

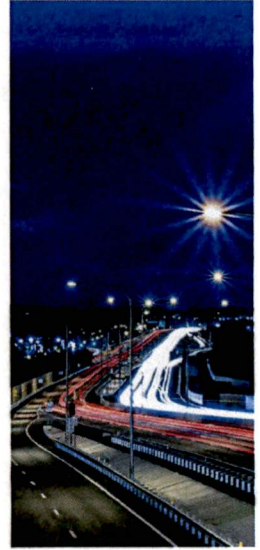
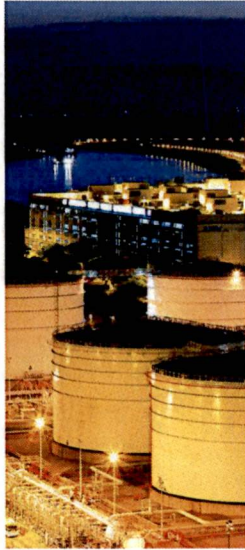
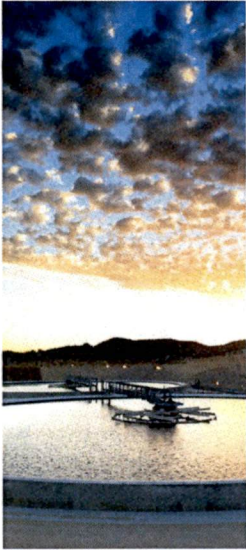
Texaco Station Maple Valley  
LUST 3431 NW 2995  
Maple Valley



RECEIVED

APR 04 2016

DEPT OF ECOLOGY  
TCP - NWRO



## 2015 Annual Groundwater Monitoring Report

Jackson's Food Store No. 5017  
21641 Maple Valley Highway  
Maple Valley, Washington

20818 44th Ave. West, Suite 190 Lynnwood Washington 98036  
062308 | Report No 1 | March 24 2016



RECEIVED

APR 04 2016

DEPT OF ECOLOGY  
TCP - NWRO

**Transmittal**

Date: March 29, 2016

Reference No.: 062308

To: Sonia Fernandez  
Department of Ecology, NW Region  
3190 160th Ave SE  
Bellevue, WA 98008-5452

Subject: 2015 Annual Groundwater Monitoring Report

No. of Copies	Description/Title	Drawing No./ Document Ref.	Issue
1	2015 Annual Groundwater Monitoring Report		

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 Your approval/comments       Returned to you       For re-submission

Sent by:  Overnight courier       Same day courier       Mailed under separate cover       Mail enclosed

Remarks:

Copy to: \_\_\_\_\_  
Completed by: Christina McClelland  
[Please Print]

Signed:

Filing: Correspondence File

## Table of Contents

1.	Introduction .....	1
1.1	Site Information .....	1
2.	Site Activities and Findings.....	1
2.1	Current Activities .....	1
2.2	Findings.....	1

## Figure Index

Figure 1	Vicinity Map
Figure 2	Groundwater Contour and Chemical Concentration Map – June 19, 2015
Figure 3	Groundwater Contour and Chemical Concentration Map – August 26, 2015
Figure 4	Groundwater Contour and Chemical Concentration Map – November 12, 2015

## Table Index

Table 1	Summary of Groundwater Monitoring Data
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## Appendices

Appendix A	Field Forms
Appendix B	Laboratory Analytical Reports

# 1. Introduction

GHD Services, Inc. (GHD) prepared this report on behalf of Jackson's Food Stores. This annual report includes all groundwater monitoring data collected in 2015.

## 1.1 Site Information

Site Address	21641 Maple Valley Highway, Maple Valley, WA
Site Use	Jackson's Food Store No. 5017
GHD Project Manager	Brian Peters
Lead Agency and Contact Fernandez	Washington State Department of Ecology, Sonia
Agency Case No.	23177881
VCP No.	NW2995

# 2. Site Activities and Findings

## 2.1 Current Activities

Blaine Tech Services, Inc. (Blaine) gauged and sampled wells according to the established monitoring program during 2015.

GHD prepared a vicinity map (Figure 1) and groundwater contour and chemical concentration maps (Figure 2 through 4). GHD prepared Table 1 summarizing groundwater monitoring data and laboratory analytical results. Field forms and the laboratory analytical reports are included as Appendices A and B, respectively.

## 2.2 Findings

Quarter/Date	2 <sup>nd</sup> /June 19, 2015
Groundwater Flow Direction	Estimated to the west
Hydraulic Gradient	0.01 foot/foot
Depth to Water	11.59 to 14.43 feet below top of well casing
Quarter/Date	3 <sup>rd</sup> /August 26, 2015
Groundwater Flow Direction	Estimated to the west
Hydraulic Gradient	0.01 foot/foot
Depth to Water	12.10 to 14.80 feet below top of well casing

Quarter/Date	4 <sup>th</sup> /November 12, 2015
Groundwater Flow Direction	Estimated to the west
Hydraulic Gradient	0.009 foot/foot
Depth to Water	11.99 to 14.35 feet below top of well casing

All of Which is Respectfully Submitted,

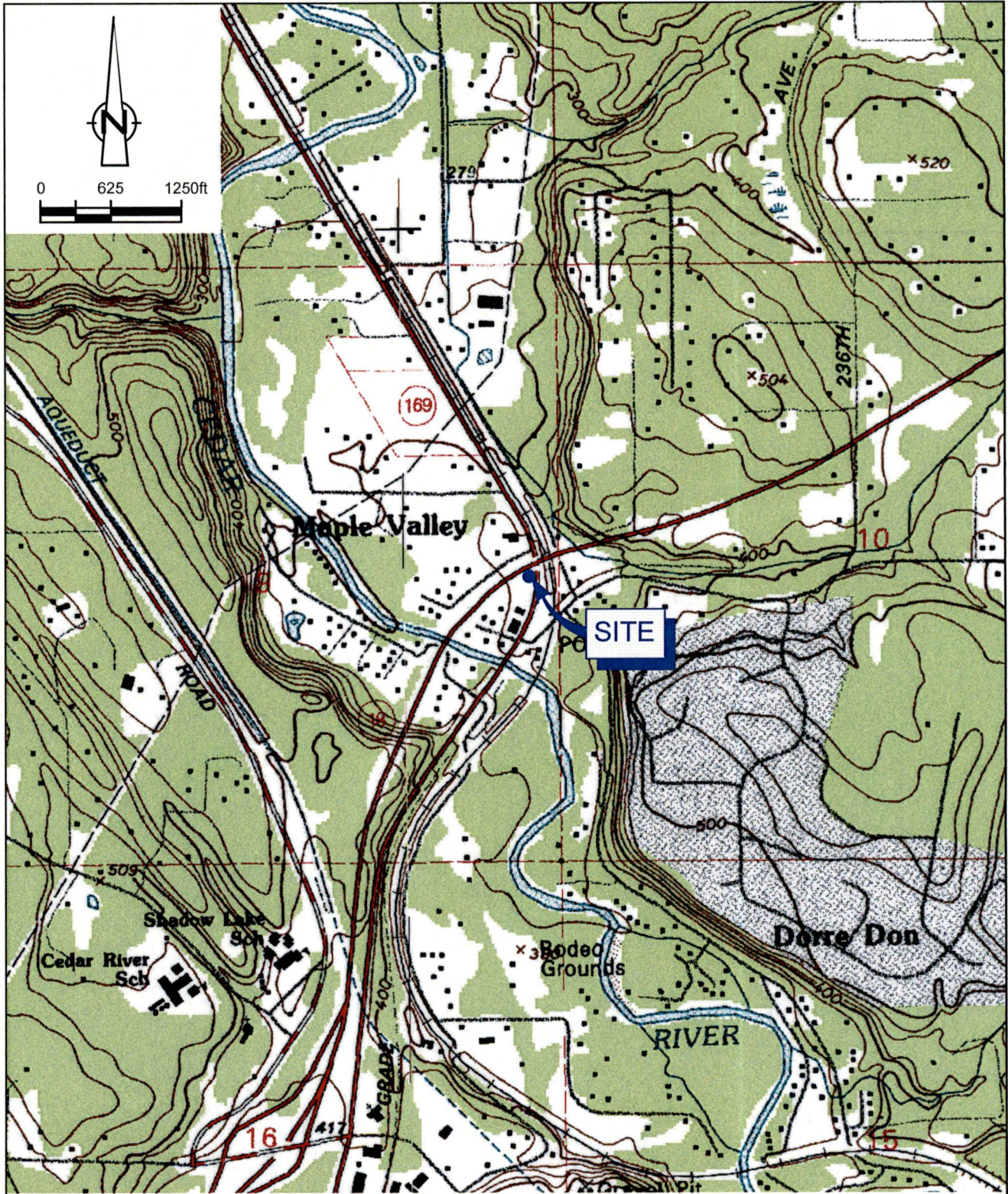
GHD

  
Christina McClelland

  
Brian Peters, LG



# Figures

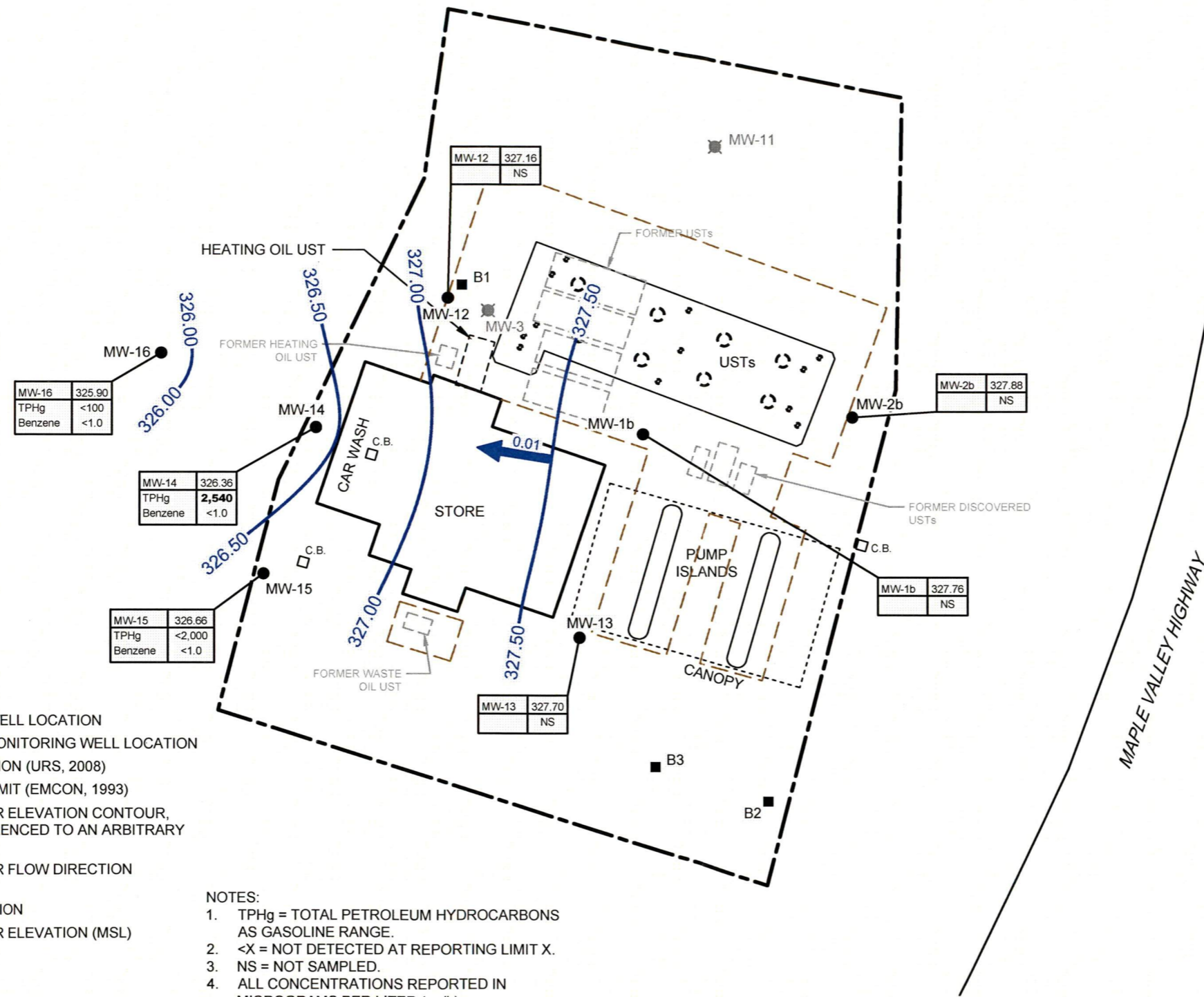
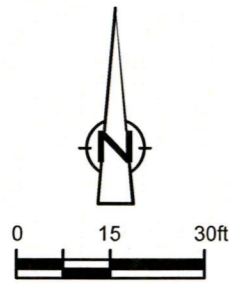


