Samples: 10479215001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	06/17/19 17:56	
Chloroethane	ug/L	<0.49	1.0	0.49	06/17/19 17:56	
Chloroform	ug/L	<0.45	1.0	0.45	06/17/19 17:56	
Chloromethane	ug/L	<0.16	4.0	0.16	06/17/19 17:56	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	06/17/19 17:56	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	06/17/19 17:56	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	06/17/19 17:56	
Dibromomethane	ug/L	<0.16	1.0	0.16	06/17/19 17:56	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	06/17/19 17:56	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	06/17/19 17:56	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	06/17/19 17:56	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	06/17/19 17:56	
Ethylbenzene	ug/L	<0.14	0.50	0.14	06/17/19 17:56	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	06/17/19 17:56	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	06/17/19 17:56	
m&p-Xylene	ug/L	<0.31	1.0	0.31	06/17/19 17:56	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	06/17/19 17:56	
Methylene Chloride	ug/L	<0.98	4.0	0.98	06/17/19 17:56	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	06/17/19 17:56	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	06/17/19 17:56	
Naphthalene	ug/L	<0.48	1.0	0.48	06/17/19 17:56	
o-Xylene	ug/L	<0.16	0.50	0.16	06/17/19 17:56	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	06/17/19 17:56	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	06/17/19 17:56	
Styrene	ug/L	<0.19	0.50	0.19	06/17/19 17:56	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	06/17/19 17:56	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	06/17/19 17:56	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	06/17/19 17:56	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	06/17/19 17:56	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	06/17/19 17:56	
Toluene	ug/L	<0.083	0.50	0.083	06/17/19 17:56	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	06/17/19 17:56	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	06/17/19 17:56	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	06/17/19 17:56	
Trichloroethene	ug/L	<0.15	0.40	0.15	06/17/19 17:56	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	06/17/19 17:56	
Vinyl acetate	ug/L	<1.1	10.0	1.1	06/17/19 17:56	
Vinyl chloride	ug/L	<0.092	0.20	0.092	06/17/19 17:56	
Xylene (Total)	ug/L	<0.31	1.5	0.31	06/17/19 17:56	
1,2-Dichloroethane-d4 (S)	%	102	75-136		06/17/19 17:56	
4-Bromofluorobenzene (S)	%	97	75-125		06/17/19 17:56	
Toluene-d8 (S)	%	101	75-125		06/17/19 17:56	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479215

LABORATORY CONTROL SAMPLE: 3315197

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	18.8	94	68-141	
1,1,1-Trichloroethane	ug/L	20	20.6	103	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	19.9	99	73-125	
1,1,2-Trichloroethane	ug/L	20	21.0	105	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	20.9	104	69-132	
1,1-Dichloroethane	ug/L	20	19.9	99	73-125	
1,1-Dichloroethene	ug/L	20	18.8	94	71-126	
1,1-Dichloropropene	ug/L	20	20.4	102	73-126	
1,2,3-Trichlorobenzene	ug/L	20	19.7	98	72-126	
1,2,3-Trichloropropane	ug/L	20	19.4	97	75-126	
1,2,4-Trichlorobenzene	ug/L	20	19.3	96	71-134	
1,2,4-Trimethylbenzene	ug/L	20	18.4	92	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	46.8	94	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	20.7	104	75-129	
1,2-Dichlorobenzene	ug/L	20	18.0	90	75-129	
1,2-Dichloroethane	ug/L	20	19.3	96	75-125	
1,2-Dichloroethene (Total)	ug/L	40	39.5	99	74-125	N2
1,2-Dichloropropane	ug/L	20	21.7	108	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.8	104	75-127	
1,3-Dichlorobenzene	ug/L	20	19.1	96	75-126	
1,3-Dichloropropane	ug/L	20	20.8	104	75-125	
1,4-Dichlorobenzene	ug/L	20	18.5	93	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	432	108	72-129	
2,2,4-Trimethylpentane	ug/L	20	19.9	99	72-128	N2
2,2-Dichloropropane	ug/L	20	22.7	114	65-138	
2-Butanone (MEK)	ug/L	100	103	103	59-144	
2-Chlorotoluene	ug/L	20	19.5	98	75-127	
2-Hexanone	ug/L	100	106	106	73-134	
4-Chlorotoluene	ug/L	20	19.2	96	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	104	104	62-141	
Acetone	ug/L	100	100	100	60-137	
Acrolein	ug/L	200	173	86	60-141	
Acrylonitrile	ug/L	200	207	104	75-129	
Benzene	ug/L	20	19.7	98	73-125	
Bromobenzene	ug/L	20	19.4	97	73-125	
Bromochloromethane	ug/L	20	20.0	100	75-135	
Bromodichloromethane	ug/L	20	19.9	99	75-125	
Bromoform	ug/L	20	20.4	102	67-136	
Bromomethane	ug/L	20	22.1	110	30-150	
Carbon disulfide	ug/L	20	16.5	83	47-137	
Carbon tetrachloride	ug/L	20	22.1	111	75-125	
Chlorobenzene	ug/L	20	17.9	90	75-125	
Chloroethane	ug/L	20	38.2	191	63-136	CH,L3
Chloroform	ug/L	20	19.6	98	73-128	
Chloromethane	ug/L	20	24.2	121	55-130	
cis-1,2-Dichloroethene	ug/L	20	20.0	100	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.1	96	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479215

LABORATORY CONTROL SAMPLE: 3315197

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	18.5	93	75-125	
Dibromomethane	ug/L	20	19.7	98	75-125	
Dichlorodifluoromethane	ug/L	20	23.2	116	63-132	
Dichlorofluoromethane	ug/L	20	21.9	109	68-127	N2
Diisopropyl ether	ug/L	20	19.0	95	71-131	
Ethyl-tert-butyl ether	ug/L	20	19.2	96	75-125	
Ethylbenzene	ug/L	20	19.9	100	75-125	
Hexachloro-1,3-butadiene	ug/L	20	18.6	93	72-134	
Isopropylbenzene (Cumene)	ug/L	20	18.4	92	75-125	
m&p-Xylene	ug/L	40	38.8	97	75-126	
Methyl-tert-butyl ether	ug/L	20	20.0	100	75-125	
Methylene Chloride	ug/L	20	19.7	99	70-125	
n-Butylbenzene	ug/L	20	19.9	99	75-126	
n-Propylbenzene	ug/L	20	19.4	97	73-127	
Naphthalene	ug/L	20	19.8	99	63-128	
o-Xylene	ug/L	20	18.2	91	75-128	
p-Isopropyltoluene	ug/L	20	20.1	101	75-125	
sec-Butylbenzene	ug/L	20	21.7	109	75-126	
Styrene	ug/L	20	19.3	96	75-125	
tert-Amylmethyl ether	ug/L	20	17.5	87	75-125	
tert-Butyl Alcohol	ug/L	200	207	103	75-130	
tert-Butylbenzene	ug/L	20	19.2	96	75-131	
Tetrachloroethene	ug/L	20	17.9	90	74-125	
Tetrahydrofuran	ug/L	200	216	108	64-138	
Toluene	ug/L	20	19.0	95	74-125	
trans-1,2-Dichloroethene	ug/L	20	19.5	98	68-128	
trans-1,3-Dichloropropene	ug/L	20	18.6	93	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	48.9	98	60-127	
Trichloroethene	ug/L	20	20.4	102	75-127	
Trichlorofluoromethane	ug/L	20	21.4	107	72-133	
Vinyl acetate	ug/L	20	19.6	98	61-129	
Vinyl chloride	ug/L	20	23.8	119	75-128	
Xylene (Total)	ug/L	60	57.0	95	75-125	
1,2-Dichloroethane-d4 (S)	%			108	75-136	
4-Bromofluorobenzene (S)	%			98	75-125	
Toluene-d8 (S)	%			96	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3317288 3317289

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10479601001 Result	Spike Conc.	Spike Conc.	Conc.								
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20.8	21.7	104	109	75-140	4	30		
1,1,1-Trichloroethane	ug/L	<0.14	20	20	21.4	24.3	107	121	74-136	12	30		
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	22.2	23.9	111	119	66-134	7	30		
1,1,2-Trichloroethane	ug/L	<0.18	20	20	23.5	23.8	118	119	75-126	1	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479215

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3317288		3317289									
Parameter	Units	10479601001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	RPD	RPD	Qual
		Result	Spike	Spike	Result	Result	% Rec	% Rec	Limits				
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	22.2	26.0	111	130	65-146	16	30		
1,1-Dichloroethane	ug/L	<0.17	20	20	20.5	22.6	103	113	68-132	9	30		
1,1-Dichloroethene	ug/L	<0.16	20	20	20.5	22.6	102	113	66-139	10	30		
1,1-Dichloropropene	ug/L	<0.20	20	20	21.8	24.4	109	122	67-134	11	30		
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	24.0	25.2	120	126	67-129	5	30		
1,2,3-Trichloropropane	ug/L	<0.26	20	20	22.3	24.0	112	120	69-128	7	30		
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	23.6	24.3	118	122	65-140	3	30		
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	21.4	23.7	107	118	71-133	10	30		
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	52.6	57.6	105	115	54-138	9	30		
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	23.2	23.9	116	120	68-125	3	30		
1,2-Dichlorobenzene	ug/L	<0.14	20	20	20.3	22.1	102	110	74-136	8	30		
1,2-Dichloroethane	ug/L	<0.22	20	20	19.0	20.8	95	104	68-125	9	30		
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	39.9	46.2	100	115	71-126	14	30	N2	
1,2-Dichloropropane	ug/L	<0.16	20	20	24.7	24.7	123	124	67-125	0	30		
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	24.9	27.3	125	137	68-137	9	30		
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.4	23.3	107	117	75-131	9	30		
1,3-Dichloropropane	ug/L	<0.070	20	20	23.1	23.6	116	118	71-125	2	30		
1,4-Dichlorobenzene	ug/L	<0.17	20	20	20.8	22.5	104	113	74-126	8	30		
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	432	445	108	111	68-125	3	30		
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	24.0	23.5	120	117	54-129	2	30	N2	
2,2-Dichloropropane	ug/L	<0.17	20	20	24.6	25.8	123	129	69-139	5	30		
2-Butanone (MEK)	ug/L	<0.99	100	100	109	115	109	115	54-144	5	30		
2-Chlorotoluene	ug/L	<0.16	20	20	22.5	24.8	112	124	75-134	10	30		
2-Hexanone	ug/L	<0.88	100	100	142	133	142	133	58-137	6	30	M1	
4-Chlorotoluene	ug/L	<0.13	20	20	21.8	24.4	109	122	72-133	11	30		
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	114	132	114	132	60-129	15	30	M1	
Acetone	ug/L	<9.2	100	100	129	105	122	98	62-132	21	30		
Acrolein	ug/L	<1.2	200	200	167	267	84	133	30-150	46	30	R1	
Acrylonitrile	ug/L	<0.91	200	200	191	231	96	115	68-125	19	30		
Benzene	ug/L	0.10J	20	20	21.4	22.5	107	112	68-125	5	30		
Bromobenzene	ug/L	<0.21	20	20	21.1	23.1	105	116	73-126	9	30		
Bromochloromethane	ug/L	<0.27	20	20	19.2	21.9	96	110	66-143	13	30		
Bromodichloromethane	ug/L	<0.22	20	20	22.7	22.8	113	114	74-125	0	30		
Bromoform	ug/L	<0.80	20	20	21.2	23.0	106	115	64-134	8	30		
Bromomethane	ug/L	<1.8	20	20	19.7	20.1	98	100	30-150	2	30		
Carbon disulfide	ug/L	0.39J	20	20	19.6	20.2	96	99	43-147	3	30		
Carbon tetrachloride	ug/L	<0.19	20	20	23.7	26.5	118	133	71-143	11	30		
Chlorobenzene	ug/L	<0.17	20	20	20.1	20.8	101	104	75-125	3	30		
Chloroethane	ug/L	<0.49	20	20	32.9	30.2	164	151	75-129	8	30	CH,M0	
Chloroform	ug/L	<0.45	20	20	18.9	21.4	94	107	66-132	12	30		
Chloromethane	ug/L	<0.16	20	20	21.1	21.9	105	110	53-137	4	30		
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	19.9	24.1	100	120	67-133	19	30		
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	21.1	21.3	106	106	66-125	1	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479215

Parameter	Units	3317288		3317289		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		10479601001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Dibromochloromethane	ug/L	<0.12	20	20	20.2	20.9	101	105	62-132	4	30		
Dibromomethane	ug/L	<0.16	20	20	20.8	20.5	104	103	67-125	1	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	22.2	23.7	111	119	71-142	7	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	19.9	22.2	100	111	70-131	11	30	N2	
Diisopropyl ether	ug/L	<0.13	20	20	19.6	22.8	98	114	63-131	15	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	18.2	21.7	91	109	66-128	18	30		
Ethylbenzene	ug/L	0.26J	20	20	23.1	24.6	114	122	74-126	7	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	26.5	22.7	132	113	68-143	15	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	21.5	23.6	108	118	74-130	9	30		
m&p-Xylene	ug/L	<0.31	40	40	45.3	48.8	113	122	69-132	8	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.0	23.2	95	116	65-131	20	30		
Methylene Chloride	ug/L	<0.98	20	20	18.2	20.8	91	104	57-125	14	30		
n-Butylbenzene	ug/L	<0.24	20	20	25.1	25.2	126	126	71-131	0	30		
n-Propylbenzene	ug/L	<0.10	20	20	24.1	25.5	121	128	67-138	6	30		
Naphthalene	ug/L	<0.48	20	20	22.5	26.1	113	131	60-130	15	30	M1	
o-Xylene	ug/L	<0.16	20	20	21.5	23.8	107	119	69-131	10	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	24.3	24.9	121	124	72-133	2	30		
sec-Butylbenzene	ug/L	<0.15	20	20	27.5	27.7	137	138	73-134	1	30	M1	
Styrene	ug/L	<0.19	20	20	21.6	23.0	108	115	72-125	7	30		
tert-Amylmethyl ether	ug/L	<0.11	20	20	18.9	21.2	94	106	67-125	11	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	207	219	104	110	64-137	6	30		
tert-Butylbenzene	ug/L	<0.15	20	20	22.9	24.4	115	122	70-143	6	30		
Tetrachloroethene	ug/L	<0.17	20	20	22.0	23.7	110	118	72-129	7	30		
Tetrahydrofuran	ug/L	<2.2	200	200	223	233	111	116	66-128	4	30		
Toluene	ug/L	0.36J	20	20	22.0	22.4	108	110	73-125	2	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	20.0	22.1	100	110	62-137	10	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	21.2	21.7	106	108	61-136	2	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	55.6	61.5	111	123	45-128	10	30		
Trichloroethene	ug/L	<0.15	20	20	23.4	19.5	117	98	74-132	18	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	19.5	21.7	97	108	75-139	11	30		
Vinyl acetate	ug/L	<1.1	20	20	20.2	23.8	101	119	51-135	16	30		
Vinyl chloride	ug/L	<0.092	20	20	22.8	24.5	114	123	68-146	7	30		
Xylene (Total)	ug/L	<0.31	60	60	66.8	72.6	111	121	67-137	8	30		
1,2-Dichloroethane-d4 (S)	%						91	102	75-136				
4-Bromofluorobenzene (S)	%						102	101	75-125				
Toluene-d8 (S)	%						97	98	75-125				

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479215

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

CH The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479215

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479215

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10479215001	Stark-GW-061319	EPA 8260B	613563		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt **Client Name:** CH2M HILL - UPRR **Project #:** **WO# : 10479215**

Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception

Tracking Number: 4934 3730 1870

Custody Seal on Cooler/Box Present? Yes No **Seals Intact?** Yes No **Biological Tissue Frozen?** Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other: PB **Temp Blank?** Yes No

Thermometer: T1(0461) T2(1336) T3(0459)
 T4(0254) T5(0489) **Type of Ice:** Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: _____ °C	Average Corrected Temp See Exceptions (no temp blank only): <input checked="" type="checkbox"/>
Correction Factor: <u>-0.1</u>	Cooler Temp Corrected w/temp blank: _____ °C	<u>2.5 °C</u>

USDA Regulated Soil: (N/A, water sample/Other: _____) **Date/Initials of Person Examining Contents:** ERT 06/14/19

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

	COMMENTS:
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No -Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	11. If no, write ID/ Date/Time on Container Below: See Exception <input type="checkbox"/>
All containers needing acid/base preservation have been checked? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide) <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/> NaOH <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
Exceptions: <u>VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No See Exception <input type="checkbox"/> pH Paper Lot# _____
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. See Exception <input type="checkbox"/>
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. <u>SHARED w/ WO: 10479209</u> Pace Trip Blank Lot # (if purchased): <u>209352</u>

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____ Field Data Required? Yes No

Comments/Resolution: _____

Project Manager Review: _____ Date: 06/14/19

Note: Whenever there is a discrepancy affecting North Carolina samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect container, etc.)

Labeled by: ERT

June 20, 2019

David Hodson
Jacobs
155 Grand Ave
#800
Oakland, CA 94612

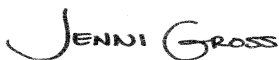
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479216

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 14, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, Jacobs
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479216

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #:74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Vermont Certification #: VT-027053137

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479216

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10479216001	Reed-GW-061319	Water	06/13/19 11:00	06/14/19 09:40

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479216

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10479216001	Reed-GW-061319	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479216

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 20, 2019

General Information:

1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

QC Batch: 613563

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 3315197)
 - Chloroethane
- MS (Lab ID: 3317288)
 - Chloroethane
- MSD (Lab ID: 3317289)
 - Chloroethane

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 613563

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- LCS (Lab ID: 3315197)
 - Chloroethane

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479216

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 20, 2019

QC Batch: 613563

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10479601001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 3317288)
 - Chloroethane
- MSD (Lab ID: 3317289)
 - Chloroethane

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3317288)
 - 2-Hexanone
 - sec-Butylbenzene
- MSD (Lab ID: 3317289)
 - 4-Methyl-2-pentanone (MIBK)
 - Naphthalene
 - sec-Butylbenzene

R1: RPD value was outside control limits.

- MSD (Lab ID: 3317289)
 - Acrolein

Additional Comments:

Analyte Comments:

QC Batch: 613563

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3315196)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3315197)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3317288)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3317289)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- Reed-GW-061319 (Lab ID: 10479216001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479216

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 20, 2019

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10479216

Sample: Reed-GW-061319 Lab ID: 10479216001 Collected: 06/13/19 11:00 Received: 06/14/19 09:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		06/17/19 19:54	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		06/17/19 19:54	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		06/17/19 19:54	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		06/17/19 19:54	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		06/17/19 19:54	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		06/17/19 19:54	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	1.0	0.16	1		06/17/19 19:54	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		06/17/19 19:54	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		06/17/19 19:54	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		06/17/19 19:54	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		06/17/19 19:54	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		06/17/19 19:54	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		06/17/19 19:54	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		06/17/19 19:54	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		06/17/19 19:54	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		06/17/19 19:54	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		06/17/19 19:54	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		06/17/19 19:54	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		06/17/19 19:54	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		06/17/19 19:54	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		06/17/19 19:54	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		06/17/19 19:54	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		06/17/19 19:54	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		06/17/19 19:54	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		06/17/19 19:54	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		06/17/19 19:54	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		06/17/19 19:54	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		06/17/19 19:54	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		06/17/19 19:54	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		06/17/19 19:54	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		06/17/19 19:54	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		06/17/19 19:54	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		06/17/19 19:54	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		06/17/19 19:54	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		06/17/19 19:54	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		06/17/19 19:54	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		06/17/19 19:54	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		06/17/19 19:54	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		06/17/19 19:54	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		06/17/19 19:54	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		06/17/19 19:54	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		06/17/19 19:54	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		06/17/19 19:54	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		06/17/19 19:54	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		06/17/19 19:54	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		06/17/19 19:54	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10479216

Sample: Reed-GW-061319 **Lab ID: 10479216001** Collected: 06/13/19 11:00 Received: 06/14/19 09:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		06/17/19 19:54	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		06/17/19 19:54	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		06/17/19 19:54	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		06/17/19 19:54	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		06/17/19 19:54	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		06/17/19 19:54	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		06/17/19 19:54	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		06/17/19 19:54	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		06/17/19 19:54	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		06/17/19 19:54	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		06/17/19 19:54	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		06/17/19 19:54	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		06/17/19 19:54	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		06/17/19 19:54	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		06/17/19 19:54	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		06/17/19 19:54	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		06/17/19 19:54	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		06/17/19 19:54	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		06/17/19 19:54	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		06/17/19 19:54	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		06/17/19 19:54	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	1.0	0.20	1		06/17/19 19:54	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		06/17/19 19:54	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		06/17/19 19:54	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		06/17/19 19:54	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		06/17/19 19:54	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		06/17/19 19:54	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/17/19 19:54	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		06/17/19 19:54	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		06/17/19 19:54	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/17/19 19:54	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		06/17/19 19:54	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		06/17/19 19:54	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		06/17/19 19:54	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%	75-136		1		06/17/19 19:54	17060-07-0	
Toluene-d8 (S)	99	%	75-125		1		06/17/19 19:54	2037-26-5	
4-Bromofluorobenzene (S)	97	%	75-125		1		06/17/19 19:54	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479216

QC Batch: 613563 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10479216001

METHOD BLANK: 3315196 Matrix: Water
Associated Lab Samples: 10479216001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	06/17/19 17:56	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	06/17/19 17:56	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	06/17/19 17:56	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	06/17/19 17:56	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	06/17/19 17:56	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	06/17/19 17:56	
1,1-Dichloroethene	ug/L	<0.16	1.0	0.16	06/17/19 17:56	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	06/17/19 17:56	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	06/17/19 17:56	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	06/17/19 17:56	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	06/17/19 17:56	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	06/17/19 17:56	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	06/17/19 17:56	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	06/17/19 17:56	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	06/17/19 17:56	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	06/17/19 17:56	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	06/17/19 17:56	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	06/17/19 17:56	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	06/17/19 17:56	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	06/17/19 17:56	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	06/17/19 17:56	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	06/17/19 17:56	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	06/17/19 17:56	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	06/17/19 17:56	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	06/17/19 17:56	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	06/17/19 17:56	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	06/17/19 17:56	
2-Hexanone	ug/L	<0.88	5.0	0.88	06/17/19 17:56	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	06/17/19 17:56	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	06/17/19 17:56	
Acetone	ug/L	<9.2	20.0	9.2	06/17/19 17:56	
Acrolein	ug/L	<1.2	10.0	1.2	06/17/19 17:56	
Acrylonitrile	ug/L	<0.91	10.0	0.91	06/17/19 17:56	
Benzene	ug/L	<0.10	0.50	0.10	06/17/19 17:56	
Bromobenzene	ug/L	<0.21	0.50	0.21	06/17/19 17:56	
Bromochloromethane	ug/L	<0.27	1.0	0.27	06/17/19 17:56	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	06/17/19 17:56	
Bromoform	ug/L	<0.80	4.0	0.80	06/17/19 17:56	
Bromomethane	ug/L	<1.8	4.0	1.8	06/17/19 17:56	
Carbon disulfide	ug/L	<0.078	1.0	0.078	06/17/19 17:56	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	06/17/19 17:56	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479216

METHOD BLANK: 3315196

Matrix: Water

Associated Lab Samples: 10479216001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	06/17/19 17:56	
Chloroethane	ug/L	<0.49	1.0	0.49	06/17/19 17:56	
Chloroform	ug/L	<0.45	1.0	0.45	06/17/19 17:56	
Chloromethane	ug/L	<0.16	4.0	0.16	06/17/19 17:56	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	06/17/19 17:56	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	06/17/19 17:56	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	06/17/19 17:56	
Dibromomethane	ug/L	<0.16	1.0	0.16	06/17/19 17:56	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	06/17/19 17:56	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	06/17/19 17:56	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	06/17/19 17:56	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	06/17/19 17:56	
Ethylbenzene	ug/L	<0.14	0.50	0.14	06/17/19 17:56	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	06/17/19 17:56	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	06/17/19 17:56	
m&p-Xylene	ug/L	<0.31	1.0	0.31	06/17/19 17:56	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	06/17/19 17:56	
Methylene Chloride	ug/L	<0.98	4.0	0.98	06/17/19 17:56	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	06/17/19 17:56	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	06/17/19 17:56	
Naphthalene	ug/L	<0.48	1.0	0.48	06/17/19 17:56	
o-Xylene	ug/L	<0.16	0.50	0.16	06/17/19 17:56	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	06/17/19 17:56	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	06/17/19 17:56	
Styrene	ug/L	<0.19	0.50	0.19	06/17/19 17:56	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	06/17/19 17:56	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	06/17/19 17:56	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	06/17/19 17:56	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	06/17/19 17:56	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	06/17/19 17:56	
Toluene	ug/L	<0.083	0.50	0.083	06/17/19 17:56	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	06/17/19 17:56	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	06/17/19 17:56	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	06/17/19 17:56	
Trichloroethene	ug/L	<0.15	0.40	0.15	06/17/19 17:56	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	06/17/19 17:56	
Vinyl acetate	ug/L	<1.1	10.0	1.1	06/17/19 17:56	
Vinyl chloride	ug/L	<0.092	0.20	0.092	06/17/19 17:56	
Xylene (Total)	ug/L	<0.31	1.5	0.31	06/17/19 17:56	
1,2-Dichloroethane-d4 (S)	%	102	75-136		06/17/19 17:56	
4-Bromofluorobenzene (S)	%	97	75-125		06/17/19 17:56	
Toluene-d8 (S)	%	101	75-125		06/17/19 17:56	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479216

LABORATORY CONTROL SAMPLE: 3315197

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	18.8	94	68-141	
1,1,1-Trichloroethane	ug/L	20	20.6	103	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	19.9	99	73-125	
1,1,2-Trichloroethane	ug/L	20	21.0	105	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	20.9	104	69-132	
1,1-Dichloroethane	ug/L	20	19.9	99	73-125	
1,1-Dichloroethene	ug/L	20	18.8	94	71-126	
1,1-Dichloropropene	ug/L	20	20.4	102	73-126	
1,2,3-Trichlorobenzene	ug/L	20	19.7	98	72-126	
1,2,3-Trichloropropane	ug/L	20	19.4	97	75-126	
1,2,4-Trichlorobenzene	ug/L	20	19.3	96	71-134	
1,2,4-Trimethylbenzene	ug/L	20	18.4	92	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	46.8	94	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	20.7	104	75-129	
1,2-Dichlorobenzene	ug/L	20	18.0	90	75-129	
1,2-Dichloroethane	ug/L	20	19.3	96	75-125	
1,2-Dichloroethene (Total)	ug/L	40	39.5	99	74-125	N2
1,2-Dichloropropane	ug/L	20	21.7	108	75-125	
1,3,5-Trimethylbenzene	ug/L	20	20.8	104	75-127	
1,3-Dichlorobenzene	ug/L	20	19.1	96	75-126	
1,3-Dichloropropane	ug/L	20	20.8	104	75-125	
1,4-Dichlorobenzene	ug/L	20	18.5	93	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	432	108	72-129	
2,2,4-Trimethylpentane	ug/L	20	19.9	99	72-128	N2
2,2-Dichloropropane	ug/L	20	22.7	114	65-138	
2-Butanone (MEK)	ug/L	100	103	103	59-144	
2-Chlorotoluene	ug/L	20	19.5	98	75-127	
2-Hexanone	ug/L	100	106	106	73-134	
4-Chlorotoluene	ug/L	20	19.2	96	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	104	104	62-141	
Acetone	ug/L	100	100	100	60-137	
Acrolein	ug/L	200	173	86	60-141	
Acrylonitrile	ug/L	200	207	104	75-129	
Benzene	ug/L	20	19.7	98	73-125	
Bromobenzene	ug/L	20	19.4	97	73-125	
Bromochloromethane	ug/L	20	20.0	100	75-135	
Bromodichloromethane	ug/L	20	19.9	99	75-125	
Bromoform	ug/L	20	20.4	102	67-136	
Bromomethane	ug/L	20	22.1	110	30-150	
Carbon disulfide	ug/L	20	16.5	83	47-137	
Carbon tetrachloride	ug/L	20	22.1	111	75-125	
Chlorobenzene	ug/L	20	17.9	90	75-125	
Chloroethane	ug/L	20	38.2	191	63-136	CH,L3
Chloroform	ug/L	20	19.6	98	73-128	
Chloromethane	ug/L	20	24.2	121	55-130	
cis-1,2-Dichloroethene	ug/L	20	20.0	100	75-125	
cis-1,3-Dichloropropene	ug/L	20	19.1	96	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479216

LABORATORY CONTROL SAMPLE: 3315197

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	18.5	93	75-125	
Dibromomethane	ug/L	20	19.7	98	75-125	
Dichlorodifluoromethane	ug/L	20	23.2	116	63-132	
Dichlorofluoromethane	ug/L	20	21.9	109	68-127	N2
Diisopropyl ether	ug/L	20	19.0	95	71-131	
Ethyl-tert-butyl ether	ug/L	20	19.2	96	75-125	
Ethylbenzene	ug/L	20	19.9	100	75-125	
Hexachloro-1,3-butadiene	ug/L	20	18.6	93	72-134	
Isopropylbenzene (Cumene)	ug/L	20	18.4	92	75-125	
m&p-Xylene	ug/L	40	38.8	97	75-126	
Methyl-tert-butyl ether	ug/L	20	20.0	100	75-125	
Methylene Chloride	ug/L	20	19.7	99	70-125	
n-Butylbenzene	ug/L	20	19.9	99	75-126	
n-Propylbenzene	ug/L	20	19.4	97	73-127	
Naphthalene	ug/L	20	19.8	99	63-128	
o-Xylene	ug/L	20	18.2	91	75-128	
p-Isopropyltoluene	ug/L	20	20.1	101	75-125	
sec-Butylbenzene	ug/L	20	21.7	109	75-126	
Styrene	ug/L	20	19.3	96	75-125	
tert-Amylmethyl ether	ug/L	20	17.5	87	75-125	
tert-Butyl Alcohol	ug/L	200	207	103	75-130	
tert-Butylbenzene	ug/L	20	19.2	96	75-131	
Tetrachloroethene	ug/L	20	17.9	90	74-125	
Tetrahydrofuran	ug/L	200	216	108	64-138	
Toluene	ug/L	20	19.0	95	74-125	
trans-1,2-Dichloroethene	ug/L	20	19.5	98	68-128	
trans-1,3-Dichloropropene	ug/L	20	18.6	93	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	48.9	98	60-127	
Trichloroethene	ug/L	20	20.4	102	75-127	
Trichlorofluoromethane	ug/L	20	21.4	107	72-133	
Vinyl acetate	ug/L	20	19.6	98	61-129	
Vinyl chloride	ug/L	20	23.8	119	75-128	
Xylene (Total)	ug/L	60	57.0	95	75-125	
1,2-Dichloroethane-d4 (S)	%			108	75-136	
4-Bromofluorobenzene (S)	%			98	75-125	
Toluene-d8 (S)	%			96	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3317288 3317289

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10479601001 Result	Spike Conc.	Spike Conc.	MS Result						
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20.8	21.7	104	109	75-140	4	30
1,1,1-Trichloroethane	ug/L	<0.14	20	20	21.4	24.3	107	121	74-136	12	30
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	22.2	23.9	111	119	66-134	7	30
1,1,2-Trichloroethane	ug/L	<0.18	20	20	23.5	23.8	118	119	75-126	1	30

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479216

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3317288 3317289												
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		10479601001 Result	Spike Conc.	Spike Conc.	MS Result							
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	22.2	26.0	111	130	65-146	16	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	20.5	22.6	103	113	68-132	9	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	20.5	22.6	102	113	66-139	10	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	21.8	24.4	109	122	67-134	11	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	24.0	25.2	120	126	67-129	5	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	22.3	24.0	112	120	69-128	7	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	23.6	24.3	118	122	65-140	3	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	21.4	23.7	107	118	71-133	10	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	52.6	57.6	105	115	54-138	9	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	23.2	23.9	116	120	68-125	3	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	20.3	22.1	102	110	74-136	8	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	19.0	20.8	95	104	68-125	9	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	39.9	46.2	100	115	71-126	14	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	24.7	24.7	123	124	67-125	0	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	24.9	27.3	125	137	68-137	9	30	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	21.4	23.3	107	117	75-131	9	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	23.1	23.6	116	118	71-125	2	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	20.8	22.5	104	113	74-126	8	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	432	445	108	111	68-125	3	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	24.0	23.5	120	117	54-129	2	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	24.6	25.8	123	129	69-139	5	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	109	115	109	115	54-144	5	30	
2-Chlorotoluene	ug/L	<0.16	20	20	22.5	24.8	112	124	75-134	10	30	
2-Hexanone	ug/L	<0.88	100	100	142	133	142	133	58-137	6	30	M1
4-Chlorotoluene	ug/L	<0.13	20	20	21.8	24.4	109	122	72-133	11	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	114	132	114	132	60-129	15	30	M1
Acetone	ug/L	<9.2	100	100	129	105	122	98	62-132	21	30	
Acrolein	ug/L	<1.2	200	200	167	267	84	133	30-150	46	30	R1
Acrylonitrile	ug/L	<0.91	200	200	191	231	96	115	68-125	19	30	
Benzene	ug/L	0.10J	20	20	21.4	22.5	107	112	68-125	5	30	
Bromobenzene	ug/L	<0.21	20	20	21.1	23.1	105	116	73-126	9	30	
Bromochloromethane	ug/L	<0.27	20	20	19.2	21.9	96	110	66-143	13	30	
Bromodichloromethane	ug/L	<0.22	20	20	22.7	22.8	113	114	74-125	0	30	
Bromoform	ug/L	<0.80	20	20	21.2	23.0	106	115	64-134	8	30	
Bromomethane	ug/L	<1.8	20	20	19.7	20.1	98	100	30-150	2	30	
Carbon disulfide	ug/L	0.39J	20	20	19.6	20.2	96	99	43-147	3	30	
Carbon tetrachloride	ug/L	<0.19	20	20	23.7	26.5	118	133	71-143	11	30	
Chlorobenzene	ug/L	<0.17	20	20	20.1	20.8	101	104	75-125	3	30	
Chloroethane	ug/L	<0.49	20	20	32.9	30.2	164	151	75-129	8	30	CH,M0
Chloroform	ug/L	<0.45	20	20	18.9	21.4	94	107	66-132	12	30	
Chloromethane	ug/L	<0.16	20	20	21.1	21.9	105	110	53-137	4	30	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	19.9	24.1	100	120	67-133	19	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	21.1	21.3	106	106	66-125	1	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479216

Parameter	Units	3317288		3317289		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		10479601001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Dibromochloromethane	ug/L	<0.12	20	20	20.2	20.9	101	105	62-132	4	30		
Dibromomethane	ug/L	<0.16	20	20	20.8	20.5	104	103	67-125	1	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	22.2	23.7	111	119	71-142	7	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	19.9	22.2	100	111	70-131	11	30	N2	
Diisopropyl ether	ug/L	<0.13	20	20	19.6	22.8	98	114	63-131	15	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	18.2	21.7	91	109	66-128	18	30		
Ethylbenzene	ug/L	0.26J	20	20	23.1	24.6	114	122	74-126	7	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	26.5	22.7	132	113	68-143	15	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	21.5	23.6	108	118	74-130	9	30		
m&p-Xylene	ug/L	<0.31	40	40	45.3	48.8	113	122	69-132	8	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	19.0	23.2	95	116	65-131	20	30		
Methylene Chloride	ug/L	<0.98	20	20	18.2	20.8	91	104	57-125	14	30		
n-Butylbenzene	ug/L	<0.24	20	20	25.1	25.2	126	126	71-131	0	30		
n-Propylbenzene	ug/L	<0.10	20	20	24.1	25.5	121	128	67-138	6	30		
Naphthalene	ug/L	<0.48	20	20	22.5	26.1	113	131	60-130	15	30	M1	
o-Xylene	ug/L	<0.16	20	20	21.5	23.8	107	119	69-131	10	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	24.3	24.9	121	124	72-133	2	30		
sec-Butylbenzene	ug/L	<0.15	20	20	27.5	27.7	137	138	73-134	1	30	M1	
Styrene	ug/L	<0.19	20	20	21.6	23.0	108	115	72-125	7	30		
tert-Amylmethyl ether	ug/L	<0.11	20	20	18.9	21.2	94	106	67-125	11	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	207	219	104	110	64-137	6	30		
tert-Butylbenzene	ug/L	<0.15	20	20	22.9	24.4	115	122	70-143	6	30		
Tetrachloroethene	ug/L	<0.17	20	20	22.0	23.7	110	118	72-129	7	30		
Tetrahydrofuran	ug/L	<2.2	200	200	223	233	111	116	66-128	4	30		
Toluene	ug/L	0.36J	20	20	22.0	22.4	108	110	73-125	2	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	20.0	22.1	100	110	62-137	10	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	21.2	21.7	106	108	61-136	2	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	55.6	61.5	111	123	45-128	10	30		
Trichloroethene	ug/L	<0.15	20	20	23.4	19.5	117	98	74-132	18	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	19.5	21.7	97	108	75-139	11	30		
Vinyl acetate	ug/L	<1.1	20	20	20.2	23.8	101	119	51-135	16	30		
Vinyl chloride	ug/L	<0.092	20	20	22.8	24.5	114	123	68-146	7	30		
Xylene (Total)	ug/L	<0.31	60	60	66.8	72.6	111	121	67-137	8	30		
1,2-Dichloroethane-d4 (S)	%						91	102	75-136				
4-Bromofluorobenzene (S)	%						102	101	75-125				
Toluene-d8 (S)	%						97	98	75-125				

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479216

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
R1	RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479216

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479216

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10479216001	Reed-GW-061319	EPA 8260B	613563		

REPORT OF LABORATORY ANALYSIS

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Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Walsh
Address: 999 W. Riverside Ave, Suite 500 Spokane, WA 99201	Copy To: Steve Demus, Jonathan Espinoza	Company: UPRR
Email:	Copy To: David Hodson, UPRR-Sysdat@ghd.com	Address: 1400 W. 52nd Ave, Denver, CO 80221
Phone:	Purchase Order # PEDD# 1497	Pace Quote: Contract# 758938
Fax:	Project Name: Freeman WA-Grain Handling Facility	Pace Project Manager: Jennifer Gross
Requested Due Date: 10 Day Standard	Project #: 1497	Pace Profile #: 36447 / 4

ITEM #	SAMPLE ID <small>One Character per box. (A-Z, 0-9 / , -) Sample ids must be unique</small>	MATRIX Drinking Water DW Water WT Waste Water WW Product P Sol/Solid SL Oil OL Wipe WP Air AR Other OT Tissue TS	CODE DW WT WW P SL OL WP AR OT TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G-GRAB C-COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							ANALYSES TEST	Requested Analysis Filtered (Y/N)																		
						DATE	TIME			Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Low Level VOCs by 8260		6010/7470 TAL Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, Nitrate 300.0	2540 TDS	TOC 5310	Sulfide 4500	Methane, Ethane, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	4500 Total Phosphorus	6010 Total Iron	MS/MSD Requested							
1	Reed-GW-061319				WTG	6/13	1100	-	3					X		X																			cool	
2																																				
3																																				
4																																				
5																																				
6																																				
7																																				
8																																				
9																																				
10																																				
11																																				
12																																				

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Short hold analyses are in bold	<i>J.C. Jacobs</i>	6/13/19	1500	<i>long just pace</i>	6/14/19	940	25 Y Y Y
*Field filtered by client							

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on top (Y/N)	Custody Sealed (Y/N)	Cooler (Y/N)	Samples intact (Y/N)
PRINT Name of SAMPLER:	<i>Jonathan Espinoza</i>					
SIGNATURE of SAMPLER:	<i>J.C.</i>	DATE Signed:	<i>6/13/19</i>			

Sample Condition Upon Receipt

Client Name:

Project #:

WO#: 10479216

Courier:

Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception

PM: JMG

Due Date: 06/21/19

CLIENT: UPRR_Jacobs

Tracking Number:

4934 3730 1870

Custody Seal on Cooler/Box Present?

Yes No

Seals Intact?

Yes No

Biological Tissue Frozen?

Yes No N/A

Packing Material:

Bubble Wrap Bubble Bags

None

Other: PS

Temp Blank?

Yes No

Thermometer:

T1(0461) T2(1336) T3(0459)
 T4(0254) T5(0489)

Type of Ice:

Wet

Blue

None

Dry

Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C

Cooler Temp Read w/temp blank: _____ °C

Average Corrected Temp (no temp blank only): 2.5 °C

See Exceptions

Correction Factor: -0.1

Cooler Temp Corrected w/temp blank: _____ °C

USDA Regulated Soil: (N/A, water sample/Other: _____)

Date/Initials of Person Examining Contents: EPT 06/14/19

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

		COMMENTS:
Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception
Matrix <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other		
All containers needing acid/base preservation have been checked?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/> NaOH <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
Exceptions <u>VOA</u> , Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exception
		Chlorine? <input type="checkbox"/> No pH Paper Lot# <input type="checkbox"/>
		Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip
Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception
Trip Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. <u>SHIPPED w/ WO: 10479205</u>
Trip Blank Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): <u>209352</u>

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____

Date/Time: _____

Field Data Required?

Yes No

Comments/Resolution: _____

Project Manager Review: _____

JENNI GROSS

Date: 06/14/19

Note: Whenever there is a discrepancy affecting North Carolina samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: EPT

June 19, 2019

David Hodson
Jacobs
155 Grand Ave
#800
Oakland, CA 94612

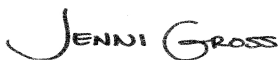
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479565

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on May 08, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, Jacobs
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479565

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Vermont Certification #: VT-027053137

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479565

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10479565001	Silva-GW-050719	Water	05/07/19 10:00	05/08/19 09:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479565

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10479565001	Silva-GW-050719	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479565

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 19, 2019

General Information:

1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 613794

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10479598001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3316268)
 - Acrolein
 - Toluene
- MSD (Lab ID: 3316269)
 - Acrolein
 - Toluene

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479565

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 19, 2019

Analyte Comments:

QC Batch: 613794

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3316264)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3316265)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3316268)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3316269)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- Silva-GW-050719 (Lab ID: 10479565001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479565

Sample: Silva-GW-050719 **Lab ID: 10479565001** Collected: 05/07/19 10:00 Received: 05/08/19 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		05/21/19 16:45	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		05/21/19 16:45	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		05/21/19 16:45	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		05/21/19 16:45	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		05/21/19 16:45	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		05/21/19 16:45	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	0.50	0.16	1		05/21/19 16:45	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	1.0	0.20	1		05/21/19 16:45	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	1.0	0.21	1		05/21/19 16:45	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		05/21/19 16:45	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	1.0	0.20	1		05/21/19 16:45	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	0.50	0.20	1		05/21/19 16:45	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		05/21/19 16:45	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	1.0	0.24	1		05/21/19 16:45	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		05/21/19 16:45	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	1.0	0.22	1		05/21/19 16:45	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		05/21/19 16:45	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		05/21/19 16:45	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		05/21/19 16:45	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		05/21/19 16:45	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		05/21/19 16:45	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		05/21/19 16:45	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		05/21/19 16:45	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		05/21/19 16:45	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		05/21/19 16:45	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		05/21/19 16:45	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		05/21/19 16:45	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		05/21/19 16:45	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		05/21/19 16:45	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		05/21/19 16:45	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		05/21/19 16:45	67-64-1	
Acrolein	<1.2	ug/L	40.0	1.2	1		05/21/19 16:45	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		05/21/19 16:45	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		05/21/19 16:45	71-43-2	
Bromobenzene	<0.21	ug/L	1.0	0.21	1		05/21/19 16:45	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		05/21/19 16:45	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		05/21/19 16:45	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		05/21/19 16:45	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		05/21/19 16:45	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		05/21/19 16:45	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		05/21/19 16:45	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		05/21/19 16:45	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		05/21/19 16:45	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		05/21/19 16:45	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		05/21/19 16:45	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		05/21/19 16:45	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479565

Sample: Silva-GW-050719 **Lab ID: 10479565001** Collected: 05/07/19 10:00 Received: 05/08/19 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		05/21/19 16:45	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		05/21/19 16:45	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		05/21/19 16:45	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		05/21/19 16:45	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		05/21/19 16:45	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		05/21/19 16:45	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		05/21/19 16:45	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	0.50	0.18	1		05/21/19 16:45	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	1.0	0.16	1		05/21/19 16:45	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		05/21/19 16:45	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		05/21/19 16:45	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		05/21/19 16:45	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		05/21/19 16:45	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		05/21/19 16:45	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		05/21/19 16:45	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		05/21/19 16:45	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		05/21/19 16:45	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		05/21/19 16:45	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		05/21/19 16:45	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		05/21/19 16:45	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		05/21/19 16:45	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	1.0	0.20	1		05/21/19 16:45	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		05/21/19 16:45	179601-23-1	
n-Butylbenzene	<0.24	ug/L	0.50	0.24	1		05/21/19 16:45	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		05/21/19 16:45	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		05/21/19 16:45	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	0.50	0.15	1		05/21/19 16:45	99-87-6	
sec-Butylbenzene	<0.15	ug/L	1.0	0.15	1		05/21/19 16:45	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		05/21/19 16:45	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		05/21/19 16:45	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		05/21/19 16:45	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		05/21/19 16:45	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		05/21/19 16:45	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		05/21/19 16:45	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	96	%	75-136		1		05/21/19 16:45	17060-07-0	
Toluene-d8 (S)	97	%	75-125		1		05/21/19 16:45	2037-26-5	
4-Bromofluorobenzene (S)	100	%	75-125		1		05/21/19 16:45	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479565

QC Batch: 613794

Analysis Method: EPA 8260B

QC Batch Method: EPA 8260B

Analysis Description: 8260 MSV LL Water

Associated Lab Samples: 10479565001

METHOD BLANK: 3316264

Matrix: Water

Associated Lab Samples: 10479565001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	05/21/19 16:11	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	05/21/19 16:11	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	05/21/19 16:11	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	05/21/19 16:11	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	05/21/19 16:11	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	05/21/19 16:11	
1,1-Dichloroethene	ug/L	<0.16	0.50	0.16	05/21/19 16:11	
1,1-Dichloropropene	ug/L	<0.20	1.0	0.20	05/21/19 16:11	
1,2,3-Trichlorobenzene	ug/L	<0.21	1.0	0.21	05/21/19 16:11	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	05/21/19 16:11	
1,2,4-Trichlorobenzene	ug/L	<0.20	1.0	0.20	05/21/19 16:11	
1,2,4-Trimethylbenzene	ug/L	<0.20	0.50	0.20	05/21/19 16:11	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	05/21/19 16:11	
1,2-Dibromoethane (EDB)	ug/L	<0.24	1.0	0.24	05/21/19 16:11	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	05/21/19 16:11	
1,2-Dichloroethane	ug/L	<0.22	1.0	0.22	05/21/19 16:11	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	05/21/19 16:11	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	05/21/19 16:11	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	05/21/19 16:11	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	05/21/19 16:11	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	05/21/19 16:11	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	05/21/19 16:11	
1,4-Dioxane (p-Dioxane)	ug/L	41.2J	200	16.3	05/21/19 16:11	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	05/21/19 16:11	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	05/21/19 16:11	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	05/21/19 16:11	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	05/21/19 16:11	
2-Hexanone	ug/L	<0.88	5.0	0.88	05/21/19 16:11	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	05/21/19 16:11	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	05/21/19 16:11	
Acetone	ug/L	<9.2	20.0	9.2	05/21/19 16:11	
Acrolein	ug/L	<1.2	40.0	1.2	05/21/19 16:11	
Acrylonitrile	ug/L	<0.91	10.0	0.91	05/21/19 16:11	
Benzene	ug/L	<0.10	0.50	0.10	05/21/19 16:11	
Bromobenzene	ug/L	<0.21	1.0	0.21	05/21/19 16:11	
Bromochloromethane	ug/L	<0.27	1.0	0.27	05/21/19 16:11	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	05/21/19 16:11	
Bromoform	ug/L	<0.80	4.0	0.80	05/21/19 16:11	
Bromomethane	ug/L	<1.8	4.0	1.8	05/21/19 16:11	
Carbon disulfide	ug/L	<0.078	1.0	0.078	05/21/19 16:11	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	05/21/19 16:11	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479565

METHOD BLANK: 3316264

Matrix: Water

Associated Lab Samples: 10479565001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	05/21/19 16:11	
Chloroethane	ug/L	<0.49	1.0	0.49	05/21/19 16:11	
Chloroform	ug/L	<0.45	1.0	0.45	05/21/19 16:11	
Chloromethane	ug/L	<0.16	4.0	0.16	05/21/19 16:11	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	05/21/19 16:11	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	05/21/19 16:11	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	05/21/19 16:11	
Dibromomethane	ug/L	<0.16	1.0	0.16	05/21/19 16:11	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	05/21/19 16:11	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	05/21/19 16:11	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	05/21/19 16:11	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	05/21/19 16:11	
Ethylbenzene	ug/L	<0.14	0.50	0.14	05/21/19 16:11	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	05/21/19 16:11	
Isopropylbenzene (Cumene)	ug/L	<0.18	0.50	0.18	05/21/19 16:11	
m&p-Xylene	ug/L	<0.31	1.0	0.31	05/21/19 16:11	
Methyl-tert-butyl ether	ug/L	<0.16	1.0	0.16	05/21/19 16:11	
Methylene Chloride	ug/L	<0.98	4.0	0.98	05/21/19 16:11	
n-Butylbenzene	ug/L	<0.24	0.50	0.24	05/21/19 16:11	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	05/21/19 16:11	
Naphthalene	ug/L	<0.48	1.0	0.48	05/21/19 16:11	
o-Xylene	ug/L	<0.16	0.50	0.16	05/21/19 16:11	
p-Isopropyltoluene	ug/L	<0.15	0.50	0.15	05/21/19 16:11	
sec-Butylbenzene	ug/L	<0.15	1.0	0.15	05/21/19 16:11	
Styrene	ug/L	<0.19	0.50	0.19	05/21/19 16:11	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	05/21/19 16:11	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	05/21/19 16:11	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	05/21/19 16:11	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	05/21/19 16:11	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	05/21/19 16:11	
Toluene	ug/L	<0.083	0.50	0.083	05/21/19 16:11	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	05/21/19 16:11	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	05/21/19 16:11	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	05/21/19 16:11	
Trichloroethene	ug/L	<0.15	0.40	0.15	05/21/19 16:11	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	05/21/19 16:11	
Vinyl acetate	ug/L	<1.1	10.0	1.1	05/21/19 16:11	
Vinyl chloride	ug/L	<0.092	0.20	0.092	05/21/19 16:11	
Xylene (Total)	ug/L	<0.31	1.5	0.31	05/21/19 16:11	
1,2-Dichloroethane-d4 (S)	%	98	75-136		05/21/19 16:11	
4-Bromofluorobenzene (S)	%	100	75-125		05/21/19 16:11	
Toluene-d8 (S)	%	98	75-125		05/21/19 16:11	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479565

LABORATORY CONTROL SAMPLE: 3316265

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	10	10.3	103	68-141	
1,1,1-Trichloroethane	ug/L	10	10.7	107	75-129	
1,1,2,2-Tetrachloroethane	ug/L	10	10.1	101	73-125	
1,1,2-Trichloroethane	ug/L	10	10	100	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	10	10.3	103	69-132	
1,1-Dichloroethane	ug/L	10	10.4	104	73-125	
1,1-Dichloroethene	ug/L	10	10.5	105	71-126	
1,1-Dichloropropene	ug/L	10	10.1	101	73-126	
1,2,3-Trichlorobenzene	ug/L	10	10.7	107	72-126	
1,2,3-Trichloropropane	ug/L	10	10.5	105	75-126	
1,2,4-Trichlorobenzene	ug/L	10	10.3	103	71-134	
1,2,4-Trimethylbenzene	ug/L	10	10.9	109	72-134	
1,2-Dibromo-3-chloropropane	ug/L	25	24.6	98	60-135	
1,2-Dibromoethane (EDB)	ug/L	10	10.5	105	75-129	
1,2-Dichlorobenzene	ug/L	10	10.5	105	75-129	
1,2-Dichloroethane	ug/L	10	10	100	75-125	
1,2-Dichloroethene (Total)	ug/L	20	20.7	103	74-125	N2
1,2-Dichloropropane	ug/L	10	10.4	104	75-125	
1,3,5-Trimethylbenzene	ug/L	10	11.0	110	75-127	
1,3-Dichlorobenzene	ug/L	10	10.9	109	75-126	
1,3-Dichloropropane	ug/L	10	11.0	110	75-125	
1,4-Dichlorobenzene	ug/L	10	10.3	103	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	200	210	105	72-129	
2,2,4-Trimethylpentane	ug/L	10	10.3	103	72-128	N2
2,2-Dichloropropane	ug/L	10	10.2	102	65-138	
2-Butanone (MEK)	ug/L	50	45.9	92	59-144	
2-Chlorotoluene	ug/L	10	10.7	107	75-127	
2-Hexanone	ug/L	50	46.2	92	73-134	
4-Chlorotoluene	ug/L	10	10.7	107	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	50	46.8	94	62-141	
Acetone	ug/L	50	46.8	94	60-137	
Acrolein	ug/L	100	105	105	60-141	
Acrylonitrile	ug/L	100	103	103	75-129	
Benzene	ug/L	10	10.5	105	73-125	
Bromobenzene	ug/L	10	10.2	102	73-125	
Bromochloromethane	ug/L	10	10.4	104	75-135	
Bromodichloromethane	ug/L	10	10.2	102	75-125	
Bromoform	ug/L	10	10.4	104	67-136	
Bromomethane	ug/L	10	11.1	111	30-150	
Carbon disulfide	ug/L	10	11.7	117	47-137	
Carbon tetrachloride	ug/L	10	11.2	112	75-125	
Chlorobenzene	ug/L	10	10.9	109	75-125	
Chloroethane	ug/L	10	8.9	89	63-136	
Chloroform	ug/L	10	10.2	102	73-128	
Chloromethane	ug/L	10	10.0	100	55-130	
cis-1,2-Dichloroethene	ug/L	10	10.5	105	75-125	
cis-1,3-Dichloropropene	ug/L	10	10.4	104	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479565