SOURCE: USGS QUADRANGLE MAP: MAPLE VALLEY, WA.

figure 1

VICINITY MAP  
 JACKSON'S FOOD STORE NO. 501  
 21641 MAPLE VALLEY HIGHWAY  
 Maple Valley, Washington





**LEGEND**

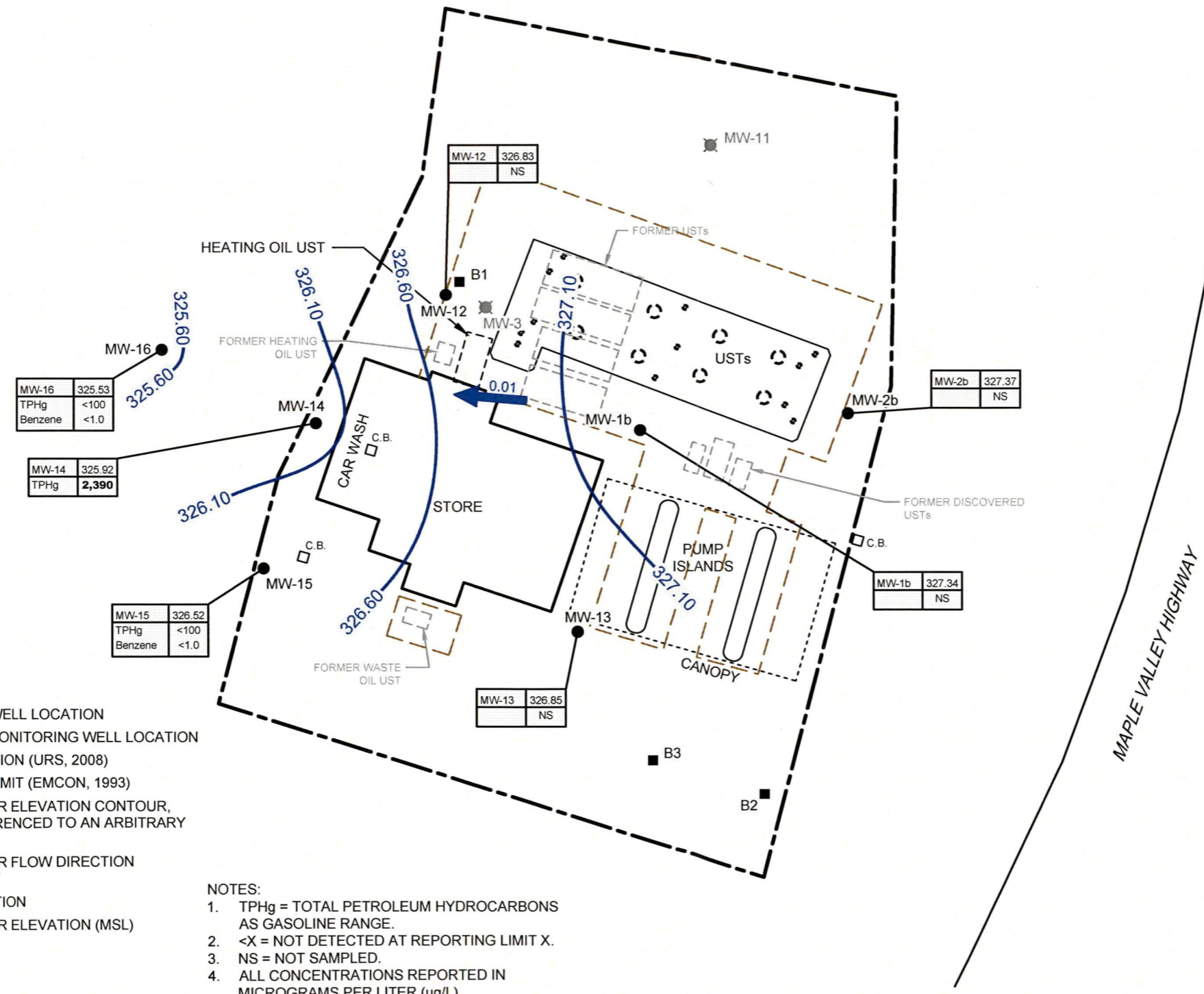
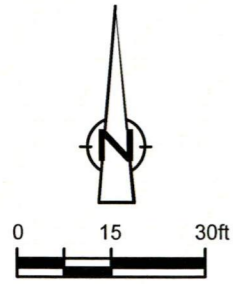
- MW-1 ● MONITORING WELL LOCATION
- MW-11 ■ ABANDONED MONITORING WELL LOCATION
- B1 ■ BORING LOCATION (URS, 2008)
- EXCAVATION LIMIT (EMCON, 1993)
- 327.30 — GROUNDWATER ELEVATION CONTOUR, IN FEET, REFERENCED TO AN ARBITRARY DATUM
- 0.02 → GROUNDWATER FLOW DIRECTION AND GRADIENT
- C.B. SAMPLE LOCATION

MW-15	326.77	GROUNDWATER ELEVATION (MSL)
TPHg	<100	RESULT
Benzene	<1.00	PARAMETER

**NOTES:**

1. TPHg = TOTAL PETROLEUM HYDROCARBONS AS GASOLINE RANGE.
2. <X = NOT DETECTED AT REPORTING LIMIT X.
3. NS = NOT SAMPLED.
4. ALL CONCENTRATIONS REPORTED IN MICROGRAMS PER LITER (µg/L)

figure 2  
**GROUNDWATER CONTOUR AND CHEMICAL CONCENTRATION MAP - JUNE 19, 2015**  
**JACKSON'S FOOD STORE NO. 5017**  
**21641 MAPLE VALLEY HIGHWAY**  
*Maple Valley, Washington*



**LEGEND**

- MW-1 ● MONITORING WELL LOCATION
- MW-11 ◻ ABANDONED MONITORING WELL LOCATION
- B1 ■ BORING LOCATION (URS, 2008)
- - - EXCAVATION LIMIT (EMCON, 1993)
- 327.30 — GROUNDWATER ELEVATION CONTOUR, IN FEET, REFERENCED TO AN ARBITRARY DATUM
- 0.02 → GROUNDWATER FLOW DIRECTION AND GRADIENT
- ◻ SAMPLE LOCATION
- ◻ GROUNDWATER ELEVATION (MSL)

MW-15	326.77
TPHg	<100
Benzene	<1.00

RESULT  
PARAMETER

- NOTES:**
1. TPHg = TOTAL PETROLEUM HYDROCARBONS AS GASOLINE RANGE.
  2. <X = NOT DETECTED AT REPORTING LIMIT X.
  3. NS = NOT SAMPLED.
  4. ALL CONCENTRATIONS REPORTED IN MICROGRAMS PER LITER (µg/L)

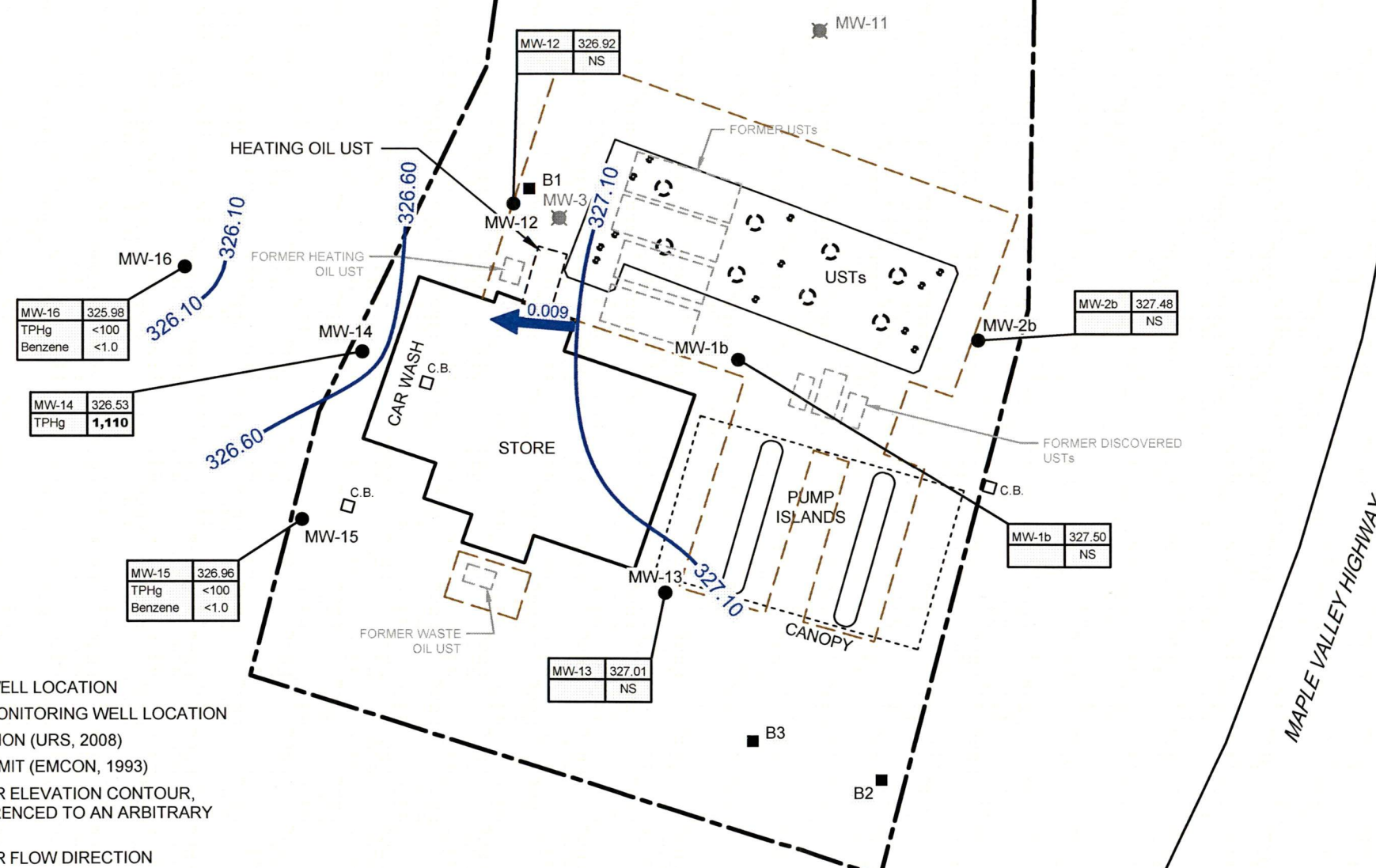
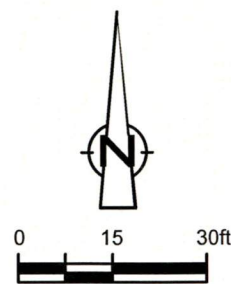
figure 3

GROUNDWATER CONTOUR AND CHEMICAL CONCENTRATION MAP - AUGUST 26, 2015  
 JACKSON'S FOOD STORE NO. 5017  
 21641 MAPLE VALLEY HIGHWAY  
 Maple Valley, Washington



SOURCE:  
 DELTA CONSULTANTS, FIGURE 2, GROUNDWATER ELEVATION CONTOUR MAP, DATED 5/2/07;  
 STATEWIDE LAND SURVEYING INC. DATED 5/19/14.