LABORATORY CONTROL SAMPLE: 3316265

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	10	10.1	101	75-125	
Dibromomethane	ug/L	10	10.6	106	75-125	
Dichlorodifluoromethane	ug/L	10	11.0	110	63-132	
Dichlorofluoromethane	ug/L	10	9.5	95	68-127	N2
Diisopropyl ether	ug/L	10	9.8	98	71-131	
Ethyl-tert-butyl ether	ug/L	10	10.6	106	75-125	
Ethylbenzene	ug/L	10	10.5	105	75-125	
Hexachloro-1,3-butadiene	ug/L	10	11.4	114	72-134	
Isopropylbenzene (Cumene)	ug/L	10	10.7	107	75-125	
m&p-Xylene	ug/L	20	21.1	106	75-126	
Methyl-tert-butyl ether	ug/L	10	9.9	99	75-125	
Methylene Chloride	ug/L	10	10.9	109	70-125	
n-Butylbenzene	ug/L	10	10.8	108	75-126	
n-Propylbenzene	ug/L	10	10.8	108	73-127	
Naphthalene	ug/L	10	9.7	97	63-128	
o-Xylene	ug/L	10	10.7	107	75-128	
p-Isopropyltoluene	ug/L	10	11.0	110	75-125	
sec-Butylbenzene	ug/L	10	10.0	100	75-126	
Styrene	ug/L	10	11.1	111	75-125	
tert-Amylmethyl ether	ug/L	10	9.9	99	75-125	
tert-Butyl Alcohol	ug/L	100	103	103	75-130	
tert-Butylbenzene	ug/L	10	10.7	107	75-131	
Tetrachloroethene	ug/L	10	11.1	111	74-125	
Tetrahydrofuran	ug/L	100	105	105	64-138	
Toluene	ug/L	10	10.8	108	74-125	
trans-1,2-Dichloroethene	ug/L	10	10.2	102	68-128	
trans-1,3-Dichloropropene	ug/L	10	9.6	96	75-125	
trans-1,4-Dichloro-2-butene	ug/L	25	24.8	99	60-127	
Trichloroethene	ug/L	10	11.2	112	75-127	
Trichlorofluoromethane	ug/L	10	11.0	110	72-133	
Vinyl acetate	ug/L	10	9.7J	97	61-129	
Vinyl chloride	ug/L	10	10.5	105	75-128	
Xylene (Total)	ug/L	30	31.8	106	75-125	
1,2-Dichloroethane-d4 (S)	%			99	75-136	
4-Bromofluorobenzene (S)	%			100	75-125	
Toluene-d8 (S)	%			101	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3316268 3316269

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10479598001 Result	Spike Conc.	Spike Conc.	MS Result						
1,1,1,2-Tetrachloroethane	ug/L	<19.6	1000	1000	1040	971	104	97	75-140	7	30
1,1,1-Trichloroethane	ug/L	851	1000	1000	1870	1740	102	89	74-136	7	30
1,1,2,2-Tetrachloroethane	ug/L	<17.0	1000	1000	999	966	100	97	66-134	3	30
1,1,2-Trichloroethane	ug/L	<18.0	1000	1000	1070	1000	105	99	75-126	6	30

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479565

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3316268			3316269							
Parameter	Units	10479598001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual	
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD		
1,1,2-Trichlorotrifluoroethane	ug/L	378	1000	1000	1370	1220	100	84	65-146	12	30	
1,1-Dichloroethane	ug/L	238	1000	1000	1220	1150	98	91	68-132	6	30	
1,1-Dichloroethene	ug/L	<15.9	1000	1000	994	906	99	91	66-139	9	30	
1,1-Dichloropropene	ug/L	<19.8	1000	1000	973	896	97	90	67-134	8	30	
1,2,3-Trichlorobenzene	ug/L	<20.6	1000	1000	1080	1010	108	101	67-129	7	30	
1,2,3-Trichloropropane	ug/L	<25.7	1000	1000	1050	951	105	95	69-128	10	30	
1,2,4-Trichlorobenzene	ug/L	<19.9	1000	1000	1070	962	107	96	65-140	11	30	
1,2,4-Trimethylbenzene	ug/L	312	1000	1000	1390	1280	107	97	71-133	8	30	
1,2-Dibromo-3-chloropropane	ug/L	<166	2500	2500	2590	2600	104	104	54-138	0	30	
1,2-Dibromoethane (EDB)	ug/L	<24.1	1000	1000	1060	955	106	96	68-125	10	30	
1,2-Dichlorobenzene	ug/L	<13.7	1000	1000	1060	969	106	97	74-136	9	30	
1,2-Dichloroethane	ug/L	<21.8	1000	1000	995	942	99	94	68-125	5	30	
1,2-Dichloroethene (Total)	ug/L	1510	2000	2000	3560	3320	103	91	71-126	7	30 N2	
1,2-Dichloropropane	ug/L	<16.5	1000	1000	1060	983	106	98	67-125	7	30	
1,3,5-Trimethylbenzene	ug/L	97.8	1000	1000	1180	1070	108	97	68-137	10	30	
1,3-Dichlorobenzene	ug/L	<16.1	1000	1000	1100	991	110	99	75-131	11	30	
1,3-Dichloropropane	ug/L	<7.0	1000	1000	1020	992	102	99	71-125	3	30	
1,4-Dichlorobenzene	ug/L	<16.9	1000	1000	1070	956	107	96	74-126	12	30	
1,4-Dioxane (p-Dioxane)	ug/L	5010J	20000	20000	26500	21100	107	81	68-125	22	30	
2,2,4-Trimethylpentane	ug/L	<19.2	1000	1000	1050	956	105	96	54-129	9	30 N2	
2,2-Dichloropropane	ug/L	<17.2	1000	1000	1040	970	104	97	69-139	7	30	
2-Butanone (MEK)	ug/L	<99.2	5000	5000	4380	4020	88	80	54-144	9	30	
2-Chlorotoluene	ug/L	<16.3	1000	1000	1120	1010	112	101	75-134	10	30	
2-Hexanone	ug/L	<87.5	5000	5000	4500	4750	90	95	58-137	5	30	
4-Chlorotoluene	ug/L	<13.4	1000	1000	1050	965	105	96	72-133	9	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<42.2	5000	5000	4770	4900	95	98	60-129	3	30	
Acetone	ug/L	<925	5000	5000	4710	4390	94	88	62-132	7	30	
Acrolein	ug/L	<120	10000	10000	31800	35200	318	352	30-150	10	30 M1	
Acrylonitrile	ug/L	<90.8	10000	10000	10200	10500	102	105	68-125	2	30	
Benzene	ug/L	<10.2	1000	1000	997	954	100	95	68-125	4	30	
Bromobenzene	ug/L	<20.7	1000	1000	1020	928	102	93	73-126	9	30	
Bromochloromethane	ug/L	<27.3	1000	1000	1030	945	103	94	66-143	8	30	
Bromodichloromethane	ug/L	<21.6	1000	1000	1020	932	102	93	74-125	9	30	
Bromoform	ug/L	<80.2	1000	1000	1040	966	104	97	64-134	7	30	
Bromomethane	ug/L	<182	1000	1000	1080	1020	108	102	30-150	6	30	
Carbon disulfide	ug/L	<7.8	1000	1000	1020	958	102	96	43-147	6	30	
Carbon tetrachloride	ug/L	<18.8	1000	1000	1090	1020	109	102	71-143	6	30	
Chlorobenzene	ug/L	<17.1	1000	1000	1090	976	109	98	75-125	11	30	
Chloroethane	ug/L	<49.0	1000	1000	1030	908	103	91	75-129	12	30	
Chloroform	ug/L	<44.8	1000	1000	968	908	97	91	66-132	6	30	
Chloromethane	ug/L	<15.5	1000	1000	1010	926	101	93	53-137	8	30	
cis-1,2-Dichloroethene	ug/L	1510	1000	1000	2580	2370	107	86	67-133	9	30	
cis-1,3-Dichloropropene	ug/L	<20.5	1000	1000	1010	936	101	94	66-125	8	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479565

Parameter	Units	3316268		3316269		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10479598001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Dibromochloromethane	ug/L	<12.3	1000	1000	995	961	99	96	62-132	3	30		
Dibromomethane	ug/L	<16.3	1000	1000	1040	1020	104	102	67-125	2	30		
Dichlorodifluoromethane	ug/L	<23.4	1000	1000	1080	985	107	97	71-142	9	30		
Dichlorofluoromethane	ug/L	<14.1	1000	1000	981	914	98	91	70-131	7	30	N2	
Diisopropyl ether	ug/L	<13.3	1000	1000	977	919	98	92	63-131	6	30		
Ethyl-tert-butyl ether	ug/L	<17.8	1000	1000	1060	972	106	97	66-128	8	30		
Ethylbenzene	ug/L	1880	1000	1000	2880	2680	100	80	74-126	7	30		
Hexachloro-1,3-butadiene	ug/L	<31.0	1000	1000	1210	1020	121	102	68-143	17	30		
Isopropylbenzene (Cumene)	ug/L	36.5J	1000	1000	1080	1020	105	98	74-130	6	30		
m&p-Xylene	ug/L	6000	2000	2000	7950	7380	98	69	69-132	7	30		
Methyl-tert-butyl ether	ug/L	<16.1	1000	1000	981	921	98	92	65-131	6	30		
Methylene Chloride	ug/L	<98.0	1000	1000	1080	976	108	98	57-125	10	30		
n-Butylbenzene	ug/L	<23.9	1000	1000	1150	985	115	98	71-131	16	30		
n-Propylbenzene	ug/L	53.1	1000	1000	1110	1040	105	99	67-138	6	30		
Naphthalene	ug/L	96.3J	1000	1000	1050	1030	96	93	60-130	2	30		
o-Xylene	ug/L	1920	1000	1000	2950	2710	103	79	69-131	8	30		
p-Isopropyltoluene	ug/L	<15.2	1000	1000	1130	1010	113	101	72-133	11	30		
sec-Butylbenzene	ug/L	<15.1	1000	1000	1020	911	102	91	73-134	11	30		
Styrene	ug/L	59.8	1000	1000	1160	1070	110	101	72-125	9	30		
tert-Amylmethyl ether	ug/L	<10.8	1000	1000	990	941	99	94	67-125	5	30		
tert-Butyl Alcohol	ug/L	<124	10000	10000	10000	9790	100	98	64-137	2	30		
tert-Butylbenzene	ug/L	<14.8	1000	1000	1050	984	105	98	70-143	6	30		
Tetrachloroethene	ug/L	56.6	1000	1000	1120	1070	106	101	72-129	4	30		
Tetrahydrofuran	ug/L	<222	10000	10000	10400	10100	104	101	66-128	3	30		
Toluene	ug/L	13400	1000	1000	14000	13200	60	-23	73-125	6	30	M1	
trans-1,2-Dichloroethene	ug/L	<11.7	1000	1000	981	953	98	95	62-137	3	30		
trans-1,3-Dichloropropene	ug/L	<18.2	1000	1000	966	922	97	92	61-136	5	30		
trans-1,4-Dichloro-2-butene	ug/L	<204	2500	2500	2570	2620	103	105	45-128	2	30		
Trichloroethene	ug/L	347	1000	1000	1360	1270	101	92	74-132	7	30		
Trichlorofluoromethane	ug/L	<23.2	1000	1000	1070	945	107	95	75-139	12	30		
Vinyl acetate	ug/L	<110	1000	1000	995J	980J	100	98	51-135		30		
Vinyl chloride	ug/L	57.0	1000	1000	1140	1060	108	100	68-146	7	30		
Xylene (Total)	ug/L	7920	3000	3000	10900	10100	99	73	67-137	8	30		
1,2-Dichloroethane-d4 (S)	%						98	99	75-136			HS	
4-Bromofluorobenzene (S)	%						100	99	75-125				
Toluene-d8 (S)	%						100	100	75-125				

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479565

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

HS Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479565

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479565

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10479565001	Silva-GW-050719	EPA 8260B	613794		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt **Client Name:** CH2M Hill **Project #:** WO#: 10473878

Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception

Tracking Number: 7475 9397 8607

PM: JMG **Due Date:** 05/15/19
CLIENT: UPRR_CH2M

Custody Seal on Cooler/Box Present? Yes No **Seals Intact?** Yes No **Biological Tissue Frozen?** Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other: PB **Temp Blank?** Yes No

Thermometer: T1(0461) T2(1336) T3(0459)
 T4(0254) T5(0048)

Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: <u>5.7</u> °C	Average Corrected Temp (no temp blank only): <u>5.7</u> °C	See Exceptions <input type="checkbox"/>
Correction Factor: <u>TRUE</u>	Cooler Temp Corrected w/temp blank: <u>5.7</u> °C		

USDA Regulated Soil: N/A, water sample/Other: _____ **Date/Initials of Person Examining Contents:** ERE 5/8/19

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

	COMMENTS:
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input checked="" type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	
All containers needing acid/base preservation have been checked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12. Sample # <u>1-2</u>
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ ^{1/1} <input checked="" type="checkbox"/> H ₂ SO ₄ ^{1/1} <input checked="" type="checkbox"/> Zinc Acetate ^{1/1}
Exceptions: <u>VOA</u> Coliform, <u>TOC</u> DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No pH Paper Lot# <input type="checkbox"/> See Exception
	Res. Chlorine 0-6 Roll <u>203619</u> 0-6 Strip 0-14 Strip <u>10D4671</u>
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. <input checked="" type="checkbox"/> See Exception
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. Pace Trip Blank Lot # (if purchased): <u>204792</u>
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** Yes No


Person Contacted: Mark Ochsner Date/Time: 06/27/18

Comments/Resolution: WA certs not required for RSK or sulfide. Analyze 8260 on -001. Per Jon, report 8260 for Silva on separate report. 061719 JMG

Project Manager Review: _____ **Date:** 05/08/19

Note: Whenever there is a discrepancy affecting North Carolina samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: [Signature]

	Document Name: Headspace Exception	Document Revised: 17Dec2018 Page 1 of 1
	Document No.: F-MN-C-276-Rev.01	Issuing Authority: Pace Minnesota Quality Office

Sample ID	Headspace greater than 6mm	Headspace less than 6mm	No Headspace	Total Vials	Sediment Present?
WSS-GW-050719	0	3	0	3	N
Silva-GW-050719	0	0	3	3	N
TB-050719	0	1	1	2	N

July 03, 2019

David Hodson
Jacobs
155 Grand Ave
#800
Oakland, CA 94612

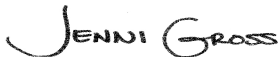
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479596

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 18, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, Jacobs
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479596

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #: 74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Montana Certificate #CERT0103
Alaska Certification UST-107
Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203
Wisconsin DNR Certification #: 998027470
WA Department of Ecology Lab ID# C1007

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC):
E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC):
T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-00119
Commonwealth of Virginia (TNI): 480246

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10479596001	WS5-GW-061719	Water	06/17/19 10:00	06/18/19 08:45
10479596002	AtwoodH-GW-061719	Water	06/17/19 10:45	06/18/19 08:45
10479596003	AtwoodS-GW-061719	Water	06/17/19 11:00	06/18/19 08:45
10479596004	Thorson-GW-061719	Water	06/17/19 11:30	06/18/19 08:45
10479596005	Lashaw-GW-061719	Water	06/17/19 12:00	06/18/19 08:45
10479596006	LashawAg-GW-061719	Water	06/17/19 12:15	06/18/19 08:45
10479596007	Lang-GW-061719	Water	06/17/19 12:45	06/18/19 08:45
10479596008	Marlow-GW-061719	Water	06/17/19 13:15	06/18/19 08:45
10479596009	Randall-GW-061719	Water	06/17/19 13:30	06/18/19 08:45
10479596010	TB-061719	Water	06/17/19 07:00	06/18/19 08:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10479596001	WS5-GW-061719	RSK 175	AJR	3	PASI-M
		EPA 6010D	DM	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JER	1	PASI-M
		SM 4500-S-2 D	GJE	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	KEO	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10479596002	AtwoodH-GW-061719	RSK 175	AJR	3	PASI-M
		EPA 6010D	DM	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JER	1	PASI-M
		SM 4500-S-2 D	GJE	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	KEO	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10479596003	AtwoodS-GW-061719	RSK 175	AJR	3	PASI-M
		EPA 6010D	DM	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JER	1	PASI-M
		SM 4500-S-2 D	GJE	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	KEO	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10479596004	Thorson-GW-061719	RSK 175	AJR	3	PASI-M
		EPA 6010D	DM	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JER	1	PASI-M
		SM 4500-S-2 D	GJE	1	PASI-N
	EPA 300.0	KEO	3	PASI-M	

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479596

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10479596005	Lashaw-GW-061719	EPA 353.2	JFP	1	PASI-M
		EPA 410.4	KEO	1	PASI-M
		SM 5310C	JK1	1	PASI-V
		RSK 175	AJR	3	PASI-M
		EPA 6010D	DM	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JER	1	PASI-M
		SM 4500-S-2 D	GJE	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
10479596006	LashawAg-GW-061719	EPA 353.2	JFP	1	PASI-M
		EPA 410.4	KEO	1	PASI-M
		SM 5310C	JK1	1	PASI-V
		RSK 175	AJR	3	PASI-M
		EPA 6010D	DM	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JER	1	PASI-M
		SM 4500-S-2 D	GJE	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
10479596007	Lang-GW-061719	EPA 353.2	JFP	1	PASI-M
		EPA 410.4	KEO	1	PASI-M
		SM 5310C	JK1	1	PASI-V
		RSK 175	AJR	3	PASI-M
		EPA 6010D	DM	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JER	1	PASI-M
		SM 4500-S-2 D	GJE	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
10479596008	Marlow-GW-061719	EPA 353.2	JFP	1	PASI-M
		EPA 410.4	KEO	1	PASI-M
		SM 5310C	JK1	1	PASI-V
		RSK 175	AJR	3	PASI-M
		EPA 6010D	DM	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2540C	JER	1	PASI-M
		SM 4500-S-2 D	GJE	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	KEO	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10479596009	Randall-GW-061719	RSK 175	AJR	3	PASI-M
		EPA 6010D	DM	16	PASI-M
		EPA 7470A	LMW	1	PASI-M
		SM 2320B	DCL	1	PASI-M
		SM 2540C	JER	1	PASI-M
		SM 4500-S-2 D	GJE	1	PASI-N
		EPA 300.0	KEO	3	PASI-M
		EPA 353.2	JFP	1	PASI-M
		EPA 410.4	KEO	1	PASI-M
		SM 5310C	JK1	1	PASI-V
10479596010	TB-061719	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
10479596001	WS5-GW-061719					
EPA 6010D	Barium, Dissolved	50.9	ug/L	10.0	06/27/19 11:28	
EPA 6010D	Beryllium, Dissolved	0.50J	ug/L	5.0	06/27/19 11:28	B
EPA 6010D	Cadmium, Dissolved	0.63J	ug/L	3.0	06/27/19 11:28	B
EPA 6010D	Cobalt, Dissolved	1.1J	ug/L	10.0	06/27/19 11:28	
EPA 6010D	Copper, Dissolved	13.4	ug/L	10.0	06/27/19 11:28	
EPA 6010D	Lead, Dissolved	3.5J	ug/L	10.0	06/27/19 11:28	
EPA 6010D	Nickel, Dissolved	7.8J	ug/L	20.0	06/27/19 11:28	
EPA 6010D	Vanadium, Dissolved	20.0	ug/L	15.0	06/27/19 11:28	
EPA 6010D	Zinc, Dissolved	49.6	ug/L	20.0	06/27/19 11:28	
SM 2320B	Alkalinity, Total as CaCO3	173	mg/L	5.0	06/27/19 10:26	
SM 2540C	Total Dissolved Solids	237	mg/L	10.0	06/20/19 11:20	
EPA 300.0	Chloride	2.8	mg/L	1.2	06/19/19 09:36	
EPA 300.0	Nitrate as N	1.0	mg/L	0.10	06/19/19 09:36	
EPA 300.0	Sulfate	6.2	mg/L	1.2	06/19/19 09:36	
EPA 353.2	Nitrogen, NO2 plus NO3	1.1	mg/L	0.10	06/20/19 12:06	
SM 5310C	Total Organic Carbon	0.99J	mg/L	1.0	06/20/19 05:42	
10479596002	AtwoodH-GW-061719					
EPA 6010D	Barium, Dissolved	44.0	ug/L	10.0	06/27/19 11:36	
EPA 6010D	Beryllium, Dissolved	1.0J	ug/L	5.0	06/27/19 11:36	B
EPA 6010D	Cadmium, Dissolved	1.2J	ug/L	3.0	06/27/19 11:36	B
EPA 6010D	Cobalt, Dissolved	2.5J	ug/L	10.0	06/27/19 11:36	
EPA 6010D	Copper, Dissolved	18.2	ug/L	10.0	06/27/19 11:36	
EPA 6010D	Lead, Dissolved	2.9J	ug/L	10.0	06/27/19 11:36	
EPA 6010D	Nickel, Dissolved	4.2J	ug/L	20.0	06/27/19 11:36	
EPA 6010D	Vanadium, Dissolved	2.2J	ug/L	15.0	06/27/19 11:36	
EPA 6010D	Zinc, Dissolved	47.7	ug/L	20.0	06/27/19 11:36	
SM 2320B	Alkalinity, Total as CaCO3	150	mg/L	5.0	06/27/19 10:33	
SM 2540C	Total Dissolved Solids	196	mg/L	10.0	06/20/19 11:20	
EPA 300.0	Chloride	1.3	mg/L	1.2	06/19/19 09:52	
EPA 300.0	Nitrate as N	0.17	mg/L	0.10	06/19/19 09:52	
EPA 300.0	Sulfate	4.1	mg/L	1.2	06/19/19 09:52	B
EPA 353.2	Nitrogen, NO2 plus NO3	0.20	mg/L	0.10	06/27/19 09:05	
SM 5310C	Total Organic Carbon	0.62J	mg/L	1.0	06/20/19 05:59	
10479596003	AtwoodS-GW-061719					
EPA 6010D	Barium, Dissolved	31.4	ug/L	10.0	06/27/19 11:38	
EPA 6010D	Beryllium, Dissolved	0.34J	ug/L	5.0	06/27/19 11:38	B
EPA 6010D	Cadmium, Dissolved	0.69J	ug/L	3.0	06/27/19 11:38	B
EPA 6010D	Cobalt, Dissolved	1.5J	ug/L	10.0	06/27/19 11:38	
EPA 6010D	Copper, Dissolved	452	ug/L	10.0	06/27/19 11:38	
EPA 6010D	Lead, Dissolved	5.9J	ug/L	10.0	06/27/19 11:38	
EPA 6010D	Nickel, Dissolved	6.4J	ug/L	20.0	06/27/19 11:38	
EPA 6010D	Vanadium, Dissolved	9.6J	ug/L	15.0	06/27/19 11:38	
EPA 6010D	Zinc, Dissolved	1830	ug/L	20.0	06/27/19 11:38	
SM 2320B	Alkalinity, Total as CaCO3	159	mg/L	5.0	06/27/19 10:38	
SM 2540C	Total Dissolved Solids	221	mg/L	10.0	06/20/19 11:20	
EPA 300.0	Chloride	1.5	mg/L	1.2	06/19/19 10:07	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
10479596003	AtwoodS-GW-061719					
EPA 300.0	Nitrate as N	1.2	mg/L	0.10	06/19/19 10:07	
EPA 300.0	Sulfate	4.6	mg/L	1.2	06/19/19 10:07	B
EPA 353.2	Nitrogen, NO2 plus NO3	1.3	mg/L	0.10	06/27/19 09:07	
SM 5310C	Total Organic Carbon	1.6	mg/L	1.0	06/20/19 06:15	
10479596004	Thorson-GW-061719					
EPA 6010D	Barium, Dissolved	54.5	ug/L	10.0	06/27/19 11:39	
EPA 6010D	Beryllium, Dissolved	0.19J	ug/L	5.0	06/27/19 11:39	B
EPA 6010D	Cobalt, Dissolved	1.4J	ug/L	10.0	06/27/19 11:39	
EPA 6010D	Nickel, Dissolved	2.1J	ug/L	20.0	06/27/19 11:39	
EPA 6010D	Zinc, Dissolved	15.4J	ug/L	20.0	06/27/19 11:39	
SM 2320B	Alkalinity, Total as CaCO3	151	mg/L	5.0	06/27/19 10:44	
SM 2540C	Total Dissolved Solids	203	mg/L	10.0	06/20/19 11:20	
EPA 300.0	Chloride	1.2	mg/L	1.2	06/19/19 10:22	
EPA 300.0	Sulfate	3.5	mg/L	1.2	06/19/19 10:22	B
SM 5310C	Total Organic Carbon	0.41J	mg/L	1.0	06/20/19 07:06	
10479596005	Lashaw-GW-061719					
EPA 6010D	Barium, Dissolved	9.7J	ug/L	10.0	06/27/19 11:44	
EPA 6010D	Beryllium, Dissolved	0.33J	ug/L	5.0	06/27/19 11:44	B
EPA 6010D	Cadmium, Dissolved	0.75J	ug/L	3.0	06/27/19 11:44	B
EPA 6010D	Cobalt, Dissolved	1.3J	ug/L	10.0	06/27/19 11:44	
EPA 6010D	Copper, Dissolved	1.8J	ug/L	10.0	06/27/19 11:44	
EPA 6010D	Lead, Dissolved	3.7J	ug/L	10.0	06/27/19 11:44	
EPA 6010D	Nickel, Dissolved	2.2J	ug/L	20.0	06/27/19 11:44	
EPA 6010D	Vanadium, Dissolved	12.3J	ug/L	15.0	06/27/19 11:44	
EPA 6010D	Zinc, Dissolved	111	ug/L	20.0	06/27/19 11:44	
SM 2320B	Alkalinity, Total as CaCO3	154	mg/L	5.0	06/27/19 10:49	
SM 2540C	Total Dissolved Solids	214	mg/L	10.0	06/20/19 11:20	
EPA 300.0	Chloride	1.7	mg/L	1.2	06/19/19 10:37	
EPA 300.0	Nitrate as N	2.3	mg/L	0.10	06/19/19 10:37	
EPA 300.0	Sulfate	6.6	mg/L	1.2	06/19/19 10:37	
EPA 353.2	Nitrogen, NO2 plus NO3	2.3	mg/L	0.50	06/27/19 09:40	
SM 5310C	Total Organic Carbon	0.67J	mg/L	1.0	06/20/19 07:22	
10479596006	LashawAg-GW-061719					
EPA 6010D	Barium, Dissolved	40.3	ug/L	10.0	06/27/19 11:46	
EPA 6010D	Beryllium, Dissolved	0.23J	ug/L	5.0	06/27/19 11:46	B
EPA 6010D	Cobalt, Dissolved	1.9J	ug/L	10.0	06/27/19 11:46	
EPA 6010D	Copper, Dissolved	1.3J	ug/L	10.0	06/27/19 11:46	
EPA 6010D	Lead, Dissolved	3.1J	ug/L	10.0	06/27/19 11:46	
EPA 6010D	Vanadium, Dissolved	3.0J	ug/L	15.0	06/27/19 11:46	
EPA 6010D	Zinc, Dissolved	367	ug/L	20.0	06/27/19 11:46	
SM 2320B	Alkalinity, Total as CaCO3	195	mg/L	5.0	06/27/19 10:55	
SM 2540C	Total Dissolved Solids	238	mg/L	10.0	06/20/19 11:20	
EPA 300.0	Chloride	3.6	mg/L	1.2	06/19/19 10:53	
EPA 300.0	Nitrate as N	0.16	mg/L	0.10	06/19/19 10:53	
EPA 300.0	Sulfate	7.1	mg/L	1.2	06/19/19 10:53	
EPA 353.2	Nitrogen, NO2 plus NO3	0.16	mg/L	0.10	06/27/19 09:16	

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
10479596006	LashawAg-GW-061719					
SM 5310C	Total Organic Carbon	0.95J	mg/L	1.0	06/20/19 07:39	
10479596007	Lang-GW-061719					
EPA 6010D	Barium, Dissolved	14.6	ug/L	10.0	06/27/19 11:48	
EPA 6010D	Beryllium, Dissolved	0.24J	ug/L	5.0	06/27/19 11:48	B
EPA 6010D	Copper, Dissolved	5.2J	ug/L	10.0	06/27/19 11:48	
EPA 6010D	Lead, Dissolved	2.0J	ug/L	10.0	06/27/19 11:48	
EPA 6010D	Vanadium, Dissolved	6.0J	ug/L	15.0	06/27/19 11:48	
EPA 6010D	Zinc, Dissolved	14.9J	ug/L	20.0	06/27/19 11:48	
SM 2320B	Alkalinity, Total as CaCO3	202	mg/L	5.0	06/28/19 07:04	
SM 2540C	Total Dissolved Solids	248	mg/L	10.0	06/20/19 11:20	
EPA 300.0	Chloride	1.7	mg/L	1.2	06/19/19 11:08	
EPA 300.0	Nitrate as N	0.43	mg/L	0.10	06/19/19 11:08	
EPA 300.0	Sulfate	2.3	mg/L	1.2	06/19/19 11:08	B
EPA 353.2	Nitrogen, NO2 plus NO3	0.47	mg/L	0.10	06/27/19 09:17	
SM 5310C	Total Organic Carbon	0.51J	mg/L	1.0	06/20/19 07:56	
10479596008	Marlow-GW-061719					
EPA 6010D	Barium, Dissolved	29.1	ug/L	10.0	06/27/19 11:49	
EPA 6010D	Beryllium, Dissolved	0.24J	ug/L	5.0	06/27/19 11:49	B
EPA 6010D	Cobalt, Dissolved	1.4J	ug/L	10.0	06/27/19 11:49	
EPA 6010D	Copper, Dissolved	6.6J	ug/L	10.0	06/27/19 11:49	
EPA 6010D	Lead, Dissolved	2.8J	ug/L	10.0	06/27/19 11:49	
EPA 6010D	Vanadium, Dissolved	9.1J	ug/L	15.0	06/27/19 11:49	
EPA 6010D	Zinc, Dissolved	31.2	ug/L	20.0	06/27/19 11:49	
SM 2320B	Alkalinity, Total as CaCO3	165	mg/L	5.0	06/28/19 07:30	
SM 2540C	Total Dissolved Solids	287	mg/L	10.0	06/20/19 11:20	
EPA 300.0	Chloride	18.0	mg/L	1.2	06/19/19 11:23	
EPA 300.0	Nitrate as N	3.8	mg/L	0.10	06/19/19 11:23	
EPA 300.0	Sulfate	13.6	mg/L	1.2	06/19/19 11:23	
EPA 353.2	Nitrogen, NO2 plus NO3	3.7	mg/L	0.50	06/27/19 09:41	
EPA 410.4	Chemical Oxygen Demand	380	mg/L	50.0	07/01/19 14:53	
SM 5310C	Total Organic Carbon	0.91J	mg/L	1.0	06/20/19 08:12	
10479596009	Randall-GW-061719					
EPA 6010D	Barium, Dissolved	20.2	ug/L	10.0	06/27/19 11:53	
EPA 6010D	Beryllium, Dissolved	0.13J	ug/L	5.0	06/27/19 11:53	B
EPA 6010D	Copper, Dissolved	2.7J	ug/L	10.0	06/27/19 11:53	
EPA 6010D	Lead, Dissolved	2.4J	ug/L	10.0	06/27/19 11:53	
EPA 6010D	Vanadium, Dissolved	6.3J	ug/L	15.0	06/27/19 11:53	
EPA 6010D	Zinc, Dissolved	30.6	ug/L	20.0	06/27/19 11:53	
SM 2320B	Alkalinity, Total as CaCO3	203	mg/L	5.0	06/28/19 07:43	
SM 2540C	Total Dissolved Solids	249	mg/L	10.0	06/20/19 11:20	
EPA 300.0	Chloride	4.4	mg/L	1.2	06/19/19 11:38	
EPA 300.0	Nitrate as N	2.0	mg/L	0.10	06/19/19 11:38	
EPA 300.0	Sulfate	8.2	mg/L	1.2	06/19/19 11:38	
EPA 353.2	Nitrogen, NO2 plus NO3	2.0	mg/L	0.10	06/27/19 09:19	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Method: RSK 175

Description: RSK 175 GCV Headspace

Client: UPRR_Jacobs

Date: July 03, 2019

General Information:

9 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 614037

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- DUP (Lab ID: 3317871)
 - Methane
- DUP (Lab ID: 3317872)
 - Methane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Method: EPA 6010D

Description: 6010D MET ICP, Dissolved

Client: UPRR_Jacobs

Date: July 03, 2019

General Information:

9 samples were analyzed for EPA 6010D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 613948

B: Analyte was detected in the associated method blank.

- BLANK for HBN 613948 [MPRP/939 (Lab ID: 3317132)]
 - Beryllium, Dissolved
 - Cadmium, Dissolved

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Method: EPA 7470A

Description: 7470A Mercury, Dissolved

Client: UPRR_Jacobs

Date: July 03, 2019

General Information:

9 samples were analyzed for EPA 7470A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: July 03, 2019

General Information:

1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 615092

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- LCS (Lab ID: 3323289)
- Carbon tetrachloride

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 615092

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10480450002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3323290)
 - Acrolein
 - Chloroethane
- MSD (Lab ID: 3323291)
 - Acrolein
 - Chloroethane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: July 03, 2019

Additional Comments:

Analyte Comments:

QC Batch: 615092

F1: The sample was analyzed at a dilution due to foaming of the sample in the purge vessel.

- MS (Lab ID: 3323290)
 - 1,2-Dichloroethane-d4 (S)
- MSD (Lab ID: 3323291)
 - 1,2-Dichloroethane-d4 (S)

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3323288)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3323289)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3323290)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3323291)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- TB-061719 (Lab ID: 10479596010)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Method: SM 2320B

Description: 2320B Alkalinity

Client: UPRR_Jacobs

Date: July 03, 2019

General Information:

9 samples were analyzed for SM 2320B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 615881

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10479712005,10479712006

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3327209)
 - Alkalinity, Total as CaCO₃
- MS (Lab ID: 3327211)
 - Alkalinity, Total as CaCO₃
- MSD (Lab ID: 3327212)
 - Alkalinity, Total as CaCO₃

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Method: SM 2540C

Description: 2540C Total Dissolved Solids

Client: UPRR_Jacobs

Date: July 03, 2019

General Information:

9 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Method: SM 4500-S-2 D

Description: 4500S2D Sulfide, Total

Client: UPRR_Jacobs

Date: July 03, 2019

General Information:

9 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 146524

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 20109005001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 646164)
- Sulfide, Total

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Method: EPA 300.0

Description: 300.0 IC Anions

Client: UPRR_Jacobs

Date: July 03, 2019

General Information:

9 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 613725

B: Analyte was detected in the associated method blank.

- BLANK for HBN 613725 [WETA/397 (Lab ID: 3315861)
- Sulfate

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Method: EPA 353.2

Description: 353.2 Nitrate + Nitrite

Client: UPRR_Jacobs

Date: July 03, 2019

General Information:

9 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 615695

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10479671003,10479671004

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3326138)
 - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 3326139)
 - Nitrogen, NO2 plus NO3

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Method: EPA 410.4

Description: 410.4 COD

Client: UPRR_Jacobs

Date: July 03, 2019

General Information:

9 samples were analyzed for EPA 410.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Method: SM 5310C

Description: 5310C TOC

Client: UPRR_Jacobs

Date: July 03, 2019

General Information:

9 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Sample: WS5-GW-061719 **Lab ID: 10479596001** Collected: 06/17/19 10:00 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace									
Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		06/19/19 17:35	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		06/19/19 17:35	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		06/19/19 17:35	74-85-1	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	06/21/19 10:07	06/27/19 11:28	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	06/21/19 10:07	06/27/19 11:28	7440-38-2	
Barium, Dissolved	50.9	ug/L	10.0	0.60	1	06/21/19 10:07	06/27/19 11:28	7440-39-3	
Beryllium, Dissolved	0.50J	ug/L	5.0	0.12	1	06/21/19 10:07	06/27/19 11:28	7440-41-7	B
Cadmium, Dissolved	0.63J	ug/L	3.0	0.28	1	06/21/19 10:07	06/27/19 11:28	7440-43-9	B
Chromium, Dissolved	<0.66	ug/L	10.0	0.66	1	06/21/19 10:07	06/27/19 11:28	7440-47-3	
Cobalt, Dissolved	1.1J	ug/L	10.0	0.50	1	06/21/19 10:07	06/27/19 11:28	7440-48-4	
Copper, Dissolved	13.4	ug/L	10.0	1.2	1	06/21/19 10:07	06/27/19 11:28	7440-50-8	
Lead, Dissolved	3.5J	ug/L	10.0	2.0	1	06/21/19 10:07	06/27/19 11:28	7439-92-1	
Molybdenum, Dissolved	<3.8	ug/L	15.0	3.8	1	06/21/19 10:07	06/27/19 11:28	7439-98-7	
Nickel, Dissolved	7.8J	ug/L	20.0	1.1	1	06/21/19 10:07	06/27/19 11:28	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	06/21/19 10:07	06/27/19 11:28	7782-49-2	
Silver, Dissolved	<0.40	ug/L	10.0	0.40	1	06/21/19 10:07	06/27/19 11:28	7440-22-4	
Thallium, Dissolved	<5.5	ug/L	20.0	5.5	1	06/21/19 10:07	06/27/19 11:28	7440-28-0	
Vanadium, Dissolved	20.0	ug/L	15.0	0.43	1	06/21/19 10:07	06/27/19 11:28	7440-62-2	
Zinc, Dissolved	49.6	ug/L	20.0	6.3	1	06/21/19 10:07	06/27/19 11:28	7440-66-6	
7470A Mercury, Dissolved									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	06/19/19 20:04	06/24/19 19:26	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	173	mg/L	5.0	2.0	1		06/27/19 10:26		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Total Dissolved Solids	237	mg/L	10.0	5.0	1		06/20/19 11:20		
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		06/20/19 16:24	18496-25-8	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	2.8	mg/L	1.2	0.12	1		06/19/19 09:36	16887-00-6	
Nitrate as N	1.0	mg/L	0.10	0.012	1		06/19/19 09:36	14797-55-8	
Sulfate	6.2	mg/L	1.2	0.28	1		06/19/19 09:36	14808-79-8	
353.2 Nitrate + Nitrite									
Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	1.1	mg/L	0.10	0.018	1		06/20/19 12:06		
410.4 COD									
Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	07/01/19 10:33	07/01/19 14:50		

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Sample: WS5-GW-061719 **Lab ID: 10479596001** Collected: 06/17/19 10:00 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	0.99J	mg/L	1.0	0.39	1		06/20/19 05:42	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Sample: AtwoodH-GW-061719 **Lab ID: 10479596002** Collected: 06/17/19 10:45 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace									
Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		06/19/19 16:05	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		06/19/19 16:05	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		06/19/19 16:05	74-85-1	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	06/21/19 10:07	06/27/19 11:36	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	06/21/19 10:07	06/27/19 11:36	7440-38-2	
Barium, Dissolved	44.0	ug/L	10.0	0.60	1	06/21/19 10:07	06/27/19 11:36	7440-39-3	
Beryllium, Dissolved	1.0J	ug/L	5.0	0.12	1	06/21/19 10:07	06/27/19 11:36	7440-41-7	B
Cadmium, Dissolved	1.2J	ug/L	3.0	0.28	1	06/21/19 10:07	06/27/19 11:36	7440-43-9	B
Chromium, Dissolved	<0.66	ug/L	10.0	0.66	1	06/21/19 10:07	06/27/19 11:36	7440-47-3	
Cobalt, Dissolved	2.5J	ug/L	10.0	0.50	1	06/21/19 10:07	06/27/19 11:36	7440-48-4	
Copper, Dissolved	18.2	ug/L	10.0	1.2	1	06/21/19 10:07	06/27/19 11:36	7440-50-8	
Lead, Dissolved	2.9J	ug/L	10.0	2.0	1	06/21/19 10:07	06/27/19 11:36	7439-92-1	
Molybdenum, Dissolved	<3.8	ug/L	15.0	3.8	1	06/21/19 10:07	06/27/19 11:36	7439-98-7	
Nickel, Dissolved	4.2J	ug/L	20.0	1.1	1	06/21/19 10:07	06/27/19 11:36	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	06/21/19 10:07	06/27/19 11:36	7782-49-2	
Silver, Dissolved	<0.40	ug/L	10.0	0.40	1	06/21/19 10:07	06/27/19 11:36	7440-22-4	
Thallium, Dissolved	<5.5	ug/L	20.0	5.5	1	06/21/19 10:07	06/27/19 11:36	7440-28-0	
Vanadium, Dissolved	2.2J	ug/L	15.0	0.43	1	06/21/19 10:07	06/27/19 11:36	7440-62-2	
Zinc, Dissolved	47.7	ug/L	20.0	6.3	1	06/21/19 10:07	06/27/19 11:36	7440-66-6	
7470A Mercury, Dissolved									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	06/19/19 20:04	06/24/19 19:28	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	150	mg/L	5.0	2.0	1		06/27/19 10:33		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Total Dissolved Solids	196	mg/L	10.0	5.0	1		06/20/19 11:20		
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		06/20/19 16:25	18496-25-8	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	1.3	mg/L	1.2	0.12	1		06/19/19 09:52	16887-00-6	
Nitrate as N	0.17	mg/L	0.10	0.012	1		06/19/19 09:52	14797-55-8	
Sulfate	4.1	mg/L	1.2	0.28	1		06/19/19 09:52	14808-79-8	B
353.2 Nitrate + Nitrite									
Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	0.20	mg/L	0.10	0.018	1		06/27/19 09:05		
410.4 COD									
Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	07/01/19 10:33	07/01/19 14:50		

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Sample: AtwoodH-GW-061719 **Lab ID: 10479596002** Collected: 06/17/19 10:45 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	0.62J	mg/L	1.0	0.39	1		06/20/19 05:59	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Sample: AtwoodS-GW-061719 **Lab ID: 10479596003** Collected: 06/17/19 11:00 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace									
Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		06/19/19 17:42	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		06/19/19 17:42	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		06/19/19 17:42	74-85-1	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	06/21/19 10:07	06/27/19 11:38	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	06/21/19 10:07	06/27/19 11:38	7440-38-2	
Barium, Dissolved	31.4	ug/L	10.0	0.60	1	06/21/19 10:07	06/27/19 11:38	7440-39-3	
Beryllium, Dissolved	0.34J	ug/L	5.0	0.12	1	06/21/19 10:07	06/27/19 11:38	7440-41-7	B
Cadmium, Dissolved	0.69J	ug/L	3.0	0.28	1	06/21/19 10:07	06/27/19 11:38	7440-43-9	B
Chromium, Dissolved	<0.66	ug/L	10.0	0.66	1	06/21/19 10:07	06/27/19 11:38	7440-47-3	
Cobalt, Dissolved	1.5J	ug/L	10.0	0.50	1	06/21/19 10:07	06/27/19 11:38	7440-48-4	
Copper, Dissolved	452	ug/L	10.0	1.2	1	06/21/19 10:07	06/27/19 11:38	7440-50-8	
Lead, Dissolved	5.9J	ug/L	10.0	2.0	1	06/21/19 10:07	06/27/19 11:38	7439-92-1	
Molybdenum, Dissolved	<3.8	ug/L	15.0	3.8	1	06/21/19 10:07	06/27/19 11:38	7439-98-7	
Nickel, Dissolved	6.4J	ug/L	20.0	1.1	1	06/21/19 10:07	06/27/19 11:38	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	06/21/19 10:07	06/27/19 11:38	7782-49-2	
Silver, Dissolved	<0.40	ug/L	10.0	0.40	1	06/21/19 10:07	06/27/19 11:38	7440-22-4	
Thallium, Dissolved	<5.5	ug/L	20.0	5.5	1	06/21/19 10:07	06/27/19 11:38	7440-28-0	
Vanadium, Dissolved	9.6J	ug/L	15.0	0.43	1	06/21/19 10:07	06/27/19 11:38	7440-62-2	
Zinc, Dissolved	1830	ug/L	20.0	6.3	1	06/21/19 10:07	06/27/19 11:38	7440-66-6	
7470A Mercury, Dissolved									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	06/19/19 20:04	06/24/19 19:31	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	159	mg/L	5.0	2.0	1		06/27/19 10:38		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Total Dissolved Solids	221	mg/L	10.0	5.0	1		06/20/19 11:20		
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		06/20/19 16:25	18496-25-8	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	1.5	mg/L	1.2	0.12	1		06/19/19 10:07	16887-00-6	
Nitrate as N	1.2	mg/L	0.10	0.012	1		06/19/19 10:07	14797-55-8	
Sulfate	4.6	mg/L	1.2	0.28	1		06/19/19 10:07	14808-79-8	B
353.2 Nitrate + Nitrite									
Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	1.3	mg/L	0.10	0.018	1		06/27/19 09:07		
410.4 COD									
Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	07/01/19 10:33	07/01/19 14:51		

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Sample: AtwoodS-GW-061719 **Lab ID: 10479596003** Collected: 06/17/19 11:00 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	1.6	mg/L	1.0	0.39	1		06/20/19 06:15	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Sample: Thorson-GW-061719 **Lab ID: 10479596004** Collected: 06/17/19 11:30 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		06/19/19 17:49	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		06/19/19 17:49	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		06/19/19 17:49	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	06/21/19 10:07	06/27/19 11:39	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	06/21/19 10:07	06/27/19 11:39	7440-38-2	
Barium, Dissolved	54.5	ug/L	10.0	0.60	1	06/21/19 10:07	06/27/19 11:39	7440-39-3	
Beryllium, Dissolved	0.19J	ug/L	5.0	0.12	1	06/21/19 10:07	06/27/19 11:39	7440-41-7	B
Cadmium, Dissolved	<0.28	ug/L	3.0	0.28	1	06/21/19 10:07	06/27/19 11:39	7440-43-9	
Chromium, Dissolved	<0.66	ug/L	10.0	0.66	1	06/21/19 10:07	06/27/19 11:39	7440-47-3	
Cobalt, Dissolved	1.4J	ug/L	10.0	0.50	1	06/21/19 10:07	06/27/19 11:39	7440-48-4	
Copper, Dissolved	<1.2	ug/L	10.0	1.2	1	06/21/19 10:07	06/27/19 11:39	7440-50-8	
Lead, Dissolved	<2.0	ug/L	10.0	2.0	1	06/21/19 10:07	06/27/19 11:39	7439-92-1	
Molybdenum, Dissolved	<3.8	ug/L	15.0	3.8	1	06/21/19 10:07	06/27/19 11:39	7439-98-7	
Nickel, Dissolved	2.1J	ug/L	20.0	1.1	1	06/21/19 10:07	06/27/19 11:39	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	06/21/19 10:07	06/27/19 11:39	7782-49-2	
Silver, Dissolved	<0.40	ug/L	10.0	0.40	1	06/21/19 10:07	06/27/19 11:39	7440-22-4	
Thallium, Dissolved	<5.5	ug/L	20.0	5.5	1	06/21/19 10:07	06/27/19 11:39	7440-28-0	
Vanadium, Dissolved	<0.43	ug/L	15.0	0.43	1	06/21/19 10:07	06/27/19 11:39	7440-62-2	
Zinc, Dissolved	15.4J	ug/L	20.0	6.3	1	06/21/19 10:07	06/27/19 11:39	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	06/19/19 20:04	06/24/19 19:33	7439-97-6	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	151	mg/L	5.0	2.0	1		06/27/19 10:44		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	203	mg/L	10.0	5.0	1		06/20/19 11:20		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		06/20/19 16:26	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	1.2	mg/L	1.2	0.12	1		06/19/19 10:22	16887-00-6	
Nitrate as N	<0.012	mg/L	0.10	0.012	1		06/19/19 10:22	14797-55-8	
Sulfate	3.5	mg/L	1.2	0.28	1		06/19/19 10:22	14808-79-8	B
353.2 Nitrate + Nitrite Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	<0.018	mg/L	0.10	0.018	1		06/27/19 09:13		
410.4 COD Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	07/01/19 10:33	07/01/19 14:51		

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Sample: Thorson-GW-061719 **Lab ID: 10479596004** Collected: 06/17/19 11:30 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	0.41J	mg/L	1.0	0.39	1		06/20/19 07:06	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Sample: Lashaw-GW-061719 **Lab ID:** 10479596005 Collected: 06/17/19 12:00 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		06/19/19 17:06	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		06/19/19 17:06	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		06/19/19 17:06	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	06/21/19 10:07	06/27/19 11:44	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	06/21/19 10:07	06/27/19 11:44	7440-38-2	
Barium, Dissolved	9.7J	ug/L	10.0	0.60	1	06/21/19 10:07	06/27/19 11:44	7440-39-3	
Beryllium, Dissolved	0.33J	ug/L	5.0	0.12	1	06/21/19 10:07	06/27/19 11:44	7440-41-7	B
Cadmium, Dissolved	0.75J	ug/L	3.0	0.28	1	06/21/19 10:07	06/27/19 11:44	7440-43-9	B
Chromium, Dissolved	<0.66	ug/L	10.0	0.66	1	06/21/19 10:07	06/27/19 11:44	7440-47-3	
Cobalt, Dissolved	1.3J	ug/L	10.0	0.50	1	06/21/19 10:07	06/27/19 11:44	7440-48-4	
Copper, Dissolved	1.8J	ug/L	10.0	1.2	1	06/21/19 10:07	06/27/19 11:44	7440-50-8	
Lead, Dissolved	3.7J	ug/L	10.0	2.0	1	06/21/19 10:07	06/27/19 11:44	7439-92-1	
Molybdenum, Dissolved	<3.8	ug/L	15.0	3.8	1	06/21/19 10:07	06/27/19 11:44	7439-98-7	
Nickel, Dissolved	2.2J	ug/L	20.0	1.1	1	06/21/19 10:07	06/27/19 11:44	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	06/21/19 10:07	06/27/19 11:44	7782-49-2	
Silver, Dissolved	<0.40	ug/L	10.0	0.40	1	06/21/19 10:07	06/27/19 11:44	7440-22-4	
Thallium, Dissolved	<5.5	ug/L	20.0	5.5	1	06/21/19 10:07	06/27/19 11:44	7440-28-0	
Vanadium, Dissolved	12.3J	ug/L	15.0	0.43	1	06/21/19 10:07	06/27/19 11:44	7440-62-2	
Zinc, Dissolved	111	ug/L	20.0	6.3	1	06/21/19 10:07	06/27/19 11:44	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	06/19/19 20:04	06/24/19 19:36	7439-97-6	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	154	mg/L	5.0	2.0	1		06/27/19 10:49		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	214	mg/L	10.0	5.0	1		06/20/19 11:20		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		06/20/19 16:29	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	1.7	mg/L	1.2	0.12	1		06/19/19 10:37	16887-00-6	
Nitrate as N	2.3	mg/L	0.10	0.012	1		06/19/19 10:37	14797-55-8	
Sulfate	6.6	mg/L	1.2	0.28	1		06/19/19 10:37	14808-79-8	
353.2 Nitrate + Nitrite Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	2.3	mg/L	0.50	0.088	5		06/27/19 09:40		
410.4 COD Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	07/01/19 10:33	07/01/19 14:52		

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Sample: Lashaw-GW-061719 **Lab ID: 10479596005** Collected: 06/17/19 12:00 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	0.67J	mg/L	1.0	0.39	1		06/20/19 07:22	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Sample: LashawAg-GW-061719 Lab ID: 10479596006 Collected: 06/17/19 12:15 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace									
Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		06/19/19 17:13	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		06/19/19 17:13	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		06/19/19 17:13	74-85-1	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	06/21/19 10:07	06/27/19 11:46	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	06/21/19 10:07	06/27/19 11:46	7440-38-2	
Barium, Dissolved	40.3	ug/L	10.0	0.60	1	06/21/19 10:07	06/27/19 11:46	7440-39-3	
Beryllium, Dissolved	0.23J	ug/L	5.0	0.12	1	06/21/19 10:07	06/27/19 11:46	7440-41-7	B
Cadmium, Dissolved	<0.28	ug/L	3.0	0.28	1	06/21/19 10:07	06/27/19 11:46	7440-43-9	
Chromium, Dissolved	<0.66	ug/L	10.0	0.66	1	06/21/19 10:07	06/27/19 11:46	7440-47-3	
Cobalt, Dissolved	1.9J	ug/L	10.0	0.50	1	06/21/19 10:07	06/27/19 11:46	7440-48-4	
Copper, Dissolved	1.3J	ug/L	10.0	1.2	1	06/21/19 10:07	06/27/19 11:46	7440-50-8	
Lead, Dissolved	3.1J	ug/L	10.0	2.0	1	06/21/19 10:07	06/27/19 11:46	7439-92-1	
Molybdenum, Dissolved	<3.8	ug/L	15.0	3.8	1	06/21/19 10:07	06/27/19 11:46	7439-98-7	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	06/21/19 10:07	06/27/19 11:46	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	06/21/19 10:07	06/27/19 11:46	7782-49-2	
Silver, Dissolved	<0.40	ug/L	10.0	0.40	1	06/21/19 10:07	06/27/19 11:46	7440-22-4	
Thallium, Dissolved	<5.5	ug/L	20.0	5.5	1	06/21/19 10:07	06/27/19 11:46	7440-28-0	
Vanadium, Dissolved	3.0J	ug/L	15.0	0.43	1	06/21/19 10:07	06/27/19 11:46	7440-62-2	
Zinc, Dissolved	367	ug/L	20.0	6.3	1	06/21/19 10:07	06/27/19 11:46	7440-66-6	
7470A Mercury, Dissolved									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	06/19/19 20:04	06/24/19 19:38	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	195	mg/L	5.0	2.0	1		06/27/19 10:55		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Total Dissolved Solids	238	mg/L	10.0	5.0	1		06/20/19 11:20		
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		06/20/19 16:58	18496-25-8	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	3.6	mg/L	1.2	0.12	1		06/19/19 10:53	16887-00-6	
Nitrate as N	0.16	mg/L	0.10	0.012	1		06/19/19 10:53	14797-55-8	
Sulfate	7.1	mg/L	1.2	0.28	1		06/19/19 10:53	14808-79-8	
353.2 Nitrate + Nitrite									
Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	0.16	mg/L	0.10	0.018	1		06/27/19 09:16		
410.4 COD									
Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	07/01/19 10:33	07/01/19 14:52		

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Sample: LashawAg-GW-061719 **Lab ID: 10479596006** Collected: 06/17/19 12:15 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	0.95J	mg/L	1.0	0.39	1		06/20/19 07:39	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Sample: Lang-GW-061719 **Lab ID: 10479596007** Collected: 06/17/19 12:45 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace									
Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		06/19/19 17:21	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		06/19/19 17:21	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		06/19/19 17:21	74-85-1	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	06/21/19 10:07	06/27/19 11:48	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	06/21/19 10:07	06/27/19 11:48	7440-38-2	
Barium, Dissolved	14.6	ug/L	10.0	0.60	1	06/21/19 10:07	06/27/19 11:48	7440-39-3	
Beryllium, Dissolved	0.24J	ug/L	5.0	0.12	1	06/21/19 10:07	06/27/19 11:48	7440-41-7	B
Cadmium, Dissolved	<0.28	ug/L	3.0	0.28	1	06/21/19 10:07	06/27/19 11:48	7440-43-9	
Chromium, Dissolved	<0.66	ug/L	10.0	0.66	1	06/21/19 10:07	06/27/19 11:48	7440-47-3	
Cobalt, Dissolved	<0.50	ug/L	10.0	0.50	1	06/21/19 10:07	06/27/19 11:48	7440-48-4	
Copper, Dissolved	5.2J	ug/L	10.0	1.2	1	06/21/19 10:07	06/27/19 11:48	7440-50-8	
Lead, Dissolved	2.0J	ug/L	10.0	2.0	1	06/21/19 10:07	06/27/19 11:48	7439-92-1	
Molybdenum, Dissolved	<3.8	ug/L	15.0	3.8	1	06/21/19 10:07	06/27/19 11:48	7439-98-7	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	06/21/19 10:07	06/27/19 11:48	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	06/21/19 10:07	06/27/19 11:48	7782-49-2	
Silver, Dissolved	<0.40	ug/L	10.0	0.40	1	06/21/19 10:07	06/27/19 11:48	7440-22-4	
Thallium, Dissolved	<5.5	ug/L	20.0	5.5	1	06/21/19 10:07	06/27/19 11:48	7440-28-0	
Vanadium, Dissolved	6.0J	ug/L	15.0	0.43	1	06/21/19 10:07	06/27/19 11:48	7440-62-2	
Zinc, Dissolved	14.9J	ug/L	20.0	6.3	1	06/21/19 10:07	06/27/19 11:48	7440-66-6	
7470A Mercury, Dissolved									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	06/19/19 20:04	06/24/19 19:40	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	202	mg/L	5.0	2.0	1		06/28/19 07:04		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Total Dissolved Solids	248	mg/L	10.0	5.0	1		06/20/19 11:20		
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		06/20/19 16:58	18496-25-8	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	1.7	mg/L	1.2	0.12	1		06/19/19 11:08	16887-00-6	
Nitrate as N	0.43	mg/L	0.10	0.012	1		06/19/19 11:08	14797-55-8	
Sulfate	2.3	mg/L	1.2	0.28	1		06/19/19 11:08	14808-79-8	B
353.2 Nitrate + Nitrite									
Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	0.47	mg/L	0.10	0.018	1		06/27/19 09:17		
410.4 COD									
Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	07/01/19 10:33	07/01/19 14:52		

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479596

Sample: Lang-GW-061719 **Lab ID: 10479596007** Collected: 06/17/19 12:45 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	0.51J	mg/L	1.0	0.39	1		06/20/19 07:56	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Sample: Marlow-GW-061719 **Lab ID: 10479596008** Collected: 06/17/19 13:15 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace									
Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		06/19/19 17:28	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		06/19/19 17:28	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		06/19/19 17:28	74-85-1	
6010D MET ICP, Dissolved									
Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	06/21/19 10:07	06/27/19 11:49	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	06/21/19 10:07	06/27/19 11:49	7440-38-2	
Barium, Dissolved	29.1	ug/L	10.0	0.60	1	06/21/19 10:07	06/27/19 11:49	7440-39-3	
Beryllium, Dissolved	0.24J	ug/L	5.0	0.12	1	06/21/19 10:07	06/27/19 11:49	7440-41-7	B
Cadmium, Dissolved	<0.28	ug/L	3.0	0.28	1	06/21/19 10:07	06/27/19 11:49	7440-43-9	
Chromium, Dissolved	<0.66	ug/L	10.0	0.66	1	06/21/19 10:07	06/27/19 11:49	7440-47-3	
Cobalt, Dissolved	1.4J	ug/L	10.0	0.50	1	06/21/19 10:07	06/27/19 11:49	7440-48-4	
Copper, Dissolved	6.6J	ug/L	10.0	1.2	1	06/21/19 10:07	06/27/19 11:49	7440-50-8	
Lead, Dissolved	2.8J	ug/L	10.0	2.0	1	06/21/19 10:07	06/27/19 11:49	7439-92-1	
Molybdenum, Dissolved	<3.8	ug/L	15.0	3.8	1	06/21/19 10:07	06/27/19 11:49	7439-98-7	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	06/21/19 10:07	06/27/19 11:49	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	06/21/19 10:07	06/27/19 11:49	7782-49-2	
Silver, Dissolved	<0.40	ug/L	10.0	0.40	1	06/21/19 10:07	06/27/19 11:49	7440-22-4	
Thallium, Dissolved	<5.5	ug/L	20.0	5.5	1	06/21/19 10:07	06/27/19 11:49	7440-28-0	
Vanadium, Dissolved	9.1J	ug/L	15.0	0.43	1	06/21/19 10:07	06/27/19 11:49	7440-62-2	
Zinc, Dissolved	31.2	ug/L	20.0	6.3	1	06/21/19 10:07	06/27/19 11:49	7440-66-6	
7470A Mercury, Dissolved									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	06/19/19 20:04	06/24/19 19:43	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	165	mg/L	5.0	2.0	1		06/28/19 07:30		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Total Dissolved Solids	287	mg/L	10.0	5.0	1		06/20/19 11:20		
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		06/20/19 16:59	18496-25-8	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	18.0	mg/L	1.2	0.12	1		06/19/19 11:23	16887-00-6	
Nitrate as N	3.8	mg/L	0.10	0.012	1		06/19/19 11:23	14797-55-8	
Sulfate	13.6	mg/L	1.2	0.28	1		06/19/19 11:23	14808-79-8	
353.2 Nitrate + Nitrite									
Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	3.7	mg/L	0.50	0.088	5		06/27/19 09:41		
410.4 COD									
Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	380	mg/L	50.0	17.0	1	07/01/19 10:33	07/01/19 14:53		

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Sample: Marlow-GW-061719 **Lab ID: 10479596008** Collected: 06/17/19 13:15 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	0.91J	mg/L	1.0	0.39	1		06/20/19 08:12	7440-44-0	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Sample: Randall-GW-061719 **Lab ID: 10479596009** Collected: 06/17/19 13:30 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 GCV Headspace Analytical Method: RSK 175									
Methane	<4.9	ug/L	10.0	4.9	1		06/20/19 15:45	74-82-8	
Ethane	<3.0	ug/L	10.0	3.0	1		06/20/19 15:45	74-84-0	
Ethene	<2.9	ug/L	10.0	2.9	1		06/20/19 15:45	74-85-1	
6010D MET ICP, Dissolved Analytical Method: EPA 6010D Preparation Method: EPA 3010									
Antimony, Dissolved	<7.0	ug/L	20.0	7.0	1	06/21/19 10:07	06/27/19 11:53	7440-36-0	
Arsenic, Dissolved	<3.8	ug/L	20.0	3.8	1	06/21/19 10:07	06/27/19 11:53	7440-38-2	
Barium, Dissolved	20.2	ug/L	10.0	0.60	1	06/21/19 10:07	06/27/19 11:53	7440-39-3	
Beryllium, Dissolved	0.13J	ug/L	5.0	0.12	1	06/21/19 10:07	06/27/19 11:53	7440-41-7	B
Cadmium, Dissolved	<0.28	ug/L	3.0	0.28	1	06/21/19 10:07	06/27/19 11:53	7440-43-9	
Chromium, Dissolved	<0.66	ug/L	10.0	0.66	1	06/21/19 10:07	06/27/19 11:53	7440-47-3	
Cobalt, Dissolved	<0.50	ug/L	10.0	0.50	1	06/21/19 10:07	06/27/19 11:53	7440-48-4	
Copper, Dissolved	2.7J	ug/L	10.0	1.2	1	06/21/19 10:07	06/27/19 11:53	7440-50-8	
Lead, Dissolved	2.4J	ug/L	10.0	2.0	1	06/21/19 10:07	06/27/19 11:53	7439-92-1	
Molybdenum, Dissolved	<3.8	ug/L	15.0	3.8	1	06/21/19 10:07	06/27/19 11:53	7439-98-7	
Nickel, Dissolved	<1.1	ug/L	20.0	1.1	1	06/21/19 10:07	06/27/19 11:53	7440-02-0	
Selenium, Dissolved	<5.8	ug/L	20.0	5.8	1	06/21/19 10:07	06/27/19 11:53	7782-49-2	
Silver, Dissolved	<0.40	ug/L	10.0	0.40	1	06/21/19 10:07	06/27/19 11:53	7440-22-4	
Thallium, Dissolved	<5.5	ug/L	20.0	5.5	1	06/21/19 10:07	06/27/19 11:53	7440-28-0	
Vanadium, Dissolved	6.3J	ug/L	15.0	0.43	1	06/21/19 10:07	06/27/19 11:53	7440-62-2	
Zinc, Dissolved	30.6	ug/L	20.0	6.3	1	06/21/19 10:07	06/27/19 11:53	7440-66-6	
7470A Mercury, Dissolved Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury, Dissolved	<0.093	ug/L	0.20	0.093	1	06/19/19 20:04	06/24/19 19:45	7439-97-6	
2320B Alkalinity Analytical Method: SM 2320B									
Alkalinity, Total as CaCO3	203	mg/L	5.0	2.0	1		06/28/19 07:43		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	249	mg/L	10.0	5.0	1		06/20/19 11:20		
4500S2D Sulfide, Total Analytical Method: SM 4500-S-2 D									
Sulfide, Total	<0.0054	mg/L	0.020	0.0054	1		06/20/19 16:59	18496-25-8	
300.0 IC Anions Analytical Method: EPA 300.0									
Chloride	4.4	mg/L	1.2	0.12	1		06/19/19 11:38	16887-00-6	
Nitrate as N	2.0	mg/L	0.10	0.012	1		06/19/19 11:38	14797-55-8	
Sulfate	8.2	mg/L	1.2	0.28	1		06/19/19 11:38	14808-79-8	
353.2 Nitrate + Nitrite Analytical Method: EPA 353.2									
Nitrogen, NO2 plus NO3	2.0	mg/L	0.10	0.018	1		06/27/19 09:19		
410.4 COD Analytical Method: EPA 410.4 Preparation Method: EPA 410.4									
Chemical Oxygen Demand	<17.0	mg/L	50.0	17.0	1	07/01/19 10:33	07/01/19 14:53		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Sample: Randall-GW-061719 **Lab ID: 10479596009** Collected: 06/17/19 13:30 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC									
Analytical Method: SM 5310C									
Total Organic Carbon	ND	mg/L	1.0	0.39	1		06/20/19 08:29	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10479596

Sample: TB-061719 **Lab ID: 10479596010** Collected: 06/17/19 07:00 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		06/24/19 22:57	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		06/24/19 22:57	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		06/24/19 22:57	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		06/24/19 22:57	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		06/24/19 22:57	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		06/24/19 22:57	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	1.0	0.16	1		06/24/19 22:57	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		06/24/19 22:57	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		06/24/19 22:57	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		06/24/19 22:57	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		06/24/19 22:57	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		06/24/19 22:57	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		06/24/19 22:57	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		06/24/19 22:57	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		06/24/19 22:57	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		06/24/19 22:57	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		06/24/19 22:57	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		06/24/19 22:57	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		06/24/19 22:57	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		06/24/19 22:57	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		06/24/19 22:57	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		06/24/19 22:57	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		06/24/19 22:57	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		06/24/19 22:57	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		06/24/19 22:57	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		06/24/19 22:57	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		06/24/19 22:57	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		06/24/19 22:57	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		06/24/19 22:57	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		06/24/19 22:57	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		06/24/19 22:57	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		06/24/19 22:57	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		06/24/19 22:57	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		06/24/19 22:57	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		06/24/19 22:57	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		06/24/19 22:57	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		06/24/19 22:57	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		06/24/19 22:57	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		06/24/19 22:57	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		06/24/19 22:57	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		06/24/19 22:57	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		06/24/19 22:57	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		06/24/19 22:57	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		06/24/19 22:57	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		06/24/19 22:57	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		06/24/19 22:57	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Sample: TB-061719 **Lab ID: 10479596010** Collected: 06/17/19 07:00 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		06/24/19 22:57	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		06/24/19 22:57	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		06/24/19 22:57	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		06/24/19 22:57	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		06/24/19 22:57	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		06/24/19 22:57	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		06/24/19 22:57	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		06/24/19 22:57	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		06/24/19 22:57	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		06/24/19 22:57	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		06/24/19 22:57	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		06/24/19 22:57	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		06/24/19 22:57	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		06/24/19 22:57	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		06/24/19 22:57	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		06/24/19 22:57	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		06/24/19 22:57	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		06/24/19 22:57	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		06/24/19 22:57	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		06/24/19 22:57	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		06/24/19 22:57	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	1.0	0.20	1		06/24/19 22:57	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		06/24/19 22:57	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		06/24/19 22:57	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		06/24/19 22:57	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		06/24/19 22:57	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		06/24/19 22:57	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/24/19 22:57	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		06/24/19 22:57	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		06/24/19 22:57	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/24/19 22:57	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		06/24/19 22:57	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		06/24/19 22:57	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		06/24/19 22:57	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	97	%	75-136		1		06/24/19 22:57	17060-07-0	
Toluene-d8 (S)	101	%	75-125		1		06/24/19 22:57	2037-26-5	
4-Bromofluorobenzene (S)	96	%	75-125		1		06/24/19 22:57	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

QC Batch: 614037

Analysis Method: RSK 175

QC Batch Method: RSK 175

Analysis Description: RSK 175 GCV HEADSPACE

Associated Lab Samples: 10479596001, 10479596002, 10479596003, 10479596004, 10479596005, 10479596006, 10479596007, 10479596008

METHOD BLANK: 3317431

Matrix: Water

Associated Lab Samples: 10479596001, 10479596002, 10479596003, 10479596004, 10479596005, 10479596006, 10479596007, 10479596008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	06/19/19 13:48	
Ethene	ug/L	<2.9	10.0	2.9	06/19/19 13:48	
Methane	ug/L	<4.9	10.0	4.9	06/19/19 13:48	

LABORATORY CONTROL SAMPLE & LCSD: 3317432

3317433

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	104	111	91	98	85-115	7	20	
Ethene	ug/L	106	96.9	104	91	98	85-115	7	20	
Methane	ug/L	60.7	52.9	56.8	87	94	85-115	7	20	

SAMPLE DUPLICATE: 3317871

Parameter	Units	10479656005 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	3.2J	3.1J		20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	4270	4200	2	20 E	

SAMPLE DUPLICATE: 3317872

Parameter	Units	10479656006 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	4.2J	4.2J		20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	4590	4610	0	20 E	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

QC Batch: 614372	Analysis Method: RSK 175
QC Batch Method: RSK 175	Analysis Description: RSK 175 GCV HEADSPACE
Associated Lab Samples: 10479596009	

METHOD BLANK: 3318939 Matrix: Water

Associated Lab Samples: 10479596009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethane	ug/L	<3.0	10.0	3.0	06/20/19 15:23	
Ethene	ug/L	<2.9	10.0	2.9	06/20/19 15:23	
Methane	ug/L	<4.9	10.0	4.9	06/20/19 15:23	

LABORATORY CONTROL SAMPLE & LCSD: 3318940 3318941

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Ethane	ug/L	114	118	115	104	101	85-115	3	20	
Ethene	ug/L	106	110	107	103	101	85-115	3	20	
Methane	ug/L	60.7	60.8	59.3	100	98	85-115	3	20	

SAMPLE DUPLICATE: 3319630

Parameter	Units	10479596009 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<3.0	<3.0		20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	<4.9	<4.9		20	

SAMPLE DUPLICATE: 3319631

Parameter	Units	10479671001 Result	Dup Result	RPD	Max RPD	Qualifiers
Ethane	ug/L	<3.0	<3.0		20	
Ethene	ug/L	<2.9	<2.9		20	
Methane	ug/L	12.6	12.0	5	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

QC Batch: 613970

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470A Mercury Water Dissolved

Associated Lab Samples: 10479596001, 10479596002, 10479596003, 10479596004, 10479596005, 10479596006, 10479596007, 10479596008, 10479596009

METHOD BLANK: 3317210

Matrix: Water

Associated Lab Samples: 10479596001, 10479596002, 10479596003, 10479596004, 10479596005, 10479596006, 10479596007, 10479596008, 10479596009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.093	0.20	0.093	06/24/19 18:55	

LABORATORY CONTROL SAMPLE: 3317211

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.0	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3317212 3317213

Parameter	Units	3317212		3317213		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		10479205002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Mercury, Dissolved	ug/L	<0.093	5	5	5.2	5.2	103	104	80-120	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479596

QC Batch: 613948 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010 Analysis Description: 6010D Water Dissolved
Associated Lab Samples: 10479596001, 10479596002, 10479596003, 10479596004, 10479596005, 10479596006, 10479596007, 10479596008, 10479596009

METHOD BLANK: 3317132 Matrix: Water
Associated Lab Samples: 10479596001, 10479596002, 10479596003, 10479596004, 10479596005, 10479596006, 10479596007, 10479596008, 10479596009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony, Dissolved	ug/L	<7.0	20.0	7.0	06/27/19 11:24	
Arsenic, Dissolved	ug/L	<3.8	20.0	3.8	06/27/19 11:24	
Barium, Dissolved	ug/L	<0.60	10.0	0.60	06/27/19 11:24	
Beryllium, Dissolved	ug/L	0.44J	5.0	0.12	06/27/19 11:24	
Cadmium, Dissolved	ug/L	0.34J	3.0	0.28	06/27/19 11:24	
Chromium, Dissolved	ug/L	<0.66	10.0	0.66	06/27/19 11:24	
Cobalt, Dissolved	ug/L	<0.50	10.0	0.50	06/27/19 11:24	
Copper, Dissolved	ug/L	<1.2	10.0	1.2	06/27/19 11:24	
Lead, Dissolved	ug/L	<2.0	10.0	2.0	06/27/19 11:24	
Molybdenum, Dissolved	ug/L	<3.8	15.0	3.8	06/27/19 11:24	
Nickel, Dissolved	ug/L	<1.1	20.0	1.1	06/27/19 11:24	
Selenium, Dissolved	ug/L	<5.8	20.0	5.8	06/27/19 11:24	
Silver, Dissolved	ug/L	<0.40	10.0	0.40	06/27/19 11:24	
Thallium, Dissolved	ug/L	<5.5	20.0	5.5	06/27/19 11:24	
Vanadium, Dissolved	ug/L	<0.43	15.0	0.43	06/27/19 11:24	
Zinc, Dissolved	ug/L	<6.3	20.0	6.3	06/27/19 11:24	

LABORATORY CONTROL SAMPLE: 3317133

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony, Dissolved	ug/L	1000	1000	100	80-120	
Arsenic, Dissolved	ug/L	1000	1020	102	80-120	
Barium, Dissolved	ug/L	1000	1000	100	80-120	
Beryllium, Dissolved	ug/L	1000	1020	102	80-120	
Cadmium, Dissolved	ug/L	1000	1040	104	80-120	
Chromium, Dissolved	ug/L	1000	1000	100	80-120	
Cobalt, Dissolved	ug/L	1000	1010	101	80-120	
Copper, Dissolved	ug/L	1000	979	98	80-120	
Lead, Dissolved	ug/L	1000	1030	103	80-120	
Molybdenum, Dissolved	ug/L	1000	1020	102	80-120	
Nickel, Dissolved	ug/L	1000	1010	101	80-120	
Selenium, Dissolved	ug/L	1000	1050	105	80-120	
Silver, Dissolved	ug/L	500	499	100	80-120	
Thallium, Dissolved	ug/L	1000	1000	100	80-120	
Vanadium, Dissolved	ug/L	1000	1000	100	80-120	
Zinc, Dissolved	ug/L	1000	1060	106	80-120	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Parameter	Units	10479596001		3317134		3317135		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Antimony, Dissolved	ug/L	<7.0	1000	1000	1020	1010	102	101	75-125	1	20			
Arsenic, Dissolved	ug/L	<3.8	1000	1000	1050	1040	105	104	75-125	1	20			
Barium, Dissolved	ug/L	50.9	1000	1000	1080	1070	103	102	75-125	1	20			
Beryllium, Dissolved	ug/L	0.50J	1000	1000	1060	1050	106	105	75-125	1	20			
Cadmium, Dissolved	ug/L	0.63J	1000	1000	1060	1050	106	105	75-125	1	20			
Chromium, Dissolved	ug/L	<0.66	1000	1000	1030	1020	103	102	75-125	1	20			
Cobalt, Dissolved	ug/L	1.1J	1000	1000	1030	1010	103	101	75-125	1	20			
Copper, Dissolved	ug/L	13.4	1000	1000	1030	1010	102	100	75-125	2	20			
Lead, Dissolved	ug/L	3.5J	1000	1000	1050	1030	104	103	75-125	2	20			
Molybdenum, Dissolved	ug/L	<3.8	1000	1000	1040	1040	104	104	75-125	0	20			
Nickel, Dissolved	ug/L	7.8J	1000	1000	1020	1010	102	100	75-125	1	20			
Selenium, Dissolved	ug/L	<5.8	1000	1000	1080	1070	108	107	75-125	1	20			
Silver, Dissolved	ug/L	<0.40	500	500	517	510	103	102	75-125	1	20			
Thallium, Dissolved	ug/L	<5.5	1000	1000	1030	1010	103	101	75-125	1	20			
Vanadium, Dissolved	ug/L	20.0	1000	1000	1050	1040	103	102	75-125	1	20			
Zinc, Dissolved	ug/L	49.6	1000	1000	1100	1090	105	104	75-125	1	20			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

QC Batch: 615092

Analysis Method: EPA 8260B

QC Batch Method: EPA 8260B

Analysis Description: 8260 MSV LL Water

Associated Lab Samples: 10479596010

METHOD BLANK: 3323288

Matrix: Water

Associated Lab Samples: 10479596010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	06/24/19 21:23	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	06/24/19 21:23	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	06/24/19 21:23	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	06/24/19 21:23	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	06/24/19 21:23	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	06/24/19 21:23	
1,1-Dichloroethene	ug/L	<0.16	1.0	0.16	06/24/19 21:23	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	06/24/19 21:23	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	06/24/19 21:23	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	06/24/19 21:23	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	06/24/19 21:23	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	06/24/19 21:23	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	06/24/19 21:23	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	06/24/19 21:23	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	06/24/19 21:23	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	06/24/19 21:23	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	06/24/19 21:23	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	06/24/19 21:23	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	06/24/19 21:23	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	06/24/19 21:23	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	06/24/19 21:23	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	06/24/19 21:23	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	06/24/19 21:23	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	06/24/19 21:23	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	06/24/19 21:23	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	06/24/19 21:23	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	06/24/19 21:23	
2-Hexanone	ug/L	<0.88	5.0	0.88	06/24/19 21:23	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	06/24/19 21:23	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	06/24/19 21:23	
Acetone	ug/L	<9.2	20.0	9.2	06/24/19 21:23	
Acrolein	ug/L	<1.2	10.0	1.2	06/24/19 21:23	
Acrylonitrile	ug/L	<0.91	10.0	0.91	06/24/19 21:23	
Benzene	ug/L	<0.10	0.50	0.10	06/24/19 21:23	
Bromobenzene	ug/L	<0.21	0.50	0.21	06/24/19 21:23	
Bromochloromethane	ug/L	<0.27	1.0	0.27	06/24/19 21:23	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	06/24/19 21:23	
Bromoform	ug/L	<0.80	4.0	0.80	06/24/19 21:23	
Bromomethane	ug/L	<1.8	4.0	1.8	06/24/19 21:23	
Carbon disulfide	ug/L	<0.078	1.0	0.078	06/24/19 21:23	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	06/24/19 21:23	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

METHOD BLANK: 3323288

Matrix: Water

Associated Lab Samples: 10479596010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	06/24/19 21:23	
Chloroethane	ug/L	<0.49	1.0	0.49	06/24/19 21:23	
Chloroform	ug/L	<0.45	1.0	0.45	06/24/19 21:23	
Chloromethane	ug/L	<0.16	4.0	0.16	06/24/19 21:23	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	06/24/19 21:23	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	06/24/19 21:23	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	06/24/19 21:23	
Dibromomethane	ug/L	<0.16	1.0	0.16	06/24/19 21:23	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	06/24/19 21:23	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	06/24/19 21:23	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	06/24/19 21:23	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	06/24/19 21:23	
Ethylbenzene	ug/L	<0.14	0.50	0.14	06/24/19 21:23	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	06/24/19 21:23	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	06/24/19 21:23	
m&p-Xylene	ug/L	<0.31	1.0	0.31	06/24/19 21:23	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	06/24/19 21:23	
Methylene Chloride	ug/L	<0.98	4.0	0.98	06/24/19 21:23	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	06/24/19 21:23	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	06/24/19 21:23	
Naphthalene	ug/L	<0.48	1.0	0.48	06/24/19 21:23	
o-Xylene	ug/L	<0.16	0.50	0.16	06/24/19 21:23	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	06/24/19 21:23	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	06/24/19 21:23	
Styrene	ug/L	<0.19	0.50	0.19	06/24/19 21:23	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	06/24/19 21:23	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	06/24/19 21:23	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	06/24/19 21:23	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	06/24/19 21:23	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	06/24/19 21:23	
Toluene	ug/L	<0.083	0.50	0.083	06/24/19 21:23	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	06/24/19 21:23	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	06/24/19 21:23	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	06/24/19 21:23	
Trichloroethene	ug/L	<0.15	0.40	0.15	06/24/19 21:23	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	06/24/19 21:23	
Vinyl acetate	ug/L	<1.1	10.0	1.1	06/24/19 21:23	
Vinyl chloride	ug/L	<0.092	0.20	0.092	06/24/19 21:23	
Xylene (Total)	ug/L	<0.31	1.5	0.31	06/24/19 21:23	
1,2-Dichloroethane-d4 (S)	%	97	75-136		06/24/19 21:23	
4-Bromofluorobenzene (S)	%	93	75-125		06/24/19 21:23	
Toluene-d8 (S)	%	103	75-125		06/24/19 21:23	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

LABORATORY CONTROL SAMPLE: 3323289

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.6	108	68-141	
1,1,1-Trichloroethane	ug/L	20	24.7	123	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	21.7	108	73-125	
1,1,2-Trichloroethane	ug/L	20	23.5	117	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	22.5	113	69-132	
1,1-Dichloroethane	ug/L	20	22.2	111	73-125	
1,1-Dichloroethene	ug/L	20	21.9	109	71-126	
1,1-Dichloropropene	ug/L	20	23.1	115	73-126	
1,2,3-Trichlorobenzene	ug/L	20	22.3	112	72-126	
1,2,3-Trichloropropane	ug/L	20	22.7	114	75-126	
1,2,4-Trichlorobenzene	ug/L	20	21.0	105	71-134	
1,2,4-Trimethylbenzene	ug/L	20	20.5	103	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	51.9	104	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	24.3	121	75-129	
1,2-Dichlorobenzene	ug/L	20	19.7	99	75-129	
1,2-Dichloroethane	ug/L	20	21.9	110	75-125	
1,2-Dichloroethene (Total)	ug/L	40	46.0	115	74-125	N2
1,2-Dichloropropane	ug/L	20	23.4	117	75-125	
1,3,5-Trimethylbenzene	ug/L	20	23.2	116	75-127	
1,3-Dichlorobenzene	ug/L	20	20.8	104	75-126	
1,3-Dichloropropane	ug/L	20	23.2	116	75-125	
1,4-Dichlorobenzene	ug/L	20	19.9	99	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	437	109	72-129	
2,2,4-Trimethylpentane	ug/L	20	20.8	104	72-128	N2
2,2-Dichloropropane	ug/L	20	25.2	126	65-138	
2-Butanone (MEK)	ug/L	100	113	113	59-144	
2-Chlorotoluene	ug/L	20	20.7	104	75-127	
2-Hexanone	ug/L	100	118	118	73-134	
4-Chlorotoluene	ug/L	20	20.5	102	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	113	113	62-141	
Acetone	ug/L	100	134	134	60-137	
Acrolein	ug/L	200	183	91	60-141	
Acrylonitrile	ug/L	200	215	108	75-129	
Benzene	ug/L	20	21.9	109	73-125	
Bromobenzene	ug/L	20	21.4	107	73-125	
Bromochloromethane	ug/L	20	23.8	119	75-135	
Bromodichloromethane	ug/L	20	24.3	121	75-125	
Bromoform	ug/L	20	25.0	125	67-136	
Bromomethane	ug/L	20	23.6	118	30-150	
Carbon disulfide	ug/L	20	19.9	100	47-137	
Carbon tetrachloride	ug/L	20	25.5	128	75-125	L3
Chlorobenzene	ug/L	20	20.5	102	75-125	
Chloroethane	ug/L	20	23.3	117	63-136	
Chloroform	ug/L	20	22.6	113	73-128	
Chloromethane	ug/L	20	21.0	105	55-130	
cis-1,2-Dichloroethene	ug/L	20	23.2	116	75-125	
cis-1,3-Dichloropropene	ug/L	20	22.1	111	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

LABORATORY CONTROL SAMPLE: 3323289

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	22.7	113	75-125	
Dibromomethane	ug/L	20	23.8	119	75-125	
Dichlorodifluoromethane	ug/L	20	22.4	112	63-132	
Dichlorofluoromethane	ug/L	20	22.0	110	68-127	N2
Diisopropyl ether	ug/L	20	20.5	102	71-131	
Ethyl-tert-butyl ether	ug/L	20	20.2	101	75-125	
Ethylbenzene	ug/L	20	22.2	111	75-125	
Hexachloro-1,3-butadiene	ug/L	20	21.3	106	72-134	
Isopropylbenzene (Cumene)	ug/L	20	20.9	104	75-125	
m&p-Xylene	ug/L	40	42.5	106	75-126	
Methyl-tert-butyl ether	ug/L	20	21.6	108	75-125	
Methylene Chloride	ug/L	20	21.5	107	70-125	
n-Butylbenzene	ug/L	20	20.6	103	75-126	
n-Propylbenzene	ug/L	20	20.7	104	73-127	
Naphthalene	ug/L	20	21.6	108	63-128	
o-Xylene	ug/L	20	21.5	108	75-128	
p-Isopropyltoluene	ug/L	20	20.6	103	75-125	
sec-Butylbenzene	ug/L	20	23.1	116	75-126	
Styrene	ug/L	20	22.0	110	75-125	
tert-Amylmethyl ether	ug/L	20	20.2	101	75-125	
tert-Butyl Alcohol	ug/L	200	207	104	75-130	
tert-Butylbenzene	ug/L	20	20.9	105	75-131	
Tetrachloroethene	ug/L	20	21.1	105	74-125	
Tetrahydrofuran	ug/L	200	266	133	64-138	
Toluene	ug/L	20	21.4	107	74-125	
trans-1,2-Dichloroethene	ug/L	20	22.8	114	68-128	
trans-1,3-Dichloropropene	ug/L	20	22.0	110	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	62.0	124	60-127	
Trichloroethene	ug/L	20	23.8	119	75-127	
Trichlorofluoromethane	ug/L	20	22.3	111	72-133	
Vinyl acetate	ug/L	20	20.1	100	61-129	
Vinyl chloride	ug/L	20	21.9	110	75-128	
Xylene (Total)	ug/L	60	64.1	107	75-125	
1,2-Dichloroethane-d4 (S)	%			102	75-136	
4-Bromofluorobenzene (S)	%			99	75-125	
Toluene-d8 (S)	%			96	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3323290 3323291

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10480450002 Result	Spike Conc.	Spike Conc.	MS Result						
1,1,1,2-Tetrachloroethane	ug/L	ND	40	40	41.6	40.7	104	102	75-140	2	30
1,1,1-Trichloroethane	ug/L	ND	40	40	48.4	45.4	121	113	74-136	7	30
1,1,2,2-Tetrachloroethane	ug/L	ND	40	40	42.8	41.4	107	103	66-134	3	30
1,1,2-Trichloroethane	ug/L	ND	40	40	45.1	43.5	113	109	75-126	4	30

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3323290			3323291							
Parameter	Units	10480450002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	ND	40	40	44.6	42.0	111	105	65-146	6	30	
1,1-Dichloroethane	ug/L	ND	40	40	43.8	42.4	110	106	68-132	3	30	
1,1-Dichloroethene	ug/L	ND	40	40	43.2	41.1	108	103	66-139	5	30	
1,1-Dichloropropene	ug/L	ND	40	40	46.1	43.0	115	107	67-134	7	30	
1,2,3-Trichlorobenzene	ug/L	ND	40	40	42.4	40.8	106	102	67-129	4	30	
1,2,3-Trichloropropane	ug/L	ND	40	40	42.8	43.4	107	108	69-128	1	30	
1,2,4-Trichlorobenzene	ug/L	ND	40	40	40.0	38.3	100	96	65-140	4	30	
1,2,4-Trimethylbenzene	ug/L	ND	40	40	40.0	38.4	100	96	71-133	4	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	100	100	110	108	110	108	54-138	2	30	
1,2-Dibromoethane (EDB)	ug/L	ND	40	40	47.5	44.9	119	112	68-125	6	30	
1,2-Dichlorobenzene	ug/L	ND	40	40	38.7	36.7	97	92	74-136	5	30	
1,2-Dichloroethane	ug/L	ND	40	40	42.6	41.1	106	103	68-125	4	30	
1,2-Dichloroethene (Total)	ug/L	ND	80	80	88.6	85.2	111	107	71-126	4	30	N2
1,2-Dichloropropane	ug/L	ND	40	40	46.9	44.9	117	112	67-125	4	30	
1,3,5-Trimethylbenzene	ug/L	ND	40	40	45.8	43.6	115	109	68-137	5	30	
1,3-Dichlorobenzene	ug/L	ND	40	40	40.2	38.2	100	95	75-131	5	30	
1,3-Dichloropropane	ug/L	ND	40	40	45.4	43.8	114	109	71-125	4	30	
1,4-Dichlorobenzene	ug/L	ND	40	40	38.7	37.3	97	93	74-126	4	30	
1,4-Dioxane (p-Dioxane)	ug/L	ND	800	800	887	841	111	105	68-125	5	30	
2,2,4-Trimethylpentane	ug/L	ND	40	40	34.1	32.4	85	81	54-129	5	30	N2
2,2-Dichloropropane	ug/L	ND	40	40	49.4	45.9	123	115	69-139	7	30	
2-Butanone (MEK)	ug/L	ND	200	200	206	203	103	102	54-144	2	30	
2-Chlorotoluene	ug/L	ND	40	40	40.0	38.8	100	97	75-134	3	30	
2-Hexanone	ug/L	ND	200	200	230	229	115	114	58-137	0	30	
4-Chlorotoluene	ug/L	ND	40	40	40.1	38.8	100	97	72-133	3	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	200	200	232	226	116	113	60-129	3	30	
Acetone	ug/L	40.6	200	200	239	233	99	96	62-132	3	30	
Acrolein	ug/L	ND	400	400	682	661	171	165	30-150	3	30	M1
Acrylonitrile	ug/L	ND	400	400	434	419	108	105	68-125	3	30	
Benzene	ug/L	ND	40	40	42.4	40.1	106	100	68-125	5	30	
Bromobenzene	ug/L	ND	40	40	40.6	39.0	102	97	73-126	4	30	
Bromochloromethane	ug/L	ND	40	40	44.5	44.2	111	110	66-143	1	30	
Bromodichloromethane	ug/L	ND	40	40	48.5	45.7	121	114	74-125	6	30	
Bromoform	ug/L	ND	40	40	49.5	47.1	124	118	64-134	5	30	
Bromomethane	ug/L	ND	40	40	52.3	51.5	131	129	30-150	2	30	
Carbon disulfide	ug/L	ND	40	40	40.3	38.8	101	97	43-147	4	30	
Carbon tetrachloride	ug/L	ND	40	40	51.0	46.9	127	117	71-143	8	30	
Chlorobenzene	ug/L	10.5	40	40	50.0	46.8	99	91	75-125	7	30	
Chloroethane	ug/L	ND	40	40	53.8	53.4	135	134	75-129	1	30	M1
Chloroform	ug/L	ND	40	40	44.3	41.0	111	102	66-132	8	30	
Chloromethane	ug/L	ND	40	40	50.1	47.4	125	118	53-137	6	30	
cis-1,2-Dichloroethene	ug/L	ND	40	40	44.3	43.1	111	108	67-133	3	30	
cis-1,3-Dichloropropene	ug/L	ND	40	40	41.3	39.7	103	99	66-125	4	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Parameter	Units	10480450002		3323290		3323291		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Dibromochloromethane	ug/L	ND	40	40	43.0	41.1	108	103	62-132	5	30			
Dibromomethane	ug/L	ND	40	40	45.9	45.4	115	113	67-125	1	30			
Dichlorodifluoromethane	ug/L	ND	40	40	50.5	48.0	126	120	71-142	5	30			
Dichlorofluoromethane	ug/L	ND	40	40	49.1	46.6	123	116	70-131	5	30	N2		
Diisopropyl ether	ug/L	ND	40	40	39.7	37.7	99	94	63-131	5	30			
Ethyl-tert-butyl ether	ug/L	ND	40	40	38.7	37.9	97	95	66-128	2	30			
Ethylbenzene	ug/L	ND	40	40	43.0	40.4	108	101	74-126	6	30			
Hexachloro-1,3-butadiene	ug/L	ND	40	40	35.9	34.6	90	87	68-143	4	30			
Isopropylbenzene (Cumene)	ug/L	ND	40	40	40.7	38.1	102	95	74-130	7	30			
m&p-Xylene	ug/L	ND	80	80	82.6	78.5	103	98	69-132	5	30			
Methyl-tert-butyl ether	ug/L	ND	40	40	41.8	41.6	105	104	65-131	1	30			
Methylene Chloride	ug/L	ND	40	40	44.0	42.1	110	105	57-125	4	30			
n-Butylbenzene	ug/L	ND	40	40	39.2	37.8	98	95	71-131	4	30			
n-Propylbenzene	ug/L	ND	40	40	40.3	38.1	101	95	67-138	6	30			
Naphthalene	ug/L	ND	40	40	43.8	43.0	109	107	60-130	2	30			
o-Xylene	ug/L	ND	40	40	41.9	38.9	105	97	69-131	7	30			
p-Isopropyltoluene	ug/L	ND	40	40	40.7	38.8	102	97	72-133	5	30			
sec-Butylbenzene	ug/L	ND	40	40	44.0	42.1	110	105	73-134	5	30			
Styrene	ug/L	ND	40	40	42.8	40.5	107	101	72-125	6	30			
tert-Amylmethyl ether	ug/L	ND	40	40	38.8	37.5	97	94	67-125	3	30			
tert-Butyl Alcohol	ug/L	ND	400	400	416	420	104	105	64-137	1	30			
tert-Butylbenzene	ug/L	ND	40	40	39.8	38.4	100	96	70-143	3	30			
Tetrachloroethene	ug/L	ND	40	40	43.0	40.0	107	100	72-129	7	30			
Tetrahydrofuran	ug/L	ND	400	400	480	463	120	116	66-128	4	30			
Toluene	ug/L	ND	40	40	42.1	40.4	105	101	73-125	4	30			
trans-1,2-Dichloroethene	ug/L	ND	40	40	44.2	42.1	111	105	62-137	5	30			
trans-1,3-Dichloropropene	ug/L	ND	40	40	41.7	40.1	104	100	61-136	4	30			
trans-1,4-Dichloro-2-butene	ug/L	ND	100	100	125	120	125	120	45-128	4	30			
Trichloroethene	ug/L	ND	40	40	46.3	43.8	116	110	74-132	6	30			
Trichlorofluoromethane	ug/L	ND	40	40	48.8	45.5	122	114	75-139	7	30			
Vinyl acetate	ug/L	ND	40	40	40.5	40.3	101	101	51-135	0	30			
Vinyl chloride	ug/L	ND	40	40	51.3	49.4	128	123	68-146	4	30			
Xylene (Total)	ug/L	ND	120	120	124	117	104	98	67-137	6	30			
1,2-Dichloroethane-d4 (S)	%						103	101	75-136				F1	
4-Bromofluorobenzene (S)	%						98	98	75-125					
Toluene-d8 (S)	%						96	96	75-125					

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479596

QC Batch: 615881 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 10479596001, 10479596002, 10479596003, 10479596004, 10479596005, 10479596006

METHOD BLANK: 3327206 Matrix: Water
Associated Lab Samples: 10479596001, 10479596002, 10479596003, 10479596004, 10479596005, 10479596006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<2.0	5.0	2.0	06/27/19 07:42	

LABORATORY CONTROL SAMPLE & LCSD: 3327207 3327208

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	40	42.7	42.8	107	107	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3327209 3327210

Parameter	Units	10479712005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	283	40	40	313	327	75	109	80-120	4	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3327211 3327212

Parameter	Units	10479712006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	272	40	40	324	321	129	123	80-120	1	20	M1

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

QC Batch: 616263 Analysis Method: SM 2320B
 QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
 Associated Lab Samples: 10479596007, 10479596008, 10479596009

METHOD BLANK: 3329152 Matrix: Water
 Associated Lab Samples: 10479596007, 10479596008, 10479596009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<2.0	5.0	2.0	06/28/19 06:50	

LABORATORY CONTROL SAMPLE & LCSD: 3329153 3329154

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	40	43.0	42.8	107	107	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3329155 3329156

Parameter	Units	10479596007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	202	40	40	249	240	116	95	80-120	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3329157 3329158

Parameter	Units	10479596008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	165	40	40	208	207	108	105	80-120	1	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

QC Batch: 614170

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 10479596001, 10479596002, 10479596003, 10479596004, 10479596005, 10479596006, 10479596007, 10479596008, 10479596009

METHOD BLANK: 3317992

Matrix: Water

Associated Lab Samples: 10479596001, 10479596002, 10479596003, 10479596004, 10479596005, 10479596006, 10479596007, 10479596008, 10479596009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	10.0	5.0	06/20/19 11:20	

LABORATORY CONTROL SAMPLE: 3317993

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	996	100	80-120	

SAMPLE DUPLICATE: 3317994

Parameter	Units	10479712005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	663	685	3	5	

SAMPLE DUPLICATE: 3317995

Parameter	Units	10479671007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	295	299	1	5	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

QC Batch: 146524

Analysis Method: SM 4500-S-2 D

QC Batch Method: SM 4500-S-2 D

Analysis Description: 4500S2D Sulfide, Total

Associated Lab Samples: 10479596001, 10479596002, 10479596003, 10479596004, 10479596005, 10479596006, 10479596007, 10479596008, 10479596009

METHOD BLANK: 646161

Matrix: Water

Associated Lab Samples: 10479596001, 10479596002, 10479596003, 10479596004, 10479596005, 10479596006, 10479596007, 10479596008, 10479596009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.0054	0.020	0.0054	06/20/19 15:46	

LABORATORY CONTROL SAMPLE: 646162

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.2	0.18	92	90-110	

MATRIX SPIKE SAMPLE: 646164

Parameter	Units	20109005001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	0.2	0.018J	9	75-125	M1

SAMPLE DUPLICATE: 646163

Parameter	Units	20109005001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<0.0054		20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479596

QC Batch: 613725 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10479596001, 10479596002, 10479596003, 10479596004, 10479596005, 10479596006, 10479596007, 10479596008, 10479596009

METHOD BLANK: 3315861 Matrix: Water
Associated Lab Samples: 10479596001, 10479596002, 10479596003, 10479596004, 10479596005, 10479596006, 10479596007, 10479596008, 10479596009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.12	1.2	0.12	06/18/19 22:38	
Nitrate as N	mg/L	<0.012	0.10	0.012	06/18/19 22:38	
Sulfate	mg/L	0.58J	1.2	0.28	06/18/19 22:38	

LABORATORY CONTROL SAMPLE: 3315862

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.1	97	90-110	
Nitrate as N	mg/L	1	0.94	94	90-110	
Sulfate	mg/L	12.5	13.0	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3315863 3315864

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10478967003 Result	Spike Conc.	Spike Conc.	MS Result						
Chloride	mg/L	1.3	12.5	12.5	13.1	13.1	94	94	90-110	0	20
Nitrate as N	mg/L	0.049J	1	1	0.95	0.95	90	90	90-110	1	20
Sulfate	mg/L	6.3	12.5	12.5	18.6	18.5	98	97	90-110	0	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3315865 3315866

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10478967004 Result	Spike Conc.	Spike Conc.	MS Result						
Chloride	mg/L	0.89J	12.5	12.5	12.8	12.6	95	94	90-110	1	20
Nitrate as N	mg/L	ND	1	1	0.94	0.92	94	92	90-110	1	20
Sulfate	mg/L	3.4	12.5	12.5	16.0	15.7	101	99	90-110	2	20

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

QC Batch: 614353	Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2	Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 10479596001	

METHOD BLANK: 3318810 Matrix: Water
Associated Lab Samples: 10479596001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	06/20/19 12:07	FS

LABORATORY CONTROL SAMPLE: 3318811

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	1.1	106	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3318812 3318813

Parameter	Units	MS		MSD		% Rec		% Rec Limits	RPD	Max RPD	Qual
		10479563001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec				
Nitrogen, NO2 plus NO3	mg/L	ND	1	1	1.1	1.1	109	106	90-110	3	20

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

QC Batch: 615695 Analysis Method: EPA 353.2
 QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
 Associated Lab Samples: 10479596002, 10479596003, 10479596004, 10479596005, 10479596006, 10479596007, 10479596008, 10479596009

METHOD BLANK: 3326136 Matrix: Water
 Associated Lab Samples: 10479596002, 10479596003, 10479596004, 10479596005, 10479596006, 10479596007, 10479596008, 10479596009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.018	0.10	0.018	06/27/19 09:36	FS

LABORATORY CONTROL SAMPLE: 3326137

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	1	1.0	101	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3326138 3326139

Parameter	Units	10479671003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	<0.018	1	1	0.85	0.87	85	87	90-110	3	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3326140 3326141

Parameter	Units	10479671004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	<0.018	1	1	1.0	1.0	105	100	90-110	5	20	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

QC Batch:	616677	Analysis Method:	EPA 410.4
QC Batch Method:	EPA 410.4	Analysis Description:	410.4 COD
Associated Lab Samples:	10479596001, 10479596002, 10479596003, 10479596004, 10479596005, 10479596006, 10479596007, 10479596008, 10479596009		

METHOD BLANK:	3331314	Matrix:	Water
Associated Lab Samples:	10479596001, 10479596002, 10479596003, 10479596004, 10479596005, 10479596006, 10479596007, 10479596008, 10479596009		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<17.0	50.0	17.0	07/01/19 14:50	

LABORATORY CONTROL SAMPLE: 3331315						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	300	308	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3331316												3331317	
Parameter	Units	10479596001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Chemical Oxygen Demand	mg/L	<17.0	250	250	245	245	97	97	90-110	0	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3331318												3331319	
Parameter	Units	10479596002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Chemical Oxygen Demand	mg/L	<17.0	250	250	246	241	98	96	90-110	2	20		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

QC Batch: 168513 Analysis Method: SM 5310C
 QC Batch Method: SM 5310C Analysis Description: 5310C TOC
 Associated Lab Samples: 10479596001, 10479596002, 10479596003, 10479596004, 10479596005, 10479596006, 10479596007, 10479596008, 10479596009

METHOD BLANK: 665044 Matrix: Water
 Associated Lab Samples: 10479596001, 10479596002, 10479596003, 10479596004, 10479596005, 10479596006, 10479596007, 10479596008, 10479596009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.39	1.0	0.39	06/20/19 00:24	

LABORATORY CONTROL SAMPLE: 665045

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	25.9	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 665046 665047

Parameter	Units	10479324002		MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result	% Rec	% Rec						
Total Organic Carbon	mg/L	4.3	25	25	25	30.1	29.6	103	101	80-120	2	20			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 665048 665049

Parameter	Units	10479324009		MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result	% Rec	% Rec						
Total Organic Carbon	mg/L	12.7	25	25	25	38.2	37.9	102	101	80-120	1	20			

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

PASI-N Pace Analytical Services - New Orleans

PASI-V Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

F1 The sample was analyzed at a dilution due to foaming of the sample in the purge vessel.

FS The sample was filtered in the laboratory prior to analysis.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479596

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10479596001	WS5-GW-061719	RSK 175	614037		
10479596002	AtwoodH-GW-061719	RSK 175	614037		
10479596003	AtwoodS-GW-061719	RSK 175	614037		
10479596004	Thorson-GW-061719	RSK 175	614037		
10479596005	Lashaw-GW-061719	RSK 175	614037		
10479596006	LashawAg-GW-061719	RSK 175	614037		
10479596007	Lang-GW-061719	RSK 175	614037		
10479596008	Marlow-GW-061719	RSK 175	614037		
10479596009	Randall-GW-061719	RSK 175	614372		
10479596001	WS5-GW-061719	EPA 3010	613948	EPA 6010D	614769
10479596002	AtwoodH-GW-061719	EPA 3010	613948	EPA 6010D	614769
10479596003	AtwoodS-GW-061719	EPA 3010	613948	EPA 6010D	614769
10479596004	Thorson-GW-061719	EPA 3010	613948	EPA 6010D	614769
10479596005	Lashaw-GW-061719	EPA 3010	613948	EPA 6010D	614769
10479596006	LashawAg-GW-061719	EPA 3010	613948	EPA 6010D	614769
10479596007	Lang-GW-061719	EPA 3010	613948	EPA 6010D	614769
10479596008	Marlow-GW-061719	EPA 3010	613948	EPA 6010D	614769
10479596009	Randall-GW-061719	EPA 3010	613948	EPA 6010D	614769
10479596001	WS5-GW-061719	EPA 7470A	613970	EPA 7470A	614334
10479596002	AtwoodH-GW-061719	EPA 7470A	613970	EPA 7470A	614334
10479596003	AtwoodS-GW-061719	EPA 7470A	613970	EPA 7470A	614334
10479596004	Thorson-GW-061719	EPA 7470A	613970	EPA 7470A	614334
10479596005	Lashaw-GW-061719	EPA 7470A	613970	EPA 7470A	614334
10479596006	LashawAg-GW-061719	EPA 7470A	613970	EPA 7470A	614334
10479596007	Lang-GW-061719	EPA 7470A	613970	EPA 7470A	614334
10479596008	Marlow-GW-061719	EPA 7470A	613970	EPA 7470A	614334
10479596009	Randall-GW-061719	EPA 7470A	613970	EPA 7470A	614334
10479596010	TB-061719	EPA 8260B	615092		
10479596001	WS5-GW-061719	SM 2320B	615881		
10479596002	AtwoodH-GW-061719	SM 2320B	615881		
10479596003	AtwoodS-GW-061719	SM 2320B	615881		
10479596004	Thorson-GW-061719	SM 2320B	615881		
10479596005	Lashaw-GW-061719	SM 2320B	615881		
10479596006	LashawAg-GW-061719	SM 2320B	615881		
10479596007	Lang-GW-061719	SM 2320B	616263		
10479596008	Marlow-GW-061719	SM 2320B	616263		
10479596009	Randall-GW-061719	SM 2320B	616263		
10479596001	WS5-GW-061719	SM 2540C	614170		
10479596002	AtwoodH-GW-061719	SM 2540C	614170		
10479596003	AtwoodS-GW-061719	SM 2540C	614170		
10479596004	Thorson-GW-061719	SM 2540C	614170		
10479596005	Lashaw-GW-061719	SM 2540C	614170		
10479596006	LashawAg-GW-061719	SM 2540C	614170		
10479596007	Lang-GW-061719	SM 2540C	614170		
10479596008	Marlow-GW-061719	SM 2540C	614170		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479596

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10479596009	Randall-GW-061719	SM 2540C	614170		
10479596001	WS5-GW-061719	SM 4500-S-2 D	146524		
10479596002	AtwoodH-GW-061719	SM 4500-S-2 D	146524		
10479596003	AtwoodS-GW-061719	SM 4500-S-2 D	146524		
10479596004	Thorson-GW-061719	SM 4500-S-2 D	146524		
10479596005	Lashaw-GW-061719	SM 4500-S-2 D	146524		
10479596006	LashawAg-GW-061719	SM 4500-S-2 D	146524		
10479596007	Lang-GW-061719	SM 4500-S-2 D	146524		
10479596008	Marlow-GW-061719	SM 4500-S-2 D	146524		
10479596009	Randall-GW-061719	SM 4500-S-2 D	146524		
10479596001	WS5-GW-061719	EPA 300.0	613725		
10479596002	AtwoodH-GW-061719	EPA 300.0	613725		
10479596003	AtwoodS-GW-061719	EPA 300.0	613725		
10479596004	Thorson-GW-061719	EPA 300.0	613725		
10479596005	Lashaw-GW-061719	EPA 300.0	613725		
10479596006	LashawAg-GW-061719	EPA 300.0	613725		
10479596007	Lang-GW-061719	EPA 300.0	613725		
10479596008	Marlow-GW-061719	EPA 300.0	613725		
10479596009	Randall-GW-061719	EPA 300.0	613725		
10479596001	WS5-GW-061719	EPA 353.2	614353		
10479596002	AtwoodH-GW-061719	EPA 353.2	615695		
10479596003	AtwoodS-GW-061719	EPA 353.2	615695		
10479596004	Thorson-GW-061719	EPA 353.2	615695		
10479596005	Lashaw-GW-061719	EPA 353.2	615695		
10479596006	LashawAg-GW-061719	EPA 353.2	615695		
10479596007	Lang-GW-061719	EPA 353.2	615695		
10479596008	Marlow-GW-061719	EPA 353.2	615695		
10479596009	Randall-GW-061719	EPA 353.2	615695		
10479596001	WS5-GW-061719	EPA 410.4	616677	EPA 410.4	616802
10479596002	AtwoodH-GW-061719	EPA 410.4	616677	EPA 410.4	616802
10479596003	AtwoodS-GW-061719	EPA 410.4	616677	EPA 410.4	616802
10479596004	Thorson-GW-061719	EPA 410.4	616677	EPA 410.4	616802
10479596005	Lashaw-GW-061719	EPA 410.4	616677	EPA 410.4	616802
10479596006	LashawAg-GW-061719	EPA 410.4	616677	EPA 410.4	616802
10479596007	Lang-GW-061719	EPA 410.4	616677	EPA 410.4	616802
10479596008	Marlow-GW-061719	EPA 410.4	616677	EPA 410.4	616802
10479596009	Randall-GW-061719	EPA 410.4	616677	EPA 410.4	616802
10479596001	WS5-GW-061719	SM 5310C	168513		
10479596002	AtwoodH-GW-061719	SM 5310C	168513		
10479596003	AtwoodS-GW-061719	SM 5310C	168513		
10479596004	Thorson-GW-061719	SM 5310C	168513		
10479596005	Lashaw-GW-061719	SM 5310C	168513		
10479596006	LashawAg-GW-061719	SM 5310C	168513		
10479596007	Lang-GW-061719	SM 5310C	168513		
10479596008	Marlow-GW-061719	SM 5310C	168513		
10479596009	Randall-GW-061719	SM 5310C	168513		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479596

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
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REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A		Section B		Section C		Page: <u>1</u> Of <u>1</u>
Required Client Information:		Required Project Information:		Invoice Information:		
Company: CH2M Hill		Report To: Mark Ochsner, Brad Ostapkowicz		Attention: Anne Walsh		
Address: 999 W. Riverside Ave, Suite 500 Spokane, WA 99201		Copy To: Steve Demus, Jonathan Espinoza		Company: UPRR		
Email:		Copy To: David Hodson, UPRR-Sysdat@ghd.com		Address: 1400 W. 52nd Ave, Denver, CO 80221		Regulatory Agency:
Phone:		Purchase Order #: PEDD# 1497		Pace Quote: Contract# 9900758938		State / Location:
Requested Due Date: 10 Day Standard		Project Name: Freeman WA-Grain Handling Facility		Pace Project Manager: Jennifer Gross		WA / Freeman
		Project #: 1497		Pace Profile #: 36447 / 4		

ITEM #	SAMPLE ID <small>One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique</small>	MATRIX <small>Drinking Water DW Water WT Waste Water WW Product P Salt/Solid SL Oil CL Wipe WP Air AR Other OT Tissue TS</small>	CODE <small>DW WT WW P SL CL WP AR OT TS</small>	MATRIX CODE (see vial/crds to left)	SAMPLE TYPE (G-GRAB C-COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES						ANALYSIS TEST <small>Low Level VOCs by 8260 6010/7470 T22 Dissolved Metals* 2320 Alkalinity Chloride, Sulfate, Nitrate 300.0 2540 TDS TOC 8310 Sulfide 4590 Methane, Ethane, Ethene RSK175 COD 410.4 Nitrate+Nitrite 353.2 4500 Total Phosphorus 6010 Total Iron MS/MSD Requested</small>	Requested Analysis: Filtered (Y/N)	Y/N						
						DATE	TIME			Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other				Y					
						1	W55-Gw-061719			WTG				2019	6/17				1000	10	X	X	X	X
2	Atwood H-Gw-061719							1045															002	
3	Atwood S-Gw-061719							1160															003	
4	Thorson-Gw-061719							1130															004	
5	Lashaw-Gw-061719							1200															005	
6	Loshaw Ag-Gw-061719							1215															006	
7	Lang-Gw-061719							1245	9														007	
8	Marlow-Gw-061719							1315	10														Z methane only 008	
9	Randall-Gw-061719							1330	10														009	
10	TB-061719	WTG						700	3				X		X								010	
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in bold	<i>J Li Jacobs</i>	6/17/19	1600	<i>Hannah Puce</i>	6/18/19	845	09	Y	N	Y
*Field filtered by client							1,2			

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples intact (Y/N)
PRINT Name of SAMPLER: <i>Jonathan Espinoza</i>					
SIGNATURE OF SAMPLER: <i>J Li</i>	DATE Signed: <i>6/17/19</i>				

10479596

 10479596
 W0#: 10479596

Sample Condition Upon Receipt **Client Name:** CH2M Hill **Project #:** **WO# : 10479596**

Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception

Tracking Number: 4934 3730 1880, 4934 3729 2713

Custody Seal on Cooler/Box Present? Yes No 6/18/19 **Seals Intact?** Yes No **Biological Tissue Frozen?** Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other: _____ **Temp Blank?** Yes No

Thermometer: T1(0461) T2(1336) T3(0459)
 T4(0254) T5(0489) **Type of Ice:** Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: <u>0.9, 1.2</u> °C	Average Corrected Temp (no temp blank only): _____ °C	See Exceptions <input type="checkbox"/>
Correction Factor: <u>True</u>	Cooler Temp Corrected w/temp blank: <u>0.9, 1.2</u> °C	_____ °C	

USDA Regulated Soil: (N/A, water sample/Other: _____) **Date/Initials of Person Examining Contents:** 6/18/19

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

		COMMENTS:
Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input checked="" type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: See Exception <input type="checkbox"/>
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other		
All containers needing acid/base preservation have been checked?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> NaOH <input checked="" type="checkbox"/> HNO ₃ <input checked="" type="checkbox"/> H ₂ SO ₄ <input checked="" type="checkbox"/> Zinc Acetate <u>1-9: 1/4</u> <u>1/1</u> <u>1/1</u>
Exceptions: <input checked="" type="checkbox"/> VOA Coliform, <input checked="" type="checkbox"/> TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No See Exception <input type="checkbox"/> Chlorine? <input type="checkbox"/> No pH Paper Lot# _____
		Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip <u>220416A</u> <u>1002981</u>
Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. See Exception <input type="checkbox"/>
Trip Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14.
Trip Blank Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): <u>213047</u>

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** Yes No

Person Contacted: Mark Date/Time: 06/27/18

Comments/Resolution: WA certs not required for RSK or sulfide.