NOTE:  
 WASHINGTON STATE PLANE COORDINATE SYSTEM NAD 83/CORS 96,  
 NORTH ZONE 4601, IN U.S. SURVEY FEET.



**LEGEND**

- MW-1 ● MONITORING WELL LOCATION
- MW-11 ■ ABANDONED MONITORING WELL LOCATION
- B1 ■ BORING LOCATION (URS, 2008)
- - - EXCAVATION LIMIT (EMCON, 1993)
- 327.30— GROUNDWATER ELEVATION CONTOUR, IN FEET, REFERENCED TO AN ARBITRARY DATUM
- 0.02 → GROUNDWATER FLOW DIRECTION AND GRADIENT
- C.B. SAMPLE LOCATION
- |         |        |
|---------|--------|
| MW-15   | 326.77 |
| TPHg    | <100   |
| Benzene | <1.00  |

 GROUNDWATER ELEVATION (MSL)
- |         |        |
|---------|--------|
| MW-15   | 326.77 |
| TPHg    | <100   |
| Benzene | <1.00  |

 RESULT
- PARAMETER

- NOTES:**
1. TPHg = TOTAL PETROLEUM HYDROCARBONS AS GASOLINE RANGE.
  2. <X = NOT DETECTED AT REPORTING LIMIT X.
  3. NS = NOT SAMPLED.
  4. ALL CONCENTRATIONS REPORTED IN MICROGRAMS PER LITER (µg/L)

figure 4

**GROUNDWATER CONTOUR AND CHEMICAL CONCENTRATION MAP - NOVEMBER 12, 2015**  
**JACKSON'S FOOD STORE NO. 5017**  
**21641 MAPLE VALLEY HIGHWAY**  
*Maple Valley, Washington*



SOURCE:  
 DELTA CONSULTANTS, FIGURE 2, GROUNDWATER ELEVATION CONTOUR MAP, DATED 5/2/07;  
 STATEWIDE LAND SURVEYING INC. DATED 5/19/14.  
 NOTE:  
 WASHINGTON STATE PLANE COORDINATE SYSTEM NAD 83/CORS 96,  
 NORTH ZONE 4601, IN U.S. SURVEY FEET.

# Tables

Table 1

Summary of Groundwater Monitoring Data  
 Shell-Branded Wholesale Facility  
 21641 Maple Valley Highway  
 Maple Valley, Washington

Sample ID	Date	TOC	DTW	SPH	GWE	Hydrocarbons			VOCs											Metals	PAHs	PCBs		
						TPHg	TPHd	TPHo	B	T	E	X	EDB	EDC	MTBE	TBA	DIPE	ETBE	TAME	PCE	Ethanol	Total Lead	Naphthalene	Total
	Model	Control	Act	Method	A	800/1000	500	500	5	1000	700	1000	0.01	5	20	N/A	N/A	N/A	N/A	5	N/A	15	160	0.1
	Method	Act	Method	A	Cleanup	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-1b	06/18/14	340.54	12.53	---	328.01	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-1b	09/04/14	340.54	12.75	---	327.79	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-1b	12/22/14	340.54	12.51	---	328.03	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-1b	06/19/15	340.54	12.78	---	327.76	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-1b	08/26/15	340.54	13.20	---	327.34	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-1b	11/12/15	340.54	13.04	---	327.50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-2b	06/18/14	339.47	11.45	---	328.02	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-2b	09/04/14	339.47	11.14	---	328.33	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-2b	12/22/14	339.47	11.45	---	328.02	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-2b	06/19/15	339.47	11.59	---	327.88	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-2b	08/26/15	339.47	12.10	---	327.37	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-2b	11/12/15	339.47	11.99	---	327.48	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-12	06/18/14	340.34	13.74	---	326.60	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-12	09/04/14	340.34	13.03	---	327.31	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-12	12/22/14	340.34	12.80	---	327.54	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-12	06/19/15	340.34	13.18	---	327.16	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-12	08/26/15	340.34	13.51	---	326.83	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-12	11/12/15	340.34	13.42	---	326.92	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-13	06/18/14	340.16	12.58	---	327.58	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-13	09/04/14	340.16	12.81	---	327.35	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-13	12/22/14	340.16	12.51	---	327.65	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-13	06/19/15	340.16	12.46	---	327.70	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-13	08/26/15	340.16	13.31	---	326.85	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-13	11/12/15	340.16	13.15	---	327.01	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-14	06/12/14	340.34	13.74	---	326.60	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-14	06/18/14	340.34	13.74	---	326.60	3,520	a	<93.9 / <93.9 a	<1.00	0.255 J	<1.00	0.740 J	0.255 J	0.385 J	<1.00	---	---	---	---	1.61 b	---	4.96	0.895 J	---
MW-14	09/04/14	340.34	13.93	---	326.41	3,160	831 / 972 a	<94.3 / <98.0 a	<1.00	<1.00	<1.00	<2.00	<0.210	<1.00	<1.00	---	---	---	---	1.65	---	5.13	<5.00	---
MW-14	12/22/14	340.34	13.71	---	326.63	2,250	979 / 1,230 a	<93.9 / <93.9 a	<1.00	<1.00	<1.00	<2.00	<0.210	<1.00	<1.00	<10.0	<2.00	<1.00	<1.00	2.09	---	5.85	<5.00	---
MW-14	06/19/15	340.34	13.98	---	326.36	2,540	<400	<400	<1.0	<1.0	<1.0	<3.0	<0.0096	---	---	---	---	---	---	---	---	---	---	---
MW-14	08/26/15	340.34	14.42	---	325.92	2,390	<400	<400	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-14	11/12/15	340.34	13.81	---	326.53	1,110	<400	<400	---	---	---	---	<0.0098	---	---	---	---	---	---	---	---	---	---	---
MW-15	06/12/14	340.16	12.75	---	327.41	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-15	06/18/14	340.16	13.19	---	326.97	<100	a	a	<1.00	<1.00	<1.00	<2.00	<0.210	<1.00	<1.00	---	---	---	---	2.02 b	---	<2	<5.00	---
MW-15	09/04/14	340.16	13.39	---	326.77	<100	a	<94.3 / <98.0 a	<1.00	<1.00	<1.00	<2.00	<0.210	<1.00	<1.00	---	---	---	---	2.51	---	<2	<5.00	---
MW-15	12/22/14	340.16	13.19	---	326.97	<100	a	<93.9 / <93.9 a	<1.00	<1.00	<1.00	<2.00	<0.210	<1.00	<1.00	<10.0	<2.00	<1.00	<1.00	2.34	---	<2	<5.00	---
MW-15	06/19/15	340.16	13.50	---	326.66	<2,000	<400	<400	<1.0	<1.0	<1.0	<3.0	---	---	---	---	---	---	---	---	---	---	---	---



# Appendices

# **Appendix A**

## **Field Forms**

## WELL GAUGING DATA

Project # 150619-LB1 Date 6/19/15 Client CRA

Site 21641 MAPLE VALLEY HWY, MAPLE VALLEY, WA

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or <del>TOP</del>	Notes
MW-1b	0826	2					12.78	24.43		
MW-2b	0837	2					11.59	24.01		
MW-12	0842	4					13.18	19.98		
MW-13	0831	4					12.46	19.95		
MW-14	0828	2					13.98	19.91		
MW-5	0815	2					13.50	19.99		
MW-16	0846	2					14.43	25.72	↓	

## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>150619-LB1</u>	Client: <u>CRA</u>
Sampler: <u>LB</u>	Gauging Date: <u>6/19/15</u>
Well I.D.: <u>MW-14</u>	Well Diameter (in.): <u>3</u> 4 6 8
Total Well Depth (ft.): <u>19.91</u>	Depth to Water (ft.): <u>13.98</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>YSI 556</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1006      Flow Rate: 100 mL/MIN      Pump Depth: 16.5'

Time	Temp. ( <del>C</del> or °F)	pH	Cond. (mS/cm or <del>µS/cm</del> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <del>ml</del> )	Depth to Water (ft.)
1012	12.89	6.30	199	47	0.94	-15.3	600	14.04
1015	12.94	6.38	200	26	0.83	-26.4	900	14.04
1018	12.91	6.35	199	21	0.82	-28.3	1200	14.04
1021	12.92	6.36	198	20	0.81	-29.6	1500	14.04
1024	12.93	6.37	197	19	0.80	-32.3	1800	14.04

Did well dewater? Yes  Amount actually evacuated: 18L

Sampling Time: 1025      Sampling Date: 6/19/15

Sample I.D.: GW-062308-608-061915-MW-14      Laboratory: PACE

Analyzed for:  TPH-G     BTEX     MTBE     TPH-D      Other: SEE COL

Equipment Blank I.D.: \_\_\_\_\_ @ \_\_\_\_\_ Time      Duplicate I.D.: \_\_\_\_\_

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 15061A-LB1	Client: CRA
Sampler: LB	Gauging Date: 6/19/15
Well I.D.: MW-15	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): 19.99	Depth to Water (ft.): 13.50
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 576

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0922      Flow Rate: 100 mL/MIN      Pump Depth: 16'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or gal)	Depth to Water (ft.)
0928	13.53	6.20	185	25	1.78	50.8	600	13.56
0931	13.47	6.18	187	18	1.73	45.8	900	13.56
0934	13.46	6.18	186	5	1.71	44.6	1200	13.56
0937	13.47	6.19	186	5	1.70	43.2	1500	13.56
0940	13.48	6.19	185	6	1.69	42.6	1800	13.56

Did well dewater? Yes <input checked="" type="checkbox"/> No	Amount actually evacuated: 1.8L
Sampling Time: 0941	Sampling Date: 6/19/15
Sample I.D.: GW-062308-008-061915-MW-15	Laboratory: PACE
Analyzed for: TPH, BTEX, MTBE, TPH-D	Other:
Equipment Blank I.D.: @	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 150619-LB1	Client: CRA
Sampler: LB	Gauging Date: 6/19/15
Well I.D.: MW-16	Well Diameter (in.): ② 3 4 6 8
Total Well Depth (ft.): 25.72	Depth to Water (ft.): 14.43
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: P&C Grade	Flow Cell Type: YSI 538

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0652      Flow Rate: 100 mL / MIN      Pump Depth: 17'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
0658	13.30	7.76	185	13	1.33	52.2	600	14.45
0901	13.27	6.81	190	18	1.30	44.8	900	14.45
0904	13.26	6.82	193	11	1.27	43.5	1200	14.45
0907	13.26	6.81	192	12	1.26	42.4	1500	14.45
0910	13.25	6.80	191	13	1.25	41.6	1800	14.45

Did well dewater? Yes  No       Amount actually evacuated: 1.8L

Sampling Time: 0911      Sampling Date: 6/19/15

Sample I.D.: 6W-062308-608-061915-MW-16      Laboratory: PACE

Analyzed for:  TPH  BTEX  MTBE  TPH-D      Other:

Equipment Blank I.D.: @      Duplicate I.D.:



ENVIRONMENTAL WELL, REMEDIATION COMPOUND, AND SITE INSPECTION FORM

INCIDENT #

ADDRESS 21641 MAPLE VALLEY Hwy

DATE: 6/19/15

CITY & STATE MAPLE VALLEY, WA

Well ID	Observations Upon Arrival														Note Repairs Made Detailed Explanation of Maintenance Recommended and Performed	Photos of Well Condition	Repair Date and PM Initials				
	Manway Cover, Type, Condition & Size					Well Labeled / Painted Properly		Well Cap (Gripper) Condition		Well Lock Condition			Well Pad / Surface Condition								
MW-1b	Standpipe	Flush	G	Ⓟ	8	Ⓟ	N	Ⓟ	R	Ⓟ	R	NL	Ⓟ	P	3/3 TABS STRIPPED	Y	Ⓜ				
MW-2b	Standpipe	Flush	G	Ⓟ	8	Ⓟ	N	Ⓟ	R	Ⓟ	R	NL	Ⓟ	P	3/3 TABS STRIPPED	Y	Ⓜ				
MW-12	Standpipe	Flush	G	Ⓟ	12	Ⓟ	N	Ⓟ	R	Ⓟ	R	NL	Ⓟ	P	3/3 TABS STRIPPED	Y	Ⓜ				
MW-13	Standpipe	Flush	G	Ⓟ	12	Ⓟ	N	Ⓟ	R	Ⓟ	R	NL	Ⓟ	P	3/3 TABS STRIPPED	Y	Ⓜ				
MW-14	Standpipe	Flush	Ⓟ	P	8	Ⓟ	N	Ⓟ	R	Ⓟ	R	NL	Ⓟ	P		Y	Ⓜ				
MW-15	Standpipe	Flush	Ⓟ	P	8	Ⓟ	N	Ⓟ	R	Ⓟ	R	NL	Ⓟ	P		Y	Ⓜ				
MW-16	Standpipe	Flush	Ⓟ	P	8	Ⓟ	N	Ⓟ	R	Ⓟ	R	NL	Ⓟ	P		Y	Ⓜ				
	Standpipe	Flush	G	P		Y	N	G	R	G	R	NL	G	P		Y	N				
	Standpipe	Flush	G	P		Y	N	G	R	G	R	NL	G	P		Y	N				
	Standpipe	Flush	G	P		Y	N	G	R	G	R	NL	G	P		Y	N				
	Standpipe	Flush	G	P		Y	N	G	R	G	R	NL	G	P		Y	N				
					TOTAL # CAPS REPLACED = 0								TOTAL # OF LOCKS REPLACED								
Condition of Soil Boring Patches of Abandoned Monitoring Wells			G	P	N/A	If POOR, Boring/Well IDs or Location Description											Y	N			
Remediation Compound Type (Check boxes that apply)		Condition of Enclosure			Condition of Area Inside Enclosure			Compound Security			Emergency Contact Info Visible			Cleaning / Repairs Recommended and Conducted			Photos of Condition	Repair Date and PM Initials			
NA		X																			
Building																					
Building w/ Fence Comp.		G			P			N/A			Y			N			N/A			Y	N
Fenced Compound																					
Trailer																					
Number of Drums On-site	Does the Label Reveal the Source of the Contents		Labeled Correctly and Writing Legible			Drum Condition			Confirm Drums Related to Environmental		Drums Located to Min Business Interference			Detailed Explanation of Any Issues Resolved			Photos of Drum Condition	Date Drums Removed from Site and PM Initials			
0	Y	N	N/A	Y	N	N/A	G	P	N/A	Y	N	Y	N	N/A		Y	N				

G = Good (Acceptable) R = Replaced  
P = Poor (needs attention) NL = No Lock Required

Note: All repairs other than locks and grippers require Shell PM approval prior to repair.

\* = Groundwater monitoring well covers must be painted and labeled in accordance with applicable regulations.

Version 2.4, March 2008

All environmental wells and the remediation compound were in good condition, locked, and secured upon my departure (unless otherwise noted above).

LEE BURES / BCS

Print or type Name of Field Personnel & Consultant Company

SHELL BILL OF LADING

SOURCE RECORD **BILL OF LADING**

FOR NON-HAZARDOUS PURGEWATER RECOVERED FROM GROUNDWATER WELLS AT SHELL FACILITIES IN THE STATE OF WASHINGTON OR OREGON. THE NON-HAZARDOUS PURGE- WATER WHICH HAS BEEN RECOVERED FROM GROUND- WATER WELLS, IS MADE UP INTO LOADS OF APPROPRIATE SIZE TO BE TRANSPORTED & PROCESSED BY A SHELL APPROVED WASTE HAULER.

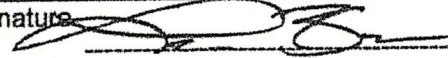
The contractor performing this work is BLAINE TECH SERVICES, INC. 22727 72<sup>ND</sup> Ave South, Suite D - 102, Kent, WA 98032. Blaine Tech Services, Inc. is authorized by SHELL OIL COMPANY (SHELL) to recover, collect, apportion into loads, and haul the Non-Hazardous Well Purgewater that is drawn from wells at the SHELL facility indicated below and to deliver that purgewater to BTS. Transport routing of the Non-Hazardous Well Purgewater may be direct from one Shell facility to BTS; from one Shell facility to BTS via another Shell facility; or any combination thereof. The Non-Hazardous Well Purgewater is and remains the property of SHELL.

This Source Record **BILL OF LADING** was initiated to cover the recovery of Non-Hazardous Well Purgewater from wells at the SHELL facility described below:

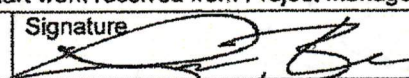
Perry Pineda  
Shell Engineer

INCIDENT # \_\_\_\_\_

21641 MAPLE VALLEY Hwy, MAPLE VALLEY, WA  
street number street name city state

WELL I.D.	GALS.	WELL I.D.	GALS.
MW-14	1 0.5		
MW-15	1 0.5		
MW-10	1 0.5		
	/		/
	/		/
	/		/
	/		/
	/		/
	/		/
added equip.		any other	
rinse water	1 1.5	adjustments	/
<b>TOTAL GALS.</b>		loaded onto	
<b>RECOVERED</b>	<u>3.0</u>	BTS vehicle #	<u>88</u>
BTS event #	time	date	
	<u>1506A-LB1</u>	<u>1050</u>	<u>6/19/15</u>
signature			
*****			
<b>RECEIVED AT</b>	time	date	
<u>BTS Kent</u>		<u>/ /</u>	
unloaded by	signature		
	_____		



Site Address: <b>ZIGAH MAPLE VALLEY HWY, MAPLE VALLEY, ND</b>		Date: <b>6/19/15</b>
Check-In with site representative completed?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A
Is fuel delivery scheduled for today?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Emergency pump cut-off switch located?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A
First aid kit located and confirmed ready-to-use?		<input checked="" type="checkbox"/> Yes
Fire extinguisher located and confirmed ready-to-use?		<input checked="" type="checkbox"/> Yes
Eye wash located and confirmed ready-to-use?		<input checked="" type="checkbox"/> Yes
HASP	Emergency Services information located & reviewed?	<input checked="" type="checkbox"/> Yes
	Hospital map & route located and reviewed?	<input checked="" type="checkbox"/> Yes
	Special Hazard Notice section reviewed?	<input checked="" type="checkbox"/> Yes
	Site Status confirmed or amended, dated and initialed?	<input checked="" type="checkbox"/> Yes
	Emergency Response procedures reviewed with all work crew members?	<input checked="" type="checkbox"/> Yes
	Compliance Roster signed by all work crew members?	<input checked="" type="checkbox"/> Yes
Site walk has been performed to locate wells and identify additional hazards?		<input checked="" type="checkbox"/> Yes
Job Safety Analysis (JSA) for each task located & reviewed by all work crew members?		<input checked="" type="checkbox"/> Yes
Work Area Plans reviewed for suitability and effectiveness given current site conditions?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A
Traffic Control Plans reviewed for suitability given current road, traffic & weather conditions?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A
Stop Work Authority reviewed and understood by all work crew members?		<input checked="" type="checkbox"/> Yes
<ul style="list-style-type: none"> <li>• In the space below, note unaddressed hazards and conditions that might compromise compliance with Approved Procedures and/or JSA's or impede the safe and proper execution of the Work Plan, Work Area Plan(s) and/or Traffic Control Plan(s).</li> <li>• Report unaddressed hazards and adverse conditions to the Project Manager during Pre-Start Call-In and as hazards are identified or conditions change throughout the workday.</li> <li>• DO NOT COMMENCE OR RESTART WORK until PM has been notified and mitigation measures approved.</li> </ul>		
Time	Hazard or Adverse Condition	PM Initials      Hazard Control Measure
Site representative briefed on planned work activities and Work Area Plans?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A
Job Clearance Form completed?		<input checked="" type="checkbox"/> Yes
Pre-Start Call-In completed and approval to start work received from Project Manager?		<input checked="" type="checkbox"/> Yes
Printed Name <b>LEBURS</b>	Signature 	Time <b>0806</b>

Job Clearance Form									
Station #		Station Address: <b>ZIGM MAPLE VALLEY HWY, MAPLE VALLEY WA</b>			Work Order Number: <b>15007418</b>		Date: <b>6/19/15</b>		
Contractor Company Name: <b>BLUMENTHAL SERVICES</b>		Contractor Project Name: <b>LEE BUDS</b>		JSA Network Number: _____		Start Time: <b>0800</b>		End Time: <b>1050</b>	
Problem/Work Description: <b>GAUSE, PURGE, + SAMPLE GROUNDWATER WELLS</b>							Return Call: <input type="checkbox"/> yes / <input type="checkbox"/> no		
							Damage Claim: <input type="checkbox"/> yes / <input type="checkbox"/> no		
<input checked="" type="checkbox"/> SAFETY VEST		<input checked="" type="checkbox"/> HARD HAT		<input checked="" type="checkbox"/> SHOES & BOOTS		<input type="checkbox"/> HEARING PROTECTION		<input type="checkbox"/> RESPIRATOR	
<input checked="" type="checkbox"/> PROTECTIVE CLOTHING		<input checked="" type="checkbox"/> GLOVES		<input checked="" type="checkbox"/> SAFETY GLASSES/GOOGLES		<input type="checkbox"/> WELDING PPE		<input type="checkbox"/> OTHER _____	
<small>Contractor completes this section below if ground is to be drilled or grouted to 100 ft. If any ground is drilled or grouted, this section must be completed.</small>									
Gause			N/A			N/A			
Purge			N/A			N/A			
Sample			N/A			N/A			
<p>Work description from scope control: _____</p> <p>Lower Risk - no JSA required: _____</p> <p>Medium Risk / Higher Risk - JSA required: _____</p> <p>Higher Risk - JSA required &amp; appropriate check list completed (see below): _____</p>									
<p>Respect of Higher / Medium Risk:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Work in heights with all eyes on open area - on closed area if no JSA present</li> <li><input type="checkbox"/> Work in confined spaces (e.g. tank, interceptor or deep manhole entry)</li> <li><input type="checkbox"/> Working or excavation related to underground tank / product flow</li> <li><input type="checkbox"/> Hot work with risk of product or vapor ignition</li> <li><input type="checkbox"/> Heavy lifting</li> <li><input type="checkbox"/> LPG system, charging, installation or maintenance</li> </ul>									
<small>This form must be completed for each job and updated and re-signed if a condition change or additional hazards identified.</small>									
<b>SIGN IN</b>			<b>SIGN OUT</b>						
<p>Operating status to be signed by the Site Representative</p> <p>Non-operating status to be signed by Contractor Representative only</p> <p><b>GENERAL SAFETY CHECKS</b></p> <ul style="list-style-type: none"> <li>• Have all site personnel been briefed?</li> <li>• Has the delivery service been informed?</li> <li>• Is a hot delivery done?</li> <li>• Have isolation procedures been agreed - lock out/tag out?</li> <li>• Are work areas cordoned off to protect workers, site staff &amp; public?</li> <li>• Other _____</li> </ul>			<p>Contractor representative name: <b>LEE BUDS</b></p> <p>Signature: _____</p> <p>Site representative name: _____</p> <p>Signature: _____</p>			<p><b>GENERAL SAFETY CHECKS</b></p> <ul style="list-style-type: none"> <li>• Has the work area been left tidy and safe?</li> <li>• Are all personnel aware of status of work including remaining isolation?</li> <li>• Are changes to equipment, equipment and components?</li> <li>• All incidents, near incidents, unsafe situations reported?</li> <li>• Other _____</li> </ul> <p>Contractor signature: _____</p> <p>Site representative name: _____</p> <p>Signature: _____</p>			

The contractor through its authorized representative shall sign, issue and be solely responsible for all job clearance forms and the obligations arising there under applicable to the work. This form covers important reminders and is not intended to relieve the contractor from safely performing the work in compliance with all applicable laws and regulations. The Site Representative may require the contractor to stop work if it appears that the contractor or any of its workers are failing to comply with the requirements in the applicable form of this form or other applicable safety requirements.