Project Manager Review: _____ **Date:** 06/18/19

Note: Whenever there is a discrepancy affecting North Carolina samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: HH

Chain of Custody



Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WA

Cert. Needed: Yes No

Owner Received Date: 6/18/2019 Results Requested By: 7/2/2019

Workorder: 10479596

Workorder Name: 1497 Freeman WA-Grain Handling

Report To		Subcontract To					Requested Analysis														
Jennifer Gross Pace Analytical Seattle 596 Industry Drive, Suite 602 Tukwila, WA 98188 Phone (206)957-2426		Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042																			
						Preserved Containers															
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	H2SO4 DGS															LAB USE ONLY
1	WS5-GW-061719	PS	6/17/2019 10:00	10479596001	Water	2															
2	AtwoodH-GW-061719	PS	6/17/2019 10:45	10479596002	Water	2															
3	AtwoodS-GW-061719	PS	6/17/2019 11:00	10479596003	Water	2															
4	Thorson-GW-061719	PS	6/17/2019 11:30	10479596004	Water	2															
5	Lashaw-GW-061719	PS	6/17/2019 12:00	10479596005	Water	2															
6	LashawAg-GW-061719	PS	6/17/2019 12:15	10479596006	Water	2															
7	Lang-GW-061719	PS	6/17/2019 12:45	10479596007	Water	2															
8	Marlow-GW-061719	PS	6/17/2019 13:15	10479596008	Water	2															
9	Randall-GW-061719	PS	6/17/2019 13:30	10479596009	Water	2															
Comments																					
Transfers	Released By	Date/Time	Received By	Date/Time																	
1	<i>[Signature]</i>	6/18/19 1855	<i>[Signature]</i>	6/18/19 1840																	
2	RCL	6/18/19	B. Matheson	6/18/19 0700																	
3																					
Cooler Temperature on Receipt		1.3 °C	Custody Seal		(Y) or N	Received on Ice		(Y) or N	Samples Intact												(Y) or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Sample Condition Upon Receipt

Client Name: Pace WA Project #: _____

Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

WO# : 12130655

PM: CLJ Due Date: 07/02/19
 CLIENT: PACE MPLS

Tracking Number: _____

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No

Packing Material: Bubble Wrap Bubble Bags None Other: _____ Temp Blank? Yes No

Thermometer Used: 140792808 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temp Read °C: 1.0 Cooler Temp Corrected °C: 1.3 Biological Tissue Frozen? Yes No NA

Temp should be above freezing to 6°C Correction Factor: 0.3 Date and Initials of Person Examining Contents: 6/18/19 DC
Bm 6/17/19

Comments: _____

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and Signature on COC?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5. If Fecal: <input type="checkbox"/> <8 hours <input type="checkbox"/> >8, <24 hours <input type="checkbox"/> >24 hours
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>		
All containers needing acid/base preservation properly preserved?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. Note samples needing adjustment:
Headspace in Methyl Mercury Container	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased): _____		

CLIENT NOTIFICATION/RESOLUTION Field Data Required? Yes No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Nikki Jarve Date: 6/19/19

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



1000 Riverbend Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon Receipt

WO#: 20109001

PM: CMM

Due Date: 07/02/19

CLIENT: PASI-MINN

Project: _____

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used:
 Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC] Temp should be above freezing to 6°C

Date and Initials of person examining contents: 06-19-19 [Signature]

Temp must be measured from Temperature blank when present Comments:

Temperature Blank Present?"	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13
		If No, was preservative added? <input type="checkbox"/> Yes <input type="checkbox"/> No If added record lot no.: HNO3 _____ H2SO4 _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	15

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

June 27, 2019

David Hodson
Jacobs
155 Grand Ave
#800
Oakland, CA 94612

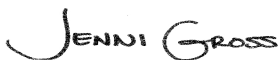
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479599

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 18, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, Jacobs
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479599

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #:74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Vermont Certification #: VT-027053137

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479599

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10479599001	WS5-GW-061719	Water	06/17/19 10:00	06/18/19 08:45

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479599

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10479599001	WS5-GW-061719	EPA 8260B	DS2	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479599

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10479599001	WS5-GW-061719					
EPA 8260B	Carbon tetrachloride	5.0	ug/L	0.50	06/25/19 09:49	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479599

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 27, 2019

General Information:

1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 615244

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10480797001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3326089)
 - Chloroethane
 - Chloromethane
 - Styrene
- MSD (Lab ID: 3326090)
 - 1,3,5-Trimethylbenzene
 - Chloromethane
 - Styrene
 - Vinyl acetate

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479599

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 27, 2019

Analyte Comments:

QC Batch: 615244

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3324037)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3324038)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3326089)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3326090)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- WS5-GW-061719 (Lab ID: 10479599001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479599

Sample: WS5-GW-061719 **Lab ID: 10479599001** Collected: 06/17/19 10:00 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		06/25/19 09:49	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		06/25/19 09:49	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		06/25/19 09:49	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		06/25/19 09:49	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		06/25/19 09:49	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		06/25/19 09:49	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	1.0	0.16	1		06/25/19 09:49	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		06/25/19 09:49	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		06/25/19 09:49	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		06/25/19 09:49	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		06/25/19 09:49	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		06/25/19 09:49	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		06/25/19 09:49	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		06/25/19 09:49	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		06/25/19 09:49	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		06/25/19 09:49	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		06/25/19 09:49	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		06/25/19 09:49	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		06/25/19 09:49	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		06/25/19 09:49	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		06/25/19 09:49	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		06/25/19 09:49	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		06/25/19 09:49	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		06/25/19 09:49	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		06/25/19 09:49	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		06/25/19 09:49	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		06/25/19 09:49	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		06/25/19 09:49	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		06/25/19 09:49	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		06/25/19 09:49	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		06/25/19 09:49	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		06/25/19 09:49	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		06/25/19 09:49	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		06/25/19 09:49	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		06/25/19 09:49	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		06/25/19 09:49	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		06/25/19 09:49	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		06/25/19 09:49	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		06/25/19 09:49	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		06/25/19 09:49	75-15-0	
Carbon tetrachloride	5.0	ug/L	0.50	0.19	1		06/25/19 09:49	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		06/25/19 09:49	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		06/25/19 09:49	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		06/25/19 09:49	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		06/25/19 09:49	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		06/25/19 09:49	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479599

Sample: WS5-GW-061719 **Lab ID: 10479599001** Collected: 06/17/19 10:00 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		06/25/19 09:49	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		06/25/19 09:49	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		06/25/19 09:49	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		06/25/19 09:49	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		06/25/19 09:49	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		06/25/19 09:49	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		06/25/19 09:49	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		06/25/19 09:49	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		06/25/19 09:49	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		06/25/19 09:49	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		06/25/19 09:49	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		06/25/19 09:49	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		06/25/19 09:49	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		06/25/19 09:49	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		06/25/19 09:49	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		06/25/19 09:49	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		06/25/19 09:49	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		06/25/19 09:49	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		06/25/19 09:49	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		06/25/19 09:49	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		06/25/19 09:49	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	1.0	0.20	1		06/25/19 09:49	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		06/25/19 09:49	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		06/25/19 09:49	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		06/25/19 09:49	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		06/25/19 09:49	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		06/25/19 09:49	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/25/19 09:49	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		06/25/19 09:49	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		06/25/19 09:49	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/25/19 09:49	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		06/25/19 09:49	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		06/25/19 09:49	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		06/25/19 09:49	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	92	%	75-136		1		06/25/19 09:49	17060-07-0	
Toluene-d8 (S)	100	%	75-125		1		06/25/19 09:49	2037-26-5	
4-Bromofluorobenzene (S)	98	%	75-125		1		06/25/19 09:49	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479599

QC Batch: 615244

Analysis Method: EPA 8260B

QC Batch Method: EPA 8260B

Analysis Description: 8260 MSV LL Water

Associated Lab Samples: 10479599001

METHOD BLANK: 3324037

Matrix: Water

Associated Lab Samples: 10479599001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	06/25/19 09:25	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	06/25/19 09:25	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	06/25/19 09:25	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	06/25/19 09:25	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	06/25/19 09:25	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	06/25/19 09:25	
1,1-Dichloroethene	ug/L	<0.16	1.0	0.16	06/25/19 09:25	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	06/25/19 09:25	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	06/25/19 09:25	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	06/25/19 09:25	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	06/25/19 09:25	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	06/25/19 09:25	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	06/25/19 09:25	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	06/25/19 09:25	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	06/25/19 09:25	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	06/25/19 09:25	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	06/25/19 09:25	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	06/25/19 09:25	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	06/25/19 09:25	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	06/25/19 09:25	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	06/25/19 09:25	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	06/25/19 09:25	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	06/25/19 09:25	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	06/25/19 09:25	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	06/25/19 09:25	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	06/25/19 09:25	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	06/25/19 09:25	
2-Hexanone	ug/L	<0.88	5.0	0.88	06/25/19 09:25	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	06/25/19 09:25	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	06/25/19 09:25	
Acetone	ug/L	<9.2	20.0	9.2	06/25/19 09:25	
Acrolein	ug/L	<1.2	10.0	1.2	06/25/19 09:25	
Acrylonitrile	ug/L	<0.91	10.0	0.91	06/25/19 09:25	
Benzene	ug/L	<0.10	0.50	0.10	06/25/19 09:25	
Bromobenzene	ug/L	<0.21	0.50	0.21	06/25/19 09:25	
Bromochloromethane	ug/L	<0.27	1.0	0.27	06/25/19 09:25	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	06/25/19 09:25	
Bromoform	ug/L	<0.80	4.0	0.80	06/25/19 09:25	
Bromomethane	ug/L	<1.8	4.0	1.8	06/25/19 09:25	
Carbon disulfide	ug/L	<0.078	1.0	0.078	06/25/19 09:25	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	06/25/19 09:25	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479599

METHOD BLANK: 3324037

Matrix: Water

Associated Lab Samples: 10479599001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	06/25/19 09:25	
Chloroethane	ug/L	<0.49	1.0	0.49	06/25/19 09:25	
Chloroform	ug/L	<0.45	1.0	0.45	06/25/19 09:25	
Chloromethane	ug/L	<0.16	4.0	0.16	06/25/19 09:25	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	06/25/19 09:25	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	06/25/19 09:25	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	06/25/19 09:25	
Dibromomethane	ug/L	<0.16	1.0	0.16	06/25/19 09:25	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	06/25/19 09:25	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	06/25/19 09:25	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	06/25/19 09:25	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	06/25/19 09:25	
Ethylbenzene	ug/L	<0.14	0.50	0.14	06/25/19 09:25	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	06/25/19 09:25	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	06/25/19 09:25	
m&p-Xylene	ug/L	<0.31	1.0	0.31	06/25/19 09:25	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	06/25/19 09:25	
Methylene Chloride	ug/L	<0.98	4.0	0.98	06/25/19 09:25	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	06/25/19 09:25	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	06/25/19 09:25	
Naphthalene	ug/L	<0.48	1.0	0.48	06/25/19 09:25	
o-Xylene	ug/L	<0.16	0.50	0.16	06/25/19 09:25	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	06/25/19 09:25	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	06/25/19 09:25	
Styrene	ug/L	<0.19	0.50	0.19	06/25/19 09:25	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	06/25/19 09:25	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	06/25/19 09:25	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	06/25/19 09:25	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	06/25/19 09:25	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	06/25/19 09:25	
Toluene	ug/L	<0.083	0.50	0.083	06/25/19 09:25	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	06/25/19 09:25	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	06/25/19 09:25	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	06/25/19 09:25	
Trichloroethene	ug/L	<0.15	0.40	0.15	06/25/19 09:25	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	06/25/19 09:25	
Vinyl acetate	ug/L	<1.1	10.0	1.1	06/25/19 09:25	
Vinyl chloride	ug/L	<0.092	0.20	0.092	06/25/19 09:25	
Xylene (Total)	ug/L	<0.31	1.5	0.31	06/25/19 09:25	
1,2-Dichloroethane-d4 (S)	%	91	75-136		06/25/19 09:25	
4-Bromofluorobenzene (S)	%	98	75-125		06/25/19 09:25	
Toluene-d8 (S)	%	100	75-125		06/25/19 09:25	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479599

LABORATORY CONTROL SAMPLE: 3324038

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	20.6	103	68-141	
1,1,1-Trichloroethane	ug/L	20	20.9	104	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	20.0	100	73-125	
1,1,2-Trichloroethane	ug/L	20	22.2	111	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	19.7	98	69-132	
1,1-Dichloroethane	ug/L	20	18.5	93	73-125	
1,1-Dichloroethene	ug/L	20	18.1	91	71-126	
1,1-Dichloropropene	ug/L	20	19.9	99	73-126	
1,2,3-Trichlorobenzene	ug/L	20	21.0	105	72-126	
1,2,3-Trichloropropane	ug/L	20	21.0	105	75-126	
1,2,4-Trichlorobenzene	ug/L	20	19.8	99	71-134	
1,2,4-Trimethylbenzene	ug/L	20	18.6	93	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	52.3	105	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	22.7	113	75-129	
1,2-Dichlorobenzene	ug/L	20	18.2	91	75-129	
1,2-Dichloroethane	ug/L	20	19.2	96	75-125	
1,2-Dichloroethene (Total)	ug/L	40	38.8	97	74-125	N2
1,2-Dichloropropane	ug/L	20	20.3	101	75-125	
1,3,5-Trimethylbenzene	ug/L	20	21.3	106	75-127	
1,3-Dichlorobenzene	ug/L	20	19.2	96	75-126	
1,3-Dichloropropane	ug/L	20	21.2	106	75-125	
1,4-Dichlorobenzene	ug/L	20	18.1	91	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	433	108	72-129	
2,2,4-Trimethylpentane	ug/L	20	18.6	93	72-128	N2
2,2-Dichloropropane	ug/L	20	22.0	110	65-138	
2-Butanone (MEK)	ug/L	100	99.2	99	59-144	
2-Chlorotoluene	ug/L	20	18.7	93	75-127	
2-Hexanone	ug/L	100	111	111	73-134	
4-Chlorotoluene	ug/L	20	18.6	93	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	110	110	62-141	
Acetone	ug/L	100	123	123	60-137	
Acrolein	ug/L	200	215	108	60-141	
Acrylonitrile	ug/L	200	187	94	75-129	
Benzene	ug/L	20	18.4	92	73-125	
Bromobenzene	ug/L	20	18.6	93	73-125	
Bromochloromethane	ug/L	20	19.9	100	75-135	
Bromodichloromethane	ug/L	20	21.8	109	75-125	
Bromoform	ug/L	20	24.2	121	67-136	
Bromomethane	ug/L	20	17.7	89	30-150	
Carbon disulfide	ug/L	20	16.3	81	47-137	
Carbon tetrachloride	ug/L	20	22.5	112	75-125	
Chlorobenzene	ug/L	20	18.8	94	75-125	
Chloroethane	ug/L	20	21.3	107	63-136	
Chloroform	ug/L	20	19.5	97	73-128	
Chloromethane	ug/L	20	19.3	96	55-130	
cis-1,2-Dichloroethene	ug/L	20	19.7	98	75-125	
cis-1,3-Dichloropropene	ug/L	20	20.1	101	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479599

LABORATORY CONTROL SAMPLE: 3324038

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	21.3	107	75-125	
Dibromomethane	ug/L	20	20.3	102	75-125	
Dichlorodifluoromethane	ug/L	20	20.7	104	63-132	
Dichlorofluoromethane	ug/L	20	19.7	98	68-127	N2
Diisopropyl ether	ug/L	20	17.3	86	71-131	
Ethyl-tert-butyl ether	ug/L	20	17.6	88	75-125	
Ethylbenzene	ug/L	20	19.9	100	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.6	103	72-134	
Isopropylbenzene (Cumene)	ug/L	20	19.5	97	75-125	
m&p-Xylene	ug/L	40	39.1	98	75-126	
Methyl-tert-butyl ether	ug/L	20	19.1	96	75-125	
Methylene Chloride	ug/L	20	16.8	84	70-125	
n-Butylbenzene	ug/L	20	19.1	95	75-126	
n-Propylbenzene	ug/L	20	18.8	94	73-127	
Naphthalene	ug/L	20	19.7	99	63-128	
o-Xylene	ug/L	20	19.4	97	75-128	
p-Isopropyltoluene	ug/L	20	19.4	97	75-125	
sec-Butylbenzene	ug/L	20	21.3	107	75-126	
Styrene	ug/L	20	20.8	104	75-125	
tert-Amylmethyl ether	ug/L	20	17.9	90	75-125	
tert-Butyl Alcohol	ug/L	200	211	106	75-130	
tert-Butylbenzene	ug/L	20	19.1	95	75-131	
Tetrachloroethene	ug/L	20	20.5	102	74-125	
Tetrahydrofuran	ug/L	200	246	123	64-138	
Toluene	ug/L	20	19.5	98	74-125	
trans-1,2-Dichloroethene	ug/L	20	19.2	96	68-128	
trans-1,3-Dichloropropene	ug/L	20	19.8	99	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	58.5	117	60-127	
Trichloroethene	ug/L	20	19.2	96	75-127	
Trichlorofluoromethane	ug/L	20	20.3	102	72-133	
Vinyl acetate	ug/L	20	17.4	87	61-129	
Vinyl chloride	ug/L	20	19.7	99	75-128	
Xylene (Total)	ug/L	60	58.5	98	75-125	
1,2-Dichloroethane-d4 (S)	%			99	75-136	
4-Bromofluorobenzene (S)	%			97	75-125	
Toluene-d8 (S)	%			97	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3326089 3326090

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10480797001 Result	Spike Conc.	Spike Conc.	Conc.								
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20	19.9	20.8	100	104	75-140	4	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20	23.5	23.0	118	115	74-136	2	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20	18.8	19.5	94	97	66-134	3	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20	20.4	21.7	102	108	75-126	6	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479599

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3326089 3326090												
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		10480797001 Result	Spike Conc.	Spike Conc.	MS Conc.							
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	22.2	23.1	111	115	65-146	4	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	20.2	19.0	101	95	68-132	6	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	20.6	19.5	103	98	66-139	5	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	21.7	21.1	109	106	67-134	3	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	22.7	23.3	114	117	67-129	3	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	19.1	20.2	96	101	69-128	5	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	23.1	23.5	116	118	65-140	2	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	19.0	17.5	95	88	71-133	8	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	48.0	51.9	96	104	54-138	8	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	21.5	21.9	107	110	68-125	2	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	18.7	20.2	93	101	74-136	8	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	17.6	18.9	88	95	68-125	7	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	41.2	39.8	103	100	71-126	3	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	22.5	22.5	113	112	67-125	0	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	17.2	0.27J	86	1	68-137		30	M1
1,3-Dichlorobenzene	ug/L	<0.16	20	20	19.3	21.1	97	105	75-131	8	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	21.0	20.9	105	105	71-125	0	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	18.5	20.4	92	102	74-126	10	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	423	422	106	105	68-125	0	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	22.7	20.0	113	100	54-129	13	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	25.3	23.7	127	119	69-139	7	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	77.4	83.5	77	83	54-144	8	30	
2-Chlorotoluene	ug/L	<0.16	20	20	19.7	20.8	98	104	75-134	6	30	
2-Hexanone	ug/L	<0.88	100	100	92.2	98.2	92	98	58-137	6	30	
4-Chlorotoluene	ug/L	<0.13	20	20	19.1	21.1	96	106	72-133	10	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	93.5	102	94	102	60-129	9	30	
Acetone	ug/L	30.3	100	100	127	122	97	92	62-132	4	30	
Acrolein	ug/L	<1.2	200	200	276	265	138	133	30-150	4	30	
Acrylonitrile	ug/L	<0.91	200	200	177	180	89	90	68-125	1	30	
Benzene	ug/L	<0.10	20	20	19.4	19.4	97	97	68-125	0	30	
Bromobenzene	ug/L	<0.21	20	20	19.8	20.5	99	103	73-126	4	30	
Bromochloromethane	ug/L	<0.27	20	20	21.0	20.0	105	100	66-143	5	30	
Bromodichloromethane	ug/L	0.34J	20	20	23.4	23.1	115	114	74-125	1	30	
Bromoform	ug/L	<0.80	20	20	22.4	22.6	112	113	64-134	1	30	
Bromomethane	ug/L	<1.8	20	20	21.8	20.0	109	100	30-150	9	30	
Carbon disulfide	ug/L	<0.078	20	20	20.1	18.1	100	90	43-147	10	30	
Carbon tetrachloride	ug/L	<0.19	20	20	24.8	25.0	124	125	71-143	1	30	
Chlorobenzene	ug/L	<0.17	20	20	18.6	19.3	93	97	75-125	4	30	
Chloroethane	ug/L	<0.49	20	20	25.9	25.6	130	128	75-129	1	30	M1
Chloroform	ug/L	39.5	20	20	54.7	55.0	76	78	66-132	1	30	
Chloromethane	ug/L	<0.16	20	20	29.6	35.1	148	176	53-137	17	30	M1
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	20.6	20.1	103	101	67-133	2	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	19.7	19.4	99	97	66-125	1	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479599

Parameter	Units	3326089		3326090		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		10480797001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Dibromochloromethane	ug/L	<0.12	20	20	20.2	20.6	101	103	62-132	2	30		
Dibromomethane	ug/L	<0.16	20	20	21.4	21.5	107	107	67-125	0	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	25.7	24.4	128	122	71-142	5	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	23.3	22.0	117	110	70-131	6	30	N2	
Diisopropyl ether	ug/L	<0.13	20	20	16.7	17.0	84	85	63-131	1	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	16.8	17.5	84	87	66-128	4	30		
Ethylbenzene	ug/L	<0.14	20	20	20.4	21.8	102	109	74-126	6	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	26.9	22.7	135	114	68-143	17	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	19.5	21.5	98	107	74-130	9	30		
m&p-Xylene	ug/L	<0.31	40	40	38.6	39.6	97	99	69-132	2	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	18.0	18.6	90	93	65-131	4	30		
Methylene Chloride	ug/L	<0.98	20	20	19.2	19.6	96	98	57-125	2	30		
n-Butylbenzene	ug/L	<0.24	20	20	22.0	21.8	110	109	71-131	1	30		
n-Propylbenzene	ug/L	<0.10	20	20	20.4	22.1	102	111	67-138	8	30		
Naphthalene	ug/L	<0.48	20	20	20.7	23.1	103	115	60-130	11	30		
o-Xylene	ug/L	<0.16	20	20	18.9	20.3	94	102	69-131	8	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	20.4	21.1	102	106	72-133	3	30		
sec-Butylbenzene	ug/L	<0.15	20	20	23.4	24.3	117	121	73-134	4	30		
Styrene	ug/L	<0.19	20	20	2.5	0.40J	12	2	72-125		30	M1	
tert-Amylmethyl ether	ug/L	<0.11	20	20	16.9	17.5	84	87	67-125	3	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	205	228	103	114	64-137	11	30		
tert-Butylbenzene	ug/L	<0.15	20	20	21.0	21.8	105	109	70-143	4	30		
Tetrachloroethene	ug/L	<0.17	20	20	21.6	22.9	108	115	72-129	6	30		
Tetrahydrofuran	ug/L	<2.2	200	200	236	231	118	115	66-128	2	30		
Toluene	ug/L	<0.083	20	20	19.7	20.4	99	102	73-125	3	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	20.6	19.7	103	99	62-137	4	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	19.6	20.3	98	101	61-136	3	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	55.6	54.5	111	109	45-128	2	30		
Trichloroethene	ug/L	<0.15	20	20	22.2	22.5	111	112	74-132	1	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	24.9	24.4	125	122	75-139	2	30		
Vinyl acetate	ug/L	<1.1	20	20	11.2	2.5J	56	13	51-135		30	M1	
Vinyl chloride	ug/L	<0.092	20	20	24.2	22.1	121	110	68-146	9	30		
Xylene (Total)	ug/L	<0.31	60	60	57.5	59.9	96	100	67-137	4	30		
1,2-Dichloroethane-d4 (S)	%						95	99	75-136				
4-Bromofluorobenzene (S)	%						101	97	75-125				
Toluene-d8 (S)	%						95	95	75-125				

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479599

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479599

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479599

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10479599001	WS5-GW-061719	EPA 8260B	615244		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: CH2M Hill
 Project #: _____

WO# : 10479599
 PM: JMG Due Date: 06/25/19
 CLIENT: UPRR_Jacobs

Courier: Fed Ex UPS USPS Client
 Pace SpeeDee Commercial See Exception

Tracking Number: 493437301880, 493437292713

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other: _____ Temp Blank? Yes No

Thermometer: T1(0461) T2(1336) T3(0459)
 T4(0254) T5(0489) Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: 0.9, 1.2 °C
 Correction Factor: True Cooler Temp Corrected w/temp blank: 0.9, 1.2 °C
 Average Corrected Temp (no temp blank only): _____ °C See Exceptions

USDA Regulated Soil: N/A, water sample/Other: _____ Date/Initials of Person Examining Contents: HE 6/18/19
 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No
 Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No
 If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

		COMMENTS:
Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: See Exception <input type="checkbox"/>
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other		
All containers needing acid/base preservation have been checked?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/> NaOH <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
Exceptions: <u>VOA</u> Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No See Exception <input type="checkbox"/> pH Paper Lot# _____
		Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip
Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. See Exception <input type="checkbox"/>
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____ Field Data Required? Yes No
 Comments/Resolution: _____

Project Manager Review: Jenni Gross Date: 06/18/19
 Note: Whenever there is a discrepancy affecting norm. or incor. preservative, out of temp. or incorrect containers, 5 samples a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of

Labelled by: HE

June 25, 2019

David Hodson
Jacobs
155 Grand Ave
#800
Oakland, CA 94612

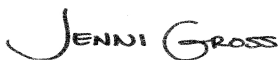
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479600

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 18, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, Jacobs
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479600

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #:74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Vermont Certification #: VT-027053137

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479600

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10479600001	AtwoodH-GW-061719	Water	06/17/19 10:45	06/18/19 08:45
10479600002	AtwoodS-GW-061719	Water	06/17/19 11:00	06/18/19 08:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479600

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10479600001	AtwoodH-GW-061719	EPA 8260B	DS2	83	PASI-M
10479600002	AtwoodS-GW-061719	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479600

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 25, 2019

General Information:

2 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 615092

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- LCS (Lab ID: 3323289)
- Carbon tetrachloride

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 615092

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10480450002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3323290)
 - Acrolein
 - Chloroethane
- MSD (Lab ID: 3323291)
 - Acrolein
 - Chloroethane

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479600

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 25, 2019

Additional Comments:

Analyte Comments:

QC Batch: 615092

F1: The sample was analyzed at a dilution due to foaming of the sample in the purge vessel.

- MS (Lab ID: 3323290)
 - 1,2-Dichloroethane-d4 (S)
- MSD (Lab ID: 3323291)
 - 1,2-Dichloroethane-d4 (S)

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- AtwoodH-GW-061719 (Lab ID: 10479600001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- AtwoodS-GW-061719 (Lab ID: 10479600002)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- BLANK (Lab ID: 3323288)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3323289)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3323290)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3323291)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479600

Sample: **AtwoodH-GW-061719** Lab ID: **10479600001** Collected: 06/17/19 10:45 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		06/25/19 02:30	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		06/25/19 02:30	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		06/25/19 02:30	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		06/25/19 02:30	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		06/25/19 02:30	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		06/25/19 02:30	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	1.0	0.16	1		06/25/19 02:30	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		06/25/19 02:30	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		06/25/19 02:30	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		06/25/19 02:30	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		06/25/19 02:30	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		06/25/19 02:30	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		06/25/19 02:30	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		06/25/19 02:30	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		06/25/19 02:30	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		06/25/19 02:30	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		06/25/19 02:30	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		06/25/19 02:30	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		06/25/19 02:30	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		06/25/19 02:30	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		06/25/19 02:30	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		06/25/19 02:30	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		06/25/19 02:30	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		06/25/19 02:30	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		06/25/19 02:30	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		06/25/19 02:30	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		06/25/19 02:30	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		06/25/19 02:30	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		06/25/19 02:30	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		06/25/19 02:30	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		06/25/19 02:30	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		06/25/19 02:30	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		06/25/19 02:30	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		06/25/19 02:30	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		06/25/19 02:30	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		06/25/19 02:30	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		06/25/19 02:30	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		06/25/19 02:30	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		06/25/19 02:30	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		06/25/19 02:30	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		06/25/19 02:30	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		06/25/19 02:30	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		06/25/19 02:30	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		06/25/19 02:30	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		06/25/19 02:30	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		06/25/19 02:30	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479600

Sample: AtwoodH-GW-061719 **Lab ID: 10479600001** Collected: 06/17/19 10:45 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		06/25/19 02:30	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		06/25/19 02:30	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		06/25/19 02:30	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		06/25/19 02:30	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		06/25/19 02:30	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		06/25/19 02:30	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		06/25/19 02:30	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		06/25/19 02:30	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		06/25/19 02:30	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		06/25/19 02:30	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		06/25/19 02:30	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		06/25/19 02:30	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		06/25/19 02:30	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		06/25/19 02:30	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		06/25/19 02:30	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		06/25/19 02:30	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		06/25/19 02:30	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		06/25/19 02:30	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		06/25/19 02:30	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		06/25/19 02:30	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		06/25/19 02:30	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	1.0	0.20	1		06/25/19 02:30	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		06/25/19 02:30	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		06/25/19 02:30	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		06/25/19 02:30	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		06/25/19 02:30	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		06/25/19 02:30	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/25/19 02:30	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		06/25/19 02:30	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		06/25/19 02:30	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/25/19 02:30	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		06/25/19 02:30	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		06/25/19 02:30	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		06/25/19 02:30	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	94	%	75-136		1		06/25/19 02:30	17060-07-0	
Toluene-d8 (S)	101	%	75-125		1		06/25/19 02:30	2037-26-5	
4-Bromofluorobenzene (S)	96	%	75-125		1		06/25/19 02:30	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10479600

Sample: **AtwoodS-GW-061719** Lab ID: **10479600002** Collected: 06/17/19 11:00 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		06/25/19 02:54	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		06/25/19 02:54	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		06/25/19 02:54	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		06/25/19 02:54	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		06/25/19 02:54	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		06/25/19 02:54	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	1.0	0.16	1		06/25/19 02:54	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		06/25/19 02:54	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		06/25/19 02:54	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		06/25/19 02:54	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		06/25/19 02:54	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		06/25/19 02:54	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		06/25/19 02:54	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		06/25/19 02:54	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		06/25/19 02:54	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		06/25/19 02:54	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		06/25/19 02:54	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		06/25/19 02:54	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		06/25/19 02:54	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		06/25/19 02:54	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		06/25/19 02:54	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		06/25/19 02:54	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		06/25/19 02:54	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		06/25/19 02:54	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		06/25/19 02:54	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		06/25/19 02:54	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		06/25/19 02:54	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		06/25/19 02:54	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		06/25/19 02:54	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		06/25/19 02:54	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		06/25/19 02:54	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		06/25/19 02:54	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		06/25/19 02:54	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		06/25/19 02:54	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		06/25/19 02:54	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		06/25/19 02:54	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		06/25/19 02:54	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		06/25/19 02:54	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		06/25/19 02:54	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		06/25/19 02:54	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		06/25/19 02:54	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		06/25/19 02:54	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		06/25/19 02:54	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		06/25/19 02:54	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		06/25/19 02:54	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		06/25/19 02:54	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479600

Sample: AtwoodS-GW-061719 **Lab ID: 10479600002** Collected: 06/17/19 11:00 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		06/25/19 02:54	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		06/25/19 02:54	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		06/25/19 02:54	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		06/25/19 02:54	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		06/25/19 02:54	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		06/25/19 02:54	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		06/25/19 02:54	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		06/25/19 02:54	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		06/25/19 02:54	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		06/25/19 02:54	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		06/25/19 02:54	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		06/25/19 02:54	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		06/25/19 02:54	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		06/25/19 02:54	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		06/25/19 02:54	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		06/25/19 02:54	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		06/25/19 02:54	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		06/25/19 02:54	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		06/25/19 02:54	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		06/25/19 02:54	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		06/25/19 02:54	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	1.0	0.20	1		06/25/19 02:54	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		06/25/19 02:54	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		06/25/19 02:54	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		06/25/19 02:54	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		06/25/19 02:54	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		06/25/19 02:54	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/25/19 02:54	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		06/25/19 02:54	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		06/25/19 02:54	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/25/19 02:54	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		06/25/19 02:54	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		06/25/19 02:54	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		06/25/19 02:54	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	97	%	75-136		1		06/25/19 02:54	17060-07-0	
Toluene-d8 (S)	100	%	75-125		1		06/25/19 02:54	2037-26-5	
4-Bromofluorobenzene (S)	95	%	75-125		1		06/25/19 02:54	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479600

QC Batch: 615092 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10479600001, 10479600002

METHOD BLANK: 3323288 Matrix: Water

Associated Lab Samples: 10479600001, 10479600002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	06/24/19 21:23	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	06/24/19 21:23	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	06/24/19 21:23	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	06/24/19 21:23	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	06/24/19 21:23	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	06/24/19 21:23	
1,1-Dichloroethene	ug/L	<0.16	1.0	0.16	06/24/19 21:23	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	06/24/19 21:23	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	06/24/19 21:23	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	06/24/19 21:23	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	06/24/19 21:23	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	06/24/19 21:23	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	06/24/19 21:23	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	06/24/19 21:23	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	06/24/19 21:23	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	06/24/19 21:23	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	06/24/19 21:23	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	06/24/19 21:23	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	06/24/19 21:23	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	06/24/19 21:23	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	06/24/19 21:23	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	06/24/19 21:23	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	06/24/19 21:23	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	06/24/19 21:23	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	06/24/19 21:23	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	06/24/19 21:23	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	06/24/19 21:23	
2-Hexanone	ug/L	<0.88	5.0	0.88	06/24/19 21:23	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	06/24/19 21:23	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	06/24/19 21:23	
Acetone	ug/L	<9.2	20.0	9.2	06/24/19 21:23	
Acrolein	ug/L	<1.2	10.0	1.2	06/24/19 21:23	
Acrylonitrile	ug/L	<0.91	10.0	0.91	06/24/19 21:23	
Benzene	ug/L	<0.10	0.50	0.10	06/24/19 21:23	
Bromobenzene	ug/L	<0.21	0.50	0.21	06/24/19 21:23	
Bromochloromethane	ug/L	<0.27	1.0	0.27	06/24/19 21:23	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	06/24/19 21:23	
Bromoform	ug/L	<0.80	4.0	0.80	06/24/19 21:23	
Bromomethane	ug/L	<1.8	4.0	1.8	06/24/19 21:23	
Carbon disulfide	ug/L	<0.078	1.0	0.078	06/24/19 21:23	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	06/24/19 21:23	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479600

METHOD BLANK: 3323288

Matrix: Water

Associated Lab Samples: 10479600001, 10479600002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	06/24/19 21:23	
Chloroethane	ug/L	<0.49	1.0	0.49	06/24/19 21:23	
Chloroform	ug/L	<0.45	1.0	0.45	06/24/19 21:23	
Chloromethane	ug/L	<0.16	4.0	0.16	06/24/19 21:23	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	06/24/19 21:23	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	06/24/19 21:23	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	06/24/19 21:23	
Dibromomethane	ug/L	<0.16	1.0	0.16	06/24/19 21:23	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	06/24/19 21:23	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	06/24/19 21:23	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	06/24/19 21:23	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	06/24/19 21:23	
Ethylbenzene	ug/L	<0.14	0.50	0.14	06/24/19 21:23	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	06/24/19 21:23	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	06/24/19 21:23	
m&p-Xylene	ug/L	<0.31	1.0	0.31	06/24/19 21:23	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	06/24/19 21:23	
Methylene Chloride	ug/L	<0.98	4.0	0.98	06/24/19 21:23	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	06/24/19 21:23	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	06/24/19 21:23	
Naphthalene	ug/L	<0.48	1.0	0.48	06/24/19 21:23	
o-Xylene	ug/L	<0.16	0.50	0.16	06/24/19 21:23	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	06/24/19 21:23	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	06/24/19 21:23	
Styrene	ug/L	<0.19	0.50	0.19	06/24/19 21:23	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	06/24/19 21:23	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	06/24/19 21:23	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	06/24/19 21:23	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	06/24/19 21:23	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	06/24/19 21:23	
Toluene	ug/L	<0.083	0.50	0.083	06/24/19 21:23	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	06/24/19 21:23	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	06/24/19 21:23	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	06/24/19 21:23	
Trichloroethene	ug/L	<0.15	0.40	0.15	06/24/19 21:23	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	06/24/19 21:23	
Vinyl acetate	ug/L	<1.1	10.0	1.1	06/24/19 21:23	
Vinyl chloride	ug/L	<0.092	0.20	0.092	06/24/19 21:23	
Xylene (Total)	ug/L	<0.31	1.5	0.31	06/24/19 21:23	
1,2-Dichloroethane-d4 (S)	%	97	75-136		06/24/19 21:23	
4-Bromofluorobenzene (S)	%	93	75-125		06/24/19 21:23	
Toluene-d8 (S)	%	103	75-125		06/24/19 21:23	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479600

LABORATORY CONTROL SAMPLE: 3323289

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.6	108	68-141	
1,1,1-Trichloroethane	ug/L	20	24.7	123	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	21.7	108	73-125	
1,1,2-Trichloroethane	ug/L	20	23.5	117	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	22.5	113	69-132	
1,1-Dichloroethane	ug/L	20	22.2	111	73-125	
1,1-Dichloroethene	ug/L	20	21.9	109	71-126	
1,1-Dichloropropene	ug/L	20	23.1	115	73-126	
1,2,3-Trichlorobenzene	ug/L	20	22.3	112	72-126	
1,2,3-Trichloropropane	ug/L	20	22.7	114	75-126	
1,2,4-Trichlorobenzene	ug/L	20	21.0	105	71-134	
1,2,4-Trimethylbenzene	ug/L	20	20.5	103	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	51.9	104	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	24.3	121	75-129	
1,2-Dichlorobenzene	ug/L	20	19.7	99	75-129	
1,2-Dichloroethane	ug/L	20	21.9	110	75-125	
1,2-Dichloroethene (Total)	ug/L	40	46.0	115	74-125	N2
1,2-Dichloropropane	ug/L	20	23.4	117	75-125	
1,3,5-Trimethylbenzene	ug/L	20	23.2	116	75-127	
1,3-Dichlorobenzene	ug/L	20	20.8	104	75-126	
1,3-Dichloropropane	ug/L	20	23.2	116	75-125	
1,4-Dichlorobenzene	ug/L	20	19.9	99	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	437	109	72-129	
2,2,4-Trimethylpentane	ug/L	20	20.8	104	72-128	N2
2,2-Dichloropropane	ug/L	20	25.2	126	65-138	
2-Butanone (MEK)	ug/L	100	113	113	59-144	
2-Chlorotoluene	ug/L	20	20.7	104	75-127	
2-Hexanone	ug/L	100	118	118	73-134	
4-Chlorotoluene	ug/L	20	20.5	102	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	113	113	62-141	
Acetone	ug/L	100	134	134	60-137	
Acrolein	ug/L	200	183	91	60-141	
Acrylonitrile	ug/L	200	215	108	75-129	
Benzene	ug/L	20	21.9	109	73-125	
Bromobenzene	ug/L	20	21.4	107	73-125	
Bromochloromethane	ug/L	20	23.8	119	75-135	
Bromodichloromethane	ug/L	20	24.3	121	75-125	
Bromoform	ug/L	20	25.0	125	67-136	
Bromomethane	ug/L	20	23.6	118	30-150	
Carbon disulfide	ug/L	20	19.9	100	47-137	
Carbon tetrachloride	ug/L	20	25.5	128	75-125	L3
Chlorobenzene	ug/L	20	20.5	102	75-125	
Chloroethane	ug/L	20	23.3	117	63-136	
Chloroform	ug/L	20	22.6	113	73-128	
Chloromethane	ug/L	20	21.0	105	55-130	
cis-1,2-Dichloroethene	ug/L	20	23.2	116	75-125	
cis-1,3-Dichloropropene	ug/L	20	22.1	111	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479600

LABORATORY CONTROL SAMPLE: 3323289

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	22.7	113	75-125	
Dibromomethane	ug/L	20	23.8	119	75-125	
Dichlorodifluoromethane	ug/L	20	22.4	112	63-132	
Dichlorofluoromethane	ug/L	20	22.0	110	68-127	N2
Diisopropyl ether	ug/L	20	20.5	102	71-131	
Ethyl-tert-butyl ether	ug/L	20	20.2	101	75-125	
Ethylbenzene	ug/L	20	22.2	111	75-125	
Hexachloro-1,3-butadiene	ug/L	20	21.3	106	72-134	
Isopropylbenzene (Cumene)	ug/L	20	20.9	104	75-125	
m&p-Xylene	ug/L	40	42.5	106	75-126	
Methyl-tert-butyl ether	ug/L	20	21.6	108	75-125	
Methylene Chloride	ug/L	20	21.5	107	70-125	
n-Butylbenzene	ug/L	20	20.6	103	75-126	
n-Propylbenzene	ug/L	20	20.7	104	73-127	
Naphthalene	ug/L	20	21.6	108	63-128	
o-Xylene	ug/L	20	21.5	108	75-128	
p-Isopropyltoluene	ug/L	20	20.6	103	75-125	
sec-Butylbenzene	ug/L	20	23.1	116	75-126	
Styrene	ug/L	20	22.0	110	75-125	
tert-Amylmethyl ether	ug/L	20	20.2	101	75-125	
tert-Butyl Alcohol	ug/L	200	207	104	75-130	
tert-Butylbenzene	ug/L	20	20.9	105	75-131	
Tetrachloroethene	ug/L	20	21.1	105	74-125	
Tetrahydrofuran	ug/L	200	266	133	64-138	
Toluene	ug/L	20	21.4	107	74-125	
trans-1,2-Dichloroethene	ug/L	20	22.8	114	68-128	
trans-1,3-Dichloropropene	ug/L	20	22.0	110	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	62.0	124	60-127	
Trichloroethene	ug/L	20	23.8	119	75-127	
Trichlorofluoromethane	ug/L	20	22.3	111	72-133	
Vinyl acetate	ug/L	20	20.1	100	61-129	
Vinyl chloride	ug/L	20	21.9	110	75-128	
Xylene (Total)	ug/L	60	64.1	107	75-125	
1,2-Dichloroethane-d4 (S)	%			102	75-136	
4-Bromofluorobenzene (S)	%			99	75-125	
Toluene-d8 (S)	%			96	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3323290 3323291

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10480450002 Result	Spike Conc.	Spike Conc.	MS Result						
1,1,1,2-Tetrachloroethane	ug/L	ND	40	40	41.6	40.7	104	102	75-140	2	30
1,1,1-Trichloroethane	ug/L	ND	40	40	48.4	45.4	121	113	74-136	7	30
1,1,2,2-Tetrachloroethane	ug/L	ND	40	40	42.8	41.4	107	103	66-134	3	30
1,1,2-Trichloroethane	ug/L	ND	40	40	45.1	43.5	113	109	75-126	4	30

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479600

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3323290			3323291							
Parameter	Units	10480450002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichlorotrifluoroethane	ug/L	ND	40	40	44.6	42.0	111	105	65-146	6	30	
1,1-Dichloroethane	ug/L	ND	40	40	43.8	42.4	110	106	68-132	3	30	
1,1-Dichloroethene	ug/L	ND	40	40	43.2	41.1	108	103	66-139	5	30	
1,1-Dichloropropene	ug/L	ND	40	40	46.1	43.0	115	107	67-134	7	30	
1,2,3-Trichlorobenzene	ug/L	ND	40	40	42.4	40.8	106	102	67-129	4	30	
1,2,3-Trichloropropane	ug/L	ND	40	40	42.8	43.4	107	108	69-128	1	30	
1,2,4-Trichlorobenzene	ug/L	ND	40	40	40.0	38.3	100	96	65-140	4	30	
1,2,4-Trimethylbenzene	ug/L	ND	40	40	40.0	38.4	100	96	71-133	4	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	100	100	110	108	110	108	54-138	2	30	
1,2-Dibromoethane (EDB)	ug/L	ND	40	40	47.5	44.9	119	112	68-125	6	30	
1,2-Dichlorobenzene	ug/L	ND	40	40	38.7	36.7	97	92	74-136	5	30	
1,2-Dichloroethane	ug/L	ND	40	40	42.6	41.1	106	103	68-125	4	30	
1,2-Dichloroethene (Total)	ug/L	ND	80	80	88.6	85.2	111	107	71-126	4	30	N2
1,2-Dichloropropane	ug/L	ND	40	40	46.9	44.9	117	112	67-125	4	30	
1,3,5-Trimethylbenzene	ug/L	ND	40	40	45.8	43.6	115	109	68-137	5	30	
1,3-Dichlorobenzene	ug/L	ND	40	40	40.2	38.2	100	95	75-131	5	30	
1,3-Dichloropropane	ug/L	ND	40	40	45.4	43.8	114	109	71-125	4	30	
1,4-Dichlorobenzene	ug/L	ND	40	40	38.7	37.3	97	93	74-126	4	30	
1,4-Dioxane (p-Dioxane)	ug/L	ND	800	800	887	841	111	105	68-125	5	30	
2,2,4-Trimethylpentane	ug/L	ND	40	40	34.1	32.4	85	81	54-129	5	30	N2
2,2-Dichloropropane	ug/L	ND	40	40	49.4	45.9	123	115	69-139	7	30	
2-Butanone (MEK)	ug/L	ND	200	200	206	203	103	102	54-144	2	30	
2-Chlorotoluene	ug/L	ND	40	40	40.0	38.8	100	97	75-134	3	30	
2-Hexanone	ug/L	ND	200	200	230	229	115	114	58-137	0	30	
4-Chlorotoluene	ug/L	ND	40	40	40.1	38.8	100	97	72-133	3	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	200	200	232	226	116	113	60-129	3	30	
Acetone	ug/L	40.6	200	200	239	233	99	96	62-132	3	30	
Acrolein	ug/L	ND	400	400	682	661	171	165	30-150	3	30	M1
Acrylonitrile	ug/L	ND	400	400	434	419	108	105	68-125	3	30	
Benzene	ug/L	ND	40	40	42.4	40.1	106	100	68-125	5	30	
Bromobenzene	ug/L	ND	40	40	40.6	39.0	102	97	73-126	4	30	
Bromochloromethane	ug/L	ND	40	40	44.5	44.2	111	110	66-143	1	30	
Bromodichloromethane	ug/L	ND	40	40	48.5	45.7	121	114	74-125	6	30	
Bromoform	ug/L	ND	40	40	49.5	47.1	124	118	64-134	5	30	
Bromomethane	ug/L	ND	40	40	52.3	51.5	131	129	30-150	2	30	
Carbon disulfide	ug/L	ND	40	40	40.3	38.8	101	97	43-147	4	30	
Carbon tetrachloride	ug/L	ND	40	40	51.0	46.9	127	117	71-143	8	30	
Chlorobenzene	ug/L	10.5	40	40	50.0	46.8	99	91	75-125	7	30	
Chloroethane	ug/L	ND	40	40	53.8	53.4	135	134	75-129	1	30	M1
Chloroform	ug/L	ND	40	40	44.3	41.0	111	102	66-132	8	30	
Chloromethane	ug/L	ND	40	40	50.1	47.4	125	118	53-137	6	30	
cis-1,2-Dichloroethene	ug/L	ND	40	40	44.3	43.1	111	108	67-133	3	30	
cis-1,3-Dichloropropene	ug/L	ND	40	40	41.3	39.7	103	99	66-125	4	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479600

Parameter	Units	10480450002		3323290		3323291		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Dibromochloromethane	ug/L	ND	40	40	43.0	41.1	108	103	62-132	5	30			
Dibromomethane	ug/L	ND	40	40	45.9	45.4	115	113	67-125	1	30			
Dichlorodifluoromethane	ug/L	ND	40	40	50.5	48.0	126	120	71-142	5	30			
Dichlorofluoromethane	ug/L	ND	40	40	49.1	46.6	123	116	70-131	5	30	N2		
Diisopropyl ether	ug/L	ND	40	40	39.7	37.7	99	94	63-131	5	30			
Ethyl-tert-butyl ether	ug/L	ND	40	40	38.7	37.9	97	95	66-128	2	30			
Ethylbenzene	ug/L	ND	40	40	43.0	40.4	108	101	74-126	6	30			
Hexachloro-1,3-butadiene	ug/L	ND	40	40	35.9	34.6	90	87	68-143	4	30			
Isopropylbenzene (Cumene)	ug/L	ND	40	40	40.7	38.1	102	95	74-130	7	30			
m&p-Xylene	ug/L	ND	80	80	82.6	78.5	103	98	69-132	5	30			
Methyl-tert-butyl ether	ug/L	ND	40	40	41.8	41.6	105	104	65-131	1	30			
Methylene Chloride	ug/L	ND	40	40	44.0	42.1	110	105	57-125	4	30			
n-Butylbenzene	ug/L	ND	40	40	39.2	37.8	98	95	71-131	4	30			
n-Propylbenzene	ug/L	ND	40	40	40.3	38.1	101	95	67-138	6	30			
Naphthalene	ug/L	ND	40	40	43.8	43.0	109	107	60-130	2	30			
o-Xylene	ug/L	ND	40	40	41.9	38.9	105	97	69-131	7	30			
p-Isopropyltoluene	ug/L	ND	40	40	40.7	38.8	102	97	72-133	5	30			
sec-Butylbenzene	ug/L	ND	40	40	44.0	42.1	110	105	73-134	5	30			
Styrene	ug/L	ND	40	40	42.8	40.5	107	101	72-125	6	30			
tert-Amylmethyl ether	ug/L	ND	40	40	38.8	37.5	97	94	67-125	3	30			
tert-Butyl Alcohol	ug/L	ND	400	400	416	420	104	105	64-137	1	30			
tert-Butylbenzene	ug/L	ND	40	40	39.8	38.4	100	96	70-143	3	30			
Tetrachloroethene	ug/L	ND	40	40	43.0	40.0	107	100	72-129	7	30			
Tetrahydrofuran	ug/L	ND	400	400	480	463	120	116	66-128	4	30			
Toluene	ug/L	ND	40	40	42.1	40.4	105	101	73-125	4	30			
trans-1,2-Dichloroethene	ug/L	ND	40	40	44.2	42.1	111	105	62-137	5	30			
trans-1,3-Dichloropropene	ug/L	ND	40	40	41.7	40.1	104	100	61-136	4	30			
trans-1,4-Dichloro-2-butene	ug/L	ND	100	100	125	120	125	120	45-128	4	30			
Trichloroethene	ug/L	ND	40	40	46.3	43.8	116	110	74-132	6	30			
Trichlorofluoromethane	ug/L	ND	40	40	48.8	45.5	122	114	75-139	7	30			
Vinyl acetate	ug/L	ND	40	40	40.5	40.3	101	101	51-135	0	30			
Vinyl chloride	ug/L	ND	40	40	51.3	49.4	128	123	68-146	4	30			
Xylene (Total)	ug/L	ND	120	120	124	117	104	98	67-137	6	30			
1,2-Dichloroethane-d4 (S)	%						103	101	75-136				F1	
4-Bromofluorobenzene (S)	%						98	98	75-125					
Toluene-d8 (S)	%						96	96	75-125					

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479600

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

F1 The sample was analyzed at a dilution due to foaming of the sample in the purge vessel.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479600

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479600

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10479600001	AtwoodH-GW-061719	EPA 8260B	615092		
10479600002	AtwoodS-GW-061719	EPA 8260B	615092		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt
 Client Name: CH2M Hill
 Project #: **WO#: 10479600**
 Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception
 Tracking Number: 493437301880, 4934 3729 2713

Custody Seal on Cooler/Box Present? Yes No
 Seals Intact? Yes No
 Biological Tissue Frozen? Yes No N/A
 Packing Material: Bubble Wrap Bubble Bags None Other: _____
 Temp Blank? Yes No
 Thermometer: T1(0461) T2(1336) T3(0459)
 T4(0254) T5(0489)
 Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)
 Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: 0.9, 1.2 °C
 Average Corrected Temp (no temp blank only): _____ °C
 Correction Factor: True Cooler Temp Corrected w/temp blank: 0.9, 1.2 °C

USDA Regulated Soil: N/A, water sample/Other: _____
 Date/Initials of Person Examining Contents: HF 6/18/19
 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No
 Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No
 If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

	COMMENTS:
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No -Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	11. If no, write ID/ Date/Time on Container Below: See Exception <input type="checkbox"/>
All containers needing acid/base preservation have been checked? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. Sample # <input type="checkbox"/> NaOH <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	Positive for Res. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No See Exception Chlorine? <input type="checkbox"/> No pH Paper Lot# <input type="checkbox"/>
Exceptions: <u>VOA</u> Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13. See Exception <input type="checkbox"/>
Trip Blank Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14. Pace Trip Blank Lot # (if purchased):
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	

CLIENT NOTIFICATION/RESOLUTION
 Person Contacted: _____ Date/Time: _____
 Comments/Resolution: _____ Field Data Required? Yes No

Project Manager Review: JENNI GROSS Date: 06/18/19
 Note: Whenever there is a discrepancy affecting North Carolina samples a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).
 Labeled by: HF

June 25, 2019

David Hodson
Jacobs
155 Grand Ave
#800
Oakland, CA 94612

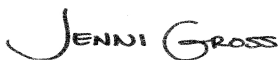
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479602

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 18, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, Jacobs
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479602

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Vermont Certification #: VT-027053137

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479602

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10479602001	Thorson-GW-061719	Water	06/17/19 11:30	06/18/19 08:45

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479602

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10479602001	Thorson-GW-061719	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479602

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 25, 2019

General Information:

1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 615092

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- LCS (Lab ID: 3323289)
- Carbon tetrachloride

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 615092

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10480450002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3323290)
 - Acrolein
 - Chloroethane
- MSD (Lab ID: 3323291)
 - Acrolein
 - Chloroethane

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479602

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 25, 2019

Additional Comments:

Analyte Comments:

QC Batch: 615092

F1: The sample was analyzed at a dilution due to foaming of the sample in the purge vessel.

- MS (Lab ID: 3323290)
 - 1,2-Dichloroethane-d4 (S)
- MSD (Lab ID: 3323291)
 - 1,2-Dichloroethane-d4 (S)

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3323288)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3323289)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3323290)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3323291)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- Thorson-GW-061719 (Lab ID: 10479602001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10479602

Sample: Thorson-GW-061719 **Lab ID: 10479602001** Collected: 06/17/19 11:30 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		06/25/19 03:18	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		06/25/19 03:18	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		06/25/19 03:18	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		06/25/19 03:18	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		06/25/19 03:18	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		06/25/19 03:18	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	1.0	0.16	1		06/25/19 03:18	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		06/25/19 03:18	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		06/25/19 03:18	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		06/25/19 03:18	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		06/25/19 03:18	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		06/25/19 03:18	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		06/25/19 03:18	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		06/25/19 03:18	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		06/25/19 03:18	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		06/25/19 03:18	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		06/25/19 03:18	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		06/25/19 03:18	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		06/25/19 03:18	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		06/25/19 03:18	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		06/25/19 03:18	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		06/25/19 03:18	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		06/25/19 03:18	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		06/25/19 03:18	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		06/25/19 03:18	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		06/25/19 03:18	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		06/25/19 03:18	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		06/25/19 03:18	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		06/25/19 03:18	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		06/25/19 03:18	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		06/25/19 03:18	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		06/25/19 03:18	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		06/25/19 03:18	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		06/25/19 03:18	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		06/25/19 03:18	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		06/25/19 03:18	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		06/25/19 03:18	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		06/25/19 03:18	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		06/25/19 03:18	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		06/25/19 03:18	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		06/25/19 03:18	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		06/25/19 03:18	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		06/25/19 03:18	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		06/25/19 03:18	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		06/25/19 03:18	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		06/25/19 03:18	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10479602

Sample: Thorson-GW-061719 **Lab ID: 10479602001** Collected: 06/17/19 11:30 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level									
Analytical Method: EPA 8260B									
Dibromomethane	<0.16	ug/L	1.0	0.16	1		06/25/19 03:18	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		06/25/19 03:18	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		06/25/19 03:18	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		06/25/19 03:18	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		06/25/19 03:18	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		06/25/19 03:18	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		06/25/19 03:18	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		06/25/19 03:18	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		06/25/19 03:18	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		06/25/19 03:18	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		06/25/19 03:18	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		06/25/19 03:18	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		06/25/19 03:18	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		06/25/19 03:18	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		06/25/19 03:18	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		06/25/19 03:18	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		06/25/19 03:18	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		06/25/19 03:18	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		06/25/19 03:18	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		06/25/19 03:18	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		06/25/19 03:18	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	1.0	0.20	1		06/25/19 03:18	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		06/25/19 03:18	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		06/25/19 03:18	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		06/25/19 03:18	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		06/25/19 03:18	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		06/25/19 03:18	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/25/19 03:18	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		06/25/19 03:18	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		06/25/19 03:18	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/25/19 03:18	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		06/25/19 03:18	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		06/25/19 03:18	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		06/25/19 03:18	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	97	%	75-136		1		06/25/19 03:18	17060-07-0	
Toluene-d8 (S)	100	%	75-125		1		06/25/19 03:18	2037-26-5	
4-Bromofluorobenzene (S)	93	%	75-125		1		06/25/19 03:18	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479602

QC Batch: 615092

Analysis Method: EPA 8260B

QC Batch Method: EPA 8260B

Analysis Description: 8260 MSV LL Water

Associated Lab Samples: 10479602001

METHOD BLANK: 3323288

Matrix: Water

Associated Lab Samples: 10479602001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	06/24/19 21:23	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	06/24/19 21:23	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	06/24/19 21:23	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	06/24/19 21:23	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	06/24/19 21:23	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	06/24/19 21:23	
1,1-Dichloroethene	ug/L	<0.16	1.0	0.16	06/24/19 21:23	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	06/24/19 21:23	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	06/24/19 21:23	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	06/24/19 21:23	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	06/24/19 21:23	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	06/24/19 21:23	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	06/24/19 21:23	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	06/24/19 21:23	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	06/24/19 21:23	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	06/24/19 21:23	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	06/24/19 21:23	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	06/24/19 21:23	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	06/24/19 21:23	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	06/24/19 21:23	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	06/24/19 21:23	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	06/24/19 21:23	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	06/24/19 21:23	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	06/24/19 21:23	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	06/24/19 21:23	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	06/24/19 21:23	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	06/24/19 21:23	
2-Hexanone	ug/L	<0.88	5.0	0.88	06/24/19 21:23	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	06/24/19 21:23	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	06/24/19 21:23	
Acetone	ug/L	<9.2	20.0	9.2	06/24/19 21:23	
Acrolein	ug/L	<1.2	10.0	1.2	06/24/19 21:23	
Acrylonitrile	ug/L	<0.91	10.0	0.91	06/24/19 21:23	
Benzene	ug/L	<0.10	0.50	0.10	06/24/19 21:23	
Bromobenzene	ug/L	<0.21	0.50	0.21	06/24/19 21:23	
Bromochloromethane	ug/L	<0.27	1.0	0.27	06/24/19 21:23	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	06/24/19 21:23	
Bromoform	ug/L	<0.80	4.0	0.80	06/24/19 21:23	
Bromomethane	ug/L	<1.8	4.0	1.8	06/24/19 21:23	
Carbon disulfide	ug/L	<0.078	1.0	0.078	06/24/19 21:23	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	06/24/19 21:23	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479602

METHOD BLANK: 3323288

Matrix: Water

Associated Lab Samples: 10479602001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	06/24/19 21:23	
Chloroethane	ug/L	<0.49	1.0	0.49	06/24/19 21:23	
Chloroform	ug/L	<0.45	1.0	0.45	06/24/19 21:23	
Chloromethane	ug/L	<0.16	4.0	0.16	06/24/19 21:23	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	06/24/19 21:23	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	06/24/19 21:23	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	06/24/19 21:23	
Dibromomethane	ug/L	<0.16	1.0	0.16	06/24/19 21:23	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	06/24/19 21:23	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	06/24/19 21:23	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	06/24/19 21:23	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	06/24/19 21:23	
Ethylbenzene	ug/L	<0.14	0.50	0.14	06/24/19 21:23	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	06/24/19 21:23	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	06/24/19 21:23	
m&p-Xylene	ug/L	<0.31	1.0	0.31	06/24/19 21:23	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	06/24/19 21:23	
Methylene Chloride	ug/L	<0.98	4.0	0.98	06/24/19 21:23	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	06/24/19 21:23	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	06/24/19 21:23	
Naphthalene	ug/L	<0.48	1.0	0.48	06/24/19 21:23	
o-Xylene	ug/L	<0.16	0.50	0.16	06/24/19 21:23	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	06/24/19 21:23	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	06/24/19 21:23	
Styrene	ug/L	<0.19	0.50	0.19	06/24/19 21:23	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	06/24/19 21:23	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	06/24/19 21:23	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	06/24/19 21:23	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	06/24/19 21:23	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	06/24/19 21:23	
Toluene	ug/L	<0.083	0.50	0.083	06/24/19 21:23	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	06/24/19 21:23	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	06/24/19 21:23	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	06/24/19 21:23	
Trichloroethene	ug/L	<0.15	0.40	0.15	06/24/19 21:23	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	06/24/19 21:23	
Vinyl acetate	ug/L	<1.1	10.0	1.1	06/24/19 21:23	
Vinyl chloride	ug/L	<0.092	0.20	0.092	06/24/19 21:23	
Xylene (Total)	ug/L	<0.31	1.5	0.31	06/24/19 21:23	
1,2-Dichloroethane-d4 (S)	%	97	75-136		06/24/19 21:23	
4-Bromofluorobenzene (S)	%	93	75-125		06/24/19 21:23	
Toluene-d8 (S)	%	103	75-125		06/24/19 21:23	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479602

LABORATORY CONTROL SAMPLE: 3323289

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.6	108	68-141	
1,1,1-Trichloroethane	ug/L	20	24.7	123	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	21.7	108	73-125	
1,1,2-Trichloroethane	ug/L	20	23.5	117	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	22.5	113	69-132	
1,1-Dichloroethane	ug/L	20	22.2	111	73-125	
1,1-Dichloroethene	ug/L	20	21.9	109	71-126	
1,1-Dichloropropene	ug/L	20	23.1	115	73-126	
1,2,3-Trichlorobenzene	ug/L	20	22.3	112	72-126	
1,2,3-Trichloropropane	ug/L	20	22.7	114	75-126	
1,2,4-Trichlorobenzene	ug/L	20	21.0	105	71-134	
1,2,4-Trimethylbenzene	ug/L	20	20.5	103	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	51.9	104	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	24.3	121	75-129	
1,2-Dichlorobenzene	ug/L	20	19.7	99	75-129	
1,2-Dichloroethane	ug/L	20	21.9	110	75-125	
1,2-Dichloroethene (Total)	ug/L	40	46.0	115	74-125	N2
1,2-Dichloropropane	ug/L	20	23.4	117	75-125	
1,3,5-Trimethylbenzene	ug/L	20	23.2	116	75-127	
1,3-Dichlorobenzene	ug/L	20	20.8	104	75-126	
1,3-Dichloropropane	ug/L	20	23.2	116	75-125	
1,4-Dichlorobenzene	ug/L	20	19.9	99	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	437	109	72-129	
2,2,4-Trimethylpentane	ug/L	20	20.8	104	72-128	N2
2,2-Dichloropropane	ug/L	20	25.2	126	65-138	
2-Butanone (MEK)	ug/L	100	113	113	59-144	
2-Chlorotoluene	ug/L	20	20.7	104	75-127	
2-Hexanone	ug/L	100	118	118	73-134	
4-Chlorotoluene	ug/L	20	20.5	102	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	113	113	62-141	
Acetone	ug/L	100	134	134	60-137	
Acrolein	ug/L	200	183	91	60-141	
Acrylonitrile	ug/L	200	215	108	75-129	
Benzene	ug/L	20	21.9	109	73-125	
Bromobenzene	ug/L	20	21.4	107	73-125	
Bromochloromethane	ug/L	20	23.8	119	75-135	
Bromodichloromethane	ug/L	20	24.3	121	75-125	
Bromoform	ug/L	20	25.0	125	67-136	
Bromomethane	ug/L	20	23.6	118	30-150	
Carbon disulfide	ug/L	20	19.9	100	47-137	
Carbon tetrachloride	ug/L	20	25.5	128	75-125	L3
Chlorobenzene	ug/L	20	20.5	102	75-125	
Chloroethane	ug/L	20	23.3	117	63-136	
Chloroform	ug/L	20	22.6	113	73-128	
Chloromethane	ug/L	20	21.0	105	55-130	
cis-1,2-Dichloroethene	ug/L	20	23.2	116	75-125	
cis-1,3-Dichloropropene	ug/L	20	22.1	111	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479602

LABORATORY CONTROL SAMPLE: 3323289

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	22.7	113	75-125	
Dibromomethane	ug/L	20	23.8	119	75-125	
Dichlorodifluoromethane	ug/L	20	22.4	112	63-132	
Dichlorofluoromethane	ug/L	20	22.0	110	68-127	N2
Diisopropyl ether	ug/L	20	20.5	102	71-131	
Ethyl-tert-butyl ether	ug/L	20	20.2	101	75-125	
Ethylbenzene	ug/L	20	22.2	111	75-125	
Hexachloro-1,3-butadiene	ug/L	20	21.3	106	72-134	
Isopropylbenzene (Cumene)	ug/L	20	20.9	104	75-125	
m&p-Xylene	ug/L	40	42.5	106	75-126	
Methyl-tert-butyl ether	ug/L	20	21.6	108	75-125	
Methylene Chloride	ug/L	20	21.5	107	70-125	
n-Butylbenzene	ug/L	20	20.6	103	75-126	
n-Propylbenzene	ug/L	20	20.7	104	73-127	
Naphthalene	ug/L	20	21.6	108	63-128	
o-Xylene	ug/L	20	21.5	108	75-128	
p-Isopropyltoluene	ug/L	20	20.6	103	75-125	
sec-Butylbenzene	ug/L	20	23.1	116	75-126	
Styrene	ug/L	20	22.0	110	75-125	
tert-Amylmethyl ether	ug/L	20	20.2	101	75-125	
tert-Butyl Alcohol	ug/L	200	207	104	75-130	
tert-Butylbenzene	ug/L	20	20.9	105	75-131	
Tetrachloroethene	ug/L	20	21.1	105	74-125	
Tetrahydrofuran	ug/L	200	266	133	64-138	
Toluene	ug/L	20	21.4	107	74-125	
trans-1,2-Dichloroethene	ug/L	20	22.8	114	68-128	
trans-1,3-Dichloropropene	ug/L	20	22.0	110	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	62.0	124	60-127	
Trichloroethene	ug/L	20	23.8	119	75-127	
Trichlorofluoromethane	ug/L	20	22.3	111	72-133	
Vinyl acetate	ug/L	20	20.1	100	61-129	
Vinyl chloride	ug/L	20	21.9	110	75-128	
Xylene (Total)	ug/L	60	64.1	107	75-125	
1,2-Dichloroethane-d4 (S)	%			102	75-136	
4-Bromofluorobenzene (S)	%			99	75-125	
Toluene-d8 (S)	%			96	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3323290 3323291

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10480450002 Result	Spike Conc.	Spike Conc.	MS Result						
1,1,1,2-Tetrachloroethane	ug/L	ND	40	40	41.6	40.7	104	102	75-140	2	30
1,1,1-Trichloroethane	ug/L	ND	40	40	48.4	45.4	121	113	74-136	7	30
1,1,2,2-Tetrachloroethane	ug/L	ND	40	40	42.8	41.4	107	103	66-134	3	30
1,1,2-Trichloroethane	ug/L	ND	40	40	45.1	43.5	113	109	75-126	4	30

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479602

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3323290			3323291							
Parameter	Units	10480450002	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual	
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD		
1,1,2-Trichlorotrifluoroethane	ug/L	ND	40	40	44.6	42.0	111	105	65-146	6	30	
1,1-Dichloroethane	ug/L	ND	40	40	43.8	42.4	110	106	68-132	3	30	
1,1-Dichloroethene	ug/L	ND	40	40	43.2	41.1	108	103	66-139	5	30	
1,1-Dichloropropene	ug/L	ND	40	40	46.1	43.0	115	107	67-134	7	30	
1,2,3-Trichlorobenzene	ug/L	ND	40	40	42.4	40.8	106	102	67-129	4	30	
1,2,3-Trichloropropane	ug/L	ND	40	40	42.8	43.4	107	108	69-128	1	30	
1,2,4-Trichlorobenzene	ug/L	ND	40	40	40.0	38.3	100	96	65-140	4	30	
1,2,4-Trimethylbenzene	ug/L	ND	40	40	40.0	38.4	100	96	71-133	4	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	100	100	110	108	110	108	54-138	2	30	
1,2-Dibromoethane (EDB)	ug/L	ND	40	40	47.5	44.9	119	112	68-125	6	30	
1,2-Dichlorobenzene	ug/L	ND	40	40	38.7	36.7	97	92	74-136	5	30	
1,2-Dichloroethane	ug/L	ND	40	40	42.6	41.1	106	103	68-125	4	30	
1,2-Dichloroethene (Total)	ug/L	ND	80	80	88.6	85.2	111	107	71-126	4	30 N2	
1,2-Dichloropropane	ug/L	ND	40	40	46.9	44.9	117	112	67-125	4	30	
1,3,5-Trimethylbenzene	ug/L	ND	40	40	45.8	43.6	115	109	68-137	5	30	
1,3-Dichlorobenzene	ug/L	ND	40	40	40.2	38.2	100	95	75-131	5	30	
1,3-Dichloropropane	ug/L	ND	40	40	45.4	43.8	114	109	71-125	4	30	
1,4-Dichlorobenzene	ug/L	ND	40	40	38.7	37.3	97	93	74-126	4	30	
1,4-Dioxane (p-Dioxane)	ug/L	ND	800	800	887	841	111	105	68-125	5	30	
2,2,4-Trimethylpentane	ug/L	ND	40	40	34.1	32.4	85	81	54-129	5	30 N2	
2,2-Dichloropropane	ug/L	ND	40	40	49.4	45.9	123	115	69-139	7	30	
2-Butanone (MEK)	ug/L	ND	200	200	206	203	103	102	54-144	2	30	
2-Chlorotoluene	ug/L	ND	40	40	40.0	38.8	100	97	75-134	3	30	
2-Hexanone	ug/L	ND	200	200	230	229	115	114	58-137	0	30	
4-Chlorotoluene	ug/L	ND	40	40	40.1	38.8	100	97	72-133	3	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	200	200	232	226	116	113	60-129	3	30	
Acetone	ug/L	40.6	200	200	239	233	99	96	62-132	3	30	
Acrolein	ug/L	ND	400	400	682	661	171	165	30-150	3	30 M1	
Acrylonitrile	ug/L	ND	400	400	434	419	108	105	68-125	3	30	
Benzene	ug/L	ND	40	40	42.4	40.1	106	100	68-125	5	30	
Bromobenzene	ug/L	ND	40	40	40.6	39.0	102	97	73-126	4	30	
Bromochloromethane	ug/L	ND	40	40	44.5	44.2	111	110	66-143	1	30	
Bromodichloromethane	ug/L	ND	40	40	48.5	45.7	121	114	74-125	6	30	
Bromoform	ug/L	ND	40	40	49.5	47.1	124	118	64-134	5	30	
Bromomethane	ug/L	ND	40	40	52.3	51.5	131	129	30-150	2	30	
Carbon disulfide	ug/L	ND	40	40	40.3	38.8	101	97	43-147	4	30	
Carbon tetrachloride	ug/L	ND	40	40	51.0	46.9	127	117	71-143	8	30	
Chlorobenzene	ug/L	10.5	40	40	50.0	46.8	99	91	75-125	7	30	
Chloroethane	ug/L	ND	40	40	53.8	53.4	135	134	75-129	1	30 M1	
Chloroform	ug/L	ND	40	40	44.3	41.0	111	102	66-132	8	30	
Chloromethane	ug/L	ND	40	40	50.1	47.4	125	118	53-137	6	30	
cis-1,2-Dichloroethene	ug/L	ND	40	40	44.3	43.1	111	108	67-133	3	30	
cis-1,3-Dichloropropene	ug/L	ND	40	40	41.3	39.7	103	99	66-125	4	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479602

Parameter	Units	10480450002		3323290		3323291		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
Dibromochloromethane	ug/L	ND	40	40	43.0	41.1	108	103	62-132	5	30			
Dibromomethane	ug/L	ND	40	40	45.9	45.4	115	113	67-125	1	30			
Dichlorodifluoromethane	ug/L	ND	40	40	50.5	48.0	126	120	71-142	5	30			
Dichlorofluoromethane	ug/L	ND	40	40	49.1	46.6	123	116	70-131	5	30	N2		
Diisopropyl ether	ug/L	ND	40	40	39.7	37.7	99	94	63-131	5	30			
Ethyl-tert-butyl ether	ug/L	ND	40	40	38.7	37.9	97	95	66-128	2	30			
Ethylbenzene	ug/L	ND	40	40	43.0	40.4	108	101	74-126	6	30			
Hexachloro-1,3-butadiene	ug/L	ND	40	40	35.9	34.6	90	87	68-143	4	30			
Isopropylbenzene (Cumene)	ug/L	ND	40	40	40.7	38.1	102	95	74-130	7	30			
m&p-Xylene	ug/L	ND	80	80	82.6	78.5	103	98	69-132	5	30			
Methyl-tert-butyl ether	ug/L	ND	40	40	41.8	41.6	105	104	65-131	1	30			
Methylene Chloride	ug/L	ND	40	40	44.0	42.1	110	105	57-125	4	30			
n-Butylbenzene	ug/L	ND	40	40	39.2	37.8	98	95	71-131	4	30			
n-Propylbenzene	ug/L	ND	40	40	40.3	38.1	101	95	67-138	6	30			
Naphthalene	ug/L	ND	40	40	43.8	43.0	109	107	60-130	2	30			
o-Xylene	ug/L	ND	40	40	41.9	38.9	105	97	69-131	7	30			
p-Isopropyltoluene	ug/L	ND	40	40	40.7	38.8	102	97	72-133	5	30			
sec-Butylbenzene	ug/L	ND	40	40	44.0	42.1	110	105	73-134	5	30			
Styrene	ug/L	ND	40	40	42.8	40.5	107	101	72-125	6	30			
tert-Amylmethyl ether	ug/L	ND	40	40	38.8	37.5	97	94	67-125	3	30			
tert-Butyl Alcohol	ug/L	ND	400	400	416	420	104	105	64-137	1	30			
tert-Butylbenzene	ug/L	ND	40	40	39.8	38.4	100	96	70-143	3	30			
Tetrachloroethene	ug/L	ND	40	40	43.0	40.0	107	100	72-129	7	30			
Tetrahydrofuran	ug/L	ND	400	400	480	463	120	116	66-128	4	30			
Toluene	ug/L	ND	40	40	42.1	40.4	105	101	73-125	4	30			
trans-1,2-Dichloroethene	ug/L	ND	40	40	44.2	42.1	111	105	62-137	5	30			
trans-1,3-Dichloropropene	ug/L	ND	40	40	41.7	40.1	104	100	61-136	4	30			
trans-1,4-Dichloro-2-butene	ug/L	ND	100	100	125	120	125	120	45-128	4	30			
Trichloroethene	ug/L	ND	40	40	46.3	43.8	116	110	74-132	6	30			
Trichlorofluoromethane	ug/L	ND	40	40	48.8	45.5	122	114	75-139	7	30			
Vinyl acetate	ug/L	ND	40	40	40.5	40.3	101	101	51-135	0	30			
Vinyl chloride	ug/L	ND	40	40	51.3	49.4	128	123	68-146	4	30			
Xylene (Total)	ug/L	ND	120	120	124	117	104	98	67-137	6	30			
1,2-Dichloroethane-d4 (S)	%						103	101	75-136				F1	
4-Bromofluorobenzene (S)	%						98	98	75-125					
Toluene-d8 (S)	%						96	96	75-125					

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479602

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

F1 The sample was analyzed at a dilution due to foaming of the sample in the purge vessel.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479602

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479602

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10479602001	Thorson-GW-061719	EPA 8260B	615092		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt
 Client Name: CH2M Hill
 Project #: **WO#: 10479602**
 Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception
 Tracking Number: 493437301880, 493437292713

Custody Seal on Cooler/Box Present? Yes No
 Seals Intact? Yes No
 Biological Tissue Frozen? Yes No N/A
 Packing Material: Bubble Wrap Bubble Bags None Other: _____
 Temp Blank? Yes No
 Thermometer: T1(0461) T2(1336) T3(0459)
 T4(0254) T5(0489)
 Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)
 Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: 0.9, 1.2 °C
 Average Corrected Temp See Exceptions (no temp blank only):
 Correction Factor: True Cooler Temp Corrected w/temp blank: 0.9, 1.2 °C

USDA Regulated Soil: N/A, water sample/Other: _____
 Date/Initials of Person Examining Contents: AE 6/18/19
 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No
 Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No
 If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

		COMMENTS:
Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other		
All containers needing acid/base preservation have been checked?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/> NaOH <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
Exceptions: <u>VOA</u> Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No Chlorine? <input type="checkbox"/> Yes <input type="checkbox"/> No pH Paper Lot# <input type="checkbox"/>
		Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip
Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased):

CLIENT NOTIFICATION/RESOLUTION
 Person Contacted: _____ Date/Time: _____
 Comments/Resolution: _____ Field Data Required? Yes No

Project Manager Review: JENNI GROSS Date: 06/18/19
 Note: Whenever there is a discrepancy affecting No. of samples a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of no. of incorrect preservative, out of temp, incorrect containers).

Labeled by: [Signature]

June 27, 2019

David Hodson
Jacobs
155 Grand Ave
#800
Oakland, CA 94612

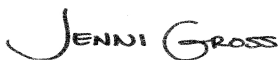
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479603

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 18, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, Jacobs
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479603

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Vermont Certification #: VT-027053137

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479603

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10479603001	Lashaw-GW-061719	Water	06/17/19 12:00	06/18/19 08:45
10479603002	LashawAg-GW-061719	Water	06/17/19 12:15	06/18/19 08:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479603

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10479603001	Lashaw-GW-061719	EPA 8260B	DS2	83	PASI-M
10479603002	LashawAg-GW-061719	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479603

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10479603001	Lashaw-GW-061719					
EPA 8260B	Carbon tetrachloride	0.51	ug/L	0.50	06/25/19 11:47	
10479603002	LashawAg-GW-061719					
EPA 8260B	Carbon tetrachloride	2.8	ug/L	0.50	06/25/19 12:11	
EPA 8260B	Chloroform	2.7	ug/L	1.0	06/25/19 12:11	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479603

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 27, 2019

General Information:

2 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 615244

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10480797001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3326089)
 - Chloroethane
 - Chloromethane
 - Styrene
- MSD (Lab ID: 3326090)
 - 1,3,5-Trimethylbenzene
 - Chloromethane
 - Styrene
 - Vinyl acetate

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479603

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 27, 2019

Analyte Comments:

QC Batch: 615244

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3324037)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3324038)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- Lashaw-GW-061719 (Lab ID: 10479603001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LashawAg-GW-061719 (Lab ID: 10479603002)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3326089)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3326090)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Project No.: 10479603

Sample: Lashaw-GW-061719 Lab ID: 10479603001 Collected: 06/17/19 12:00 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		06/25/19 11:47	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		06/25/19 11:47	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		06/25/19 11:47	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		06/25/19 11:47	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		06/25/19 11:47	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		06/25/19 11:47	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	1.0	0.16	1		06/25/19 11:47	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		06/25/19 11:47	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		06/25/19 11:47	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		06/25/19 11:47	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		06/25/19 11:47	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		06/25/19 11:47	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		06/25/19 11:47	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		06/25/19 11:47	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		06/25/19 11:47	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		06/25/19 11:47	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		06/25/19 11:47	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		06/25/19 11:47	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		06/25/19 11:47	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		06/25/19 11:47	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		06/25/19 11:47	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		06/25/19 11:47	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		06/25/19 11:47	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		06/25/19 11:47	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		06/25/19 11:47	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		06/25/19 11:47	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		06/25/19 11:47	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		06/25/19 11:47	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		06/25/19 11:47	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		06/25/19 11:47	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		06/25/19 11:47	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		06/25/19 11:47	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		06/25/19 11:47	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		06/25/19 11:47	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		06/25/19 11:47	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		06/25/19 11:47	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		06/25/19 11:47	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		06/25/19 11:47	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		06/25/19 11:47	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		06/25/19 11:47	75-15-0	
Carbon tetrachloride	0.51	ug/L	0.50	0.19	1		06/25/19 11:47	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		06/25/19 11:47	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		06/25/19 11:47	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		06/25/19 11:47	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		06/25/19 11:47	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		06/25/19 11:47	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10479603

Sample: Lashaw-GW-061719 Lab ID: 10479603001 Collected: 06/17/19 12:00 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		06/25/19 11:47	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		06/25/19 11:47	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		06/25/19 11:47	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		06/25/19 11:47	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		06/25/19 11:47	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		06/25/19 11:47	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		06/25/19 11:47	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		06/25/19 11:47	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		06/25/19 11:47	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		06/25/19 11:47	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		06/25/19 11:47	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		06/25/19 11:47	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		06/25/19 11:47	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		06/25/19 11:47	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		06/25/19 11:47	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		06/25/19 11:47	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		06/25/19 11:47	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		06/25/19 11:47	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		06/25/19 11:47	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		06/25/19 11:47	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		06/25/19 11:47	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	1.0	0.20	1		06/25/19 11:47	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		06/25/19 11:47	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		06/25/19 11:47	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		06/25/19 11:47	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		06/25/19 11:47	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		06/25/19 11:47	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/25/19 11:47	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		06/25/19 11:47	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		06/25/19 11:47	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/25/19 11:47	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		06/25/19 11:47	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		06/25/19 11:47	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		06/25/19 11:47	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	93	%	75-136		1		06/25/19 11:47	17060-07-0	
Toluene-d8 (S)	98	%	75-125		1		06/25/19 11:47	2037-26-5	
4-Bromofluorobenzene (S)	96	%	75-125		1		06/25/19 11:47	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479603

Sample: LashawAg-GW-061719 Lab ID: 10479603002 Collected: 06/17/19 12:15 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		06/25/19 12:11	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		06/25/19 12:11	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		06/25/19 12:11	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		06/25/19 12:11	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		06/25/19 12:11	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		06/25/19 12:11	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	1.0	0.16	1		06/25/19 12:11	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		06/25/19 12:11	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		06/25/19 12:11	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		06/25/19 12:11	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		06/25/19 12:11	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		06/25/19 12:11	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		06/25/19 12:11	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		06/25/19 12:11	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		06/25/19 12:11	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		06/25/19 12:11	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		06/25/19 12:11	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		06/25/19 12:11	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		06/25/19 12:11	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		06/25/19 12:11	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		06/25/19 12:11	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		06/25/19 12:11	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		06/25/19 12:11	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		06/25/19 12:11	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		06/25/19 12:11	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		06/25/19 12:11	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		06/25/19 12:11	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		06/25/19 12:11	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		06/25/19 12:11	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		06/25/19 12:11	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		06/25/19 12:11	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		06/25/19 12:11	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		06/25/19 12:11	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		06/25/19 12:11	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		06/25/19 12:11	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		06/25/19 12:11	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		06/25/19 12:11	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		06/25/19 12:11	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		06/25/19 12:11	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		06/25/19 12:11	75-15-0	
Carbon tetrachloride	2.8	ug/L	0.50	0.19	1		06/25/19 12:11	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		06/25/19 12:11	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		06/25/19 12:11	75-00-3	
Chloroform	2.7	ug/L	1.0	0.45	1		06/25/19 12:11	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		06/25/19 12:11	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		06/25/19 12:11	124-48-1	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479603

Sample: LashawAg-GW-061719 **Lab ID: 10479603002** Collected: 06/17/19 12:15 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		06/25/19 12:11	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		06/25/19 12:11	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		06/25/19 12:11	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		06/25/19 12:11	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		06/25/19 12:11	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		06/25/19 12:11	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		06/25/19 12:11	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		06/25/19 12:11	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		06/25/19 12:11	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		06/25/19 12:11	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		06/25/19 12:11	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		06/25/19 12:11	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		06/25/19 12:11	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		06/25/19 12:11	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		06/25/19 12:11	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		06/25/19 12:11	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		06/25/19 12:11	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		06/25/19 12:11	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		06/25/19 12:11	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		06/25/19 12:11	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		06/25/19 12:11	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	1.0	0.20	1		06/25/19 12:11	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		06/25/19 12:11	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		06/25/19 12:11	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		06/25/19 12:11	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		06/25/19 12:11	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		06/25/19 12:11	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/25/19 12:11	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		06/25/19 12:11	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		06/25/19 12:11	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/25/19 12:11	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		06/25/19 12:11	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		06/25/19 12:11	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		06/25/19 12:11	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	93	%	75-136		1		06/25/19 12:11	17060-07-0	
Toluene-d8 (S)	97	%	75-125		1		06/25/19 12:11	2037-26-5	
4-Bromofluorobenzene (S)	98	%	75-125		1		06/25/19 12:11	460-00-4	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479603

QC Batch: 615244 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10479603001, 10479603002

METHOD BLANK: 3324037 Matrix: Water

Associated Lab Samples: 10479603001, 10479603002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	06/25/19 09:25	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	06/25/19 09:25	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	06/25/19 09:25	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	06/25/19 09:25	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	06/25/19 09:25	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	06/25/19 09:25	
1,1-Dichloroethene	ug/L	<0.16	1.0	0.16	06/25/19 09:25	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	06/25/19 09:25	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	06/25/19 09:25	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	06/25/19 09:25	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	06/25/19 09:25	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	06/25/19 09:25	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	06/25/19 09:25	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	06/25/19 09:25	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	06/25/19 09:25	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	06/25/19 09:25	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	06/25/19 09:25	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	06/25/19 09:25	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	06/25/19 09:25	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	06/25/19 09:25	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	06/25/19 09:25	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	06/25/19 09:25	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	06/25/19 09:25	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	06/25/19 09:25	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	06/25/19 09:25	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	06/25/19 09:25	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	06/25/19 09:25	
2-Hexanone	ug/L	<0.88	5.0	0.88	06/25/19 09:25	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	06/25/19 09:25	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	06/25/19 09:25	
Acetone	ug/L	<9.2	20.0	9.2	06/25/19 09:25	
Acrolein	ug/L	<1.2	10.0	1.2	06/25/19 09:25	
Acrylonitrile	ug/L	<0.91	10.0	0.91	06/25/19 09:25	
Benzene	ug/L	<0.10	0.50	0.10	06/25/19 09:25	
Bromobenzene	ug/L	<0.21	0.50	0.21	06/25/19 09:25	
Bromochloromethane	ug/L	<0.27	1.0	0.27	06/25/19 09:25	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	06/25/19 09:25	
Bromoform	ug/L	<0.80	4.0	0.80	06/25/19 09:25	
Bromomethane	ug/L	<1.8	4.0	1.8	06/25/19 09:25	
Carbon disulfide	ug/L	<0.078	1.0	0.078	06/25/19 09:25	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	06/25/19 09:25	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479603

METHOD BLANK: 3324037

Matrix: Water

Associated Lab Samples: 10479603001, 10479603002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	06/25/19 09:25	
Chloroethane	ug/L	<0.49	1.0	0.49	06/25/19 09:25	
Chloroform	ug/L	<0.45	1.0	0.45	06/25/19 09:25	
Chloromethane	ug/L	<0.16	4.0	0.16	06/25/19 09:25	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	06/25/19 09:25	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	06/25/19 09:25	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	06/25/19 09:25	
Dibromomethane	ug/L	<0.16	1.0	0.16	06/25/19 09:25	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	06/25/19 09:25	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	06/25/19 09:25	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	06/25/19 09:25	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	06/25/19 09:25	
Ethylbenzene	ug/L	<0.14	0.50	0.14	06/25/19 09:25	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	06/25/19 09:25	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	06/25/19 09:25	
m&p-Xylene	ug/L	<0.31	1.0	0.31	06/25/19 09:25	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	06/25/19 09:25	
Methylene Chloride	ug/L	<0.98	4.0	0.98	06/25/19 09:25	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	06/25/19 09:25	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	06/25/19 09:25	
Naphthalene	ug/L	<0.48	1.0	0.48	06/25/19 09:25	
o-Xylene	ug/L	<0.16	0.50	0.16	06/25/19 09:25	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	06/25/19 09:25	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	06/25/19 09:25	
Styrene	ug/L	<0.19	0.50	0.19	06/25/19 09:25	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	06/25/19 09:25	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	06/25/19 09:25	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	06/25/19 09:25	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	06/25/19 09:25	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	06/25/19 09:25	
Toluene	ug/L	<0.083	0.50	0.083	06/25/19 09:25	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	06/25/19 09:25	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	06/25/19 09:25	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	06/25/19 09:25	
Trichloroethene	ug/L	<0.15	0.40	0.15	06/25/19 09:25	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	06/25/19 09:25	
Vinyl acetate	ug/L	<1.1	10.0	1.1	06/25/19 09:25	
Vinyl chloride	ug/L	<0.092	0.20	0.092	06/25/19 09:25	
Xylene (Total)	ug/L	<0.31	1.5	0.31	06/25/19 09:25	
1,2-Dichloroethane-d4 (S)	%	91	75-136		06/25/19 09:25	
4-Bromofluorobenzene (S)	%	98	75-125		06/25/19 09:25	
Toluene-d8 (S)	%	100	75-125		06/25/19 09:25	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479603

LABORATORY CONTROL SAMPLE: 3324038

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	20.6	103	68-141	
1,1,1-Trichloroethane	ug/L	20	20.9	104	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	20.0	100	73-125	
1,1,2-Trichloroethane	ug/L	20	22.2	111	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	19.7	98	69-132	
1,1-Dichloroethane	ug/L	20	18.5	93	73-125	
1,1-Dichloroethene	ug/L	20	18.1	91	71-126	
1,1-Dichloropropene	ug/L	20	19.9	99	73-126	
1,2,3-Trichlorobenzene	ug/L	20	21.0	105	72-126	
1,2,3-Trichloropropane	ug/L	20	21.0	105	75-126	
1,2,4-Trichlorobenzene	ug/L	20	19.8	99	71-134	
1,2,4-Trimethylbenzene	ug/L	20	18.6	93	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	52.3	105	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	22.7	113	75-129	
1,2-Dichlorobenzene	ug/L	20	18.2	91	75-129	
1,2-Dichloroethane	ug/L	20	19.2	96	75-125	
1,2-Dichloroethene (Total)	ug/L	40	38.8	97	74-125	N2
1,2-Dichloropropane	ug/L	20	20.3	101	75-125	
1,3,5-Trimethylbenzene	ug/L	20	21.3	106	75-127	
1,3-Dichlorobenzene	ug/L	20	19.2	96	75-126	
1,3-Dichloropropane	ug/L	20	21.2	106	75-125	
1,4-Dichlorobenzene	ug/L	20	18.1	91	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	433	108	72-129	
2,2,4-Trimethylpentane	ug/L	20	18.6	93	72-128	N2
2,2-Dichloropropane	ug/L	20	22.0	110	65-138	
2-Butanone (MEK)	ug/L	100	99.2	99	59-144	
2-Chlorotoluene	ug/L	20	18.7	93	75-127	
2-Hexanone	ug/L	100	111	111	73-134	
4-Chlorotoluene	ug/L	20	18.6	93	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	110	110	62-141	
Acetone	ug/L	100	123	123	60-137	
Acrolein	ug/L	200	215	108	60-141	
Acrylonitrile	ug/L	200	187	94	75-129	
Benzene	ug/L	20	18.4	92	73-125	
Bromobenzene	ug/L	20	18.6	93	73-125	
Bromochloromethane	ug/L	20	19.9	100	75-135	
Bromodichloromethane	ug/L	20	21.8	109	75-125	
Bromoform	ug/L	20	24.2	121	67-136	
Bromomethane	ug/L	20	17.7	89	30-150	
Carbon disulfide	ug/L	20	16.3	81	47-137	
Carbon tetrachloride	ug/L	20	22.5	112	75-125	
Chlorobenzene	ug/L	20	18.8	94	75-125	
Chloroethane	ug/L	20	21.3	107	63-136	
Chloroform	ug/L	20	19.5	97	73-128	
Chloromethane	ug/L	20	19.3	96	55-130	
cis-1,2-Dichloroethene	ug/L	20	19.7	98	75-125	
cis-1,3-Dichloropropene	ug/L	20	20.1	101	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479603

LABORATORY CONTROL SAMPLE: 3324038

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	21.3	107	75-125	
Dibromomethane	ug/L	20	20.3	102	75-125	
Dichlorodifluoromethane	ug/L	20	20.7	104	63-132	
Dichlorofluoromethane	ug/L	20	19.7	98	68-127	N2
Diisopropyl ether	ug/L	20	17.3	86	71-131	
Ethyl-tert-butyl ether	ug/L	20	17.6	88	75-125	
Ethylbenzene	ug/L	20	19.9	100	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.6	103	72-134	
Isopropylbenzene (Cumene)	ug/L	20	19.5	97	75-125	
m&p-Xylene	ug/L	40	39.1	98	75-126	
Methyl-tert-butyl ether	ug/L	20	19.1	96	75-125	
Methylene Chloride	ug/L	20	16.8	84	70-125	
n-Butylbenzene	ug/L	20	19.1	95	75-126	
n-Propylbenzene	ug/L	20	18.8	94	73-127	
Naphthalene	ug/L	20	19.7	99	63-128	
o-Xylene	ug/L	20	19.4	97	75-128	
p-Isopropyltoluene	ug/L	20	19.4	97	75-125	
sec-Butylbenzene	ug/L	20	21.3	107	75-126	
Styrene	ug/L	20	20.8	104	75-125	
tert-Amylmethyl ether	ug/L	20	17.9	90	75-125	
tert-Butyl Alcohol	ug/L	200	211	106	75-130	
tert-Butylbenzene	ug/L	20	19.1	95	75-131	
Tetrachloroethene	ug/L	20	20.5	102	74-125	
Tetrahydrofuran	ug/L	200	246	123	64-138	
Toluene	ug/L	20	19.5	98	74-125	
trans-1,2-Dichloroethene	ug/L	20	19.2	96	68-128	
trans-1,3-Dichloropropene	ug/L	20	19.8	99	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	58.5	117	60-127	
Trichloroethene	ug/L	20	19.2	96	75-127	
Trichlorofluoromethane	ug/L	20	20.3	102	72-133	
Vinyl acetate	ug/L	20	17.4	87	61-129	
Vinyl chloride	ug/L	20	19.7	99	75-128	
Xylene (Total)	ug/L	60	58.5	98	75-125	
1,2-Dichloroethane-d4 (S)	%			99	75-136	
4-Bromofluorobenzene (S)	%			97	75-125	
Toluene-d8 (S)	%			97	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3326089 3326090

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10480797001 Result	Spike Conc.	Spike Conc.	Conc.								
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20	19.9	20.8	100	104	75-140	4	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20	23.5	23.0	118	115	74-136	2	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20	18.8	19.5	94	97	66-134	3	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20	20.4	21.7	102	108	75-126	6	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479603

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3326089		3326090									
Parameter	Units	10480797001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	RPD	RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits				
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	22.2	23.1	111	115	65-146	4	30		
1,1-Dichloroethane	ug/L	<0.17	20	20	20.2	19.0	101	95	68-132	6	30		
1,1-Dichloroethene	ug/L	<0.16	20	20	20.6	19.5	103	98	66-139	5	30		
1,1-Dichloropropene	ug/L	<0.20	20	20	21.7	21.1	109	106	67-134	3	30		
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	22.7	23.3	114	117	67-129	3	30		
1,2,3-Trichloropropane	ug/L	<0.26	20	20	19.1	20.2	96	101	69-128	5	30		
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	23.1	23.5	116	118	65-140	2	30		
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	19.0	17.5	95	88	71-133	8	30		
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	48.0	51.9	96	104	54-138	8	30		
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	21.5	21.9	107	110	68-125	2	30		
1,2-Dichlorobenzene	ug/L	<0.14	20	20	18.7	20.2	93	101	74-136	8	30		
1,2-Dichloroethane	ug/L	<0.22	20	20	17.6	18.9	88	95	68-125	7	30		
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	41.2	39.8	103	100	71-126	3	30	N2	
1,2-Dichloropropane	ug/L	<0.16	20	20	22.5	22.5	113	112	67-125	0	30		
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	17.2	0.27J	86	1	68-137		30	M1	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	19.3	21.1	97	105	75-131	8	30		
1,3-Dichloropropane	ug/L	<0.070	20	20	21.0	20.9	105	105	71-125	0	30		
1,4-Dichlorobenzene	ug/L	<0.17	20	20	18.5	20.4	92	102	74-126	10	30		
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	423	422	106	105	68-125	0	30		
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	22.7	20.0	113	100	54-129	13	30	N2	
2,2-Dichloropropane	ug/L	<0.17	20	20	25.3	23.7	127	119	69-139	7	30		
2-Butanone (MEK)	ug/L	<0.99	100	100	77.4	83.5	77	83	54-144	8	30		
2-Chlorotoluene	ug/L	<0.16	20	20	19.7	20.8	98	104	75-134	6	30		
2-Hexanone	ug/L	<0.88	100	100	92.2	98.2	92	98	58-137	6	30		
4-Chlorotoluene	ug/L	<0.13	20	20	19.1	21.1	96	106	72-133	10	30		
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	93.5	102	94	102	60-129	9	30		
Acetone	ug/L	30.3	100	100	127	122	97	92	62-132	4	30		
Acrolein	ug/L	<1.2	200	200	276	265	138	133	30-150	4	30		
Acrylonitrile	ug/L	<0.91	200	200	177	180	89	90	68-125	1	30		
Benzene	ug/L	<0.10	20	20	19.4	19.4	97	97	68-125	0	30		
Bromobenzene	ug/L	<0.21	20	20	19.8	20.5	99	103	73-126	4	30		
Bromochloromethane	ug/L	<0.27	20	20	21.0	20.0	105	100	66-143	5	30		
Bromodichloromethane	ug/L	0.34J	20	20	23.4	23.1	115	114	74-125	1	30		
Bromoform	ug/L	<0.80	20	20	22.4	22.6	112	113	64-134	1	30		
Bromomethane	ug/L	<1.8	20	20	21.8	20.0	109	100	30-150	9	30		
Carbon disulfide	ug/L	<0.078	20	20	20.1	18.1	100	90	43-147	10	30		
Carbon tetrachloride	ug/L	<0.19	20	20	24.8	25.0	124	125	71-143	1	30		
Chlorobenzene	ug/L	<0.17	20	20	18.6	19.3	93	97	75-125	4	30		
Chloroethane	ug/L	<0.49	20	20	25.9	25.6	130	128	75-129	1	30	M1	
Chloroform	ug/L	39.5	20	20	54.7	55.0	76	78	66-132	1	30		
Chloromethane	ug/L	<0.16	20	20	29.6	35.1	148	176	53-137	17	30	M1	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	20.6	20.1	103	101	67-133	2	30		
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	19.7	19.4	99	97	66-125	1	30		

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479603

Parameter	Units	3326089		3326090		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10480797001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Dibromochloromethane	ug/L	<0.12	20	20	20.2	20.6	101	103	62-132	2	30		
Dibromomethane	ug/L	<0.16	20	20	21.4	21.5	107	107	67-125	0	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	25.7	24.4	128	122	71-142	5	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	23.3	22.0	117	110	70-131	6	30	N2	
Diisopropyl ether	ug/L	<0.13	20	20	16.7	17.0	84	85	63-131	1	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	16.8	17.5	84	87	66-128	4	30		
Ethylbenzene	ug/L	<0.14	20	20	20.4	21.8	102	109	74-126	6	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	26.9	22.7	135	114	68-143	17	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	19.5	21.5	98	107	74-130	9	30		
m&p-Xylene	ug/L	<0.31	40	40	38.6	39.6	97	99	69-132	2	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	18.0	18.6	90	93	65-131	4	30		
Methylene Chloride	ug/L	<0.98	20	20	19.2	19.6	96	98	57-125	2	30		
n-Butylbenzene	ug/L	<0.24	20	20	22.0	21.8	110	109	71-131	1	30		
n-Propylbenzene	ug/L	<0.10	20	20	20.4	22.1	102	111	67-138	8	30		
Naphthalene	ug/L	<0.48	20	20	20.7	23.1	103	115	60-130	11	30		
o-Xylene	ug/L	<0.16	20	20	18.9	20.3	94	102	69-131	8	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	20.4	21.1	102	106	72-133	3	30		
sec-Butylbenzene	ug/L	<0.15	20	20	23.4	24.3	117	121	73-134	4	30		
Styrene	ug/L	<0.19	20	20	2.5	0.40J	12	2	72-125		30	M1	
tert-Amylmethyl ether	ug/L	<0.11	20	20	16.9	17.5	84	87	67-125	3	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	205	228	103	114	64-137	11	30		
tert-Butylbenzene	ug/L	<0.15	20	20	21.0	21.8	105	109	70-143	4	30		
Tetrachloroethene	ug/L	<0.17	20	20	21.6	22.9	108	115	72-129	6	30		
Tetrahydrofuran	ug/L	<2.2	200	200	236	231	118	115	66-128	2	30		
Toluene	ug/L	<0.083	20	20	19.7	20.4	99	102	73-125	3	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	20.6	19.7	103	99	62-137	4	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	19.6	20.3	98	101	61-136	3	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	55.6	54.5	111	109	45-128	2	30		
Trichloroethene	ug/L	<0.15	20	20	22.2	22.5	111	112	74-132	1	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	24.9	24.4	125	122	75-139	2	30		
Vinyl acetate	ug/L	<1.1	20	20	11.2	2.5J	56	13	51-135		30	M1	
Vinyl chloride	ug/L	<0.092	20	20	24.2	22.1	121	110	68-146	9	30		
Xylene (Total)	ug/L	<0.31	60	60	57.5	59.9	96	100	67-137	4	30		
1,2-Dichloroethane-d4 (S)	%						95	99	75-136				
4-Bromofluorobenzene (S)	%						101	97	75-125				
Toluene-d8 (S)	%						95	95	75-125				

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479603

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479603

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479603

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10479603001	Lashaw-GW-061719	EPA 8260B	615244		
10479603002	LashawAg-GW-061719	EPA 8260B	615244		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: CH2M Hill Project #: _____

WO#: 10479603
 PM: JMG Due Date: 06/25/19
 CLIENT: UPRR_Jacobs

Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception

Tracking Number: 493437301880, 4934 3729 2713

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other: _____ Temp Blank? Yes No

Thermometer: T1(0461) T2(1336) T3(0459)
 T4(0254) T5(0489) Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: <u>0.9, 1.2</u> °C	Average Corrected Temp (no temp blank only): _____ °C	See Exceptions <input type="checkbox"/>
Correction Factor: <u>True</u>	Cooler Temp Corrected w/temp blank: <u>0.9, 1.2</u> °C		

USDA Regulated Soil: N/A, water sample/Other: _____ Date/Initials of Person Examining Contents: AE 6/18/19
 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No
 Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

		COMMENTS:
Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other		
All containers needing acid/base preservation have been checked?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/> NaOH <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
Exceptions: <u>VOA</u> Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exception Chlorine? <input type="checkbox"/> No pH Paper Lot# <input type="checkbox"/>
		Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip
Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____ Field Data Required? Yes No

Comments/Resolution: _____

Project Manager Review: Jenni Gross Date: 06/18/19

Note: Whenever there is a discrepancy affecting North Carolina samples a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: AE

June 27, 2019

David Hodson
Jacobs
155 Grand Ave
#800
Oakland, CA 94612

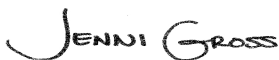
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479604

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 18, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, Jacobs
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479604

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #:74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Vermont Certification #: VT-027053137

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479604

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10479604001	Lang-GW-061719	Water	06/17/19 12:45	06/18/19 08:45

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479604

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10479604001	Lang-GW-061719	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479604

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 27, 2019

General Information:

1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 615244

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10480797001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3326089)
 - Chloroethane
 - Chloromethane
 - Styrene
- MSD (Lab ID: 3326090)
 - 1,3,5-Trimethylbenzene
 - Chloromethane
 - Styrene
 - Vinyl acetate

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479604

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 27, 2019

Analyte Comments:

QC Batch: 615244

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3324037)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3324038)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- Lang-GW-061719 (Lab ID: 10479604001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3326089)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3326090)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10479604

Sample: Lang-GW-061719 Lab ID: 10479604001 Collected: 06/17/19 12:45 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		06/25/19 12:34	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		06/25/19 12:34	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		06/25/19 12:34	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		06/25/19 12:34	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		06/25/19 12:34	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		06/25/19 12:34	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	1.0	0.16	1		06/25/19 12:34	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		06/25/19 12:34	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		06/25/19 12:34	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		06/25/19 12:34	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		06/25/19 12:34	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		06/25/19 12:34	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		06/25/19 12:34	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		06/25/19 12:34	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		06/25/19 12:34	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		06/25/19 12:34	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		06/25/19 12:34	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		06/25/19 12:34	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		06/25/19 12:34	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		06/25/19 12:34	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		06/25/19 12:34	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		06/25/19 12:34	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		06/25/19 12:34	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		06/25/19 12:34	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		06/25/19 12:34	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		06/25/19 12:34	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		06/25/19 12:34	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		06/25/19 12:34	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		06/25/19 12:34	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		06/25/19 12:34	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		06/25/19 12:34	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		06/25/19 12:34	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		06/25/19 12:34	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		06/25/19 12:34	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		06/25/19 12:34	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		06/25/19 12:34	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		06/25/19 12:34	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		06/25/19 12:34	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		06/25/19 12:34	74-83-9	
Carbon disulfide	<0.078	ug/L	1.0	0.078	1		06/25/19 12:34	75-15-0	
Carbon tetrachloride	<0.19	ug/L	0.50	0.19	1		06/25/19 12:34	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		06/25/19 12:34	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		06/25/19 12:34	75-00-3	
Chloroform	<0.45	ug/L	1.0	0.45	1		06/25/19 12:34	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		06/25/19 12:34	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		06/25/19 12:34	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10479604