WELL GAUGING DATA

Project # 150826-CP2 Date 8/26/15 Client GMD

Site 21641 Maple Valley Hwy Maple Valley WA

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or <u>TOG</u>	Notes
MW-14	1205	2					13.20	24.61		
MW-24	1208	2					12.10	24.12		
MW-12	1202	4					13.51	20.18		
MW-13	1152	4					<del>13.31</del> <del>14.42</del>	20.02		
MW-14	1150	2					14.42	20.03		
MW-15	1155	2					13.64	20.13		
MW-16	1158	2					14.80	25.30		√

### LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>150826-CPZ</u>	Client: <u>GMI</u>
Sampler: <u>CPotent</u>	Gauging Date: <u>8/26/15</u>
Well I.D.: <u>MW-14</u>	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): <u>20.03</u>	Depth to Water (ft.): <u>14.42</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVG</u> Grade	Flow Cell Type: <u>VSI 556</u>

Purge Method:  2" Grundfos Pump       Peristaltic Pump       Bladder Pump  
 Sampling Method:  Dedicated Tubing       New Tubing       Other \_\_\_\_\_  
 Start Purge Time: 1253      Flow Rate: 100 mL/min      Pump Depth: 17'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1259	16.73	5.11	226	36	1.76	139.0	600	14.49
1302	16.69	5.05	227	29	1.61	119.8	900	14.49
1305	16.63	5.03	227	20	1.56	111.5	1200	14.49
1308	16.59	5.01	228	18	1.45	108.2	1500	14.49
1311	16.55	5.00	228	17	1.37	107.1	1800	14.49

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Amount actually evacuated: <u>1.8L</u>
Sampling Time: <u>1312</u>	Sampling Date: <u>8/26/15</u>
Sample I.D.: <u>GW-062308-608-082615-MW-14</u> Laboratory: <u>POCC</u>	
Analyzed for: <input checked="" type="checkbox"/> TPH-G    BTEX    MTBE <input checked="" type="checkbox"/> TPH-D    Other: <u>See COC</u>	
Equipment Blank I.D.: _____ @ _____ Time	Duplicate I.D.: _____

**LOW FLOW WELL MONITORING DATA SHEET**

Project #: <u>150826 CAZ</u>	Client: <u>GHD</u>
Sampler: <u>C Peters</u>	Gauging Date: <u>8/26/15</u>
Well I.D.: <u>MW-15</u>	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): <u>20.13</u>	Depth to Water (ft.): <u>13.64</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>45I556</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1219      Flow Rate: 100 mL/min      Pump Depth: 16'

Time	Temp. (C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1225	17.99	5.72	223	16	5.73	153.2	600	13.71
1228	17.90	5.49	222	9	5.66	147.3	900	13.71
1231	17.78	5.26	223	4	5.70	135.3	1200	13.71
1234	17.67	5.16	222	3	5.74	130.7	1500	13.71
1237	17.60	5.12	223	2	5.74	128.2	1800	13.71

Did well dewater? Yes  No       Amount actually evacuated: 1.8L

Sampling Time: 1238      Sampling Date: 8/26/15

Sample I.D.: 6W-062308-608-082615-MW-15      Laboratory: Pace

Analyzed for: TPH BTEX MTBE TPH      Other: See ca

Equipment Blank I.D.: \_\_\_\_\_ @ \_\_\_\_\_ Time      Duplicate I.D.: \_\_\_\_\_

**LOW FLOW WELL MONITORING DATA SHEET**

Project #: <u>150826-CP2</u>	Client: <u>GMD</u>
Sampler: <u>C. P. Detert</u>	Gauging Date: <u>8/20/15</u>
Well I.D.: <u>MW-16</u>	Well Diameter (in.): <u>(2)</u> 3 4 6 8
Total Well Depth (ft.): <u>25.30</u>	Depth to Water (ft.): <u>14.80</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>YCF 556</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1324      Flow Rate: 100 mL/min      Pump Depth: 17'

Time	Temp. (C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1330	19.14	5.04	216	45	5.07	138.7	600	14.87
1333	19.20	5.05	217	48	4.76	124.0	900	14.87
1336	19.12	5.06	217	44	4.82	118.4	1200	14.87
1339	18.98	5.05	216	41	4.88	115.5	1500	14.87
1342	18.86	5.04	216	42	4.85	116.1	1800	14.87

Did well dewater? Yes  No       Amount actually evacuated: 1.8L

Sampling Time: 1343      Sampling Date: 8/20/15

Sample I.D.: GW-062308-608-082615-MW-16      Laboratory: Pace

Analyzed for:  TPH-G    BTEX    MTBE     TPH-D      Other: See COC

Equipment Blank I.D.: \_\_\_\_\_ @ \_\_\_\_\_ Time      Duplicate I.D.: \_\_\_\_\_



ENVIRONMENTAL WELL, REMEDIATION COMPOUND, AND SITE INSPECTION FORM

INCIDENT #

ADDRESS 21041 Maple Valley Hwy

DATE: 8/26/15

CITY & STATE Maple Valley WA

Well ID	Observations Upon Arrival													Note Repairs Made Detailed Explanation of Maintenance Recommended and Performed	Photos of Well Condition		Repair Date and PM Initials		
	Manway Cover, Type, Condition & Size					Well Labeled / Painted Properly		Well Cap (Gripper) Condition		Well Lock Condition			Well Pad / Surface Condition						
MW-16	Standpipe	Flush	G	P	8	Y	N	G	R	G	R	NL	G	P	3/3 Tabs Stripped	Y	N		
MW-26	Standpipe	Flush	G	P	8	Y	N	G	R	G	R	NL	G	P	3/3 Tabs Stripped	Y	N		
MW-12	Standpipe	Flush	G	P	12	Y	N	G	R	G	R	NL	G	P	3/3 Tabs Stripped	Y	N		
MW-13	Standpipe	Flush	G	P	12	Y	N	G	R	G	R	NL	G	P	3/3 Tabs Stripped	Y	N		
MW-14	Standpipe	Flush	G	P	8	Y	N	G	R	G	R	NL	G	P		Y	N		
MW-15	Standpipe	Flush	G	P	8	Y	N	G	R	G	R	NL	G	P		Y	N		
MW-16	Standpipe	Flush	G	P	8	Y	N	G	R	G	R	NL	G	P		Y	N		
	Standpipe	Flush	G	P		Y	N	G	R	G	R	NL	G	P		Y	N		
	Standpipe	Flush	G	P		Y	N	G	R	G	R	NL	G	P		Y	N		
	Standpipe	Flush	G	P		Y	N	G	R	G	R	NL	G	P		Y	N		
	Standpipe	Flush	G	P		Y	N	G	R	G	R	NL	G	P		Y	N		
TOTAL # CAPS REPLACED =					0	TOTAL # OF LOCKS REPLACED					0								
Condition of Soil Boring Patches or Abandoned Monitoring Wells				G	P	N/A	If POOR, Boring/Well ID or Location Description										Y	N	
Remediation Compound Type (Check boxes that apply)		Condition of Enclosure			Condition of Area Inside Enclosure			Compound Security			Emergency Contact Info Visible			Cleaning / Repairs Recommended and Conducted			Photos of Condition		Repair Date and PM Initials
NA		G			G			G			Y						Y		N
Building		P			P			P			N						Y		N
Building w/ Fence Comp.		N/A			N/A			N/A			N/A						Y		N
Fenced Compound																			
Trailer																			
Number of Drums On-site	Does the Label Reveal the Source of the Contents		Labeled Correctly and Writing Legible			Drum Condition			Confirm Drums Related to Environmental		Drums Located to Min Business Interference			Detailed Explanation of Any Issues Resolved			Photos of Drum Condition		Date Drums Removed from Site and PM Initials
0	Y	N	N/A	Y	N	N/A	G	P	N/A	Y	N	Y	N	N/A				Y	N

G = Good (Acceptable) R = Replaced  
P = Poor (needs attention) NL = No Lock Required

Note: All repairs other than locks and grippers require Shell PM approval prior to repair.

\* Groundwater monitoring well covers must be painted and labeled in accordance with applicable regulations.  
Version 2.4, March 2008

All environmental wells and the remediation compound were in good condition, locked, and secured upon my departure (unless otherwise noted above).

Craig Peters BTS  
Print or type Name of Field Personnel & Consultant Company

SHELL BILL OF LADING

SOURCE RECORD **BILL OF LADING**  
 FOR NON-HAZARDOUS PURGEWATER RECOVERED FROM GROUNDWATER WELLS AT SHELL FACILITIES IN THE STATE OF WASHINGTON OR OREGON. THE NON-HAZARDOUS PURGE- WATER WHICH HAS BEEN RECOVERED FROM GROUND- WATER WELLS, IS MADE UP INTO LOADS OF APPROPRIATE SIZE TO BE TRANSPORTED & PROCESSED BY A SHELL APPROVED WASTE HAULER.

The contractor performing this work is BLAINE TECH SERVICES, INC. 22727 72<sup>ND</sup> Ave South, Suite D - 102, Kent, WA 98032. Blaine Tech Services, Inc. is authorized by SHELL OIL COMPANY (SHELL) to recover, collect, apportion into loads, and haul the Non-Hazardous Well Purgewater that is drawn from wells at the SHELL facility indicated below and to deliver that purgewater to BTS. Transport routing of the Non-Hazardous Well Purgewater may be direct from one Shell facility to BTS; from one Shell facility to BTS via another Shell facility; or any combination thereof. The Non-Hazardous Well Purgewater is and remains the property of SHELL.

This Source Record **BILL OF LADING** was initiated to cover the recovery of Non-Hazardous Well Purgewater from wells at the SHELL facility described below:

INCIDENT # \_\_\_\_\_ Perry Pineda  
 Shell Engineer  
 21641 Maple Valley Hwy Mapl-Valley WA  
 street number street name city state

WELL I.D.	GALS.	WELL I.D.	GALS.
MW-14	0.5		
MW-15	0.5		
MW-16	0.5		
/		/	
/		/	
/		/	
/		/	
/		/	
added equip.		any other	
rinse water	0.5	adjustments	/
<b>TOTAL GALS. RECOVERED</b>	<b>2.0</b>	loaded onto	
		BTS vehicle #	90
BTS event #	time	date	
150826-002	1400	8/26/15	
signature <i>Craig Post</i>			
*****			
<b>RECEIVED AT</b>		time	date
BTS Kent		1500	8/26/15
unloaded by signature <i>Craig Post</i>			



Site Address: <i>21641 Maple Valley Hwy Maple Valley WA</i>		Date: <i>8/26/15</i>
Check-In with site representative completed?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A
Is fuel delivery scheduled for today?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Emergency pump cut-off switch located?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A
First aid kit located and confirmed ready-to-use?		<input checked="" type="checkbox"/> Yes
Fire extinguisher located and confirmed ready-to-use?		<input checked="" type="checkbox"/> Yes
Eye wash located and confirmed ready-to-use?		<input checked="" type="checkbox"/> Yes
HASP	Emergency Services information located & reviewed?	<input checked="" type="checkbox"/> Yes
	Hospital map & route located and reviewed?	<input checked="" type="checkbox"/> Yes
	Special Hazard Notice section reviewed?	<input checked="" type="checkbox"/> Yes
	Site Status confirmed or amended, dated and initialed?	<input checked="" type="checkbox"/> Yes
	Emergency Response procedures reviewed with all work crew members?	<input checked="" type="checkbox"/> Yes
	Compliance Roster signed by all work crew members?	<input checked="" type="checkbox"/> Yes
Site walk has been performed to locate wells and identify additional hazards?		<input checked="" type="checkbox"/> Yes
Job Safety Analysis (JSA) for each task located & reviewed by all work crew members?		<input checked="" type="checkbox"/> Yes
Work Area Plans reviewed for suitability and effectiveness given current site conditions?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A
Traffic Control Plans reviewed for suitability given current road, traffic & weather conditions?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A
Stop Work Authority reviewed and understood by all work crew members?		<input type="checkbox"/> Yes

- In the space below, note unaddressed hazards and conditions that might compromise compliance with Approved Procedures and/or JSA's or impede the safe and proper execution of the Work Plan, Work Area Plan(s) and/or Traffic Control Plan(s).
- Report unaddressed hazards and adverse conditions to the Project Manager during Pre-Start Call-In and as hazards are identified or conditions change throughout the workday.
- DO NOT COMMENCE OR RESTART WORK until PM has been notified and mitigation measures approved.