Sample: Lang-GW-061719 **Lab ID: 10479604001** Collected: 06/17/19 12:45 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		06/25/19 12:34	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		06/25/19 12:34	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		06/25/19 12:34	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		06/25/19 12:34	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		06/25/19 12:34	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		06/25/19 12:34	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		06/25/19 12:34	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		06/25/19 12:34	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		06/25/19 12:34	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		06/25/19 12:34	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		06/25/19 12:34	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		06/25/19 12:34	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		06/25/19 12:34	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		06/25/19 12:34	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		06/25/19 12:34	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		06/25/19 12:34	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		06/25/19 12:34	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		06/25/19 12:34	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		06/25/19 12:34	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		06/25/19 12:34	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		06/25/19 12:34	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	1.0	0.20	1		06/25/19 12:34	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		06/25/19 12:34	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		06/25/19 12:34	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		06/25/19 12:34	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		06/25/19 12:34	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		06/25/19 12:34	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/25/19 12:34	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		06/25/19 12:34	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		06/25/19 12:34	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/25/19 12:34	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		06/25/19 12:34	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		06/25/19 12:34	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		06/25/19 12:34	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	92	%	75-136		1		06/25/19 12:34	17060-07-0	
Toluene-d8 (S)	98	%	75-125		1		06/25/19 12:34	2037-26-5	
4-Bromofluorobenzene (S)	95	%	75-125		1		06/25/19 12:34	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479604

QC Batch: 615244

Analysis Method: EPA 8260B

QC Batch Method: EPA 8260B

Analysis Description: 8260 MSV LL Water

Associated Lab Samples: 10479604001

METHOD BLANK: 3324037

Matrix: Water

Associated Lab Samples: 10479604001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	06/25/19 09:25	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	06/25/19 09:25	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	06/25/19 09:25	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	06/25/19 09:25	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	06/25/19 09:25	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	06/25/19 09:25	
1,1-Dichloroethene	ug/L	<0.16	1.0	0.16	06/25/19 09:25	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	06/25/19 09:25	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	06/25/19 09:25	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	06/25/19 09:25	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	06/25/19 09:25	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	06/25/19 09:25	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	06/25/19 09:25	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	06/25/19 09:25	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	06/25/19 09:25	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	06/25/19 09:25	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	06/25/19 09:25	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	06/25/19 09:25	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	06/25/19 09:25	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	06/25/19 09:25	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	06/25/19 09:25	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	06/25/19 09:25	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	06/25/19 09:25	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	06/25/19 09:25	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	06/25/19 09:25	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	06/25/19 09:25	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	06/25/19 09:25	
2-Hexanone	ug/L	<0.88	5.0	0.88	06/25/19 09:25	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	06/25/19 09:25	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	06/25/19 09:25	
Acetone	ug/L	<9.2	20.0	9.2	06/25/19 09:25	
Acrolein	ug/L	<1.2	10.0	1.2	06/25/19 09:25	
Acrylonitrile	ug/L	<0.91	10.0	0.91	06/25/19 09:25	
Benzene	ug/L	<0.10	0.50	0.10	06/25/19 09:25	
Bromobenzene	ug/L	<0.21	0.50	0.21	06/25/19 09:25	
Bromochloromethane	ug/L	<0.27	1.0	0.27	06/25/19 09:25	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	06/25/19 09:25	
Bromoform	ug/L	<0.80	4.0	0.80	06/25/19 09:25	
Bromomethane	ug/L	<1.8	4.0	1.8	06/25/19 09:25	
Carbon disulfide	ug/L	<0.078	1.0	0.078	06/25/19 09:25	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	06/25/19 09:25	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479604

METHOD BLANK: 3324037

Matrix: Water

Associated Lab Samples: 10479604001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	06/25/19 09:25	
Chloroethane	ug/L	<0.49	1.0	0.49	06/25/19 09:25	
Chloroform	ug/L	<0.45	1.0	0.45	06/25/19 09:25	
Chloromethane	ug/L	<0.16	4.0	0.16	06/25/19 09:25	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	06/25/19 09:25	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	06/25/19 09:25	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	06/25/19 09:25	
Dibromomethane	ug/L	<0.16	1.0	0.16	06/25/19 09:25	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	06/25/19 09:25	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	06/25/19 09:25	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	06/25/19 09:25	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	06/25/19 09:25	
Ethylbenzene	ug/L	<0.14	0.50	0.14	06/25/19 09:25	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	06/25/19 09:25	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	06/25/19 09:25	
m&p-Xylene	ug/L	<0.31	1.0	0.31	06/25/19 09:25	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	06/25/19 09:25	
Methylene Chloride	ug/L	<0.98	4.0	0.98	06/25/19 09:25	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	06/25/19 09:25	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	06/25/19 09:25	
Naphthalene	ug/L	<0.48	1.0	0.48	06/25/19 09:25	
o-Xylene	ug/L	<0.16	0.50	0.16	06/25/19 09:25	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	06/25/19 09:25	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	06/25/19 09:25	
Styrene	ug/L	<0.19	0.50	0.19	06/25/19 09:25	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	06/25/19 09:25	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	06/25/19 09:25	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	06/25/19 09:25	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	06/25/19 09:25	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	06/25/19 09:25	
Toluene	ug/L	<0.083	0.50	0.083	06/25/19 09:25	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	06/25/19 09:25	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	06/25/19 09:25	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	06/25/19 09:25	
Trichloroethene	ug/L	<0.15	0.40	0.15	06/25/19 09:25	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	06/25/19 09:25	
Vinyl acetate	ug/L	<1.1	10.0	1.1	06/25/19 09:25	
Vinyl chloride	ug/L	<0.092	0.20	0.092	06/25/19 09:25	
Xylene (Total)	ug/L	<0.31	1.5	0.31	06/25/19 09:25	
1,2-Dichloroethane-d4 (S)	%	91	75-136		06/25/19 09:25	
4-Bromofluorobenzene (S)	%	98	75-125		06/25/19 09:25	
Toluene-d8 (S)	%	100	75-125		06/25/19 09:25	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479604

LABORATORY CONTROL SAMPLE: 3324038

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	20.6	103	68-141	
1,1,1-Trichloroethane	ug/L	20	20.9	104	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	20.0	100	73-125	
1,1,2-Trichloroethane	ug/L	20	22.2	111	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	19.7	98	69-132	
1,1-Dichloroethane	ug/L	20	18.5	93	73-125	
1,1-Dichloroethene	ug/L	20	18.1	91	71-126	
1,1-Dichloropropene	ug/L	20	19.9	99	73-126	
1,2,3-Trichlorobenzene	ug/L	20	21.0	105	72-126	
1,2,3-Trichloropropane	ug/L	20	21.0	105	75-126	
1,2,4-Trichlorobenzene	ug/L	20	19.8	99	71-134	
1,2,4-Trimethylbenzene	ug/L	20	18.6	93	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	52.3	105	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	22.7	113	75-129	
1,2-Dichlorobenzene	ug/L	20	18.2	91	75-129	
1,2-Dichloroethane	ug/L	20	19.2	96	75-125	
1,2-Dichloroethene (Total)	ug/L	40	38.8	97	74-125	N2
1,2-Dichloropropane	ug/L	20	20.3	101	75-125	
1,3,5-Trimethylbenzene	ug/L	20	21.3	106	75-127	
1,3-Dichlorobenzene	ug/L	20	19.2	96	75-126	
1,3-Dichloropropane	ug/L	20	21.2	106	75-125	
1,4-Dichlorobenzene	ug/L	20	18.1	91	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	433	108	72-129	
2,2,4-Trimethylpentane	ug/L	20	18.6	93	72-128	N2
2,2-Dichloropropane	ug/L	20	22.0	110	65-138	
2-Butanone (MEK)	ug/L	100	99.2	99	59-144	
2-Chlorotoluene	ug/L	20	18.7	93	75-127	
2-Hexanone	ug/L	100	111	111	73-134	
4-Chlorotoluene	ug/L	20	18.6	93	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	110	110	62-141	
Acetone	ug/L	100	123	123	60-137	
Acrolein	ug/L	200	215	108	60-141	
Acrylonitrile	ug/L	200	187	94	75-129	
Benzene	ug/L	20	18.4	92	73-125	
Bromobenzene	ug/L	20	18.6	93	73-125	
Bromochloromethane	ug/L	20	19.9	100	75-135	
Bromodichloromethane	ug/L	20	21.8	109	75-125	
Bromoform	ug/L	20	24.2	121	67-136	
Bromomethane	ug/L	20	17.7	89	30-150	
Carbon disulfide	ug/L	20	16.3	81	47-137	
Carbon tetrachloride	ug/L	20	22.5	112	75-125	
Chlorobenzene	ug/L	20	18.8	94	75-125	
Chloroethane	ug/L	20	21.3	107	63-136	
Chloroform	ug/L	20	19.5	97	73-128	
Chloromethane	ug/L	20	19.3	96	55-130	
cis-1,2-Dichloroethene	ug/L	20	19.7	98	75-125	
cis-1,3-Dichloropropene	ug/L	20	20.1	101	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479604

LABORATORY CONTROL SAMPLE: 3324038

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	21.3	107	75-125	
Dibromomethane	ug/L	20	20.3	102	75-125	
Dichlorodifluoromethane	ug/L	20	20.7	104	63-132	
Dichlorofluoromethane	ug/L	20	19.7	98	68-127	N2
Diisopropyl ether	ug/L	20	17.3	86	71-131	
Ethyl-tert-butyl ether	ug/L	20	17.6	88	75-125	
Ethylbenzene	ug/L	20	19.9	100	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.6	103	72-134	
Isopropylbenzene (Cumene)	ug/L	20	19.5	97	75-125	
m&p-Xylene	ug/L	40	39.1	98	75-126	
Methyl-tert-butyl ether	ug/L	20	19.1	96	75-125	
Methylene Chloride	ug/L	20	16.8	84	70-125	
n-Butylbenzene	ug/L	20	19.1	95	75-126	
n-Propylbenzene	ug/L	20	18.8	94	73-127	
Naphthalene	ug/L	20	19.7	99	63-128	
o-Xylene	ug/L	20	19.4	97	75-128	
p-Isopropyltoluene	ug/L	20	19.4	97	75-125	
sec-Butylbenzene	ug/L	20	21.3	107	75-126	
Styrene	ug/L	20	20.8	104	75-125	
tert-Amylmethyl ether	ug/L	20	17.9	90	75-125	
tert-Butyl Alcohol	ug/L	200	211	106	75-130	
tert-Butylbenzene	ug/L	20	19.1	95	75-131	
Tetrachloroethene	ug/L	20	20.5	102	74-125	
Tetrahydrofuran	ug/L	200	246	123	64-138	
Toluene	ug/L	20	19.5	98	74-125	
trans-1,2-Dichloroethene	ug/L	20	19.2	96	68-128	
trans-1,3-Dichloropropene	ug/L	20	19.8	99	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	58.5	117	60-127	
Trichloroethene	ug/L	20	19.2	96	75-127	
Trichlorofluoromethane	ug/L	20	20.3	102	72-133	
Vinyl acetate	ug/L	20	17.4	87	61-129	
Vinyl chloride	ug/L	20	19.7	99	75-128	
Xylene (Total)	ug/L	60	58.5	98	75-125	
1,2-Dichloroethane-d4 (S)	%			99	75-136	
4-Bromofluorobenzene (S)	%			97	75-125	
Toluene-d8 (S)	%			97	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3326089 3326090

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10480797001 Result	Spike Conc.	Spike Conc.	Conc.								
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20	19.9	20.8	100	104	75-140	4	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20	23.5	23.0	118	115	74-136	2	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20	18.8	19.5	94	97	66-134	3	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20	20.4	21.7	102	108	75-126	6	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479604

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3326089 3326090												
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		10480797001 Result	Spike Conc.	Spike Conc.	MS Result							
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	22.2	23.1	111	115	65-146	4	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	20.2	19.0	101	95	68-132	6	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	20.6	19.5	103	98	66-139	5	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	21.7	21.1	109	106	67-134	3	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	22.7	23.3	114	117	67-129	3	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	19.1	20.2	96	101	69-128	5	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	23.1	23.5	116	118	65-140	2	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	19.0	17.5	95	88	71-133	8	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	48.0	51.9	96	104	54-138	8	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	21.5	21.9	107	110	68-125	2	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	18.7	20.2	93	101	74-136	8	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	17.6	18.9	88	95	68-125	7	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	41.2	39.8	103	100	71-126	3	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	22.5	22.5	113	112	67-125	0	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	17.2	0.27J	86	1	68-137		30	M1
1,3-Dichlorobenzene	ug/L	<0.16	20	20	19.3	21.1	97	105	75-131	8	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	21.0	20.9	105	105	71-125	0	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	18.5	20.4	92	102	74-126	10	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	423	422	106	105	68-125	0	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	22.7	20.0	113	100	54-129	13	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	25.3	23.7	127	119	69-139	7	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	77.4	83.5	77	83	54-144	8	30	
2-Chlorotoluene	ug/L	<0.16	20	20	19.7	20.8	98	104	75-134	6	30	
2-Hexanone	ug/L	<0.88	100	100	92.2	98.2	92	98	58-137	6	30	
4-Chlorotoluene	ug/L	<0.13	20	20	19.1	21.1	96	106	72-133	10	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	93.5	102	94	102	60-129	9	30	
Acetone	ug/L	30.3	100	100	127	122	97	92	62-132	4	30	
Acrolein	ug/L	<1.2	200	200	276	265	138	133	30-150	4	30	
Acrylonitrile	ug/L	<0.91	200	200	177	180	89	90	68-125	1	30	
Benzene	ug/L	<0.10	20	20	19.4	19.4	97	97	68-125	0	30	
Bromobenzene	ug/L	<0.21	20	20	19.8	20.5	99	103	73-126	4	30	
Bromochloromethane	ug/L	<0.27	20	20	21.0	20.0	105	100	66-143	5	30	
Bromodichloromethane	ug/L	0.34J	20	20	23.4	23.1	115	114	74-125	1	30	
Bromoform	ug/L	<0.80	20	20	22.4	22.6	112	113	64-134	1	30	
Bromomethane	ug/L	<1.8	20	20	21.8	20.0	109	100	30-150	9	30	
Carbon disulfide	ug/L	<0.078	20	20	20.1	18.1	100	90	43-147	10	30	
Carbon tetrachloride	ug/L	<0.19	20	20	24.8	25.0	124	125	71-143	1	30	
Chlorobenzene	ug/L	<0.17	20	20	18.6	19.3	93	97	75-125	4	30	
Chloroethane	ug/L	<0.49	20	20	25.9	25.6	130	128	75-129	1	30	M1
Chloroform	ug/L	39.5	20	20	54.7	55.0	76	78	66-132	1	30	
Chloromethane	ug/L	<0.16	20	20	29.6	35.1	148	176	53-137	17	30	M1
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	20.6	20.1	103	101	67-133	2	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	19.7	19.4	99	97	66-125	1	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479604

Parameter	Units	3326089		3326090		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		10480797001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Dibromochloromethane	ug/L	<0.12	20	20	20.2	20.6	101	103	62-132	2	30		
Dibromomethane	ug/L	<0.16	20	20	21.4	21.5	107	107	67-125	0	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	25.7	24.4	128	122	71-142	5	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	23.3	22.0	117	110	70-131	6	30	N2	
Diisopropyl ether	ug/L	<0.13	20	20	16.7	17.0	84	85	63-131	1	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	16.8	17.5	84	87	66-128	4	30		
Ethylbenzene	ug/L	<0.14	20	20	20.4	21.8	102	109	74-126	6	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	26.9	22.7	135	114	68-143	17	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	19.5	21.5	98	107	74-130	9	30		
m&p-Xylene	ug/L	<0.31	40	40	38.6	39.6	97	99	69-132	2	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	18.0	18.6	90	93	65-131	4	30		
Methylene Chloride	ug/L	<0.98	20	20	19.2	19.6	96	98	57-125	2	30		
n-Butylbenzene	ug/L	<0.24	20	20	22.0	21.8	110	109	71-131	1	30		
n-Propylbenzene	ug/L	<0.10	20	20	20.4	22.1	102	111	67-138	8	30		
Naphthalene	ug/L	<0.48	20	20	20.7	23.1	103	115	60-130	11	30		
o-Xylene	ug/L	<0.16	20	20	18.9	20.3	94	102	69-131	8	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	20.4	21.1	102	106	72-133	3	30		
sec-Butylbenzene	ug/L	<0.15	20	20	23.4	24.3	117	121	73-134	4	30		
Styrene	ug/L	<0.19	20	20	2.5	0.40J	12	2	72-125		30	M1	
tert-Amylmethyl ether	ug/L	<0.11	20	20	16.9	17.5	84	87	67-125	3	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	205	228	103	114	64-137	11	30		
tert-Butylbenzene	ug/L	<0.15	20	20	21.0	21.8	105	109	70-143	4	30		
Tetrachloroethene	ug/L	<0.17	20	20	21.6	22.9	108	115	72-129	6	30		
Tetrahydrofuran	ug/L	<2.2	200	200	236	231	118	115	66-128	2	30		
Toluene	ug/L	<0.083	20	20	19.7	20.4	99	102	73-125	3	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	20.6	19.7	103	99	62-137	4	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	19.6	20.3	98	101	61-136	3	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	55.6	54.5	111	109	45-128	2	30		
Trichloroethene	ug/L	<0.15	20	20	22.2	22.5	111	112	74-132	1	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	24.9	24.4	125	122	75-139	2	30		
Vinyl acetate	ug/L	<1.1	20	20	11.2	2.5J	56	13	51-135		30	M1	
Vinyl chloride	ug/L	<0.092	20	20	24.2	22.1	121	110	68-146	9	30		
Xylene (Total)	ug/L	<0.31	60	60	57.5	59.9	96	100	67-137	4	30		
1,2-Dichloroethane-d4 (S)	%						95	99	75-136				
4-Bromofluorobenzene (S)	%						101	97	75-125				
Toluene-d8 (S)	%						95	95	75-125				

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479604

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479604

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479604

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10479604001	Lang-GW-061719	EPA 8260B	615244		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt Client Name: **CH2M Hill** Project #: **WO#: 10479604**
 Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception
 Tracking Number: **493437301880, 493437292713**

PM: **JMG** Due Date: **06/25/19**
 CLIENT: **UPRR_Jacobs**

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A
 Packing Material: Bubble Wrap Bubble Bags None Other: _____ Temp Blank? Yes No
 Thermometer: T1(0461) T2(1336) T3(0459)
 T4(0254) T5(0489) Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)
 Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: **0.9, 1.2** °C Average Corrected Temp (no temp blank only): _____ °C See Exceptions
 Correction Factor: **True** Cooler Temp Corrected w/temp blank: **0.9, 1.2** °C

USDA Regulated Soil: N/A, water sample/Other: _____ Date/Initials of Person Examining Contents: **HE 6/18/19**
 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No
 If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

	COMMENTS:
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	
All containers needing acid/base preservation have been checked? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/> NaOH <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
Exceptions: VOA Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Exception Chlorine? <input type="checkbox"/> No <input type="checkbox"/> pH Paper Lot# <input type="checkbox"/>
	Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception
Trip Blank Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION/RESOLUTION Field Data Required? Yes No
 Person Contacted: _____ Date/Time: _____
 Comments/Resolution: _____

Project Manager Review: Jenni Gross Date: 06/18/19
 Note: Whenever there is a discrepancy affecting compliance samples a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

Labelled by: HE

June 27, 2019

David Hodson
Jacobs
155 Grand Ave
#800
Oakland, CA 94612

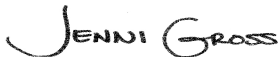
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479606

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 18, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, Jacobs
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479606

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Vermont Certification #: VT-027053137

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479606

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10479606001	Marlow-GW-061719	Water	06/17/19 13:15	06/18/19 08:45

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479606

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10479606001	Marlow-GW-061719	EPA 8260B	DS2	83	PASI-M

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479606

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10479606001	Marlow-GW-061719					
EPA 8260B	Carbon disulfide	0.57J	ug/L	1.0	06/25/19 12:58	
EPA 8260B	Carbon tetrachloride	109	ug/L	2.5	06/25/19 17:42	
EPA 8260B	Chloroform	7.7	ug/L	1.0	06/25/19 12:58	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479606

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 27, 2019

General Information:

1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 615244

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10480797001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3326089)
 - Chloroethane
 - Chloromethane
 - Styrene
- MSD (Lab ID: 3326090)
 - 1,3,5-Trimethylbenzene
 - Chloromethane
 - Styrene
 - Vinyl acetate

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479606

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 27, 2019

Analyte Comments:

QC Batch: 615244

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3324037)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3324038)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3326089)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3326090)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- Marlow-GW-061719 (Lab ID: 10479606001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Project No.: 10479606

Sample: Marlow-GW-061719 Lab ID: 10479606001 Collected: 06/17/19 13:15 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		06/25/19 12:58	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		06/25/19 12:58	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		06/25/19 12:58	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		06/25/19 12:58	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		06/25/19 12:58	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		06/25/19 12:58	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	1.0	0.16	1		06/25/19 12:58	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		06/25/19 12:58	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		06/25/19 12:58	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		06/25/19 12:58	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		06/25/19 12:58	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		06/25/19 12:58	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		06/25/19 12:58	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		06/25/19 12:58	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		06/25/19 12:58	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		06/25/19 12:58	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		06/25/19 12:58	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		06/25/19 12:58	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		06/25/19 12:58	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		06/25/19 12:58	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		06/25/19 12:58	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		06/25/19 12:58	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		06/25/19 12:58	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		06/25/19 12:58	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		06/25/19 12:58	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		06/25/19 12:58	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		06/25/19 12:58	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		06/25/19 12:58	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		06/25/19 12:58	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		06/25/19 12:58	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		06/25/19 12:58	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		06/25/19 12:58	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		06/25/19 12:58	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		06/25/19 12:58	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		06/25/19 12:58	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		06/25/19 12:58	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		06/25/19 12:58	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		06/25/19 12:58	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		06/25/19 12:58	74-83-9	
Carbon disulfide	0.57J	ug/L	1.0	0.078	1		06/25/19 12:58	75-15-0	
Carbon tetrachloride	109	ug/L	2.5	0.94	5		06/25/19 17:42	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		06/25/19 12:58	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		06/25/19 12:58	75-00-3	
Chloroform	7.7	ug/L	1.0	0.45	1		06/25/19 12:58	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		06/25/19 12:58	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		06/25/19 12:58	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479606

Sample: Marlow-GW-061719 **Lab ID: 10479606001** Collected: 06/17/19 13:15 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		06/25/19 12:58	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		06/25/19 12:58	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		06/25/19 12:58	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		06/25/19 12:58	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		06/25/19 12:58	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		06/25/19 12:58	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		06/25/19 12:58	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		06/25/19 12:58	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		06/25/19 12:58	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		06/25/19 12:58	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		06/25/19 12:58	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		06/25/19 12:58	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		06/25/19 12:58	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		06/25/19 12:58	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		06/25/19 12:58	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		06/25/19 12:58	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		06/25/19 12:58	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		06/25/19 12:58	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		06/25/19 12:58	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		06/25/19 12:58	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		06/25/19 12:58	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	1.0	0.20	1		06/25/19 12:58	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		06/25/19 12:58	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		06/25/19 12:58	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		06/25/19 12:58	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		06/25/19 12:58	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		06/25/19 12:58	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/25/19 12:58	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		06/25/19 12:58	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		06/25/19 12:58	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/25/19 12:58	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		06/25/19 12:58	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		06/25/19 12:58	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		06/25/19 12:58	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	95	%	75-136		1		06/25/19 12:58	17060-07-0	
Toluene-d8 (S)	100	%	75-125		1		06/25/19 12:58	2037-26-5	
4-Bromofluorobenzene (S)	97	%	75-125		1		06/25/19 12:58	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479606

QC Batch: 615244

Analysis Method: EPA 8260B

QC Batch Method: EPA 8260B

Analysis Description: 8260 MSV LL Water

Associated Lab Samples: 10479606001

METHOD BLANK: 3324037

Matrix: Water

Associated Lab Samples: 10479606001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	06/25/19 09:25	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	06/25/19 09:25	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	06/25/19 09:25	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	06/25/19 09:25	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	06/25/19 09:25	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	06/25/19 09:25	
1,1-Dichloroethene	ug/L	<0.16	1.0	0.16	06/25/19 09:25	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	06/25/19 09:25	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	06/25/19 09:25	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	06/25/19 09:25	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	06/25/19 09:25	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	06/25/19 09:25	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	06/25/19 09:25	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	06/25/19 09:25	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	06/25/19 09:25	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	06/25/19 09:25	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	06/25/19 09:25	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	06/25/19 09:25	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	06/25/19 09:25	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	06/25/19 09:25	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	06/25/19 09:25	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	06/25/19 09:25	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	06/25/19 09:25	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	06/25/19 09:25	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	06/25/19 09:25	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	06/25/19 09:25	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	06/25/19 09:25	
2-Hexanone	ug/L	<0.88	5.0	0.88	06/25/19 09:25	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	06/25/19 09:25	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	06/25/19 09:25	
Acetone	ug/L	<9.2	20.0	9.2	06/25/19 09:25	
Acrolein	ug/L	<1.2	10.0	1.2	06/25/19 09:25	
Acrylonitrile	ug/L	<0.91	10.0	0.91	06/25/19 09:25	
Benzene	ug/L	<0.10	0.50	0.10	06/25/19 09:25	
Bromobenzene	ug/L	<0.21	0.50	0.21	06/25/19 09:25	
Bromochloromethane	ug/L	<0.27	1.0	0.27	06/25/19 09:25	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	06/25/19 09:25	
Bromoform	ug/L	<0.80	4.0	0.80	06/25/19 09:25	
Bromomethane	ug/L	<1.8	4.0	1.8	06/25/19 09:25	
Carbon disulfide	ug/L	<0.078	1.0	0.078	06/25/19 09:25	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	06/25/19 09:25	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479606

METHOD BLANK: 3324037

Matrix: Water

Associated Lab Samples: 10479606001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	06/25/19 09:25	
Chloroethane	ug/L	<0.49	1.0	0.49	06/25/19 09:25	
Chloroform	ug/L	<0.45	1.0	0.45	06/25/19 09:25	
Chloromethane	ug/L	<0.16	4.0	0.16	06/25/19 09:25	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	06/25/19 09:25	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	06/25/19 09:25	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	06/25/19 09:25	
Dibromomethane	ug/L	<0.16	1.0	0.16	06/25/19 09:25	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	06/25/19 09:25	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	06/25/19 09:25	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	06/25/19 09:25	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	06/25/19 09:25	
Ethylbenzene	ug/L	<0.14	0.50	0.14	06/25/19 09:25	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	06/25/19 09:25	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	06/25/19 09:25	
m&p-Xylene	ug/L	<0.31	1.0	0.31	06/25/19 09:25	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	06/25/19 09:25	
Methylene Chloride	ug/L	<0.98	4.0	0.98	06/25/19 09:25	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	06/25/19 09:25	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	06/25/19 09:25	
Naphthalene	ug/L	<0.48	1.0	0.48	06/25/19 09:25	
o-Xylene	ug/L	<0.16	0.50	0.16	06/25/19 09:25	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	06/25/19 09:25	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	06/25/19 09:25	
Styrene	ug/L	<0.19	0.50	0.19	06/25/19 09:25	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	06/25/19 09:25	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	06/25/19 09:25	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	06/25/19 09:25	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	06/25/19 09:25	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	06/25/19 09:25	
Toluene	ug/L	<0.083	0.50	0.083	06/25/19 09:25	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	06/25/19 09:25	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	06/25/19 09:25	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	06/25/19 09:25	
Trichloroethene	ug/L	<0.15	0.40	0.15	06/25/19 09:25	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	06/25/19 09:25	
Vinyl acetate	ug/L	<1.1	10.0	1.1	06/25/19 09:25	
Vinyl chloride	ug/L	<0.092	0.20	0.092	06/25/19 09:25	
Xylene (Total)	ug/L	<0.31	1.5	0.31	06/25/19 09:25	
1,2-Dichloroethane-d4 (S)	%	91	75-136		06/25/19 09:25	
4-Bromofluorobenzene (S)	%	98	75-125		06/25/19 09:25	
Toluene-d8 (S)	%	100	75-125		06/25/19 09:25	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479606

LABORATORY CONTROL SAMPLE: 3324038

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	20.6	103	68-141	
1,1,1-Trichloroethane	ug/L	20	20.9	104	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	20.0	100	73-125	
1,1,2-Trichloroethane	ug/L	20	22.2	111	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	19.7	98	69-132	
1,1-Dichloroethane	ug/L	20	18.5	93	73-125	
1,1-Dichloroethene	ug/L	20	18.1	91	71-126	
1,1-Dichloropropene	ug/L	20	19.9	99	73-126	
1,2,3-Trichlorobenzene	ug/L	20	21.0	105	72-126	
1,2,3-Trichloropropane	ug/L	20	21.0	105	75-126	
1,2,4-Trichlorobenzene	ug/L	20	19.8	99	71-134	
1,2,4-Trimethylbenzene	ug/L	20	18.6	93	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	52.3	105	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	22.7	113	75-129	
1,2-Dichlorobenzene	ug/L	20	18.2	91	75-129	
1,2-Dichloroethane	ug/L	20	19.2	96	75-125	
1,2-Dichloroethene (Total)	ug/L	40	38.8	97	74-125	N2
1,2-Dichloropropane	ug/L	20	20.3	101	75-125	
1,3,5-Trimethylbenzene	ug/L	20	21.3	106	75-127	
1,3-Dichlorobenzene	ug/L	20	19.2	96	75-126	
1,3-Dichloropropane	ug/L	20	21.2	106	75-125	
1,4-Dichlorobenzene	ug/L	20	18.1	91	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	433	108	72-129	
2,2,4-Trimethylpentane	ug/L	20	18.6	93	72-128	N2
2,2-Dichloropropane	ug/L	20	22.0	110	65-138	
2-Butanone (MEK)	ug/L	100	99.2	99	59-144	
2-Chlorotoluene	ug/L	20	18.7	93	75-127	
2-Hexanone	ug/L	100	111	111	73-134	
4-Chlorotoluene	ug/L	20	18.6	93	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	110	110	62-141	
Acetone	ug/L	100	123	123	60-137	
Acrolein	ug/L	200	215	108	60-141	
Acrylonitrile	ug/L	200	187	94	75-129	
Benzene	ug/L	20	18.4	92	73-125	
Bromobenzene	ug/L	20	18.6	93	73-125	
Bromochloromethane	ug/L	20	19.9	100	75-135	
Bromodichloromethane	ug/L	20	21.8	109	75-125	
Bromoform	ug/L	20	24.2	121	67-136	
Bromomethane	ug/L	20	17.7	89	30-150	
Carbon disulfide	ug/L	20	16.3	81	47-137	
Carbon tetrachloride	ug/L	20	22.5	112	75-125	
Chlorobenzene	ug/L	20	18.8	94	75-125	
Chloroethane	ug/L	20	21.3	107	63-136	
Chloroform	ug/L	20	19.5	97	73-128	
Chloromethane	ug/L	20	19.3	96	55-130	
cis-1,2-Dichloroethene	ug/L	20	19.7	98	75-125	
cis-1,3-Dichloropropene	ug/L	20	20.1	101	74-125	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479606

LABORATORY CONTROL SAMPLE: 3324038

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	21.3	107	75-125	
Dibromomethane	ug/L	20	20.3	102	75-125	
Dichlorodifluoromethane	ug/L	20	20.7	104	63-132	
Dichlorofluoromethane	ug/L	20	19.7	98	68-127	N2
Diisopropyl ether	ug/L	20	17.3	86	71-131	
Ethyl-tert-butyl ether	ug/L	20	17.6	88	75-125	
Ethylbenzene	ug/L	20	19.9	100	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.6	103	72-134	
Isopropylbenzene (Cumene)	ug/L	20	19.5	97	75-125	
m&p-Xylene	ug/L	40	39.1	98	75-126	
Methyl-tert-butyl ether	ug/L	20	19.1	96	75-125	
Methylene Chloride	ug/L	20	16.8	84	70-125	
n-Butylbenzene	ug/L	20	19.1	95	75-126	
n-Propylbenzene	ug/L	20	18.8	94	73-127	
Naphthalene	ug/L	20	19.7	99	63-128	
o-Xylene	ug/L	20	19.4	97	75-128	
p-Isopropyltoluene	ug/L	20	19.4	97	75-125	
sec-Butylbenzene	ug/L	20	21.3	107	75-126	
Styrene	ug/L	20	20.8	104	75-125	
tert-Amylmethyl ether	ug/L	20	17.9	90	75-125	
tert-Butyl Alcohol	ug/L	200	211	106	75-130	
tert-Butylbenzene	ug/L	20	19.1	95	75-131	
Tetrachloroethene	ug/L	20	20.5	102	74-125	
Tetrahydrofuran	ug/L	200	246	123	64-138	
Toluene	ug/L	20	19.5	98	74-125	
trans-1,2-Dichloroethene	ug/L	20	19.2	96	68-128	
trans-1,3-Dichloropropene	ug/L	20	19.8	99	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	58.5	117	60-127	
Trichloroethene	ug/L	20	19.2	96	75-127	
Trichlorofluoromethane	ug/L	20	20.3	102	72-133	
Vinyl acetate	ug/L	20	17.4	87	61-129	
Vinyl chloride	ug/L	20	19.7	99	75-128	
Xylene (Total)	ug/L	60	58.5	98	75-125	
1,2-Dichloroethane-d4 (S)	%			99	75-136	
4-Bromofluorobenzene (S)	%			97	75-125	
Toluene-d8 (S)	%			97	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3326089 3326090

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10480797001 Result	Spike Conc.	Spike Conc.	Conc.								
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20	19.9	20.8	100	104	75-140	4	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20	23.5	23.0	118	115	74-136	2	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20	18.8	19.5	94	97	66-134	3	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20	20.4	21.7	102	108	75-126	6	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479606

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3326089 3326090												
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		10480797001 Result	Spike Conc.	Spike Conc.	MS Conc.							
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	22.2	23.1	111	115	65-146	4	30	
1,1-Dichloroethane	ug/L	<0.17	20	20	20.2	19.0	101	95	68-132	6	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	20.6	19.5	103	98	66-139	5	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	21.7	21.1	109	106	67-134	3	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	22.7	23.3	114	117	67-129	3	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	19.1	20.2	96	101	69-128	5	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	23.1	23.5	116	118	65-140	2	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	19.0	17.5	95	88	71-133	8	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	48.0	51.9	96	104	54-138	8	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	21.5	21.9	107	110	68-125	2	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	18.7	20.2	93	101	74-136	8	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	17.6	18.9	88	95	68-125	7	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	41.2	39.8	103	100	71-126	3	30	N2
1,2-Dichloropropane	ug/L	<0.16	20	20	22.5	22.5	113	112	67-125	0	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	17.2	0.27J	86	1	68-137		30	M1
1,3-Dichlorobenzene	ug/L	<0.16	20	20	19.3	21.1	97	105	75-131	8	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	21.0	20.9	105	105	71-125	0	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	18.5	20.4	92	102	74-126	10	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	423	422	106	105	68-125	0	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	22.7	20.0	113	100	54-129	13	30	N2
2,2-Dichloropropane	ug/L	<0.17	20	20	25.3	23.7	127	119	69-139	7	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	77.4	83.5	77	83	54-144	8	30	
2-Chlorotoluene	ug/L	<0.16	20	20	19.7	20.8	98	104	75-134	6	30	
2-Hexanone	ug/L	<0.88	100	100	92.2	98.2	92	98	58-137	6	30	
4-Chlorotoluene	ug/L	<0.13	20	20	19.1	21.1	96	106	72-133	10	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	93.5	102	94	102	60-129	9	30	
Acetone	ug/L	30.3	100	100	127	122	97	92	62-132	4	30	
Acrolein	ug/L	<1.2	200	200	276	265	138	133	30-150	4	30	
Acrylonitrile	ug/L	<0.91	200	200	177	180	89	90	68-125	1	30	
Benzene	ug/L	<0.10	20	20	19.4	19.4	97	97	68-125	0	30	
Bromobenzene	ug/L	<0.21	20	20	19.8	20.5	99	103	73-126	4	30	
Bromochloromethane	ug/L	<0.27	20	20	21.0	20.0	105	100	66-143	5	30	
Bromodichloromethane	ug/L	0.34J	20	20	23.4	23.1	115	114	74-125	1	30	
Bromoform	ug/L	<0.80	20	20	22.4	22.6	112	113	64-134	1	30	
Bromomethane	ug/L	<1.8	20	20	21.8	20.0	109	100	30-150	9	30	
Carbon disulfide	ug/L	<0.078	20	20	20.1	18.1	100	90	43-147	10	30	
Carbon tetrachloride	ug/L	<0.19	20	20	24.8	25.0	124	125	71-143	1	30	
Chlorobenzene	ug/L	<0.17	20	20	18.6	19.3	93	97	75-125	4	30	
Chloroethane	ug/L	<0.49	20	20	25.9	25.6	130	128	75-129	1	30	M1
Chloroform	ug/L	39.5	20	20	54.7	55.0	76	78	66-132	1	30	
Chloromethane	ug/L	<0.16	20	20	29.6	35.1	148	176	53-137	17	30	M1
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	20.6	20.1	103	101	67-133	2	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	19.7	19.4	99	97	66-125	1	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479606

Parameter	Units	3326089		3326090		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		10480797001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Dibromochloromethane	ug/L	<0.12	20	20	20.2	20.6	101	103	62-132	2	30		
Dibromomethane	ug/L	<0.16	20	20	21.4	21.5	107	107	67-125	0	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	25.7	24.4	128	122	71-142	5	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	23.3	22.0	117	110	70-131	6	30	N2	
Diisopropyl ether	ug/L	<0.13	20	20	16.7	17.0	84	85	63-131	1	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	16.8	17.5	84	87	66-128	4	30		
Ethylbenzene	ug/L	<0.14	20	20	20.4	21.8	102	109	74-126	6	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	26.9	22.7	135	114	68-143	17	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	19.5	21.5	98	107	74-130	9	30		
m&p-Xylene	ug/L	<0.31	40	40	38.6	39.6	97	99	69-132	2	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	18.0	18.6	90	93	65-131	4	30		
Methylene Chloride	ug/L	<0.98	20	20	19.2	19.6	96	98	57-125	2	30		
n-Butylbenzene	ug/L	<0.24	20	20	22.0	21.8	110	109	71-131	1	30		
n-Propylbenzene	ug/L	<0.10	20	20	20.4	22.1	102	111	67-138	8	30		
Naphthalene	ug/L	<0.48	20	20	20.7	23.1	103	115	60-130	11	30		
o-Xylene	ug/L	<0.16	20	20	18.9	20.3	94	102	69-131	8	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	20.4	21.1	102	106	72-133	3	30		
sec-Butylbenzene	ug/L	<0.15	20	20	23.4	24.3	117	121	73-134	4	30		
Styrene	ug/L	<0.19	20	20	2.5	0.40J	12	2	72-125		30	M1	
tert-Amylmethyl ether	ug/L	<0.11	20	20	16.9	17.5	84	87	67-125	3	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	205	228	103	114	64-137	11	30		
tert-Butylbenzene	ug/L	<0.15	20	20	21.0	21.8	105	109	70-143	4	30		
Tetrachloroethene	ug/L	<0.17	20	20	21.6	22.9	108	115	72-129	6	30		
Tetrahydrofuran	ug/L	<2.2	200	200	236	231	118	115	66-128	2	30		
Toluene	ug/L	<0.083	20	20	19.7	20.4	99	102	73-125	3	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	20.6	19.7	103	99	62-137	4	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	19.6	20.3	98	101	61-136	3	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	55.6	54.5	111	109	45-128	2	30		
Trichloroethene	ug/L	<0.15	20	20	22.2	22.5	111	112	74-132	1	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	24.9	24.4	125	122	75-139	2	30		
Vinyl acetate	ug/L	<1.1	20	20	11.2	2.5J	56	13	51-135		30	M1	
Vinyl chloride	ug/L	<0.092	20	20	24.2	22.1	121	110	68-146	9	30		
Xylene (Total)	ug/L	<0.31	60	60	57.5	59.9	96	100	67-137	4	30		
1,2-Dichloroethane-d4 (S)	%						95	99	75-136				
4-Bromofluorobenzene (S)	%						101	97	75-125				
Toluene-d8 (S)	%						95	95	75-125				

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479606

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479606

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479606

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10479606001	Marlow-GW-061719	EPA 8260B	615244		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A
Required Client Information:

Section B
Required Project Information:

Section C
Invoice Information:

Company: CH2M Hill	Report To: Mark Ochsner, Brad Ostapkowicz	Attention: Anne Waish
Address: 999 W. Riverside Ave, Suite 500 Spokane, WA 99201	Copy To: Steve Demus, Jonathan Espinoza Copy To: David Hodson, UPRR-Sysdat@ghd.com	Company: UPRR Address: 1400 W. 52nd Ave, Denver, CO 80221
Email:	Purchase Order #: PEDD# 1497	Pace Quote: Contract# 9900758938
Phone:	Fax:	Pace Project Manager: Jennifer Gross
Requested Due Date: 10 Day Standard	Project #: 1497	Pace Profile #: 36447 / 4

Regulatory Agency:
State / Location:
WA / Freeman

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 /, -) Sample Ids must be unique	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G-GRAB C-COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Requested Analysis/Filtered (Y/N)																											
				DATE	TIME			Preservatives																											
								Unpreserved	H2SO4	HNO3	HCl	NaOH + Zn Acetate	Other	Analyses Test: Y/N	Low Level VOCs by 8260	6010/7470 T22 Dissolved Metals*	2320 Alkalinity	Chloride, Sulfate, Nitrate 300.0	2540 TDS	TOC 5310	Sulfide 4600	Methano, Ethano, Ethene RSK175	COD 410.4	Nitrate+Nitrite 353.2	4500 Total Phosphorus	8010 Total Iron	MS/MSD Requested								
1	Matlaw-GW-061719	WT6	4/17	1315	-	3						X																							
2																																			
3																																			
4																																			
5																																			
6																																			
7																																			
8																																			
9																																			
10																																			
11																																			
12																																			

WO# : 10479606

 10479606

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Short hold analyses are in bold	<i>JT Li/Jacobs</i>	6/17/19	1600	<i>Jonathan Pace</i>	6/18/19	845	0.9	Y	N	Y
*Field filtered by client							1.2			

SAMPLER NAME AND SIGNATURE		
PRINT Name of SAMPLER:	<i>Jonathan Espinoza</i>	
SIGNATURE of SAMPLER:	<i>JT Li</i>	DATE Signed: <i>6/17/19</i>

TEMP in C	Received on ice (Y/N)	Custody Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)
-----------	-----------------------	----------------------	--------------	----------------------

Sample Condition Upon Receipt **Client Name:** CH2M Hill **Project #:** **WO# : 10479606**
Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception
Tracking Number: 493437301880, 493437292713

Custody Seal on Cooler/Box Present? Yes No **Seals Intact?** Yes No **Biological Tissue Frozen?** Yes No N/A
Packing Material: Bubble Wrap Bubble Bags None Other: _____ **Temp Blank?** Yes No
Thermometer: T1(0461) T2(1336) T3(0459)
 T4(0254) T5(0489) **Type of Ice:** Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)
 Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:** 0.9, 1.2 °C **Average Corrected Temp (no temp blank only):** _____ °C
Correction Factor: True **Cooler Temp Corrected w/temp blank:** 0.9, 1.2 °C

USDA Regulated Soil: N/A, water sample/Other: _____ **Date/Initials of Person Examining Contents:** HF 6/18/19
 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No
If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

		COMMENTS:
Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other		
All containers needing acid/base preservation have been checked?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/> NaOH <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
Exceptions: <u>VOA</u> Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes <input type="checkbox"/> No See Exception Chlorine? <input type="checkbox"/> No pH Paper Lot# <input type="checkbox"/>
		Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip
Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14. <input type="checkbox"/>
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased):

CLIENT NOTIFICATION/RESOLUTION
 Person Contacted: _____ Date/Time: _____ **Field Data Required?** Yes No
 Comments/Resolution: _____

Project Manager Review: _____ JENNI Gross Date: 06/18/19
 Note: Whenever there is a discrepancy affecting No. _____ since samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: HF

June 27, 2019

David Hodson
Jacobs
155 Grand Ave
#800
Oakland, CA 94612

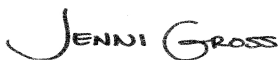
RE: Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479607

Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 18, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, Jacobs
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479607

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #:74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Vermont Certification #: VT-027053137

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479607

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10479607001	Randall-GW-061719	Water	06/17/19 13:30	06/18/19 08:45

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479607

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10479607001	Randall-GW-061719	EPA 8260B	DS2	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479607

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10479607001	Randall-GW-061719					
EPA 8260B	Carbon disulfide	0.71J	ug/L	1.0	06/25/19 13:22	
EPA 8260B	Carbon tetrachloride	191	ug/L	5.0	06/25/19 18:06	
EPA 8260B	Chloroform	7.9	ug/L	1.0	06/25/19 13:22	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479607

Method: EPA 8260B
Description: 8260B MSV Low Level
Client: UPRR_Jacobs
Date: June 27, 2019

General Information:

1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 615244

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10480797001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3326089)
 - Chloroethane
 - Chloromethane
 - Styrene
- MSD (Lab ID: 3326090)
 - 1,3,5-Trimethylbenzene
 - Chloromethane
 - Styrene
 - Vinyl acetate

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479607

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: June 27, 2019

Analyte Comments:

QC Batch: 615244

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3324037)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3324038)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3326089)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3326090)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- Randall-GW-061719 (Lab ID: 10479607001)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10479607

Sample: **Randall-GW-061719** Lab ID: **10479607001** Collected: 06/17/19 13:30 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
1,1,1,2-Tetrachloroethane	<0.20	ug/L	0.50	0.20	1		06/25/19 13:22	630-20-6	
1,1,1-Trichloroethane	<0.14	ug/L	0.50	0.14	1		06/25/19 13:22	71-55-6	
1,1,2,2-Tetrachloroethane	<0.17	ug/L	0.50	0.17	1		06/25/19 13:22	79-34-5	
1,1,2-Trichloroethane	<0.18	ug/L	0.50	0.18	1		06/25/19 13:22	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.22	ug/L	1.0	0.22	1		06/25/19 13:22	76-13-1	
1,1-Dichloroethane	<0.17	ug/L	0.50	0.17	1		06/25/19 13:22	75-34-3	
1,1-Dichloroethene	<0.16	ug/L	1.0	0.16	1		06/25/19 13:22	75-35-4	
1,1-Dichloropropene	<0.20	ug/L	0.50	0.20	1		06/25/19 13:22	563-58-6	
1,2,3-Trichlorobenzene	<0.21	ug/L	0.50	0.21	1		06/25/19 13:22	87-61-6	
1,2,3-Trichloropropane	<0.26	ug/L	4.0	0.26	1		06/25/19 13:22	96-18-4	
1,2,4-Trichlorobenzene	<0.20	ug/L	0.50	0.20	1		06/25/19 13:22	120-82-1	
1,2,4-Trimethylbenzene	<0.20	ug/L	1.0	0.20	1		06/25/19 13:22	95-63-6	
1,2-Dibromo-3-chloropropane	<1.7	ug/L	4.0	1.7	1		06/25/19 13:22	96-12-8	
1,2-Dibromoethane (EDB)	<0.24	ug/L	0.50	0.24	1		06/25/19 13:22	106-93-4	
1,2-Dichlorobenzene	<0.14	ug/L	0.50	0.14	1		06/25/19 13:22	95-50-1	
1,2-Dichloroethane	<0.22	ug/L	0.50	0.22	1		06/25/19 13:22	107-06-2	
1,2-Dichloroethene (Total)	<0.27	ug/L	1.0	0.27	1		06/25/19 13:22	540-59-0	N2
1,2-Dichloropropane	<0.16	ug/L	4.0	0.16	1		06/25/19 13:22	78-87-5	
1,3,5-Trimethylbenzene	<0.12	ug/L	0.50	0.12	1		06/25/19 13:22	108-67-8	
1,3-Dichlorobenzene	<0.16	ug/L	0.50	0.16	1		06/25/19 13:22	541-73-1	
1,3-Dichloropropane	<0.070	ug/L	0.50	0.070	1		06/25/19 13:22	142-28-9	
1,4-Dichlorobenzene	<0.17	ug/L	0.50	0.17	1		06/25/19 13:22	106-46-7	
1,4-Dioxane (p-Dioxane)	<16.3	ug/L	200	16.3	1		06/25/19 13:22	123-91-1	
2,2,4-Trimethylpentane	<0.19	ug/L	4.0	0.19	1		06/25/19 13:22	540-84-1	N2
2,2-Dichloropropane	<0.17	ug/L	1.0	0.17	1		06/25/19 13:22	594-20-7	
2-Butanone (MEK)	<0.99	ug/L	5.0	0.99	1		06/25/19 13:22	78-93-3	
2-Chlorotoluene	<0.16	ug/L	0.50	0.16	1		06/25/19 13:22	95-49-8	
2-Hexanone	<0.88	ug/L	5.0	0.88	1		06/25/19 13:22	591-78-6	
4-Chlorotoluene	<0.13	ug/L	0.50	0.13	1		06/25/19 13:22	106-43-4	
4-Methyl-2-pentanone (MIBK)	<0.42	ug/L	5.0	0.42	1		06/25/19 13:22	108-10-1	
Acetone	<9.2	ug/L	20.0	9.2	1		06/25/19 13:22	67-64-1	
Acrolein	<1.2	ug/L	10.0	1.2	1		06/25/19 13:22	107-02-8	
Acrylonitrile	<0.91	ug/L	10.0	0.91	1		06/25/19 13:22	107-13-1	
Benzene	<0.10	ug/L	0.50	0.10	1		06/25/19 13:22	71-43-2	
Bromobenzene	<0.21	ug/L	0.50	0.21	1		06/25/19 13:22	108-86-1	
Bromochloromethane	<0.27	ug/L	1.0	0.27	1		06/25/19 13:22	74-97-5	
Bromodichloromethane	<0.22	ug/L	0.50	0.22	1		06/25/19 13:22	75-27-4	
Bromoform	<0.80	ug/L	4.0	0.80	1		06/25/19 13:22	75-25-2	
Bromomethane	<1.8	ug/L	4.0	1.8	1		06/25/19 13:22	74-83-9	
Carbon disulfide	0.71J	ug/L	1.0	0.078	1		06/25/19 13:22	75-15-0	
Carbon tetrachloride	191	ug/L	5.0	1.9	10		06/25/19 18:06	56-23-5	
Chlorobenzene	<0.17	ug/L	0.50	0.17	1		06/25/19 13:22	108-90-7	
Chloroethane	<0.49	ug/L	1.0	0.49	1		06/25/19 13:22	75-00-3	
Chloroform	7.9	ug/L	1.0	0.45	1		06/25/19 13:22	67-66-3	
Chloromethane	<0.16	ug/L	4.0	0.16	1		06/25/19 13:22	74-87-3	
Dibromochloromethane	<0.12	ug/L	1.0	0.12	1		06/25/19 13:22	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Grain Handling

Sample Project No.: 10479607

Sample: **Randall-GW-061719** Lab ID: **10479607001** Collected: 06/17/19 13:30 Received: 06/18/19 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV Low Level		Analytical Method: EPA 8260B							
Dibromomethane	<0.16	ug/L	1.0	0.16	1		06/25/19 13:22	74-95-3	
Dichlorodifluoromethane	<0.23	ug/L	1.0	0.23	1		06/25/19 13:22	75-71-8	
Dichlorofluoromethane	<0.14	ug/L	1.0	0.14	1		06/25/19 13:22	75-43-4	N2
Diisopropyl ether	<0.13	ug/L	1.0	0.13	1		06/25/19 13:22	108-20-3	
Ethyl-tert-butyl ether	<0.18	ug/L	0.50	0.18	1		06/25/19 13:22	637-92-3	
Ethylbenzene	<0.14	ug/L	0.50	0.14	1		06/25/19 13:22	100-41-4	
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		06/25/19 13:22	87-68-3	
Isopropylbenzene (Cumene)	<0.18	ug/L	1.0	0.18	1		06/25/19 13:22	98-82-8	
Methyl-tert-butyl ether	<0.16	ug/L	0.50	0.16	1		06/25/19 13:22	1634-04-4	
Methylene Chloride	<0.98	ug/L	4.0	0.98	1		06/25/19 13:22	75-09-2	
Naphthalene	<0.48	ug/L	1.0	0.48	1		06/25/19 13:22	91-20-3	
Styrene	<0.19	ug/L	0.50	0.19	1		06/25/19 13:22	100-42-5	
Tetrachloroethene	<0.17	ug/L	0.50	0.17	1		06/25/19 13:22	127-18-4	
Tetrahydrofuran	<2.2	ug/L	10.0	2.2	1		06/25/19 13:22	109-99-9	
Toluene	<0.083	ug/L	0.50	0.083	1		06/25/19 13:22	108-88-3	
Trichloroethene	<0.15	ug/L	0.40	0.15	1		06/25/19 13:22	79-01-6	
Trichlorofluoromethane	<0.23	ug/L	0.50	0.23	1		06/25/19 13:22	75-69-4	
Vinyl acetate	<1.1	ug/L	10.0	1.1	1		06/25/19 13:22	108-05-4	
Vinyl chloride	<0.092	ug/L	0.20	0.092	1		06/25/19 13:22	75-01-4	
Xylene (Total)	<0.31	ug/L	1.5	0.31	1		06/25/19 13:22	1330-20-7	
cis-1,2-Dichloroethene	<0.15	ug/L	0.50	0.15	1		06/25/19 13:22	156-59-2	
cis-1,3-Dichloropropene	<0.20	ug/L	1.0	0.20	1		06/25/19 13:22	10061-01-5	
m&p-Xylene	<0.31	ug/L	1.0	0.31	1		06/25/19 13:22	179601-23-1	
n-Butylbenzene	<0.24	ug/L	1.0	0.24	1		06/25/19 13:22	104-51-8	
n-Propylbenzene	<0.10	ug/L	0.50	0.10	1		06/25/19 13:22	103-65-1	
o-Xylene	<0.16	ug/L	0.50	0.16	1		06/25/19 13:22	95-47-6	
p-Isopropyltoluene	<0.15	ug/L	1.0	0.15	1		06/25/19 13:22	99-87-6	
sec-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/25/19 13:22	135-98-8	
tert-Amylmethyl ether	<0.11	ug/L	0.50	0.11	1		06/25/19 13:22	994-05-8	
tert-Butyl Alcohol	<1.2	ug/L	10.0	1.2	1		06/25/19 13:22	75-65-0	
tert-Butylbenzene	<0.15	ug/L	0.50	0.15	1		06/25/19 13:22	98-06-6	
trans-1,2-Dichloroethene	<0.12	ug/L	0.50	0.12	1		06/25/19 13:22	156-60-5	
trans-1,3-Dichloropropene	<0.18	ug/L	1.0	0.18	1		06/25/19 13:22	10061-02-6	
trans-1,4-Dichloro-2-butene	<2.0	ug/L	10.0	2.0	1		06/25/19 13:22	110-57-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	91	%	75-136		1		06/25/19 13:22	17060-07-0	
Toluene-d8 (S)	101	%	75-125		1		06/25/19 13:22	2037-26-5	
4-Bromofluorobenzene (S)	95	%	75-125		1		06/25/19 13:22	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling
Pace Project No.: 10479607