Time	Hazard or Adverse Condition	PM Initials	Hazard Control Measure

Site representative briefed on planned work activities and Work Area Plans?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A
Job Clearance Form completed?		<input checked="" type="checkbox"/> Yes
Pre-Start Call-In completed and approval to start work received from Project Manager?		<input checked="" type="checkbox"/> Yes
Printed Name <i>Craig Peters</i>	Signature <i>[Signature]</i>	Time <i>1145</i>

Job Clearance Form									
Station #	Station Address: <u>216041 Maple Valley Hwy Maple Valley</u>	Work Order Number: <u>150820-002</u>	Date: <u>8/26/15</u>						
Contractor Case #/Name: <u>7515</u>	Contractor Name: <u>Craig Peters</u>	Number of Workers: <u>1</u>	JSA Reference Number: (if required)	Start Time: <u>11:50</u>	End Time: <u>1400</u>	Latent:	Travel Time:	Travel Clearance:	
Problem/Work Description: <u>Gauge / Sample</u>						Return Call: <u>yes / no</u>			
						Damage Claim: <u>yes / no</u>			
PPE REQUIRED (CHECK AND/OR FILL IN DARK SPACE)									
<input checked="" type="checkbox"/> SAFETY VEST	<input checked="" type="checkbox"/> HARD HAT	<input checked="" type="checkbox"/> SHOES & BOOTS	<input type="checkbox"/> HEARING PROTECTION	<input type="checkbox"/> RESPIRATOR					
<input checked="" type="checkbox"/> PROTECTIVE CLOTHING	<input checked="" type="checkbox"/> GLOVES	<input checked="" type="checkbox"/> SAFETY GLASSES/GOOGLES	<input type="checkbox"/> WELDING PPE	<input type="checkbox"/> OTHER					
Contractor to complete this section below. If factors listed on JSA or specific to this job may pose an additional hazard, it is not described in the JSA.									
<u>Gauge Sample</u>			<u>N/A</u>			<u>N/A</u>			
Work documentation requirements: <u>Lowest Risk - no JSA required</u> <u>Medium Risk / Higher Risk tasks - JSA required</u> <u>Higher Risk - JSA required &amp; appropriate check list completed (see below)</u>									
Examples of Medium / Medium Risk: <ul style="list-style-type: none"> <li><input type="checkbox"/> Work at heights in all cases on open steel - on closed steel if no JSA present</li> <li><input type="checkbox"/> Work in confined spaces (e.g. tank, intercept or deep manhole entry)</li> <li><input type="checkbox"/> Trenching or excavation related to underground tank / product line</li> <li><input type="checkbox"/> Hot work with risk of product or vapor ignition</li> <li><input type="checkbox"/> Heavy lifting</li> <li><input type="checkbox"/> LPG system degassing, installation or maintenance</li> </ul>									
This form must be completed for each job and updated and re-signed if circumstances change or additional hazards identified.									
<b>SIGN IN</b>		Contractor representative name: <u>Craig Peters</u> Signature: <u>Craig Peters</u>			<b>SIGN OUT</b>			Contractor signature: <u>Craig Peters</u>	
Operating sites to be signed by the Site Representative		GENERAL SAFETY CHECKS • Has the work area been hot tag and safe? • Are site personnel aware of status of work including remaining isolation? • Are changes to equipment documented and communicated? • All incidents, near incidents, unsafe situations reported? • Other:			Site representative name: <u>Lisa Hernandez</u> Signature: <u>Lisa Hernandez</u>				
Non-operating sites to be signed by Contractor Representative only									
GENERAL SAFETY CHECKS • Have all site personnel been informed? • Has fuel delivery service been informed? • Is fuel delivery due? • Have isolation procedures been agreed - lock out/tag out? • Are work areas cordoned off to protect workers, site staff & public? • Other:		Site representative name: <u>Lisa Hernandez</u> Signature: <u>Lisa Hernandez</u>							
PPE IS - (Drivers - Replicated unless Disabled Oil tank/valve model and serial as an exception)									

The contractor through its authorized representative shall sign, issue and be solely responsible for all job clearance forms and the obligations arising there under applicable to the work.  
 This form covers important procedures and is not intended to relieve the contractor from safely performing the work in accordance with all applicable laws and regulations.  
 The Site Representative may require the contractor to stop work if it appears that the contractor or any of its workers are failing to comply with the requirements in the applicable items of this form or other applicable safety requirements.

WELL GAUGING DATA

Project # 151112-CP1 Date 11/12/15 Client GHD

Site 21641 Maple Valley Hwy Maple Valley WA

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or <del>TOE</del>	Notes
MW-16	0738	2					13.04	24.59	↓	
MW-26	0733	2					11.99	24.15		
MW-12	0740	4					13.42	20.21		
MW-13	0730	4					13.15	20.02		
MW-14	0724	2					13.81	20.00		
MW-15	0721	2					13.20	20.15		
MW-16	0718	2					14.35	25.31		

### LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>151112-CPI</u>	Client: <u>GMD</u>
Sampler: <u>C Peter</u>	Gauging Date: <u>11/12/15</u>
Well I.D.: <u>MW-14</u>	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): <u>20.00</u>	Depth to Water (ft.): <u>13.81</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>YSI 556</u>

Purge Method: 2" Grundfos Pump      Peristaltic  Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0854      Flow Rate: 100 mL/min      Pump Depth: 16'

Time	Temp. ( <input checked="" type="checkbox"/> or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
0900	12.34	5.21	299	127	2.99	-77.6	600	13.95
0903	12.35	5.25	304	108	2.78	-82.8	900	13.95
0906	12.39	5.27	308	74	2.44	-85.1	1200	13.95
0909	12.36	5.31	306	70	2.25	-87.4	1500	13.95
0912	12.39	5.35	310	67	2.18	-88.8	1800	13.95

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Amount actually evacuated: <u>1.8L</u>
Sampling Time: <u>0914</u>	Sampling Date: <u>11/12/15</u>
Sample I.D.: <u>GW-062308608-111215-MW-14</u> Laboratory: <u>Pace</u>	
Analyzed for: <u>TPH-D</u> BTEX MTBE <u>TPH-D</u>	Other: <u>See cos</u>
Equipment Blank I.D.: _____ @ _____ Time	Duplicate I.D.: _____

### LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>151112-CPI</u>	Client: <u>GHD</u>
Sampler: <u>CPeterr</u>	Gauging Date: <u>11/12/15</u>
Well I.D.: <u>MW-15</u>	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): <u>20.15</u>	Depth to Water (ft.): <u>13.20</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>VOC</u> Grade	Flow Cell Type: <u>VIS 556</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0823      Flow Rate: 100 mL/min      Pump Depth: 16'

Time	Temp. ( <u>°C</u> or °F)	pH	Cond. (mS/cm or μS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
0829	12.86	5.16	270	23	4.79	-73.7	1000	13.32
0832	12.99	5.19	268	9	4.75	-77.7	900	13.32
0835	13.05	5.19	267	6	4.66	-80.1	1200	13.32
0838	13.13	5.20	265	6	4.63	-83.8	1500	13.32
0841	13.20	5.21	266	5	4.67	-85.1	1800	13.32

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Amount actually evacuated: <u>1.8L</u>
Sampling Time: <u>0842</u>	Sampling Date: <u>11/12/15</u>
Sample I.D.: <u>GW-062308-608-111215-MW-15</u>	Laboratory: <u>Pace</u>
Analyzed for: <u>TPH-G</u> <u>BTEX</u> MTBE <u>TPH-D</u>	Other: <u>See COC</u>
Equipment Blank I.D.: <u>@</u> Time	Duplicate I.D.:

### LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>15112-CPI</u>	Client: <u>GHD</u>
Sampler: <u>C Peters</u>	Gauging Date: <u>11/12/15</u>
Well I.D.: <u>MW-16</u>	Well Diameter (in.): <u>(2)</u> 3 4 6 8
Total Well Depth (ft.): <u>25.31</u>	Depth to Water (ft.): <u>14.35</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>VSE 556</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0750      Flow Rate: 100 mL/min      Pump Depth: 17"

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
0756	11.63	5.31	261	62	6.34	-11.6	600	14.45
0759	11.60	5.27	258	60	6.05	-25.7	900	14.45
0802	11.60	5.25	257	50	5.94	-31.9	1200	14.45
0805	11.65	5.24	257	47	5.84	-36.1	1500	14.45
0808	11.63	5.25	256	43	5.79	-40.9	1800	14.45

Did well dewater? Yes  No       Amount actually evacuated: 1.8L

Sampling Time: 0810      Sampling Date: 11/12/15

Sample I.D.: GW-062308-608-11215-MW-16      Laboratory: Pace

Analyzed for: TPH G BTEX MTBE TPH D      Other: See COC

Equipment Blank I.D.: \_\_\_\_\_ @ \_\_\_\_\_ Time      Duplicate I.D.: \_\_\_\_\_



ENVIRONMENTAL WELL, REMEDIATION COMPOUND, AND SITE INSPECTION FORM

INCIDENT #

ADDRESS 21641 Maple Valley Hwy

DATE: 11/12/15

CITY & STATE Maple Valley WA

Well ID	Observations Upon Arrival														Note Repairs Made Detailed Explanation of Maintenance Recommended and Performed	Photos of Well Condition		Repair Date and PM Initials		
	Manway Cover, Type, Condition & Size					Well Labeled / Painted Properly*		Well Cap (Gripper) Condition		Well Lock Condition			Well Pad / Surface Condition							
MW-17	Standpipe	Flush	G	P	8	Y	N	G	R	G	R	NL	G	P	3/3 Tabs Stripped	Y	N			
MW-26	Standpipe	Flush	G	P	8	Y	N	G	R	G	R	NL	G	P	3/3 Tabs Stripped	Y	N			
MW-12	Standpipe	Flush	G	P	12	Y	N	G	R	G	R	NL	G	P	3/3 Tabs Stripped	Y	N			
MW-13	Standpipe	Flush	G	P	12	Y	N	G	R	G	R	NL	G	P	3/3 Tabs Stripped	Y	N			
MW-14	Standpipe	Flush	G	P	8	Y	N	G	R	G	R	NL	G	P		Y	N			
MW-15	Standpipe	Flush	G	P	8	Y	N	G	R	G	R	NL	G	P		Y	N			
MW-16	Standpipe	Flush	G	P	8	Y	N	G	R	G	R	NL	G	P		Y	N			
	Standpipe	Flush	G	P	Size (inch)	Y	N	G	R	G	R	NL	G	P		Y	N			
	Standpipe	Flush	G	P	Size (inch)	Y	N	G	R	G	R	NL	G	P		Y	N			
	Standpipe	Flush	G	P	Size (inch)	Y	N	G	R	G	R	NL	G	P		Y	N			
	Standpipe	Flush	G	P	Size (inch)	Y	N	G	R	G	R	NL	G	P		Y	N			
					TOTAL # CAPS REPLACED =				0					= TOTAL # OF LOCKS REPLACED						
Condition of Soil Boring Patches or Abandoned Monitoring Wells		G	P	N/A	If POOR, Borings/Well IDs or Location Description														Y	N
Remediation Compound Type (Check boxes that apply)		Condition of Enclosure			Condition of Area Inside Enclosure			Compound Security			Emergency Contact Info Visible			Cleaning / Repairs Recommended and Conducted				Photos of Condition		Repair Date and PM Initials
NA		G			G			G			Y							Y		N
Building		G			G			G			Y							Y		N
Building w/ Fence Comp.		G			G			G			Y							Y		N
Fenced Compound		G			G			G			Y							Y		N
Trailer		G			G			G			Y							Y		N
Number of Drums On-site	Does the Label Reveal the Source of the Contents		Labeled Correctly and Writing Legible			Drum Condition			Confirm Drums Related to Environmental		Drums Located to Min Business Interference			Detailed Explanation of Any Issues Resolved				Photos of Drum Condition		Date Drums Removed from Site and PM Initials
0	Y	N	N/A	Y	N	N/A	G	P	N/A	Y	N	Y	N	N/A					Y	N

G = Good (Acceptable) R = Replaced  
P = Poor (needs attention) NL = No Lock Required

Note: All repairs other than locks and grippers require Shell PM approval prior to repair.

\* Groundwater monitoring well covers must be painted and labeled in accordance with applicable regulations.

All environmental wells and the remediation compound were in good condition, locked, and secured upon my departure (unless otherwise noted above).

Craig Peter BTS

Print or type Name of Field Personnel & Consultant Company

SHELL BILL OF LADING

SOURCE RECORD **BILL OF LADING**

FOR NON-HAZARDOUS PURGEWATER RECOVERED FROM GROUNDWATER WELLS AT SHELL FACILITIES IN THE STATE OF WASHINGTON OR OREGON. THE NON-HAZARDOUS PURGE- WATER WHICH HAS BEEN RECOVERED FROM GROUND- WATER WELLS, IS MADE UP INTO LOADS OF APPROPRIATE SIZE TO BE TRANSPORTED & PROCESSED BY A SHELL APPROVED WASTE HAULER.

The contractor performing this work is BLAINE TECH SERVICES, INC. 22727 72<sup>ND</sup> Ave South, Suite D - 102, Kent, WA 98032. Blaine Tech Services, Inc. is authorized by SHELL OIL COMPANY (SHELL) to recover, collect, apportion into loads, and haul the Non-Hazardous Well Purgewater that is drawn from wells at the SHELL facility indicated below and to deliver that purgewater to BTS. Transport routing of the Non-Hazardous Well Purgewater may be direct from one Shell facility to BTS; from one Shell facility to BTS via another Shell facility; or any combination thereof. The Non-Hazardous Well Purgewater is and remains the property of SHELL.

This Source Record **BILL OF LADING** was initiated to cover the recovery of Non-Hazardous Well Purgewater from wells at the SHELL facility described below:

INCIDENT # \_\_\_\_\_ Perry Pineda  
Shell Engineer

21641 Maple Valley Hwy Maple Valley WA  
street number street name city state

WELL I.D.	GALS.	WELL I.D.	GALS.
MW-14	0.5		
MW-15	0.5		
MW-16	0.5		
/	/	/	/
/	/	/	/
/	/	/	/
/	/	/	/
/	/	/	/
added equip.		any other	
rinse water	0.5	adjustments	/
<b>TOTAL GALS.</b>		loaded onto	
<b>RECOVERED</b>	2.0	BTS vehicle #	90
BTS event #	time	date	
15112-CPI	0930	11/12/15	
signature	_____		
*****			
<b>RECEIVED AT</b>	time	date	
BTS Kent	1400	11/12/15	
unloaded by	_____		
signature	_____		



Site Address: <i>21641 Maple Valley Hwy Maple Valley WA</i>		Date: <i>11/2/15</i>	
Check-In with site representative completed?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	
Is fuel delivery scheduled for today?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Emergency pump cut-off switch located?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	
First aid kit located and confirmed ready-to-use?		<input checked="" type="checkbox"/> Yes	
Fire extinguisher located and confirmed ready-to-use?		<input checked="" type="checkbox"/> Yes	
Eye wash located and confirmed ready-to-use?		<input checked="" type="checkbox"/> Yes	
HASP	Emergency Services information located & reviewed?	<input checked="" type="checkbox"/> Yes	
	Hospital map & route located and reviewed?	<input checked="" type="checkbox"/> Yes	
	Special Hazard Notice section reviewed?	<input checked="" type="checkbox"/> Yes	
	Site Status confirmed or amended, dated and initialed?	<input checked="" type="checkbox"/> Yes	
	Emergency Response procedures reviewed with all work crew members?	<input checked="" type="checkbox"/> Yes	
	Compliance Roster signed by all work crew members?	<input checked="" type="checkbox"/> Yes	
Site walk has been performed to locate wells and identify additional hazards?		<input checked="" type="checkbox"/> Yes	
Job Safety Analysis (JSA) for each task located & reviewed by all work crew members?		<input checked="" type="checkbox"/> Yes	
Work Area Plans reviewed for suitability and effectiveness given current site conditions?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	
Traffic Control Plans reviewed for suitability given current road, traffic & weather conditions?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A	
Stop Work Authority reviewed and understood by all work crew members?		<input checked="" type="checkbox"/> Yes	
<ul style="list-style-type: none"> <li>• In the space below, note unaddressed hazards and conditions that might compromise compliance with Approved Procedures and/or JSA's or impede the safe and proper execution of the Work Plan, Work Area Plan(s) and/or Traffic Control Plan(s).</li> <li>• Report unaddressed hazards and adverse conditions to the Project Manager during Pre-Start Call-In and as hazards are identified or conditions change throughout the workday.</li> <li>• DO NOT COMMENCE OR RESTART WORK until PM has been notified and mitigation measures approved.</li> </ul>			
Time	Hazard or Adverse Condition	PM Initials	Hazard Control Measure
Site representative briefed on planned work activities and Work Area Plans?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A	
Job Clearance Form completed?		<input checked="" type="checkbox"/> Yes	
Pre-Start Call-In completed and approval to start work received from Project Manager?		<input checked="" type="checkbox"/> Yes	
Printed Name <i>Craig Peters</i>	Signature <i>Craig Peters</i>	Time <i>0715</i>	

Job Clearance Form							
CONTRACTOR INSTRUCTIONS PRIOR TO START OF WORK: 1. Review form, check appropriate boxes, read and sign at the bottom of this form. 2. Inform the manager or site representative of the job to be performed and potential safety concerns and obtain a signature.							
Station #	Station Address:	Work Order Number:	Date:				
	21641 Maple Valley Hwy Maple Valley, WA	15112-001	11/12/15				
Contractor Company Name:	Contact for person to sign for (if not you)	Number of Workers:	JSA Job # (if required):	Start Time:	End Time:	Leak:	Transf. Flow:
BTS	Craig Peter	1	(required)	0715	0930		
Return/Work Description:						Return Call:	yes/ no
Gauge / sample						Damage Claim:	yes/ no
PPE REQUIRED (CHECK AND/OR FILL BLANK SPACE)							
<input type="checkbox"/> SAFETY VEST	<input type="checkbox"/> HARD HAT	<input type="checkbox"/> SHOES & BOOTS	<input type="checkbox"/> HEARING PROTECTION	<input type="checkbox"/> RESPIRATOR			
<input type="checkbox"/> PROTECTIVE CLOTHING	<input type="checkbox"/> GLOVES	<input type="checkbox"/> SAFETY GLASSES/GOOGLES	<input type="checkbox"/> WELDING PPE	<input type="checkbox"/> OTHER			
Contractor Stoppage Reason (if not JSA required, check one or more of the following for any potential hazard, but do not check anything on JSA)							
TASK STEP		Hazards not covered by JSA			How to reduce or eliminate risk- include PPE to be worn		
Gauge Sample		N/A			N/A		
Work description & equipment							
Lower Risk - no JSA required		Medium Risk / Higher Risk tasks - JSA required		Higher Risk - JSA required & appropriate check list completed (as below)			
<input type="checkbox"/> Work at heights in all cases on open sites - on closed sites if no JSA present <input type="checkbox"/> Trenching or excavation related to underground tank / product line <input type="checkbox"/> Heavy lifting <input type="checkbox"/> Work in confined spaces (e.g. tank, tankset or other manhole entry) <input type="checkbox"/> Hot work with risk of product or vapor ignition <input type="checkbox"/> LPG system degassing, installation or maintenance							
<b>SIGN IN</b> Operating site to be signed by the Site Representative (Non operating sites to be signed by Contractor Representative only) <b>GENERAL SAFETY CHECKS</b> • Have all site personnel been informed? • Has fuel delivery service been informed? • Is a fuel delivery due? • Have isolation procedures been agreed - lock out/tag out? • Are work areas cordoned off to protect workers, site staff & public? • Other:				<b>SIGN OUT</b> Contractor signature Craig Peter <b>GENERAL SAFETY CHECKS</b> • Has the work area been left tidy and safe? • Are the personnel aware of status of work including remaining fuel in tank? • Are changes to equipment documented and communicated? • All incidents, near incidents, unsafe situations reported? • Other:			
Contractor representative name		Signature		Contractor signature			
Craig Peter		Craig Peter		Craig Peter			
Site representative name		Signature		Site representative name		Signature	
Evangeline		Evangeline		Evangeline		Evangeline	
PARTS - Order #, Part # and/or Dispose # (if include model and serial no as appropriate)							

The contractor through its authorized representative shall sign, is and be solely responsible for all job clearance forms and the obligations arising there under applicable to the work.  
 This form covers important reminders and is not intended to relieve the contractor from safely performing the work in compliance with all applicable laws and regulations.  
 The Site Representative may require the contractor to stop work if it appears that the contractor or any of its workers are failing to comply with the requirements in the applicable form of this form or the applicable safety requirements.

# **Appendix B**

## **Laboratory Analytical Reports**

November 30, 2015

Brian Peters  
GHD Services, Inc.  
20818 44th Avenue W  
Suite 190  
Lynnwood, WA 98036

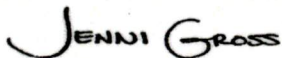
RE: Project: 062305-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10330038

Dear Brian Peters:

Enclosed are the analytical results for sample(s) received by the laboratory on November 13, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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  
Project Manager

Enclosures

cc: Jeffrey Cloud, GHD Services Inc.