QC Batch: 615244 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV LL Water
Associated Lab Samples: 10479607001

METHOD BLANK: 3324037 Matrix: Water
Associated Lab Samples: 10479607001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.20	0.50	0.20	06/25/19 09:25	
1,1,1-Trichloroethane	ug/L	<0.14	0.50	0.14	06/25/19 09:25	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	0.50	0.17	06/25/19 09:25	
1,1,2-Trichloroethane	ug/L	<0.18	0.50	0.18	06/25/19 09:25	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	1.0	0.22	06/25/19 09:25	
1,1-Dichloroethane	ug/L	<0.17	0.50	0.17	06/25/19 09:25	
1,1-Dichloroethene	ug/L	<0.16	1.0	0.16	06/25/19 09:25	
1,1-Dichloropropene	ug/L	<0.20	0.50	0.20	06/25/19 09:25	
1,2,3-Trichlorobenzene	ug/L	<0.21	0.50	0.21	06/25/19 09:25	
1,2,3-Trichloropropane	ug/L	<0.26	4.0	0.26	06/25/19 09:25	
1,2,4-Trichlorobenzene	ug/L	<0.20	0.50	0.20	06/25/19 09:25	
1,2,4-Trimethylbenzene	ug/L	<0.20	1.0	0.20	06/25/19 09:25	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	4.0	1.7	06/25/19 09:25	
1,2-Dibromoethane (EDB)	ug/L	<0.24	0.50	0.24	06/25/19 09:25	
1,2-Dichlorobenzene	ug/L	<0.14	0.50	0.14	06/25/19 09:25	
1,2-Dichloroethane	ug/L	<0.22	0.50	0.22	06/25/19 09:25	
1,2-Dichloroethene (Total)	ug/L	<0.27	1.0	0.27	06/25/19 09:25	N2
1,2-Dichloropropane	ug/L	<0.16	4.0	0.16	06/25/19 09:25	
1,3,5-Trimethylbenzene	ug/L	<0.12	0.50	0.12	06/25/19 09:25	
1,3-Dichlorobenzene	ug/L	<0.16	0.50	0.16	06/25/19 09:25	
1,3-Dichloropropane	ug/L	<0.070	0.50	0.070	06/25/19 09:25	
1,4-Dichlorobenzene	ug/L	<0.17	0.50	0.17	06/25/19 09:25	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	200	16.3	06/25/19 09:25	
2,2,4-Trimethylpentane	ug/L	<0.19	4.0	0.19	06/25/19 09:25	N2
2,2-Dichloropropane	ug/L	<0.17	1.0	0.17	06/25/19 09:25	
2-Butanone (MEK)	ug/L	<0.99	5.0	0.99	06/25/19 09:25	
2-Chlorotoluene	ug/L	<0.16	0.50	0.16	06/25/19 09:25	
2-Hexanone	ug/L	<0.88	5.0	0.88	06/25/19 09:25	
4-Chlorotoluene	ug/L	<0.13	0.50	0.13	06/25/19 09:25	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	5.0	0.42	06/25/19 09:25	
Acetone	ug/L	<9.2	20.0	9.2	06/25/19 09:25	
Acrolein	ug/L	<1.2	10.0	1.2	06/25/19 09:25	
Acrylonitrile	ug/L	<0.91	10.0	0.91	06/25/19 09:25	
Benzene	ug/L	<0.10	0.50	0.10	06/25/19 09:25	
Bromobenzene	ug/L	<0.21	0.50	0.21	06/25/19 09:25	
Bromochloromethane	ug/L	<0.27	1.0	0.27	06/25/19 09:25	
Bromodichloromethane	ug/L	<0.22	0.50	0.22	06/25/19 09:25	
Bromoform	ug/L	<0.80	4.0	0.80	06/25/19 09:25	
Bromomethane	ug/L	<1.8	4.0	1.8	06/25/19 09:25	
Carbon disulfide	ug/L	<0.078	1.0	0.078	06/25/19 09:25	
Carbon tetrachloride	ug/L	<0.19	0.50	0.19	06/25/19 09:25	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479607

METHOD BLANK: 3324037

Matrix: Water

Associated Lab Samples: 10479607001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorobenzene	ug/L	<0.17	0.50	0.17	06/25/19 09:25	
Chloroethane	ug/L	<0.49	1.0	0.49	06/25/19 09:25	
Chloroform	ug/L	<0.45	1.0	0.45	06/25/19 09:25	
Chloromethane	ug/L	<0.16	4.0	0.16	06/25/19 09:25	
cis-1,2-Dichloroethene	ug/L	<0.15	0.50	0.15	06/25/19 09:25	
cis-1,3-Dichloropropene	ug/L	<0.20	1.0	0.20	06/25/19 09:25	
Dibromochloromethane	ug/L	<0.12	1.0	0.12	06/25/19 09:25	
Dibromomethane	ug/L	<0.16	1.0	0.16	06/25/19 09:25	
Dichlorodifluoromethane	ug/L	<0.23	1.0	0.23	06/25/19 09:25	
Dichlorofluoromethane	ug/L	<0.14	1.0	0.14	06/25/19 09:25	N2
Diisopropyl ether	ug/L	<0.13	1.0	0.13	06/25/19 09:25	
Ethyl-tert-butyl ether	ug/L	<0.18	0.50	0.18	06/25/19 09:25	
Ethylbenzene	ug/L	<0.14	0.50	0.14	06/25/19 09:25	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	0.31	06/25/19 09:25	
Isopropylbenzene (Cumene)	ug/L	<0.18	1.0	0.18	06/25/19 09:25	
m&p-Xylene	ug/L	<0.31	1.0	0.31	06/25/19 09:25	
Methyl-tert-butyl ether	ug/L	<0.16	0.50	0.16	06/25/19 09:25	
Methylene Chloride	ug/L	<0.98	4.0	0.98	06/25/19 09:25	
n-Butylbenzene	ug/L	<0.24	1.0	0.24	06/25/19 09:25	
n-Propylbenzene	ug/L	<0.10	0.50	0.10	06/25/19 09:25	
Naphthalene	ug/L	<0.48	1.0	0.48	06/25/19 09:25	
o-Xylene	ug/L	<0.16	0.50	0.16	06/25/19 09:25	
p-Isopropyltoluene	ug/L	<0.15	1.0	0.15	06/25/19 09:25	
sec-Butylbenzene	ug/L	<0.15	0.50	0.15	06/25/19 09:25	
Styrene	ug/L	<0.19	0.50	0.19	06/25/19 09:25	
tert-Amylmethyl ether	ug/L	<0.11	0.50	0.11	06/25/19 09:25	
tert-Butyl Alcohol	ug/L	<1.2	10.0	1.2	06/25/19 09:25	
tert-Butylbenzene	ug/L	<0.15	0.50	0.15	06/25/19 09:25	
Tetrachloroethene	ug/L	<0.17	0.50	0.17	06/25/19 09:25	
Tetrahydrofuran	ug/L	<2.2	10.0	2.2	06/25/19 09:25	
Toluene	ug/L	<0.083	0.50	0.083	06/25/19 09:25	
trans-1,2-Dichloroethene	ug/L	<0.12	0.50	0.12	06/25/19 09:25	
trans-1,3-Dichloropropene	ug/L	<0.18	1.0	0.18	06/25/19 09:25	
trans-1,4-Dichloro-2-butene	ug/L	<2.0	10.0	2.0	06/25/19 09:25	
Trichloroethene	ug/L	<0.15	0.40	0.15	06/25/19 09:25	
Trichlorofluoromethane	ug/L	<0.23	0.50	0.23	06/25/19 09:25	
Vinyl acetate	ug/L	<1.1	10.0	1.1	06/25/19 09:25	
Vinyl chloride	ug/L	<0.092	0.20	0.092	06/25/19 09:25	
Xylene (Total)	ug/L	<0.31	1.5	0.31	06/25/19 09:25	
1,2-Dichloroethane-d4 (S)	%	91	75-136		06/25/19 09:25	
4-Bromofluorobenzene (S)	%	98	75-125		06/25/19 09:25	
Toluene-d8 (S)	%	100	75-125		06/25/19 09:25	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479607

LABORATORY CONTROL SAMPLE: 3324038

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	20.6	103	68-141	
1,1,1-Trichloroethane	ug/L	20	20.9	104	75-129	
1,1,2,2-Tetrachloroethane	ug/L	20	20.0	100	73-125	
1,1,2-Trichloroethane	ug/L	20	22.2	111	74-131	
1,1,2-Trichlorotrifluoroethane	ug/L	20	19.7	98	69-132	
1,1-Dichloroethane	ug/L	20	18.5	93	73-125	
1,1-Dichloroethene	ug/L	20	18.1	91	71-126	
1,1-Dichloropropene	ug/L	20	19.9	99	73-126	
1,2,3-Trichlorobenzene	ug/L	20	21.0	105	72-126	
1,2,3-Trichloropropane	ug/L	20	21.0	105	75-126	
1,2,4-Trichlorobenzene	ug/L	20	19.8	99	71-134	
1,2,4-Trimethylbenzene	ug/L	20	18.6	93	72-134	
1,2-Dibromo-3-chloropropane	ug/L	50	52.3	105	60-135	
1,2-Dibromoethane (EDB)	ug/L	20	22.7	113	75-129	
1,2-Dichlorobenzene	ug/L	20	18.2	91	75-129	
1,2-Dichloroethane	ug/L	20	19.2	96	75-125	
1,2-Dichloroethene (Total)	ug/L	40	38.8	97	74-125	N2
1,2-Dichloropropane	ug/L	20	20.3	101	75-125	
1,3,5-Trimethylbenzene	ug/L	20	21.3	106	75-127	
1,3-Dichlorobenzene	ug/L	20	19.2	96	75-126	
1,3-Dichloropropane	ug/L	20	21.2	106	75-125	
1,4-Dichlorobenzene	ug/L	20	18.1	91	75-125	
1,4-Dioxane (p-Dioxane)	ug/L	400	433	108	72-129	
2,2,4-Trimethylpentane	ug/L	20	18.6	93	72-128	N2
2,2-Dichloropropane	ug/L	20	22.0	110	65-138	
2-Butanone (MEK)	ug/L	100	99.2	99	59-144	
2-Chlorotoluene	ug/L	20	18.7	93	75-127	
2-Hexanone	ug/L	100	111	111	73-134	
4-Chlorotoluene	ug/L	20	18.6	93	75-127	
4-Methyl-2-pentanone (MIBK)	ug/L	100	110	110	62-141	
Acetone	ug/L	100	123	123	60-137	
Acrolein	ug/L	200	215	108	60-141	
Acrylonitrile	ug/L	200	187	94	75-129	
Benzene	ug/L	20	18.4	92	73-125	
Bromobenzene	ug/L	20	18.6	93	73-125	
Bromochloromethane	ug/L	20	19.9	100	75-135	
Bromodichloromethane	ug/L	20	21.8	109	75-125	
Bromoform	ug/L	20	24.2	121	67-136	
Bromomethane	ug/L	20	17.7	89	30-150	
Carbon disulfide	ug/L	20	16.3	81	47-137	
Carbon tetrachloride	ug/L	20	22.5	112	75-125	
Chlorobenzene	ug/L	20	18.8	94	75-125	
Chloroethane	ug/L	20	21.3	107	63-136	
Chloroform	ug/L	20	19.5	97	73-128	
Chloromethane	ug/L	20	19.3	96	55-130	
cis-1,2-Dichloroethene	ug/L	20	19.7	98	75-125	
cis-1,3-Dichloropropene	ug/L	20	20.1	101	74-125	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479607

LABORATORY CONTROL SAMPLE: 3324038

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	20	21.3	107	75-125	
Dibromomethane	ug/L	20	20.3	102	75-125	
Dichlorodifluoromethane	ug/L	20	20.7	104	63-132	
Dichlorofluoromethane	ug/L	20	19.7	98	68-127	N2
Diisopropyl ether	ug/L	20	17.3	86	71-131	
Ethyl-tert-butyl ether	ug/L	20	17.6	88	75-125	
Ethylbenzene	ug/L	20	19.9	100	75-125	
Hexachloro-1,3-butadiene	ug/L	20	20.6	103	72-134	
Isopropylbenzene (Cumene)	ug/L	20	19.5	97	75-125	
m&p-Xylene	ug/L	40	39.1	98	75-126	
Methyl-tert-butyl ether	ug/L	20	19.1	96	75-125	
Methylene Chloride	ug/L	20	16.8	84	70-125	
n-Butylbenzene	ug/L	20	19.1	95	75-126	
n-Propylbenzene	ug/L	20	18.8	94	73-127	
Naphthalene	ug/L	20	19.7	99	63-128	
o-Xylene	ug/L	20	19.4	97	75-128	
p-Isopropyltoluene	ug/L	20	19.4	97	75-125	
sec-Butylbenzene	ug/L	20	21.3	107	75-126	
Styrene	ug/L	20	20.8	104	75-125	
tert-Amylmethyl ether	ug/L	20	17.9	90	75-125	
tert-Butyl Alcohol	ug/L	200	211	106	75-130	
tert-Butylbenzene	ug/L	20	19.1	95	75-131	
Tetrachloroethene	ug/L	20	20.5	102	74-125	
Tetrahydrofuran	ug/L	200	246	123	64-138	
Toluene	ug/L	20	19.5	98	74-125	
trans-1,2-Dichloroethene	ug/L	20	19.2	96	68-128	
trans-1,3-Dichloropropene	ug/L	20	19.8	99	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	58.5	117	60-127	
Trichloroethene	ug/L	20	19.2	96	75-127	
Trichlorofluoromethane	ug/L	20	20.3	102	72-133	
Vinyl acetate	ug/L	20	17.4	87	61-129	
Vinyl chloride	ug/L	20	19.7	99	75-128	
Xylene (Total)	ug/L	60	58.5	98	75-125	
1,2-Dichloroethane-d4 (S)	%			99	75-136	
4-Bromofluorobenzene (S)	%			97	75-125	
Toluene-d8 (S)	%			97	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3326089 3326090

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		10480797001 Result	Spike Conc.	Spike Conc.	Conc.								
1,1,1,2-Tetrachloroethane	ug/L	<0.20	20	20	20	19.9	20.8	100	104	75-140	4	30	
1,1,1-Trichloroethane	ug/L	<0.14	20	20	20	23.5	23.0	118	115	74-136	2	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.17	20	20	20	18.8	19.5	94	97	66-134	3	30	
1,1,2-Trichloroethane	ug/L	<0.18	20	20	20	20.4	21.7	102	108	75-126	6	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479607

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3326089 3326090												
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		10480797001 Result	Spike Conc.	Spike Conc.	MS Conc.							
1,1,2-Trichlorotrifluoroethane	ug/L	<0.22	20	20	20	22.2	23.1	111	115	65-146	4	30
1,1-Dichloroethane	ug/L	<0.17	20	20	20.2	19.0	101	95	68-132	6	30	
1,1-Dichloroethene	ug/L	<0.16	20	20	20.6	19.5	103	98	66-139	5	30	
1,1-Dichloropropene	ug/L	<0.20	20	20	21.7	21.1	109	106	67-134	3	30	
1,2,3-Trichlorobenzene	ug/L	<0.21	20	20	22.7	23.3	114	117	67-129	3	30	
1,2,3-Trichloropropane	ug/L	<0.26	20	20	19.1	20.2	96	101	69-128	5	30	
1,2,4-Trichlorobenzene	ug/L	<0.20	20	20	23.1	23.5	116	118	65-140	2	30	
1,2,4-Trimethylbenzene	ug/L	<0.20	20	20	19.0	17.5	95	88	71-133	8	30	
1,2-Dibromo-3-chloropropane	ug/L	<1.7	50	50	48.0	51.9	96	104	54-138	8	30	
1,2-Dibromoethane (EDB)	ug/L	<0.24	20	20	21.5	21.9	107	110	68-125	2	30	
1,2-Dichlorobenzene	ug/L	<0.14	20	20	18.7	20.2	93	101	74-136	8	30	
1,2-Dichloroethane	ug/L	<0.22	20	20	17.6	18.9	88	95	68-125	7	30	
1,2-Dichloroethene (Total)	ug/L	<0.27	40	40	41.2	39.8	103	100	71-126	3	30 N2	
1,2-Dichloropropane	ug/L	<0.16	20	20	22.5	22.5	113	112	67-125	0	30	
1,3,5-Trimethylbenzene	ug/L	<0.12	20	20	17.2	0.27J	86	1	68-137		30 M1	
1,3-Dichlorobenzene	ug/L	<0.16	20	20	19.3	21.1	97	105	75-131	8	30	
1,3-Dichloropropane	ug/L	<0.070	20	20	21.0	20.9	105	105	71-125	0	30	
1,4-Dichlorobenzene	ug/L	<0.17	20	20	18.5	20.4	92	102	74-126	10	30	
1,4-Dioxane (p-Dioxane)	ug/L	<16.3	400	400	423	422	106	105	68-125	0	30	
2,2,4-Trimethylpentane	ug/L	<0.19	20	20	22.7	20.0	113	100	54-129	13	30 N2	
2,2-Dichloropropane	ug/L	<0.17	20	20	25.3	23.7	127	119	69-139	7	30	
2-Butanone (MEK)	ug/L	<0.99	100	100	77.4	83.5	77	83	54-144	8	30	
2-Chlorotoluene	ug/L	<0.16	20	20	19.7	20.8	98	104	75-134	6	30	
2-Hexanone	ug/L	<0.88	100	100	92.2	98.2	92	98	58-137	6	30	
4-Chlorotoluene	ug/L	<0.13	20	20	19.1	21.1	96	106	72-133	10	30	
4-Methyl-2-pentanone (MIBK)	ug/L	<0.42	100	100	93.5	102	94	102	60-129	9	30	
Acetone	ug/L	30.3	100	100	127	122	97	92	62-132	4	30	
Acrolein	ug/L	<1.2	200	200	276	265	138	133	30-150	4	30	
Acrylonitrile	ug/L	<0.91	200	200	177	180	89	90	68-125	1	30	
Benzene	ug/L	<0.10	20	20	19.4	19.4	97	97	68-125	0	30	
Bromobenzene	ug/L	<0.21	20	20	19.8	20.5	99	103	73-126	4	30	
Bromochloromethane	ug/L	<0.27	20	20	21.0	20.0	105	100	66-143	5	30	
Bromodichloromethane	ug/L	0.34J	20	20	23.4	23.1	115	114	74-125	1	30	
Bromoform	ug/L	<0.80	20	20	22.4	22.6	112	113	64-134	1	30	
Bromomethane	ug/L	<1.8	20	20	21.8	20.0	109	100	30-150	9	30	
Carbon disulfide	ug/L	<0.078	20	20	20.1	18.1	100	90	43-147	10	30	
Carbon tetrachloride	ug/L	<0.19	20	20	24.8	25.0	124	125	71-143	1	30	
Chlorobenzene	ug/L	<0.17	20	20	18.6	19.3	93	97	75-125	4	30	
Chloroethane	ug/L	<0.49	20	20	25.9	25.6	130	128	75-129	1	30 M1	
Chloroform	ug/L	39.5	20	20	54.7	55.0	76	78	66-132	1	30	
Chloromethane	ug/L	<0.16	20	20	29.6	35.1	148	176	53-137	17	30 M1	
cis-1,2-Dichloroethene	ug/L	<0.15	20	20	20.6	20.1	103	101	67-133	2	30	
cis-1,3-Dichloropropene	ug/L	<0.20	20	20	19.7	19.4	99	97	66-125	1	30	

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QUALITY CONTROL DATA

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479607

Parameter	Units	3326089		3326090		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		10480797001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Dibromochloromethane	ug/L	<0.12	20	20	20.2	20.6	101	103	62-132	2	30		
Dibromomethane	ug/L	<0.16	20	20	21.4	21.5	107	107	67-125	0	30		
Dichlorodifluoromethane	ug/L	<0.23	20	20	25.7	24.4	128	122	71-142	5	30		
Dichlorofluoromethane	ug/L	<0.14	20	20	23.3	22.0	117	110	70-131	6	30	N2	
Diisopropyl ether	ug/L	<0.13	20	20	16.7	17.0	84	85	63-131	1	30		
Ethyl-tert-butyl ether	ug/L	<0.18	20	20	16.8	17.5	84	87	66-128	4	30		
Ethylbenzene	ug/L	<0.14	20	20	20.4	21.8	102	109	74-126	6	30		
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	26.9	22.7	135	114	68-143	17	30		
Isopropylbenzene (Cumene)	ug/L	<0.18	20	20	19.5	21.5	98	107	74-130	9	30		
m&p-Xylene	ug/L	<0.31	40	40	38.6	39.6	97	99	69-132	2	30		
Methyl-tert-butyl ether	ug/L	<0.16	20	20	18.0	18.6	90	93	65-131	4	30		
Methylene Chloride	ug/L	<0.98	20	20	19.2	19.6	96	98	57-125	2	30		
n-Butylbenzene	ug/L	<0.24	20	20	22.0	21.8	110	109	71-131	1	30		
n-Propylbenzene	ug/L	<0.10	20	20	20.4	22.1	102	111	67-138	8	30		
Naphthalene	ug/L	<0.48	20	20	20.7	23.1	103	115	60-130	11	30		
o-Xylene	ug/L	<0.16	20	20	18.9	20.3	94	102	69-131	8	30		
p-Isopropyltoluene	ug/L	<0.15	20	20	20.4	21.1	102	106	72-133	3	30		
sec-Butylbenzene	ug/L	<0.15	20	20	23.4	24.3	117	121	73-134	4	30		
Styrene	ug/L	<0.19	20	20	2.5	0.40J	12	2	72-125		30	M1	
tert-Amylmethyl ether	ug/L	<0.11	20	20	16.9	17.5	84	87	67-125	3	30		
tert-Butyl Alcohol	ug/L	<1.2	200	200	205	228	103	114	64-137	11	30		
tert-Butylbenzene	ug/L	<0.15	20	20	21.0	21.8	105	109	70-143	4	30		
Tetrachloroethene	ug/L	<0.17	20	20	21.6	22.9	108	115	72-129	6	30		
Tetrahydrofuran	ug/L	<2.2	200	200	236	231	118	115	66-128	2	30		
Toluene	ug/L	<0.083	20	20	19.7	20.4	99	102	73-125	3	30		
trans-1,2-Dichloroethene	ug/L	<0.12	20	20	20.6	19.7	103	99	62-137	4	30		
trans-1,3-Dichloropropene	ug/L	<0.18	20	20	19.6	20.3	98	101	61-136	3	30		
trans-1,4-Dichloro-2-butene	ug/L	<2.0	50	50	55.6	54.5	111	109	45-128	2	30		
Trichloroethene	ug/L	<0.15	20	20	22.2	22.5	111	112	74-132	1	30		
Trichlorofluoromethane	ug/L	<0.23	20	20	24.9	24.4	125	122	75-139	2	30		
Vinyl acetate	ug/L	<1.1	20	20	11.2	2.5J	56	13	51-135		30	M1	
Vinyl chloride	ug/L	<0.092	20	20	24.2	22.1	121	110	68-146	9	30		
Xylene (Total)	ug/L	<0.31	60	60	57.5	59.9	96	100	67-137	4	30		
1,2-Dichloroethane-d4 (S)	%						95	99	75-136				
4-Bromofluorobenzene (S)	%						101	97	75-125				
Toluene-d8 (S)	%						95	95	75-125				

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479607

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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METHOD CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479607

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV Low Level	Water	SW-846 8260B/5030B	N/A

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1497 Freeman WA-Grain Handling

Pace Project No.: 10479607

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10479607001	Randall-GW-061719	EPA 8260B	615244		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: CH2M Hill

Project #: **WO#: 10479607**

PM: JMG Due Date: 06/25/19
CLIENT: UPRR_Jacobs

Courier: Fed Ex UPS USPS Client
 Pace Speedee Commercial See Exception

Tracking Number: 493437301890, 493437292713

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Biological Tissue Frozen? Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other: _____ Temp Blank? Yes No

Thermometer: T1(0461) T2(1336) T3(0459)
 T4(0254) T5(0489) Type of Ice: Wet Blue None Dry Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank: <u>0.9, 1.2</u> °C	Average Corrected Temp (no temp blank only): <input type="checkbox"/>
Correction Factor: <u>True</u>	Cooler Temp Corrected w/temp blank: <u>0.9, 1.2</u> °C	See Exceptions <input type="checkbox"/>

USDA Regulated Soil: (N/A, water sample/Other: _____) Date/Initials of Person Examining Contents: AE 6/18/19
Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No
Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No
If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

	COMMENTS:
Chain of Custody Present and Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	4.
Short Hold Time Analysis (<72 hr)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Field Filtered Volume Received for Dissolved Tests? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. If no, write ID/ Date/Time on Container Below: <input type="checkbox"/> See Exception
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other	
All containers needing acid/base preservation have been checked? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide) <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/> NaOH <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Zinc Acetate
Exceptions: <u>VOA</u> Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Positive for Res. Chlorine? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> See Exception
	pH Paper Lot#
	Res. Chlorine 0-6 Roll 0-6 Strip 0-14 Strip
Headspace in VOA Vials (greater than 6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception
Trip Blank Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Pace Trip Blank Lot # (if purchased):

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____ Field Data Required? Yes No
Comments/Resolution: _____

Project Manager Review:

Note: Whenever there is a discrepancy affecting compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers). JENNI GROSS Date: 06/18/19

Labeled by: HF

July 10, 2019

David Hodson
Jacobs
155 Grand Ave
#800
Oakland, CA 94612

RE: Project: 1497 Freeman WA-Cenex Harvest
Pace Project No.: 10480346

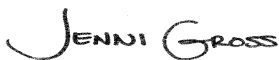
Dear David Hodson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 21, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Steve Demus, Jacobs
Jonathan Espinoza, Jacobs
Mark Ochsner, Jacobs
Brad Ostapkowicz, Jacobs
UPRR-Sysdat@ghd.com, UPRR



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #:74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Vermont Certification #: VT-027053137

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Cenex Harvest
Pace Project No.: 10480346

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10480346001	SB206-5'	Solid	06/19/19 09:40	06/21/19 09:45
10480346002	SB206-10'	Solid	06/19/19 09:50	06/21/19 09:45
10480346003	SB206-15'	Solid	06/19/19 10:00	06/21/19 09:45
10480346004	SB206-20'	Solid	06/19/19 10:15	06/21/19 09:45
10480346005	SB206-25'	Solid	06/19/19 10:20	06/21/19 09:45
10480346006	SB206-30'	Solid	06/19/19 10:35	06/21/19 09:45
10480346007	SB206-35'	Solid	06/19/19 10:45	06/21/19 09:45
10480346008	SB206-40'	Solid	06/19/19 11:15	06/21/19 09:45
10480346009	SB206-45'	Solid	06/19/19 11:25	06/21/19 09:45
10480346010	SB206-50'	Solid	06/19/19 11:45	06/21/19 09:45
10480346011	SB206-55'	Solid	06/19/19 12:10	06/21/19 09:45
10480346012	SB206-60'	Solid	06/19/19 12:40	06/21/19 09:45
10480346013	SB206-65'	Solid	06/19/19 12:45	06/21/19 09:45
10480346014	SB206-70'	Solid	06/19/19 14:00	06/21/19 09:45
10480346015	SB206-77'	Solid	06/19/19 14:05	06/21/19 09:45
10480346016	SB206-GW	Water	06/19/19 14:10	06/21/19 09:45
10480346017	FD1	Solid	06/19/19 08:00	06/21/19 09:45
10480346018	FD2	Solid	06/19/19 08:05	06/21/19 09:45
10480346019	TB1	Solid	06/19/19 07:00	06/21/19 09:45
10480346020	TB2	Solid	06/19/19 07:05	06/21/19 09:45
10480346021	TB3	Solid	06/19/19 07:10	06/21/19 09:45
10480346022	TB4	Solid	06/20/19 07:00	06/21/19 09:45
10480346023	SB208-5'	Solid	06/20/19 09:10	06/21/19 09:45
10480346024	SB208-10'	Solid	06/20/19 09:35	06/21/19 09:45
10480346025	SB208-15'	Solid	06/20/19 09:45	06/21/19 09:45
10480346026	SB208-20'	Solid	06/20/19 10:00	06/21/19 09:45
10480346027	SB208-25'	Solid	06/20/19 10:05	06/21/19 09:45
10480346028	SB208-30'	Solid	06/20/19 10:30	06/21/19 09:45
10480346029	SB208-35'	Solid	06/20/19 10:55	06/21/19 09:45
10480346030	SB208-40'	Solid	06/20/19 11:05	06/21/19 09:45
10480346031	SB208-45'	Solid	06/20/19 11:10	06/21/19 09:45
10480346032	SB208-50'	Solid	06/20/19 11:35	06/21/19 09:45
10480346033	SB208-55'	Solid	06/20/19 11:45	06/21/19 09:45
10480346034	SB208-60'	Solid	06/20/19 12:00	06/21/19 09:45
10480346035	SB208-65'	Solid	06/20/19 12:10	06/21/19 09:45
10480346036	SB208-70'	Solid	06/20/19 12:50	06/21/19 09:45
10480346037	SB208-75'	Solid	06/20/19 13:00	06/21/19 09:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10480346038	SB208-80'	Solid	06/20/19 13:55	06/21/19 09:45
10480346039	SB208-85'	Solid	06/20/19 14:05	06/21/19 09:45
10480346040	SB208-90'	Solid	06/20/19 14:45	06/21/19 09:45
10480346045	FD3	Solid	06/20/19 08:00	06/21/19 09:45
10480346046	SB208-GW	Water	06/20/19 14:00	06/21/19 09:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10480346001	SB206-5'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	GDM	51	PASI-M
10480346002	SB206-10'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	GDM	51	PASI-M
10480346003	SB206-15'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	GDM	51	PASI-M
10480346004	SB206-20'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	GDM	51	PASI-M
10480346005	SB206-25'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10480346006	SB206-30'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	GDM	51	PASI-M
10480346007	SB206-35'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	GDM	51	PASI-M
10480346008	SB206-40'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	GDM	51	PASI-M
10480346009	SB206-45'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	GDM	51	PASI-M
10480346010	SB206-50'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	GDM	51	PASI-M
10480346011	SB206-55'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	GDM	51	PASI-M
10480346012	SB206-60'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	GDM	51	PASI-M
10480346013	SB206-65'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	GDM	51	PASI-M
10480346014	SB206-70'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	GDM	51	PASI-M
10480346015	SB206-77'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	GDM	51	PASI-M
10480346016	SB206-GW	EPA 8260B	DS2	83	PASI-M
10480346017	FD1	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	GDM	51	PASI-M
10480346018	FD2	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	GDM	51	PASI-M
10480346019	TB1	EPA 8260B	GDM	51	PASI-M
10480346020	TB2	EPA 8260B	GDM	51	PASI-M

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10480346021	TB3	EPA 8260B	GDM	51	PASI-M
10480346022	TB4	EPA 8260B	CD2	51	PASI-M
10480346023	SB208-5'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10480346024	SB208-10'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10480346025	SB208-15'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10480346026	SB208-20'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10480346027	SB208-25'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10480346028	SB208-30'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10480346029	SB208-35'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10480346030	SB208-40'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10480346031	SB208-45'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10480346032	SB208-50'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10480346033	SB208-55'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10480346034	SB208-60'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10480346035	SB208-65'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10480346036	SB208-70'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10480346037	SB208-75'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10480346038	SB208-80'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10480346039	SB208-85'	ASTM D2974	JDL	1	PASI-M
		EPA 8260B	CD2	51	PASI-M
10480346040	SB208-90'	ASTM D2974	JDL	1	PASI-M

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10480346045	FD3	EPA 8260B	CD2	51	PASI-M
		ASTM D2974	JDL	1	PASI-M
10480346046	SB208-GW	EPA 8260B	CD2	51	PASI-M
		EPA 8260B	DS2	83	PASI-M

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10480346001	SB206-5'					
ASTM D2974	Percent Moisture	15.4	%	0.10	07/05/19 11:00	
10480346002	SB206-10'					
ASTM D2974	Percent Moisture	15.9	%	0.10	07/05/19 11:00	
10480346003	SB206-15'					
ASTM D2974	Percent Moisture	34.7	%	0.10	07/05/19 11:01	
10480346004	SB206-20'					
ASTM D2974	Percent Moisture	36.6	%	0.10	07/05/19 11:37	
10480346005	SB206-25'					
ASTM D2974	Percent Moisture	29.6	%	0.10	07/05/19 11:37	
EPA 8260B	Benzene	0.0070J	mg/kg	0.028	07/02/19 17:56	
10480346006	SB206-30'					
ASTM D2974	Percent Moisture	27.9	%	0.10	07/05/19 11:37	
10480346007	SB206-35'					
ASTM D2974	Percent Moisture	28.0	%	0.10	07/05/19 11:37	
10480346008	SB206-40'					
ASTM D2974	Percent Moisture	24.9	%	0.10	07/05/19 11:38	
EPA 8260B	Methylene Chloride	0.14J	mg/kg	0.28	07/01/19 17:06	
10480346009	SB206-45'					
ASTM D2974	Percent Moisture	32.7	%	0.10	07/05/19 11:38	
10480346010	SB206-50'					
ASTM D2974	Percent Moisture	35.4	%	0.10	07/05/19 11:38	
10480346011	SB206-55'					
ASTM D2974	Percent Moisture	27.2	%	0.10	07/05/19 11:38	
10480346012	SB206-60'					
ASTM D2974	Percent Moisture	32.2	%	0.10	07/05/19 11:38	
10480346013	SB206-65'					
ASTM D2974	Percent Moisture	29.1	%	0.10	07/05/19 11:38	
10480346014	SB206-70'					
ASTM D2974	Percent Moisture	30.2	%	0.10	07/05/19 11:39	
10480346015	SB206-77'					
ASTM D2974	Percent Moisture	26.5	%	0.10	07/05/19 11:39	
10480346016	SB206-GW					
EPA 8260B	Carbon tetrachloride	0.50J	ug/L	0.50	06/25/19 14:09	
EPA 8260B	Chloroform	0.87J	ug/L	1.0	06/25/19 14:09	
10480346017	FD1					
ASTM D2974	Percent Moisture	28.0	%	0.10	07/05/19 11:39	

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10480346018	FD2					
ASTM D2974	Percent Moisture	16.1	%	0.10	07/05/19 11:39	
10480346023	SB208-5'					
ASTM D2974	Percent Moisture	16.0	%	0.10	07/05/19 11:39	
EPA 8260B	Benzene	0.0036J	mg/kg	0.025	07/04/19 13:44	
10480346024	SB208-10'					
ASTM D2974	Percent Moisture	22.5	%	0.10	07/05/19 11:40	
10480346025	SB208-15'					
ASTM D2974	Percent Moisture	17.0	%	0.10	07/05/19 11:40	
EPA 8260B	Chloroform	0.039J	mg/kg	0.27	07/03/19 17:43	
10480346026	SB208-20'					
ASTM D2974	Percent Moisture	18.2	%	0.10	07/05/19 11:40	
EPA 8260B	Chloroform	0.035J	mg/kg	0.25	07/03/19 18:03	
10480346027	SB208-25'					
ASTM D2974	Percent Moisture	16.1	%	0.10	07/05/19 11:40	
10480346028	SB208-30'					
ASTM D2974	Percent Moisture	22.4	%	0.10	07/05/19 11:40	
10480346029	SB208-35'					
ASTM D2974	Percent Moisture	35.9	%	0.10	07/05/19 12:43	
10480346030	SB208-40'					
ASTM D2974	Percent Moisture	30.0	%	0.10	07/05/19 12:43	
10480346031	SB208-45'					
ASTM D2974	Percent Moisture	29.7	%	0.10	07/05/19 12:43	
10480346032	SB208-50'					
ASTM D2974	Percent Moisture	22.1	%	0.10	07/05/19 12:43	
10480346033	SB208-55'					
ASTM D2974	Percent Moisture	32.0	%	0.10	07/05/19 12:44	
10480346034	SB208-60'					
ASTM D2974	Percent Moisture	36.8	%	0.10	07/05/19 12:44	
EPA 8260B	Chloroform	0.043J	mg/kg	0.33	07/03/19 20:19	
10480346035	SB208-65'					
ASTM D2974	Percent Moisture	36.2	%	0.10	07/05/19 12:44	
10480346036	SB208-70'					
ASTM D2974	Percent Moisture	33.5	%	0.10	07/05/19 12:44	
10480346037	SB208-75'					
ASTM D2974	Percent Moisture	31.2	%	0.10	07/05/19 12:44	
10480346038	SB208-80'					
ASTM D2974	Percent Moisture	30.3	%	0.10	07/05/19 12:45	

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SUMMARY OF DETECTION

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10480346039	SB208-85'					
ASTM D2974	Percent Moisture	31.0	%	0.10	07/05/19 12:45	
10480346040	SB208-90'					
ASTM D2974	Percent Moisture	28.8	%	0.10	07/05/19 12:45	
10480346045	FD3					
ASTM D2974	Percent Moisture	35.4	%	0.10	07/05/19 12:45	
10480346046	SB208-GW					
EPA 8260B	Benzene	2.3	ug/L	1.0	06/25/19 13:46	
EPA 8260B	Ethylbenzene	0.48J	ug/L	1.0	06/25/19 13:46	
EPA 8260B	Toluene	2.4	ug/L	1.0	06/25/19 13:46	

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Method: EPA 8260B

Description: 8260B MSV 5030 Med Level

Client: UPRR_Jacobs

Date: July 10, 2019

General Information:

40 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 5035/5030B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

QC Batch: 616710

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 3331465)
 - Bromomethane
 - Carbon tetrachloride
 - Dibromochloromethane
 - Trichlorofluoromethane
- MS (Lab ID: 3331466)
 - Bromomethane
 - Carbon tetrachloride
 - Dibromochloromethane
 - Trichlorofluoromethane
- MSD (Lab ID: 3331467)
 - Bromomethane
 - Carbon tetrachloride
 - Dibromochloromethane
 - Trichlorofluoromethane

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: 616710

S3: Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated sample.

- SB206-20' (Lab ID: 10480346004)
 - 1,2-Dichloroethane-d4 (S)
- SB206-30' (Lab ID: 10480346006)

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Method: EPA 8260B

Description: 8260B MSV 5030 Med Level

Client: UPRR_Jacobs

Date: July 10, 2019

QC Batch: 616710

S3: Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated sample.

- 1,2-Dichloroethane-d4 (S)
- SB206-35' (Lab ID: 10480346007)
 - 1,2-Dichloroethane-d4 (S)
- SB206-40' (Lab ID: 10480346008)
 - 1,2-Dichloroethane-d4 (S)

QC Batch: 617323

S3: Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated sample.

- FD3 (Lab ID: 10480346045)
 - 1,2-Dichloroethane-d4 (S)
- SB208-25' (Lab ID: 10480346027)
 - 1,2-Dichloroethane-d4 (S)
- SB208-55' (Lab ID: 10480346033)
 - 1,2-Dichloroethane-d4 (S)
- SB208-80' (Lab ID: 10480346038)
 - 1,2-Dichloroethane-d4 (S)
- SB208-85' (Lab ID: 10480346039)
 - 1,2-Dichloroethane-d4 (S)
- SB208-90' (Lab ID: 10480346040)
 - 1,2-Dichloroethane-d4 (S)

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 616710

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

- LCS (Lab ID: 3331465)
 - Carbon tetrachloride

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 616710

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10480917001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 3331466)
 - Carbon tetrachloride
- MSD (Lab ID: 3331467)
 - Carbon tetrachloride

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Method: EPA 8260B

Description: 8260B MSV 5030 Med Level

Client: UPRR_Jacobs

Date: July 10, 2019

QC Batch: 616710

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10480917001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3331466)
 - 1,1,1-Trichloroethane
 - 1,2-Dichloroethane
 - Bromodichloromethane
 - Bromoform
 - Chloroform
 - Dibromochloromethane
 - Hexachloro-1,3-butadiene
 - Trichlorofluoromethane
- MSD (Lab ID: 3331467)
 - 1,1,1-Trichloroethane
 - 1,2-Dichloroethane
 - Bromodichloromethane
 - Chloroethane
 - Chloroform
 - Dibromochloromethane
 - Trichlorofluoromethane

R1: RPD value was outside control limits.

- MSD (Lab ID: 3331467)
 - Hexachloro-1,3-butadiene

QC Batch: 616897

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10480931002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3332404)
 - Carbon tetrachloride
 - Toluene
- MSD (Lab ID: 3332405)
 - Bromoform
 - Carbon tetrachloride
 - Toluene

QC Batch: 617652

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10481988001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3336182)
 - Trichlorofluoromethane
- MSD (Lab ID: 3336183)
 - Trichlorofluoromethane

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: July 10, 2019

General Information:

2 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 615244

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10480797001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 3326089)
 - Chloroethane
 - Chloromethane
 - Styrene
- MSD (Lab ID: 3326090)
 - 1,3,5-Trimethylbenzene
 - Chloromethane
 - Styrene
 - Vinyl acetate

Additional Comments:

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PROJECT NARRATIVE

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Method: EPA 8260B

Description: 8260B MSV Low Level

Client: UPRR_Jacobs

Date: July 10, 2019

Analyte Comments:

QC Batch: 615244

1M: The sample was analyzed at a dilution due to a large amount of sediment in the vials.

- SB208-GW (Lab ID: 10480346046)
 - 1,2-Dichloroethane-d4 (S)

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3324037)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- LCS (Lab ID: 3324038)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MS (Lab ID: 3326089)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- MSD (Lab ID: 3326090)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- SB206-GW (Lab ID: 10480346016)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane
- SB208-GW (Lab ID: 10480346046)
 - 1,2-Dichloroethene (Total)
 - Dichlorofluoromethane
 - 2,2,4-Trimethylpentane

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Sample: **SB206-5'** Lab ID: **10480346001** Collected: 06/19/19 09:40 Received: 06/21/19 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974		Analytical Method: ASTM D2974							
Percent Moisture	15.4	%	0.10	0.10	1		07/05/19 11:00		
8260B MSV 5030 Med Level		Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B							
1,1,1-Trichloroethane	<0.027	mg/kg	0.058	0.027	1	07/01/19 11:21	07/01/19 15:18	71-55-6	
1,1,1,2-Tetrachloroethane	<0.010	mg/kg	0.058	0.010	1	07/01/19 11:21	07/01/19 15:18	79-34-5	
1,1,2-Trichloroethane	<0.0070	mg/kg	0.058	0.0070	1	07/01/19 11:21	07/01/19 15:18	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.068	mg/kg	0.23	0.068	1	07/01/19 11:21	07/01/19 15:18	76-13-1	
1,1-Dichloroethane	<0.0065	mg/kg	0.058	0.0065	1	07/01/19 11:21	07/01/19 15:18	75-34-3	
1,1-Dichloroethene	<0.017	mg/kg	0.23	0.017	1	07/01/19 11:21	07/01/19 15:18	75-35-4	
1,2,4-Trichlorobenzene	<0.013	mg/kg	0.058	0.013	1	07/01/19 11:21	07/01/19 15:18	120-82-1	
1,2,4-Trimethylbenzene	<0.012	mg/kg	0.058	0.012	1	07/01/19 11:21	07/01/19 15:18	95-63-6	
1,2-Dibromoethane (EDB)	<0.0061	mg/kg	0.058	0.0061	1	07/01/19 11:21	07/01/19 15:18	106-93-4	
1,2-Dichlorobenzene	<0.0024	mg/kg	0.058	0.0024	1	07/01/19 11:21	07/01/19 15:18	95-50-1	
1,2-Dichloroethane	<0.0064	mg/kg	0.058	0.0064	1	07/01/19 11:21	07/01/19 15:18	107-06-2	
1,3,5-Trimethylbenzene	<0.0093	mg/kg	0.058	0.0093	1	07/01/19 11:21	07/01/19 15:18	108-67-8	
1,3-Dichlorobenzene	<0.0021	mg/kg	0.058	0.0021	1	07/01/19 11:21	07/01/19 15:18	541-73-1	
1,4-Dichlorobenzene	<0.0036	mg/kg	0.058	0.0036	1	07/01/19 11:21	07/01/19 15:18	106-46-7	
2-Butanone (MEK)	<0.031	mg/kg	0.29	0.031	1	07/01/19 11:21	07/01/19 15:18	78-93-3	
2-Hexanone	<0.013	mg/kg	0.29	0.013	1	07/01/19 11:21	07/01/19 15:18	591-78-6	
4-Methyl-2-pentanone (MIBK)	<0.012	mg/kg	0.29	0.012	1	07/01/19 11:21	07/01/19 15:18	108-10-1	
Acetone	<0.36	mg/kg	1.2	0.36	1	07/01/19 11:21	07/01/19 15:18	67-64-1	
Benzene	<0.0033	mg/kg	0.023	0.0033	1	07/01/19 11:21	07/01/19 15:18	71-43-2	
Bromodichloromethane	<0.020	mg/kg	0.058	0.020	1	07/01/19 11:21	07/01/19 15:18	75-27-4	
Bromoform	<0.088	mg/kg	0.23	0.088	1	07/01/19 11:21	07/01/19 15:18	75-25-2	
Bromomethane	<0.068	mg/kg	0.58	0.068	1	07/01/19 11:21	07/01/19 15:18	74-83-9	
Carbon tetrachloride	<0.028	mg/kg	0.23	0.028	1	07/01/19 11:21	07/01/19 15:18	56-23-5	
Chlorobenzene	<0.0033	mg/kg	0.058	0.0033	1	07/01/19 11:21	07/01/19 15:18	108-90-7	
Chloroethane	<0.030	mg/kg	0.58	0.030	1	07/01/19 11:21	07/01/19 15:18	75-00-3	
Chloroform	<0.029	mg/kg	0.058	0.029	1	07/01/19 11:21	07/01/19 15:18	67-66-3	
Chloromethane	<0.014	mg/kg	0.23	0.014	1	07/01/19 11:21	07/01/19 15:18	74-87-3	
Dibromochloromethane	<0.0068	mg/kg	0.23	0.0068	1	07/01/19 11:21	07/01/19 15:18	124-48-1	
Dichlorodifluoromethane	<0.019	mg/kg	0.23	0.019	1	07/01/19 11:21	07/01/19 15:18	75-71-8	
Ethylbenzene	<0.0032	mg/kg	0.058	0.0032	1	07/01/19 11:21	07/01/19 15:18	100-41-4	
Hexachloro-1,3-butadiene	<0.014	mg/kg	0.29	0.014	1	07/01/19 11:21	07/01/19 15:18	87-68-3	
Methyl-tert-butyl ether	<0.0069	mg/kg	0.058	0.0069	1	07/01/19 11:21	07/01/19 15:18	1634-04-4	
Methylene Chloride	<0.11	mg/kg	0.23	0.11	1	07/01/19 11:21	07/01/19 15:18	75-09-2	
Naphthalene	<0.055	mg/kg	0.23	0.055	1	07/01/19 11:21	07/01/19 15:18	91-20-3	
Styrene	<0.0027	mg/kg	0.058	0.0027	1	07/01/19 11:21	07/01/19 15:18	100-42-5	
Tetrachloroethene	<0.021	mg/kg	0.058	0.021	1	07/01/19 11:21	07/01/19 15:18	127-18-4	
Tetrahydrofuran	<0.085	mg/kg	2.3	0.085	1	07/01/19 11:21	07/01/19 15:18	109-99-9	
Toluene	<0.014	mg/kg	0.058	0.014	1	07/01/19 11:21	07/01/19 15:18	108-88-3	
Trichloroethene	<0.0090	mg/kg	0.058	0.0090	1	07/01/19 11:21	07/01/19 15:18	79-01-6	
Trichlorofluoromethane	<0.10	mg/kg	0.23	0.10	1	07/01/19 11:21	07/01/19 15:18	75-69-4	
Vinyl acetate	<0.0068	mg/kg	0.58	0.0068	1	07/01/19 11:21	07/01/19 15:18	108-05-4	
Vinyl chloride	<0.011	mg/kg	0.023	0.011	1	07/01/19 11:21	07/01/19 15:18	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Sample: SB206-5' **Lab ID: 10480346001** Collected: 06/19/19 09:40 Received: 06/21/19 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level		Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B							
cis-1,2-Dichloroethene	<0.0097	mg/kg	0.058	0.0097	1	07/01/19 11:21	07/01/19 15:18	156-59-2	
cis-1,3-Dichloropropene	<0.0084	mg/kg	0.058	0.0084	1	07/01/19 11:21	07/01/19 15:18	10061-01-5	
m&p-Xylene	<0.0072	mg/kg	0.12	0.0072	1	07/01/19 11:21	07/01/19 15:18	179601-23-1	
o-Xylene	<0.014	mg/kg	0.058	0.014	1	07/01/19 11:21	07/01/19 15:18	95-47-6	
trans-1,2-Dichloroethene	<0.027	mg/kg	0.058	0.027	1	07/01/19 11:21	07/01/19 15:18	156-60-5	
trans-1,3-Dichloropropene	<0.0081	mg/kg	0.058	0.0081	1	07/01/19 11:21	07/01/19 15:18	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	123	%	75-125		1	07/01/19 11:21	07/01/19 15:18	17060-07-0	
Toluene-d8 (S)	97	%	75-125		1	07/01/19 11:21	07/01/19 15:18	2037-26-5	
4-Bromofluorobenzene (S)	102	%	75-125		1	07/01/19 11:21	07/01/19 15:18	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Sample: **SB206-10'** Lab ID: **10480346002** Collected: 06/19/19 09:50 Received: 06/21/19 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974		Analytical Method: ASTM D2974							
Percent Moisture	15.9	%	0.10	0.10	1		07/05/19 11:00		
8260B MSV 5030 Med Level		Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B							
1,1,1-Trichloroethane	<0.027	mg/kg	0.058	0.027	1	07/01/19 11:21	07/01/19 15:36	71-55-6	
1,1,2,2-Tetrachloroethane	<0.010	mg/kg	0.058	0.010	1	07/01/19 11:21	07/01/19 15:36	79-34-5	
1,1,2-Trichloroethane	<0.0069	mg/kg	0.058	0.0069	1	07/01/19 11:21	07/01/19 15:36	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.067	mg/kg	0.23	0.067	1	07/01/19 11:21	07/01/19 15:36	76-13-1	
1,1-Dichloroethane	<0.0065	mg/kg	0.058	0.0065	1	07/01/19 11:21	07/01/19 15:36	75-34-3	
1,1-Dichloroethene	<0.017	mg/kg	0.23	0.017	1	07/01/19 11:21	07/01/19 15:36	75-35-4	
1,2,4-Trichlorobenzene	<0.013	mg/kg	0.058	0.013	1	07/01/19 11:21	07/01/19 15:36	120-82-1	
1,2,4-Trimethylbenzene	<0.012	mg/kg	0.058	0.012	1	07/01/19 11:21	07/01/19 15:36	95-63-6	
1,2-Dibromoethane (EDB)	<0.0061	mg/kg	0.058	0.0061	1	07/01/19 11:21	07/01/19 15:36	106-93-4	
1,2-Dichlorobenzene	<0.0023	mg/kg	0.058	0.0023	1	07/01/19 11:21	07/01/19 15:36	95-50-1	
1,2-Dichloroethane	<0.0063	mg/kg	0.058	0.0063	1	07/01/19 11:21	07/01/19 15:36	107-06-2	
1,3,5-Trimethylbenzene	<0.0092	mg/kg	0.058	0.0092	1	07/01/19 11:21	07/01/19 15:36	108-67-8	
1,3-Dichlorobenzene	<0.0021	mg/kg	0.058	0.0021	1	07/01/19 11:21	07/01/19 15:36	541-73-1	
1,4-Dichlorobenzene	<0.0036	mg/kg	0.058	0.0036	1	07/01/19 11:21	07/01/19 15:36	106-46-7	
2-Butanone (MEK)	<0.031	mg/kg	0.29	0.031	1	07/01/19 11:21	07/01/19 15:36	78-93-3	
2-Hexanone	<0.013	mg/kg	0.29	0.013	1	07/01/19 11:21	07/01/19 15:36	591-78-6	
4-Methyl-2-pentanone (MIBK)	<0.012	mg/kg	0.29	0.012	1	07/01/19 11:21	07/01/19 15:36	108-10-1	
Acetone	<0.36	mg/kg	1.2	0.36	1	07/01/19 11:21	07/01/19 15:36	67-64-1	
Benzene	<0.0033	mg/kg	0.023	0.0033	1	07/01/19 11:21	07/01/19 15:36	71-43-2	
Bromodichloromethane	<0.020	mg/kg	0.058	0.020	1	07/01/19 11:21	07/01/19 15:36	75-27-4	
Bromoform	<0.087	mg/kg	0.23	0.087	1	07/01/19 11:21	07/01/19 15:36	75-25-2	
Bromomethane	<0.067	mg/kg	0.58	0.067	1	07/01/19 11:21	07/01/19 15:36	74-83-9	
Carbon tetrachloride	<0.028	mg/kg	0.23	0.028	1	07/01/19 11:21	07/01/19 15:36	56-23-5	
Chlorobenzene	<0.0033	mg/kg	0.058	0.0033	1	07/01/19 11:21	07/01/19 15:36	108-90-7	
Chloroethane	<0.030	mg/kg	0.58	0.030	1	07/01/19 11:21	07/01/19 15:36	75-00-3	
Chloroform	<0.029	mg/kg	0.058	0.029	1	07/01/19 11:21	07/01/19 15:36	67-66-3	
Chloromethane	<0.014	mg/kg	0.23	0.014	1	07/01/19 11:21	07/01/19 15:36	74-87-3	
Dibromochloromethane	<0.0067	mg/kg	0.23	0.0067	1	07/01/19 11:21	07/01/19 15:36	124-48-1	
Dichlorodifluoromethane	<0.019	mg/kg	0.23	0.019	1	07/01/19 11:21	07/01/19 15:36	75-71-8	
Ethylbenzene	<0.0031	mg/kg	0.058	0.0031	1	07/01/19 11:21	07/01/19 15:36	100-41-4	
Hexachloro-1,3-butadiene	<0.014	mg/kg	0.29	0.014	1	07/01/19 11:21	07/01/19 15:36	87-68-3	
Methyl-tert-butyl ether	<0.0069	mg/kg	0.058	0.0069	1	07/01/19 11:21	07/01/19 15:36	1634-04-4	
Methylene Chloride	<0.11	mg/kg	0.23	0.11	1	07/01/19 11:21	07/01/19 15:36	75-09-2	
Naphthalene	<0.054	mg/kg	0.23	0.054	1	07/01/19 11:21	07/01/19 15:36	91-20-3	
Styrene	<0.0026	mg/kg	0.058	0.0026	1	07/01/19 11:21	07/01/19 15:36	100-42-5	
Tetrachloroethene	<0.020	mg/kg	0.058	0.020	1	07/01/19 11:21	07/01/19 15:36	127-18-4	
Tetrahydrofuran	<0.084	mg/kg	2.3	0.084	1	07/01/19 11:21	07/01/19 15:36	109-99-9	
Toluene	<0.014	mg/kg	0.058	0.014	1	07/01/19 11:21	07/01/19 15:36	108-88-3	
Trichloroethene	<0.0089	mg/kg	0.058	0.0089	1	07/01/19 11:21	07/01/19 15:36	79-01-6	
Trichlorofluoromethane	<0.10	mg/kg	0.23	0.10	1	07/01/19 11:21	07/01/19 15:36	75-69-4	
Vinyl acetate	<0.0067	mg/kg	0.58	0.0067	1	07/01/19 11:21	07/01/19 15:36	108-05-4	
Vinyl chloride	<0.011	mg/kg	0.023	0.011	1	07/01/19 11:21	07/01/19 15:36	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Sample: SB206-10' **Lab ID: 10480346002** Collected: 06/19/19 09:50 Received: 06/21/19 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level		Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B							
cis-1,2-Dichloroethene	<0.0096	mg/kg	0.058	0.0096	1	07/01/19 11:21	07/01/19 15:36	156-59-2	
cis-1,3-Dichloropropene	<0.0083	mg/kg	0.058	0.0083	1	07/01/19 11:21	07/01/19 15:36	10061-01-5	
m&p-Xylene	<0.0071	mg/kg	0.12	0.0071	1	07/01/19 11:21	07/01/19 15:36	179601-23-1	
o-Xylene	<0.013	mg/kg	0.058	0.013	1	07/01/19 11:21	07/01/19 15:36	95-47-6	
trans-1,2-Dichloroethene	<0.027	mg/kg	0.058	0.027	1	07/01/19 11:21	07/01/19 15:36	156-60-5	
trans-1,3-Dichloropropene	<0.0080	mg/kg	0.058	0.0080	1	07/01/19 11:21	07/01/19 15:36	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	123	%	75-125		1	07/01/19 11:21	07/01/19 15:36	17060-07-0	
Toluene-d8 (S)	101	%	75-125		1	07/01/19 11:21	07/01/19 15:36	2037-26-5	
4-Bromofluorobenzene (S)	101	%	75-125		1	07/01/19 11:21	07/01/19 15:36	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Sample: **SB206-15'** Lab ID: **10480346003** Collected: 06/19/19 10:00 Received: 06/21/19 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974		Analytical Method: ASTM D2974							
Percent Moisture	34.7	%	0.10	0.10	1		07/05/19 11:01		
8260B MSV 5030 Med Level		Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B							
1,1,1-Trichloroethane	<0.036	mg/kg	0.078	0.036	1	07/01/19 11:21	07/01/19 15:54	71-55-6	
1,1,2,2-Tetrachloroethane	<0.014	mg/kg	0.078	0.014	1	07/01/19 11:21	07/01/19 15:54	79-34-5	
1,1,2-Trichloroethane	<0.0093	mg/kg	0.078	0.0093	1	07/01/19 11:21	07/01/19 15:54	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.090	mg/kg	0.31	0.090	1	07/01/19 11:21	07/01/19 15:54	76-13-1	
1,1-Dichloroethane	<0.0087	mg/kg	0.078	0.0087	1	07/01/19 11:21	07/01/19 15:54	75-34-3	
1,1-Dichloroethene	<0.023	mg/kg	0.31	0.023	1	07/01/19 11:21	07/01/19 15:54	75-35-4	
1,2,4-Trichlorobenzene	<0.017	mg/kg	0.078	0.017	1	07/01/19 11:21	07/01/19 15:54	120-82-1	
1,2,4-Trimethylbenzene	<0.016	mg/kg	0.078	0.016	1	07/01/19 11:21	07/01/19 15:54	95-63-6	
1,2-Dibromoethane (EDB)	<0.0082	mg/kg	0.078	0.0082	1	07/01/19 11:21	07/01/19 15:54	106-93-4	
1,2-Dichlorobenzene	<0.0031	mg/kg	0.078	0.0031	1	07/01/19 11:21	07/01/19 15:54	95-50-1	
1,2-Dichloroethane	<0.0086	mg/kg	0.078	0.0086	1	07/01/19 11:21	07/01/19 15:54	107-06-2	
1,3,5-Trimethylbenzene	<0.012	mg/kg	0.078	0.012	1	07/01/19 11:21	07/01/19 15:54	108-67-8	
1,3-Dichlorobenzene	<0.0028	mg/kg	0.078	0.0028	1	07/01/19 11:21	07/01/19 15:54	541-73-1	
1,4-Dichlorobenzene	<0.0048	mg/kg	0.078	0.0048	1	07/01/19 11:21	07/01/19 15:54	106-46-7	
2-Butanone (MEK)	<0.041	mg/kg	0.39	0.041	1	07/01/19 11:21	07/01/19 15:54	78-93-3	
2-Hexanone	<0.018	mg/kg	0.39	0.018	1	07/01/19 11:21	07/01/19 15:54	591-78-6	
4-Methyl-2-pentanone (MIBK)	<0.016	mg/kg	0.39	0.016	1	07/01/19 11:21	07/01/19 15:54	108-10-1	
Acetone	<0.48	mg/kg	1.6	0.48	1	07/01/19 11:21	07/01/19 15:54	67-64-1	
Benzene	<0.0044	mg/kg	0.031	0.0044	1	07/01/19 11:21	07/01/19 15:54	71-43-2	
Bromodichloromethane	<0.027	mg/kg	0.078	0.027	1	07/01/19 11:21	07/01/19 15:54	75-27-4	
Bromoform	<0.12	mg/kg	0.31	0.12	1	07/01/19 11:21	07/01/19 15:54	75-25-2	
Bromomethane	<0.091	mg/kg	0.78	0.091	1	07/01/19 11:21	07/01/19 15:54	74-83-9	
Carbon tetrachloride	<0.037	mg/kg	0.31	0.037	1	07/01/19 11:21	07/01/19 15:54	56-23-5	
Chlorobenzene	<0.0044	mg/kg	0.078	0.0044	1	07/01/19 11:21	07/01/19 15:54	108-90-7	
Chloroethane	<0.040	mg/kg	0.78	0.040	1	07/01/19 11:21	07/01/19 15:54	75-00-3	
Chloroform	<0.039	mg/kg	0.078	0.039	1	07/01/19 11:21	07/01/19 15:54	67-66-3	
Chloromethane	<0.019	mg/kg	0.31	0.019	1	07/01/19 11:21	07/01/19 15:54	74-87-3	
Dibromochloromethane	<0.0090	mg/kg	0.31	0.0090	1	07/01/19 11:21	07/01/19 15:54	124-48-1	
Dichlorodifluoromethane	<0.025	mg/kg	0.31	0.025	1	07/01/19 11:21	07/01/19 15:54	75-71-8	
Ethylbenzene	<0.0042	mg/kg	0.078	0.0042	1	07/01/19 11:21	07/01/19 15:54	100-41-4	
Hexachloro-1,3-butadiene	<0.019	mg/kg	0.39	0.019	1	07/01/19 11:21	07/01/19 15:54	87-68-3	
Methyl-tert-butyl ether	<0.0093	mg/kg	0.078	0.0093	1	07/01/19 11:21	07/01/19 15:54	1634-04-4	
Methylene Chloride	<0.15	mg/kg	0.31	0.15	1	07/01/19 11:21	07/01/19 15:54	75-09-2	
Naphthalene	<0.073	mg/kg	0.31	0.073	1	07/01/19 11:21	07/01/19 15:54	91-20-3	
Styrene	<0.0036	mg/kg	0.078	0.0036	1	07/01/19 11:21	07/01/19 15:54	100-42-5	
Tetrachloroethene	<0.027	mg/kg	0.078	0.027	1	07/01/19 11:21	07/01/19 15:54	127-18-4	
Tetrahydrofuran	<0.11	mg/kg	3.1	0.11	1	07/01/19 11:21	07/01/19 15:54	109-99-9	
Toluene	<0.019	mg/kg	0.078	0.019	1	07/01/19 11:21	07/01/19 15:54	108-88-3	
Trichloroethene	<0.012	mg/kg	0.078	0.012	1	07/01/19 11:21	07/01/19 15:54	79-01-6	
Trichlorofluoromethane	<0.14	mg/kg	0.31	0.14	1	07/01/19 11:21	07/01/19 15:54	75-69-4	
Vinyl acetate	<0.0090	mg/kg	0.78	0.0090	1	07/01/19 11:21	07/01/19 15:54	108-05-4	
Vinyl chloride	<0.015	mg/kg	0.031	0.015	1	07/01/19 11:21	07/01/19 15:54	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Sample: SB206-15' **Lab ID: 10480346003** Collected: 06/19/19 10:00 Received: 06/21/19 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level		Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B							
cis-1,2-Dichloroethene	<0.013	mg/kg	0.078	0.013	1	07/01/19 11:21	07/01/19 15:54	156-59-2	
cis-1,3-Dichloropropene	<0.011	mg/kg	0.078	0.011	1	07/01/19 11:21	07/01/19 15:54	10061-01-5	
m&p-Xylene	<0.0096	mg/kg	0.16	0.0096	1	07/01/19 11:21	07/01/19 15:54	179601-23-1	
o-Xylene	<0.018	mg/kg	0.078	0.018	1	07/01/19 11:21	07/01/19 15:54	95-47-6	
trans-1,2-Dichloroethene	<0.036	mg/kg	0.078	0.036	1	07/01/19 11:21	07/01/19 15:54	156-60-5	
trans-1,3-Dichloropropene	<0.011	mg/kg	0.078	0.011	1	07/01/19 11:21	07/01/19 15:54	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	125	%	75-125		1	07/01/19 11:21	07/01/19 15:54	17060-07-0	
Toluene-d8 (S)	99	%	75-125		1	07/01/19 11:21	07/01/19 15:54	2037-26-5	
4-Bromofluorobenzene (S)	104	%	75-125		1	07/01/19 11:21	07/01/19 15:54	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Sample: **SB206-20'** Lab ID: **10480346004** Collected: 06/19/19 10:15 Received: 06/21/19 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974		Analytical Method: ASTM D2974							
Percent Moisture	36.6	%	0.10	0.10	1		07/05/19 11:37		
8260B MSV 5030 Med Level		Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B							
1,1,1-Trichloroethane	<0.037	mg/kg	0.079	0.037	1	07/01/19 11:21	07/01/19 16:12	71-55-6	
1,1,2,2-Tetrachloroethane	<0.014	mg/kg	0.079	0.014	1	07/01/19 11:21	07/01/19 16:12	79-34-5	
1,1,2-Trichloroethane	<0.0094	mg/kg	0.079	0.0094	1	07/01/19 11:21	07/01/19 16:12	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.091	mg/kg	0.31	0.091	1	07/01/19 11:21	07/01/19 16:12	76-13-1	
1,1-Dichloroethane	<0.0088	mg/kg	0.079	0.0088	1	07/01/19 11:21	07/01/19 16:12	75-34-3	
1,1-Dichloroethene	<0.024	mg/kg	0.31	0.024	1	07/01/19 11:21	07/01/19 16:12	75-35-4	
1,2,4-Trichlorobenzene	<0.017	mg/kg	0.079	0.017	1	07/01/19 11:21	07/01/19 16:12	120-82-1	
1,2,4-Trimethylbenzene	<0.016	mg/kg	0.079	0.016	1	07/01/19 11:21	07/01/19 16:12	95-63-6	
1,2-Dibromoethane (EDB)	<0.0083	mg/kg	0.079	0.0083	1	07/01/19 11:21	07/01/19 16:12	106-93-4	
1,2-Dichlorobenzene	<0.0032	mg/kg	0.079	0.0032	1	07/01/19 11:21	07/01/19 16:12	95-50-1	
1,2-Dichloroethane	<0.0087	mg/kg	0.079	0.0087	1	07/01/19 11:21	07/01/19 16:12	107-06-2	
1,3,5-Trimethylbenzene	<0.013	mg/kg	0.079	0.013	1	07/01/19 11:21	07/01/19 16:12	108-67-8	
1,3-Dichlorobenzene	<0.0029	mg/kg	0.079	0.0029	1	07/01/19 11:21	07/01/19 16:12	541-73-1	
1,4-Dichlorobenzene	<0.0049	mg/kg	0.079	0.0049	1	07/01/19 11:21	07/01/19 16:12	106-46-7	
2-Butanone (MEK)	<0.042	mg/kg	0.39	0.042	1	07/01/19 11:21	07/01/19 16:12	78-93-3	
2-Hexanone	<0.018	mg/kg	0.39	0.018	1	07/01/19 11:21	07/01/19 16:12	591-78-6	
4-Methyl-2-pentanone (MIBK)	<0.016	mg/kg	0.39	0.016	1	07/01/19 11:21	07/01/19 16:12	108-10-1	
Acetone	<0.49	mg/kg	1.6	0.49	1	07/01/19 11:21	07/01/19 16:12	67-64-1	
Benzene	<0.0044	mg/kg	0.031	0.0044	1	07/01/19 11:21	07/01/19 16:12	71-43-2	
Bromodichloromethane	<0.027	mg/kg	0.079	0.027	1	07/01/19 11:21	07/01/19 16:12	75-27-4	
Bromoform	<0.12	mg/kg	0.31	0.12	1	07/01/19 11:21	07/01/19 16:12	75-25-2	
Bromomethane	<0.092	mg/kg	0.79	0.092	1	07/01/19 11:21	07/01/19 16:12	74-83-9	
Carbon tetrachloride	<0.038	mg/kg	0.31	0.038	1	07/01/19 11:21	07/01/19 16:12	56-23-5	
Chlorobenzene	<0.0044	mg/kg	0.079	0.0044	1	07/01/19 11:21	07/01/19 16:12	108-90-7	
Chloroethane	<0.041	mg/kg	0.79	0.041	1	07/01/19 11:21	07/01/19 16:12	75-00-3	
Chloroform	<0.039	mg/kg	0.079	0.039	1	07/01/19 11:21	07/01/19 16:12	67-66-3	
Chloromethane	<0.019	mg/kg	0.31	0.019	1	07/01/19 11:21	07/01/19 16:12	74-87-3	
Dibromochloromethane	<0.0091	mg/kg	0.31	0.0091	1	07/01/19 11:21	07/01/19 16:12	124-48-1	
Dichlorodifluoromethane	<0.026	mg/kg	0.31	0.026	1	07/01/19 11:21	07/01/19 16:12	75-71-8	
Ethylbenzene	<0.0043	mg/kg	0.079	0.0043	1	07/01/19 11:21	07/01/19 16:12	100-41-4	
Hexachloro-1,3-butadiene	<0.019	mg/kg	0.39	0.019	1	07/01/19 11:21	07/01/19 16:12	87-68-3	
Methyl-tert-butyl ether	<0.0094	mg/kg	0.079	0.0094	1	07/01/19 11:21	07/01/19 16:12	1634-04-4	
Methylene Chloride	<0.15	mg/kg	0.31	0.15	1	07/01/19 11:21	07/01/19 16:12	75-09-2	
Naphthalene	<0.074	mg/kg	0.31	0.074	1	07/01/19 11:21	07/01/19 16:12	91-20-3	
Styrene	<0.0036	mg/kg	0.079	0.0036	1	07/01/19 11:21	07/01/19 16:12	100-42-5	
Tetrachloroethene	<0.028	mg/kg	0.079	0.028	1	07/01/19 11:21	07/01/19 16:12	127-18-4	
Tetrahydrofuran	<0.11	mg/kg	3.1	0.11	1	07/01/19 11:21	07/01/19 16:12	109-99-9	
Toluene	<0.019	mg/kg	0.079	0.019	1	07/01/19 11:21	07/01/19 16:12	108-88-3	
Trichloroethene	<0.012	mg/kg	0.079	0.012	1	07/01/19 11:21	07/01/19 16:12	79-01-6	
Trichlorofluoromethane	<0.14	mg/kg	0.31	0.14	1	07/01/19 11:21	07/01/19 16:12	75-69-4	
Vinyl acetate	<0.0091	mg/kg	0.79	0.0091	1	07/01/19 11:21	07/01/19 16:12	108-05-4	
Vinyl chloride	<0.015	mg/kg	0.031	0.015	1	07/01/19 11:21	07/01/19 16:12	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Sample: SB206-20' **Lab ID: 10480346004** Collected: 06/19/19 10:15 Received: 06/21/19 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level		Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B							
cis-1,2-Dichloroethene	<0.013	mg/kg	0.079	0.013	1	07/01/19 11:21	07/01/19 16:12	156-59-2	
cis-1,3-Dichloropropene	<0.011	mg/kg	0.079	0.011	1	07/01/19 11:21	07/01/19 16:12	10061-01-5	
m&p-Xylene	<0.0097	mg/kg	0.16	0.0097	1	07/01/19 11:21	07/01/19 16:12	179601-23-1	
o-Xylene	<0.018	mg/kg	0.079	0.018	1	07/01/19 11:21	07/01/19 16:12	95-47-6	
trans-1,2-Dichloroethene	<0.037	mg/kg	0.079	0.037	1	07/01/19 11:21	07/01/19 16:12	156-60-5	
trans-1,3-Dichloropropene	<0.011	mg/kg	0.079	0.011	1	07/01/19 11:21	07/01/19 16:12	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	130	%	75-125		1	07/01/19 11:21	07/01/19 16:12	17060-07-0	S3
Toluene-d8 (S)	99	%	75-125		1	07/01/19 11:21	07/01/19 16:12	2037-26-5	
4-Bromofluorobenzene (S)	107	%	75-125		1	07/01/19 11:21	07/01/19 16:12	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Sample: **SB206-25'** Lab ID: **10480346005** Collected: 06/19/19 10:20 Received: 06/21/19 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974		Analytical Method: ASTM D2974							
Percent Moisture	29.6	%	0.10	0.10	1		07/05/19 11:37		
8260B MSV 5030 Med Level		Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B							
1,1,1-Trichloroethane	<0.033	mg/kg	0.070	0.033	1	07/01/19 11:21	07/02/19 17:56	71-55-6	
1,1,2,2-Tetrachloroethane	<0.012	mg/kg	0.070	0.012	1	07/01/19 11:21	07/02/19 17:56	79-34-5	
1,1,2-Trichloroethane	<0.0084	mg/kg	0.070	0.0084	1	07/01/19 11:21	07/02/19 17:56	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.082	mg/kg	0.28	0.082	1	07/01/19 11:21	07/02/19 17:56	76-13-1	
1,1-Dichloroethane	<0.0079	mg/kg	0.070	0.0079	1	07/01/19 11:21	07/02/19 17:56	75-34-3	
1,1-Dichloroethene	<0.021	mg/kg	0.070	0.021	1	07/01/19 11:21	07/02/19 17:56	75-35-4	
1,2,4-Trichlorobenzene	<0.016	mg/kg	0.070	0.016	1	07/01/19 11:21	07/02/19 17:56	120-82-1	
1,2,4-Trimethylbenzene	<0.014	mg/kg	0.070	0.014	1	07/01/19 11:21	07/02/19 17:56	95-63-6	
1,2-Dibromoethane (EDB)	<0.0074	mg/kg	0.070	0.0074	1	07/01/19 11:21	07/02/19 17:56	106-93-4	
1,2-Dichlorobenzene	<0.0028	mg/kg	0.070	0.0028	1	07/01/19 11:21	07/02/19 17:56	95-50-1	
1,2-Dichloroethane	<0.0078	mg/kg	0.070	0.0078	1	07/01/19 11:21	07/02/19 17:56	107-06-2	
1,3,5-Trimethylbenzene	<0.011	mg/kg	0.070	0.011	1	07/01/19 11:21	07/02/19 17:56	108-67-8	
1,3-Dichlorobenzene	<0.0026	mg/kg	0.070	0.0026	1	07/01/19 11:21	07/02/19 17:56	541-73-1	
1,4-Dichlorobenzene	<0.0044	mg/kg	0.070	0.0044	1	07/01/19 11:21	07/02/19 17:56	106-46-7	
2-Butanone (MEK)	<0.037	mg/kg	0.35	0.037	1	07/01/19 11:21	07/02/19 17:56	78-93-3	
2-Hexanone	<0.016	mg/kg	0.35	0.016	1	07/01/19 11:21	07/02/19 17:56	591-78-6	
4-Methyl-2-pentanone (MIBK)	<0.015	mg/kg	0.35	0.015	1	07/01/19 11:21	07/02/19 17:56	108-10-1	
Acetone	<0.44	mg/kg	1.4	0.44	1	07/01/19 11:21	07/02/19 17:56	67-64-1	
Benzene	0.0070J	mg/kg	0.028	0.0040	1	07/01/19 11:21	07/02/19 17:56	71-43-2	
Bromodichloromethane	<0.024	mg/kg	0.070	0.024	1	07/01/19 11:21	07/02/19 17:56	75-27-4	
Bromoform	<0.11	mg/kg	0.28	0.11	1	07/01/19 11:21	07/02/19 17:56	75-25-2	
Bromomethane	<0.082	mg/kg	0.70	0.082	1	07/01/19 11:21	07/02/19 17:56	74-83-9	
Carbon tetrachloride	<0.034	mg/kg	0.070	0.034	1	07/01/19 11:21	07/02/19 17:56	56-23-5	L1
Chlorobenzene	<0.0040	mg/kg	0.070	0.0040	1	07/01/19 11:21	07/02/19 17:56	108-90-7	
Chloroethane	<0.037	mg/kg	0.70	0.037	1	07/01/19 11:21	07/02/19 17:56	75-00-3	
Chloroform	<0.035	mg/kg	0.070	0.035	1	07/01/19 11:21	07/02/19 17:56	67-66-3	
Chloromethane	<0.017	mg/kg	0.28	0.017	1	07/01/19 11:21	07/02/19 17:56	74-87-3	
Dibromochloromethane	<0.0082	mg/kg	0.28	0.0082	1	07/01/19 11:21	07/02/19 17:56	124-48-1	
Dichlorodifluoromethane	<0.023	mg/kg	0.28	0.023	1	07/01/19 11:21	07/02/19 17:56	75-71-8	
Ethylbenzene	<0.0038	mg/kg	0.070	0.0038	1	07/01/19 11:21	07/02/19 17:56	100-41-4	
Hexachloro-1,3-butadiene	<0.017	mg/kg	0.35	0.017	1	07/01/19 11:21	07/02/19 17:56	87-68-3	
Methyl-tert-butyl ether	<0.0084	mg/kg	0.070	0.0084	1	07/01/19 11:21	07/02/19 17:56	1634-04-4	
Methylene Chloride	<0.13	mg/kg	0.28	0.13	1	07/01/19 11:21	07/02/19 17:56	75-09-2	
Naphthalene	<0.066	mg/kg	0.28	0.066	1	07/01/19 11:21	07/02/19 17:56	91-20-3	
Styrene	<0.0032	mg/kg	0.070	0.0032	1	07/01/19 11:21	07/02/19 17:56	100-42-5	
Tetrachloroethene	<0.025	mg/kg	0.070	0.025	1	07/01/19 11:21	07/02/19 17:56	127-18-4	
Tetrahydrofuran	<0.10	mg/kg	2.8	0.10	1	07/01/19 11:21	07/02/19 17:56	109-99-9	
Toluene	<0.017	mg/kg	0.070	0.017	1	07/01/19 11:21	07/02/19 17:56	108-88-3	
Trichloroethene	<0.011	mg/kg	0.070	0.011	1	07/01/19 11:21	07/02/19 17:56	79-01-6	
Trichlorofluoromethane	<0.12	mg/kg	0.28	0.12	1	07/01/19 11:21	07/02/19 17:56	75-69-4	
Vinyl acetate	<0.0082	mg/kg	0.70	0.0082	1	07/01/19 11:21	07/02/19 17:56	108-05-4	
Vinyl chloride	<0.014	mg/kg	0.028	0.014	1	07/01/19 11:21	07/02/19 17:56	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Sample: SB206-25' **Lab ID: 10480346005** Collected: 06/19/19 10:20 Received: 06/21/19 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level		Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B							
cis-1,2-Dichloroethene	<0.012	mg/kg	0.070	0.012	1	07/01/19 11:21	07/02/19 17:56	156-59-2	
cis-1,3-Dichloropropene	<0.010	mg/kg	0.070	0.010	1	07/01/19 11:21	07/02/19 17:56	10061-01-5	
m&p-Xylene	<0.0087	mg/kg	0.14	0.0087	1	07/01/19 11:21	07/02/19 17:56	179601-23-1	
o-Xylene	<0.016	mg/kg	0.070	0.016	1	07/01/19 11:21	07/02/19 17:56	95-47-6	
trans-1,2-Dichloroethene	<0.033	mg/kg	0.070	0.033	1	07/01/19 11:21	07/02/19 17:56	156-60-5	
trans-1,3-Dichloropropene	<0.0098	mg/kg	0.070	0.0098	1	07/01/19 11:21	07/02/19 17:56	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	107	%	75-125		1	07/01/19 11:21	07/02/19 17:56	17060-07-0	
Toluene-d8 (S)	100	%	75-125		1	07/01/19 11:21	07/02/19 17:56	2037-26-5	
4-Bromofluorobenzene (S)	97	%	75-125		1	07/01/19 11:21	07/02/19 17:56	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Sample: **SB206-30'** Lab ID: **10480346006** Collected: 06/19/19 10:35 Received: 06/21/19 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974		Analytical Method: ASTM D2974							
Percent Moisture	27.9	%	0.10	0.10	1		07/05/19 11:37		
8260B MSV 5030 Med Level		Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B							
1,1,1-Trichloroethane	<0.034	mg/kg	0.072	0.034	1	07/01/19 11:21	07/01/19 16:30	71-55-6	
1,1,2,2-Tetrachloroethane	<0.013	mg/kg	0.072	0.013	1	07/01/19 11:21	07/01/19 16:30	79-34-5	
1,1,2-Trichloroethane	<0.0086	mg/kg	0.072	0.0086	1	07/01/19 11:21	07/01/19 16:30	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.084	mg/kg	0.29	0.084	1	07/01/19 11:21	07/01/19 16:30	76-13-1	
1,1-Dichloroethane	<0.0081	mg/kg	0.072	0.0081	1	07/01/19 11:21	07/01/19 16:30	75-34-3	
1,1-Dichloroethene	<0.022	mg/kg	0.29	0.022	1	07/01/19 11:21	07/01/19 16:30	75-35-4	
1,2,4-Trichlorobenzene	<0.016	mg/kg	0.072	0.016	1	07/01/19 11:21	07/01/19 16:30	120-82-1	
1,2,4-Trimethylbenzene	<0.014	mg/kg	0.072	0.014	1	07/01/19 11:21	07/01/19 16:30	95-63-6	
1,2-Dibromoethane (EDB)	<0.0076	mg/kg	0.072	0.0076	1	07/01/19 11:21	07/01/19 16:30	106-93-4	
1,2-Dichlorobenzene	<0.0029	mg/kg	0.072	0.0029	1	07/01/19 11:21	07/01/19 16:30	95-50-1	
1,2-Dichloroethane	<0.0079	mg/kg	0.072	0.0079	1	07/01/19 11:21	07/01/19 16:30	107-06-2	
1,3,5-Trimethylbenzene	<0.011	mg/kg	0.072	0.011	1	07/01/19 11:21	07/01/19 16:30	108-67-8	
1,3-Dichlorobenzene	<0.0026	mg/kg	0.072	0.0026	1	07/01/19 11:21	07/01/19 16:30	541-73-1	
1,4-Dichlorobenzene	<0.0045	mg/kg	0.072	0.0045	1	07/01/19 11:21	07/01/19 16:30	106-46-7	
2-Butanone (MEK)	<0.038	mg/kg	0.36	0.038	1	07/01/19 11:21	07/01/19 16:30	78-93-3	
2-Hexanone	<0.017	mg/kg	0.36	0.017	1	07/01/19 11:21	07/01/19 16:30	591-78-6	
4-Methyl-2-pentanone (MIBK)	<0.015	mg/kg	0.36	0.015	1	07/01/19 11:21	07/01/19 16:30	108-10-1	
Acetone	<0.45	mg/kg	1.4	0.45	1	07/01/19 11:21	07/01/19 16:30	67-64-1	
Benzene	<0.0041	mg/kg	0.029	0.0041	1	07/01/19 11:21	07/01/19 16:30	71-43-2	
Bromodichloromethane	<0.025	mg/kg	0.072	0.025	1	07/01/19 11:21	07/01/19 16:30	75-27-4	
Bromoform	<0.11	mg/kg	0.29	0.11	1	07/01/19 11:21	07/01/19 16:30	75-25-2	
Bromomethane	<0.084	mg/kg	0.72	0.084	1	07/01/19 11:21	07/01/19 16:30	74-83-9	
Carbon tetrachloride	<0.034	mg/kg	0.29	0.034	1	07/01/19 11:21	07/01/19 16:30	56-23-5	
Chlorobenzene	<0.0041	mg/kg	0.072	0.0041	1	07/01/19 11:21	07/01/19 16:30	108-90-7	
Chloroethane	<0.037	mg/kg	0.72	0.037	1	07/01/19 11:21	07/01/19 16:30	75-00-3	
Chloroform	<0.036	mg/kg	0.072	0.036	1	07/01/19 11:21	07/01/19 16:30	67-66-3	
Chloromethane	<0.017	mg/kg	0.29	0.017	1	07/01/19 11:21	07/01/19 16:30	74-87-3	
Dibromochloromethane	<0.0084	mg/kg	0.29	0.0084	1	07/01/19 11:21	07/01/19 16:30	124-48-1	
Dichlorodifluoromethane	<0.023	mg/kg	0.29	0.023	1	07/01/19 11:21	07/01/19 16:30	75-71-8	
Ethylbenzene	<0.0039	mg/kg	0.072	0.0039	1	07/01/19 11:21	07/01/19 16:30	100-41-4	
Hexachloro-1,3-butadiene	<0.018	mg/kg	0.36	0.018	1	07/01/19 11:21	07/01/19 16:30	87-68-3	
Methyl-tert-butyl ether	<0.0086	mg/kg	0.072	0.0086	1	07/01/19 11:21	07/01/19 16:30	1634-04-4	
Methylene Chloride	<0.14	mg/kg	0.29	0.14	1	07/01/19 11:21	07/01/19 16:30	75-09-2	
Naphthalene	<0.067	mg/kg	0.29	0.067	1	07/01/19 11:21	07/01/19 16:30	91-20-3	
Styrene	<0.0033	mg/kg	0.072	0.0033	1	07/01/19 11:21	07/01/19 16:30	100-42-5	
Tetrachloroethene	<0.025	mg/kg	0.072	0.025	1	07/01/19 11:21	07/01/19 16:30	127-18-4	
Tetrahydrofuran	<0.10	mg/kg	2.9	0.10	1	07/01/19 11:21	07/01/19 16:30	109-99-9	
Toluene	<0.018	mg/kg	0.072	0.018	1	07/01/19 11:21	07/01/19 16:30	108-88-3	
Trichloroethene	<0.011	mg/kg	0.072	0.011	1	07/01/19 11:21	07/01/19 16:30	79-01-6	
Trichlorofluoromethane	<0.13	mg/kg	0.29	0.13	1	07/01/19 11:21	07/01/19 16:30	75-69-4	
Vinyl acetate	<0.0083	mg/kg	0.72	0.0083	1	07/01/19 11:21	07/01/19 16:30	108-05-4	
Vinyl chloride	<0.014	mg/kg	0.029	0.014	1	07/01/19 11:21	07/01/19 16:30	75-01-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Sample: SB206-30' **Lab ID: 10480346006** Collected: 06/19/19 10:35 Received: 06/21/19 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level		Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B							
cis-1,2-Dichloroethene	<0.012	mg/kg	0.072	0.012	1	07/01/19 11:21	07/01/19 16:30	156-59-2	
cis-1,3-Dichloropropene	<0.010	mg/kg	0.072	0.010	1	07/01/19 11:21	07/01/19 16:30	10061-01-5	
m&p-Xylene	<0.0089	mg/kg	0.14	0.0089	1	07/01/19 11:21	07/01/19 16:30	179601-23-1	
o-Xylene	<0.017	mg/kg	0.072	0.017	1	07/01/19 11:21	07/01/19 16:30	95-47-6	
trans-1,2-Dichloroethene	<0.034	mg/kg	0.072	0.034	1	07/01/19 11:21	07/01/19 16:30	156-60-5	
trans-1,3-Dichloropropene	<0.010	mg/kg	0.072	0.010	1	07/01/19 11:21	07/01/19 16:30	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	130	%	75-125		1	07/01/19 11:21	07/01/19 16:30	17060-07-0	S3
Toluene-d8 (S)	103	%	75-125		1	07/01/19 11:21	07/01/19 16:30	2037-26-5	
4-Bromofluorobenzene (S)	101	%	75-125		1	07/01/19 11:21	07/01/19 16:30	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Sample: **SB206-35'** Lab ID: **10480346007** Collected: 06/19/19 10:45 Received: 06/21/19 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974		Analytical Method: ASTM D2974							
Percent Moisture	28.0	%	0.10	0.10	1		07/05/19 11:37		
8260B MSV 5030 Med Level		Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B							
1,1,1-Trichloroethane	<0.033	mg/kg	0.071	0.033	1	07/01/19 11:21	07/01/19 16:48	71-55-6	
1,1,2,2-Tetrachloroethane	<0.013	mg/kg	0.071	0.013	1	07/01/19 11:21	07/01/19 16:48	79-34-5	
1,1,2-Trichloroethane	<0.0085	mg/kg	0.071	0.0085	1	07/01/19 11:21	07/01/19 16:48	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.083	mg/kg	0.28	0.083	1	07/01/19 11:21	07/01/19 16:48	76-13-1	
1,1-Dichloroethane	<0.0080	mg/kg	0.071	0.0080	1	07/01/19 11:21	07/01/19 16:48	75-34-3	
1,1-Dichloroethene	<0.021	mg/kg	0.28	0.021	1	07/01/19 11:21	07/01/19 16:48	75-35-4	
1,2,4-Trichlorobenzene	<0.016	mg/kg	0.071	0.016	1	07/01/19 11:21	07/01/19 16:48	120-82-1	
1,2,4-Trimethylbenzene	<0.014	mg/kg	0.071	0.014	1	07/01/19 11:21	07/01/19 16:48	95-63-6	
1,2-Dibromoethane (EDB)	<0.0075	mg/kg	0.071	0.0075	1	07/01/19 11:21	07/01/19 16:48	106-93-4	
1,2-Dichlorobenzene	<0.0029	mg/kg	0.071	0.0029	1	07/01/19 11:21	07/01/19 16:48	95-50-1	
1,2-Dichloroethane	<0.0078	mg/kg	0.071	0.0078	1	07/01/19 11:21	07/01/19 16:48	107-06-2	
1,3,5-Trimethylbenzene	<0.011	mg/kg	0.071	0.011	1	07/01/19 11:21	07/01/19 16:48	108-67-8	
1,3-Dichlorobenzene	<0.0026	mg/kg	0.071	0.0026	1	07/01/19 11:21	07/01/19 16:48	541-73-1	
1,4-Dichlorobenzene	<0.0044	mg/kg	0.071	0.0044	1	07/01/19 11:21	07/01/19 16:48	106-46-7	
2-Butanone (MEK)	<0.038	mg/kg	0.36	0.038	1	07/01/19 11:21	07/01/19 16:48	78-93-3	
2-Hexanone	<0.016	mg/kg	0.36	0.016	1	07/01/19 11:21	07/01/19 16:48	591-78-6	
4-Methyl-2-pentanone (MIBK)	<0.015	mg/kg	0.36	0.015	1	07/01/19 11:21	07/01/19 16:48	108-10-1	
Acetone	<0.44	mg/kg	1.4	0.44	1	07/01/19 11:21	07/01/19 16:48	67-64-1	
Benzene	<0.0040	mg/kg	0.028	0.0040	1	07/01/19 11:21	07/01/19 16:48	71-43-2	
Bromodichloromethane	<0.024	mg/kg	0.071	0.024	1	07/01/19 11:21	07/01/19 16:48	75-27-4	
Bromoform	<0.11	mg/kg	0.28	0.11	1	07/01/19 11:21	07/01/19 16:48	75-25-2	
Bromomethane	<0.083	mg/kg	0.71	0.083	1	07/01/19 11:21	07/01/19 16:48	74-83-9	
Carbon tetrachloride	<0.034	mg/kg	0.28	0.034	1	07/01/19 11:21	07/01/19 16:48	56-23-5	
Chlorobenzene	<0.0040	mg/kg	0.071	0.0040	1	07/01/19 11:21	07/01/19 16:48	108-90-7	
Chloroethane	<0.037	mg/kg	0.71	0.037	1	07/01/19 11:21	07/01/19 16:48	75-00-3	
Chloroform	<0.036	mg/kg	0.071	0.036	1	07/01/19 11:21	07/01/19 16:48	67-66-3	
Chloromethane	<0.017	mg/kg	0.28	0.017	1	07/01/19 11:21	07/01/19 16:48	74-87-3	
Dibromochloromethane	<0.0083	mg/kg	0.28	0.0083	1	07/01/19 11:21	07/01/19 16:48	124-48-1	
Dichlorodifluoromethane	<0.023	mg/kg	0.28	0.023	1	07/01/19 11:21	07/01/19 16:48	75-71-8	
Ethylbenzene	<0.0039	mg/kg	0.071	0.0039	1	07/01/19 11:21	07/01/19 16:48	100-41-4	
Hexachloro-1,3-butadiene	<0.017	mg/kg	0.36	0.017	1	07/01/19 11:21	07/01/19 16:48	87-68-3	
Methyl-tert-butyl ether	<0.0085	mg/kg	0.071	0.0085	1	07/01/19 11:21	07/01/19 16:48	1634-04-4	
Methylene Chloride	<0.13	mg/kg	0.28	0.13	1	07/01/19 11:21	07/01/19 16:48	75-09-2	
Naphthalene	<0.067	mg/kg	0.28	0.067	1	07/01/19 11:21	07/01/19 16:48	91-20-3	
Styrene	<0.0032	mg/kg	0.071	0.0032	1	07/01/19 11:21	07/01/19 16:48	100-42-5	
Tetrachloroethene	<0.025	mg/kg	0.071	0.025	1	07/01/19 11:21	07/01/19 16:48	127-18-4	
Tetrahydrofuran	<0.10	mg/kg	2.8	0.10	1	07/01/19 11:21	07/01/19 16:48	109-99-9	
Toluene	<0.017	mg/kg	0.071	0.017	1	07/01/19 11:21	07/01/19 16:48	108-88-3	
Trichloroethene	<0.011	mg/kg	0.071	0.011	1	07/01/19 11:21	07/01/19 16:48	79-01-6	
Trichlorofluoromethane	<0.12	mg/kg	0.28	0.12	1	07/01/19 11:21	07/01/19 16:48	75-69-4	
Vinyl acetate	<0.0082	mg/kg	0.71	0.0082	1	07/01/19 11:21	07/01/19 16:48	108-05-4	
Vinyl chloride	<0.014	mg/kg	0.028	0.014	1	07/01/19 11:21	07/01/19 16:48	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Sample: SB206-35' Lab ID: 10480346007 Collected: 06/19/19 10:45 Received: 06/21/19 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level		Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B							
cis-1,2-Dichloroethene	<0.012	mg/kg	0.071	0.012	1	07/01/19 11:21	07/01/19 16:48	156-59-2	
cis-1,3-Dichloropropene	<0.010	mg/kg	0.071	0.010	1	07/01/19 11:21	07/01/19 16:48	10061-01-5	
m&p-Xylene	<0.0088	mg/kg	0.14	0.0088	1	07/01/19 11:21	07/01/19 16:48	179601-23-1	
o-Xylene	<0.017	mg/kg	0.071	0.017	1	07/01/19 11:21	07/01/19 16:48	95-47-6	
trans-1,2-Dichloroethene	<0.033	mg/kg	0.071	0.033	1	07/01/19 11:21	07/01/19 16:48	156-60-5	
trans-1,3-Dichloropropene	<0.0099	mg/kg	0.071	0.0099	1	07/01/19 11:21	07/01/19 16:48	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	128	%	75-125		1	07/01/19 11:21	07/01/19 16:48	17060-07-0	S3
Toluene-d8 (S)	99	%	75-125		1	07/01/19 11:21	07/01/19 16:48	2037-26-5	
4-Bromofluorobenzene (S)	102	%	75-125		1	07/01/19 11:21	07/01/19 16:48	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Sample: **SB206-40'** Lab ID: **10480346008** Collected: 06/19/19 11:15 Received: 06/21/19 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974		Analytical Method: ASTM D2974							
Percent Moisture	24.9	%	0.10	0.10	1		07/05/19 11:38		
8260B MSV 5030 Med Level		Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B							
1,1,1-Trichloroethane	<0.033	mg/kg	0.070	0.033	1	07/01/19 11:21	07/01/19 17:06	71-55-6	
1,1,2,2-Tetrachloroethane	<0.012	mg/kg	0.070	0.012	1	07/01/19 11:21	07/01/19 17:06	79-34-5	
1,1,2-Trichloroethane	<0.0084	mg/kg	0.070	0.0084	1	07/01/19 11:21	07/01/19 17:06	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.081	mg/kg	0.28	0.081	1	07/01/19 11:21	07/01/19 17:06	76-13-1	
1,1-Dichloroethane	<0.0079	mg/kg	0.070	0.0079	1	07/01/19 11:21	07/01/19 17:06	75-34-3	
1,1-Dichloroethene	<0.021	mg/kg	0.28	0.021	1	07/01/19 11:21	07/01/19 17:06	75-35-4	
1,2,4-Trichlorobenzene	<0.016	mg/kg	0.070	0.016	1	07/01/19 11:21	07/01/19 17:06	120-82-1	
1,2,4-Trimethylbenzene	<0.014	mg/kg	0.070	0.014	1	07/01/19 11:21	07/01/19 17:06	95-63-6	
1,2-Dibromoethane (EDB)	<0.0074	mg/kg	0.070	0.0074	1	07/01/19 11:21	07/01/19 17:06	106-93-4	
1,2-Dichlorobenzene	<0.0028	mg/kg	0.070	0.0028	1	07/01/19 11:21	07/01/19 17:06	95-50-1	
1,2-Dichloroethane	<0.0077	mg/kg	0.070	0.0077	1	07/01/19 11:21	07/01/19 17:06	107-06-2	
1,3,5-Trimethylbenzene	<0.011	mg/kg	0.070	0.011	1	07/01/19 11:21	07/01/19 17:06	108-67-8	
1,3-Dichlorobenzene	<0.0025	mg/kg	0.070	0.0025	1	07/01/19 11:21	07/01/19 17:06	541-73-1	
1,4-Dichlorobenzene	<0.0043	mg/kg	0.070	0.0043	1	07/01/19 11:21	07/01/19 17:06	106-46-7	
2-Butanone (MEK)	<0.037	mg/kg	0.35	0.037	1	07/01/19 11:21	07/01/19 17:06	78-93-3	
2-Hexanone	<0.016	mg/kg	0.35	0.016	1	07/01/19 11:21	07/01/19 17:06	591-78-6	
4-Methyl-2-pentanone (MIBK)	<0.015	mg/kg	0.35	0.015	1	07/01/19 11:21	07/01/19 17:06	108-10-1	
Acetone	<0.44	mg/kg	1.4	0.44	1	07/01/19 11:21	07/01/19 17:06	67-64-1	
Benzene	<0.0039	mg/kg	0.028	0.0039	1	07/01/19 11:21	07/01/19 17:06	71-43-2	
Bromodichloromethane	<0.024	mg/kg	0.070	0.024	1	07/01/19 11:21	07/01/19 17:06	75-27-4	
Bromoform	<0.11	mg/kg	0.28	0.11	1	07/01/19 11:21	07/01/19 17:06	75-25-2	
Bromomethane	<0.082	mg/kg	0.70	0.082	1	07/01/19 11:21	07/01/19 17:06	74-83-9	
Carbon tetrachloride	<0.033	mg/kg	0.28	0.033	1	07/01/19 11:21	07/01/19 17:06	56-23-5	
Chlorobenzene	<0.0039	mg/kg	0.070	0.0039	1	07/01/19 11:21	07/01/19 17:06	108-90-7	
Chloroethane	<0.036	mg/kg	0.70	0.036	1	07/01/19 11:21	07/01/19 17:06	75-00-3	
Chloroform	<0.035	mg/kg	0.070	0.035	1	07/01/19 11:21	07/01/19 17:06	67-66-3	
Chloromethane	<0.017	mg/kg	0.28	0.017	1	07/01/19 11:21	07/01/19 17:06	74-87-3	
Dibromochloromethane	<0.0081	mg/kg	0.28	0.0081	1	07/01/19 11:21	07/01/19 17:06	124-48-1	
Dichlorodifluoromethane	<0.023	mg/kg	0.28	0.023	1	07/01/19 11:21	07/01/19 17:06	75-71-8	
Ethylbenzene	<0.0038	mg/kg	0.070	0.0038	1	07/01/19 11:21	07/01/19 17:06	100-41-4	
Hexachloro-1,3-butadiene	<0.017	mg/kg	0.35	0.017	1	07/01/19 11:21	07/01/19 17:06	87-68-3	
Methyl-tert-butyl ether	<0.0083	mg/kg	0.070	0.0083	1	07/01/19 11:21	07/01/19 17:06	1634-04-4	
Methylene Chloride	0.14J	mg/kg	0.28	0.13	1	07/01/19 11:21	07/01/19 17:06	75-09-2	
Naphthalene	<0.066	mg/kg	0.28	0.066	1	07/01/19 11:21	07/01/19 17:06	91-20-3	
Styrene	<0.0032	mg/kg	0.070	0.0032	1	07/01/19 11:21	07/01/19 17:06	100-42-5	
Tetrachloroethene	<0.025	mg/kg	0.070	0.025	1	07/01/19 11:21	07/01/19 17:06	127-18-4	
Tetrahydrofuran	<0.10	mg/kg	2.8	0.10	1	07/01/19 11:21	07/01/19 17:06	109-99-9	
Toluene	<0.017	mg/kg	0.070	0.017	1	07/01/19 11:21	07/01/19 17:06	108-88-3	
Trichloroethene	<0.011	mg/kg	0.070	0.011	1	07/01/19 11:21	07/01/19 17:06	79-01-6	
Trichlorofluoromethane	<0.12	mg/kg	0.28	0.12	1	07/01/19 11:21	07/01/19 17:06	75-69-4	
Vinyl acetate	<0.0081	mg/kg	0.70	0.0081	1	07/01/19 11:21	07/01/19 17:06	108-05-4	
Vinyl chloride	<0.014	mg/kg	0.028	0.014	1	07/01/19 11:21	07/01/19 17:06	75-01-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Sample: SB206-40' Lab ID: 10480346008 Collected: 06/19/19 11:15 Received: 06/21/19 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV 5030 Med Level		Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B							
cis-1,2-Dichloroethene	<0.012	mg/kg	0.070	0.012	1	07/01/19 11:21	07/01/19 17:06	156-59-2	
cis-1,3-Dichloropropene	<0.010	mg/kg	0.070	0.010	1	07/01/19 11:21	07/01/19 17:06	10061-01-5	
m&p-Xylene	<0.0087	mg/kg	0.14	0.0087	1	07/01/19 11:21	07/01/19 17:06	179601-23-1	
o-Xylene	<0.016	mg/kg	0.070	0.016	1	07/01/19 11:21	07/01/19 17:06	95-47-6	
trans-1,2-Dichloroethene	<0.033	mg/kg	0.070	0.033	1	07/01/19 11:21	07/01/19 17:06	156-60-5	
trans-1,3-Dichloropropene	<0.0097	mg/kg	0.070	0.0097	1	07/01/19 11:21	07/01/19 17:06	10061-02-6	
Surrogates									
1,2-Dichloroethane-d4 (S)	131	%	75-125		1	07/01/19 11:21	07/01/19 17:06	17060-07-0	S3
Toluene-d8 (S)	98	%	75-125		1	07/01/19 11:21	07/01/19 17:06	2037-26-5	
4-Bromofluorobenzene (S)	105	%	75-125		1	07/01/19 11:21	07/01/19 17:06	460-00-4	

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ANALYTICAL RESULTS

Project: 1497 Freeman WA-Cenex Harvest

Pace Project No.: 10480346

Sample: **SB206-45'** Lab ID: **10480346009** Collected: 06/19/19 11:25 Received: 06/21/19 09:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974		Analytical Method: ASTM D2974							
Percent Moisture	32.7	%	0.10	0.10	1		07/05/19 11:38		
8260B MSV 5030 Med Level		Analytical Method: EPA 8260B Preparation Method: EPA 5035/5030B							
1,1,1-Trichloroethane	<0.035	mg/kg	0.076	0.035	1	07/01/19 18:09	07/02/19 20:47	71-55-6	
1,1,2,2-Tetrachloroethane	<0.013	mg/kg	0.076	0.013	1	07/01/19 18:09	07/02/19 20:47	79-34-5	
1,1,2-Trichloroethane	<0.0090	mg/kg	0.076	0.0090	1	07/01/19 18:09	07/02/19 20:47	79-00-5	
1,1,2-Trichlorotrifluoroethane	<0.088	mg/kg	0.30	0.088	1	07/01/19 18:09	07/02/19 20:47	76-13-1	
1,1-Dichloroethane	<0.0085	mg/kg	0.076	0.0085	1	07/01/19 18:09	07/02/19 20:47	75-34-3	
1,1-Dichloroethene	<0.023	mg/kg	0.076	0.023	1	07/01/19 18:09	07/02/19 20:47	75-35-4	
1,2,4-Trichlorobenzene	<0.017	mg/kg	0.076	0.017	1	07/01/19 18:09	07/02/19 20:47	120-82-1	
1,2,4-Trimethylbenzene	<0.015	mg/kg	0.076	0.015	1	07/01/19 18:09	07/02/19 20:47	95-63-6	
1,2-Dibromoethane (EDB)	<0.0080	mg/kg	0.076	0.0080	1	07/01/19 18:09	07/02/19 20:47	106-93-4	
1,2-Dichlorobenzene	<0.0031	mg/kg	0.076	0.0031	1	07/01/19 18:09	07/02/19 20:47	95-50-1	
1,2-Dichloroethane	<0.0083	mg/kg	0.076	0.0083	1	07/01/19 18:09	07/02/19 20:47	107-06-2	
1,3,5-Trimethylbenzene	<0.012	mg/kg	0.076	0.012	1	07/01/19 18:09	07/02/19 20:47	108-67-8	
1,3-Dichlorobenzene	<0.0028	mg/kg	0.076	0.0028	1	07/01/19 18:09	07/02/19 20:47	541-73-1	
1,4-Dichlorobenzene	<0.0047	mg/kg	0.076	0.0047	1	07/01/19 18:09	07/02/19 20:47	106-46-7	
2-Butanone (MEK)	<0.040	mg/kg	0.38	0.040	1	07/01/19 18:09	07/02/19 20:47	78-93-3	
2-Hexanone	<0.017	mg/kg	0.38	0.017	1	07/01/19 18:09	07/02/19 20:47	591-78-6	
4-Methyl-2-pentanone (MIBK)	<0.016	mg/kg	0.38	0.016	1	07/01/19 18:09	07/02/19 20:47	108-10-1	
Acetone	<0.47	mg/kg	1.5	0.47	1	07/01/19 18:09	07/02/19 20:47	67-64-1	
Benzene	<0.0043	mg/kg	0.030	0.0043	1	07/01/19 18:09	07/02/19 20:47	71-43-2	
Bromodichloromethane	<0.026	mg/kg	0.076	0.026	1	07/01/19 18:09	07/02/19 20:47	75-27-4	
Bromoform	<0.11	mg/kg	0.30	0.11	1	07/01/19 18:09	07/02/19 20:47	75-25-2	
Bromomethane	<0.089	mg/kg	0.76	0.089	1	07/01/19 18:09	07/02/19 20:47	74-83-9	
Carbon tetrachloride	<0.036	mg/kg	0.076	0.036	1	07/01/19 18:09	07/02/19 20:47	56-23-5	
Chlorobenzene	<0.0043	mg/kg	0.076	0.0043	1	07/01/19 18:09	07/02/19 20:47	108-90-7	
Chloroethane	<0.039	mg/kg	0.76	0.039	1	07/01/19 18:09	07/02/19 20:47	75-00-3	
Chloroform	<0.038	mg/kg	0.30	0.038	1	07/01/19 18:09	07/02/19 20:47	67-66-3	
Chloromethane	<0.018	mg/kg	0.30	0.018	1	07/01/19 18:09	07/02/19 20:47	74-87-3	
Dibromochloromethane	<0.0088	mg/kg	0.30	0.0088	1	07/01/19 18:09	07/02/19 20:47	124-48-1	
Dichlorodifluoromethane	<0.025	mg/kg	0.30	0.025	1	07/01/19 18:09	07/02/19 20:47	75-71-8	
Ethylbenzene	<0.0041	mg/kg	0.076	0.0041	1	07/01/19 18:09	07/02/19 20:47	100-41-4	
Hexachloro-1,3-butadiene	<0.018	mg/kg	0.38	0.018	1	07/01/19 18:09	07/02/19 20:47	87-68-3	
Methyl-tert-butyl ether	<0.0090	mg/kg	0.076	0.0090	1	07/01/19 18:09	07/02/19 20:47	1634-04-4	
Methylene Chloride	<0.14	mg/kg	0.30	0.14	1	07/01/19 18:09	07/02/19 20:47	75-09-2	
Naphthalene	<0.071	mg/kg	0.30	0.071	1	07/01/19 18:09	07/02/19 20:47	91-20-3	
Styrene	<0.0035	mg/kg	0.076	0.0035	1	07/01/19 18:09	07/02/19 20:47	100-42-5	
Tetrachloroethene	<0.027	mg/kg	0.076	0.027	1	07/01/19 18:09	07/02/19 20:47	127-18-4	
Tetrahydrofuran	<0.11	mg/kg	3.0	0.11	1	07/01/19 18:09	07/02/19 20:47	109-99-9	
Toluene	<0.018	mg/kg	0.076	0.018	1	07/01/19 18:09	07/02/19 20:47	108-88-3	
Trichloroethene	<0.012	mg/kg	0.076	0.012	1	07/01/19 18:09	07/02/19 20:47	79-01-6	
Trichlorofluoromethane	<0.13	mg/kg	0.30	0.13	1	07/01/19 18:09	07/02/19 20:47	75-69-4	
Vinyl acetate	<0.0088	mg/kg	0.76	0.0088	1	07/01/19 18:09	07/02/19 20:47	108-05-4	
Vinyl chloride	<0.015	mg/kg	0.030	0.015	1	07/01/19 18:09	07/02/19 20:47	75-01-4	

REPORT OF LABORATORY ANALYSIS

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