## REPORT OF LABORATORY ANALYSIS

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

## CERTIFICATIONS

Project: 062305-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10330038

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### Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414  
A2LA Certification #: 2926.01  
Alaska Certification #: UST-078  
Alaska Certification #MN00064  
Alabama Certification #40770  
Arizona Certification #: AZ-0014  
Arkansas Certification #: 88-0680  
California Certification #: 01155CA  
Colorado Certification #Pace  
Connecticut Certification #: PH-0256  
EPA Region 8 Certification #: 8TMS-L  
Florida/NELAP Certification #: E87605  
Guam Certification #: 14-008r  
Georgia Certification #: 959  
Georgia EPD #: Pace  
Idaho Certification #: MN00064  
Hawaii Certification #MN00064  
Illinois Certification #: 200011  
Indiana Certification#C-MN-01  
Iowa Certification #: 368  
Kansas Certification #: E-10167  
Kentucky Dept of Envi. Protection - DW #90062  
Kentucky Dept of Envi. Protection - WW #:90062  
Louisiana DEQ Certification #: 3086  
Louisiana DHH #: LA140001  
Maine Certification #: 2013011  
Maryland Certification #: 322  
Michigan DEPH Certification #: 9909

Minnesota Certification #: 027-053-137  
Mississippi Certification #: Pace  
Montana Certification #: MT0092  
Nevada Certification #: MN\_00064  
Nebraska Certification #: Pace  
New Jersey Certification #: MN-002  
New York Certification #: 11647  
North Carolina Certification #: 530  
North Carolina State Public Health #: 27700  
North Dakota Certification #: R-036  
Ohio EPA #: 4150  
Ohio VAP Certification #: CL101  
Oklahoma Certification #: 9507  
Oregon Certification #: MN200001  
Oregon Certification #: MN300001  
Pennsylvania Certification #: 68-00563  
Puerto Rico Certification  
Saipan (CNMI) #:MP0003  
South Carolina #:74003001  
Texas Certification #: T104704192  
Tennessee Certification #: 02818  
Utah Certification #: MN000642013-4  
Virginia DGS Certification #: 251  
Washington Certification #: C486  
West Virginia Certification #: 382  
West Virginia DHHR #:9952C  
Wisconsin Certification #: 999407970

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: 062305-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10330038

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10330038001	GW-062308-608-111215-MW-14	Water	11/12/15 09:14	11/13/15 13:46
10330038002	GW-062308-608-111215-MW-15	Water	11/12/15 08:42	11/13/15 13:46
10330038003	GW-062308-608-111215-MW-16	Water	11/12/15 08:10	11/13/15 13:46
10330038004	Trip Blank	Water	11/12/15 00:00	11/13/15 13:46

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 062305-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10330038

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10330038001	GW-062308-608-111215-MW-14	EPA 8011	XV1	2	PASI-M
		NWTPH-Dx	MT	4	PASI-M
		NWTPH-Gx	KMZ	2	PASI-M
10330038002	GW-062308-608-111215-MW-15	NWTPH-Dx	MT	4	PASI-M
		NWTPH-Gx	KMZ	2	PASI-M
		EPA 8260B	PRD	7	PASI-M
10330038003	GW-062308-608-111215-MW-16	NWTPH-Dx	MT	4	PASI-M
		NWTPH-Gx	KMZ	2	PASI-M
		EPA 8260B	PRD	7	PASI-M
10330038004	Trip Blank	NWTPH-Gx	KMZ	2	PASI-M
		EPA 8260B	DJB	7	PASI-M

### REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: 062305-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10330038

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**Method:** EPA 8011  
**Description:** 8011 GCS EDB and DBCP  
**Client:** GHD Services Inc  
**Date:** November 30, 2015

### General Information:

1 sample was analyzed for EPA 8011. 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 8011 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.

### Additional Comments:

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: 062305-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10330038

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**Method:** NWTPH-Dx  
**Description:** NWTPH-Dx GCS Silica Gel LV  
**Client:** GHD Services Inc  
**Date:** November 30, 2015

### General Information:

3 samples were analyzed for NWTPH-Dx. 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 3510C 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: OEXT/31717

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

### 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: 062305-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10330038

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**Method:** NWTPH-Gx  
**Description:** NWTPH-Gx GCV  
**Client:** GHD Services Inc  
**Date:** November 30, 2015

### General Information:

4 samples were analyzed for NWTPH-Gx. 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: GCV/14639

R1: RPD value was outside control limits.

- LCSD (Lab ID: 2135513)
- TPH as Gas

### 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: 062305-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10330038

---

**Method:** EPA 8260B  
**Description:** 8260B MSV UST  
**Client:** GHD Services Inc  
**Date:** November 30, 2015

**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.

**Duplicate Sample:**

All duplicate sample results were within method 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: 062305-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10330038

Sample: **GW-062308-608-111215-MW-14**      Lab ID: **10330038001**      Collected: 11/12/15 09:14      Received: 11/13/15 13:46      Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8011 GCS EDB and DBCP</b>								
Analytical Method: EPA 8011      Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.0098	1	11/18/15 12:41	11/20/15 07:03	106-93-4	
<b>Surrogates</b>								
4-Bromofluorobenzene (S)	126	%	30-150	1	11/18/15 12:41	11/20/15 07:03	460-00-4	
<b>NWTPH-Dx GCS Silica Gel LV</b>								
Analytical Method: NWTPH-Dx      Preparation Method: EPA 3510C								
Diesel Fuel Range SG	ND	mg/L	0.40	1	11/19/15 10:59	11/23/15 17:55	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	1	11/19/15 10:59	11/23/15 17:55	64742-65-0	
<b>Surrogates</b>								
o-Terphenyl (S)	62	%	50-150	1	11/19/15 10:59	11/23/15 17:55	84-15-1	
n-Triacontane (S)	63	%	50-150	1	11/19/15 10:59	11/23/15 17:55	638-68-6	
<b>NWTPH-Gx GCV</b>								
Analytical Method: NWTPH-Gx								
TPH as Gas	<b>1110</b>	ug/L	100	1		11/14/15 14:27		
<b>Surrogates</b>								
a,a,a-Trifluorotoluene (S)	126	%	50-150	1		11/14/15 14:27	98-08-8	

## REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: 062305-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10330038

Sample: **GW-062308-608-111215-MW-15** Lab ID: **10330038002** Collected: 11/12/15 08:42 Received: 11/13/15 13:46 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>		Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C						
Diesel Fuel Range SG	ND	mg/L	0.40	1	11/19/15 10:59	11/23/15 18:16	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	1	11/19/15 10:59	11/23/15 18:16	64742-65-0	
<b>Surrogates</b>								
o-Terphenyl (S)	61	%	50-150	1	11/19/15 10:59	11/23/15 18:16	84-15-1	
n-Triacontane (S)	63	%	50-150	1	11/19/15 10:59	11/23/15 18:16	638-68-6	
<b>NWTPH-Gx GCV</b>		Analytical Method: NWTPH-Gx						
TPH as Gas	ND	ug/L	100	1		11/14/15 14:47		
<b>Surrogates</b>								
a,a,a-Trifluorotoluene (S)	92	%	50-150	1		11/14/15 14:47	98-08-8	
<b>8260B MSV UST</b>		Analytical Method: EPA 8260B						
Benzene	ND	ug/L	1.0	1		11/19/15 18:55	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		11/19/15 18:55	100-41-4	
Toluene	ND	ug/L	1.0	1		11/19/15 18:55	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		11/19/15 18:55	1330-20-7	
<b>Surrogates</b>								
1,2-Dichloroethane-d4 (S)	108	%	75-125	1		11/19/15 18:55	17060-07-0	
Toluene-d8 (S)	99	%	75-125	1		11/19/15 18:55	2037-26-5	
4-Bromofluorobenzene (S)	101	%	75-125	1		11/19/15 18:55	460-00-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: 062305-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10330038

Sample: **GW-062308-608-111215-MW-16** Lab ID: **10330038003** Collected: 11/12/15 08:10 Received: 11/13/15 13:46 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>		Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C						
Diesel Fuel Range SG	ND	mg/L	0.40	1	11/19/15 10:59	11/23/15 18:38	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	1	11/19/15 10:59	11/23/15 18:38	64742-65-0	
<b>Surrogates</b>								
o-Terphenyl (S)	72	%.	50-150	1	11/19/15 10:59	11/23/15 18:38	84-15-1	
n-Triacontane (S)	75	%.	50-150	1	11/19/15 10:59	11/23/15 18:38	638-68-6	
<b>NWTPH-Gx GCV</b>		Analytical Method: NWTPH-Gx						
TPH as Gas	ND	ug/L	100	1		11/14/15 15:07		
<b>Surrogates</b>								
a,a,a-Trifluorotoluene (S)	90	%.	50-150	1		11/14/15 15:07	98-08-8	
<b>8260B MSV UST</b>		Analytical Method: EPA 8260B						
Benzene	ND	ug/L	1.0	1		11/19/15 19:12	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		11/19/15 19:12	100-41-4	
Toluene	ND	ug/L	1.0	1		11/19/15 19:12	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		11/19/15 19:12	1330-20-7	
<b>Surrogates</b>								
1,2-Dichloroethane-d4 (S)	104	%.	75-125	1		11/19/15 19:12	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1		11/19/15 19:12	2037-26-5	
4-Bromofluorobenzene (S)	104	%.	75-125	1		11/19/15 19:12	460-00-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: 062305-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10330038

Sample: Trip Blank	Lab ID: 10330038004	Collected: 11/12/15 00:00	Received: 11/13/15 13:46	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Gx GCV</b>		Analytical Method: NWTPH-Gx						
TPH as Gas	ND	ug/L	100	1		11/14/15 13:47		
<b>Surrogates</b>								
a,a,a-Trifluorotoluene (S)	90	%	50-150	1		11/14/15 13:47	98-08-8	
<b>8260B MSV UST</b>		Analytical Method: EPA 8260B						
Benzene	ND	ug/L	1.0	1		11/17/15 06:28	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		11/17/15 06:28	100-41-4	
Toluene	ND	ug/L	1.0	1		11/17/15 06:28	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		11/17/15 06:28	1330-20-7	
<b>Surrogates</b>								
1,2-Dichloroethane-d4 (S)	91	%	75-125	1		11/17/15 06:28	17060-07-0	
Toluene-d8 (S)	93	%	75-125	1		11/17/15 06:28	2037-26-5	
4-Bromofluorobenzene (S)	100	%	75-125	1		11/17/15 06:28	460-00-4	

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**QUALITY CONTROL DATA**

Project: 062305-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10330038

QC Batch: GCV/14639 Analysis Method: NWTPH-Gx  
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water  
Associated Lab Samples: 10330038001, 10330038002, 10330038003, 10330038004

METHOD BLANK: 2135510 Matrix: Water  
Associated Lab Samples: 10330038001, 10330038002, 10330038003, 10330038004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	11/14/15 12:26	
a,a,a-Trifluorotoluene (S)	%	92	50-150	11/14/15 12:26	

METHOD BLANK: 2135511 Matrix: Water  
Associated Lab Samples: 10330038001, 10330038002, 10330038003, 10330038004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	11/14/15 13:07	
a,a,a-Trifluorotoluene (S)	%	86	50-150	11/14/15 13:07	

LABORATORY CONTROL SAMPLE & LCSD: 2135512

Parameter	Units	Spike Conc.	2135513		LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
			LCS Result	LCSD Result						
TPH as Gas	ug/L	1000	1030	833	103	83	65-125	21	20	R1
a,a,a-Trifluorotoluene (S)	%				101	106	50-150			

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**REPORT OF LABORATORY ANALYSIS**

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### QUALITY CONTROL DATA

Project: 062305-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10330038

QC Batch: MSV/33796 Analysis Method: EPA 8260B  
QC Batch Method: EPA 8260B Analysis Description: 8260B MSV UST-WATER  
Associated Lab Samples: 10330038004

METHOD BLANK: 2136270 Matrix: Water  
Associated Lab Samples: 10330038004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	11/17/15 05:55	
Ethylbenzene	ug/L	ND	1.0	11/17/15 05:55	
Toluene	ug/L	ND	1.0	11/17/15 05:55	
Xylene (Total)	ug/L	ND	3.0	11/17/15 05:55	
1,2-Dichloroethane-d4 (S)	%	93	75-125	11/17/15 05:55	
4-Bromofluorobenzene (S)	%	100	75-125	11/17/15 05:55	
Toluene-d8 (S)	%	94	75-125	11/17/15 05:55	

LABORATORY CONTROL SAMPLE: 2136271

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	21.7	108	71-125	
Ethylbenzene	ug/L	20	21.3	106	75-125	
Toluene	ug/L	20	20.4	102	74-125	
Xylene (Total)	ug/L	60	63.3	105	75-125	
1,2-Dichloroethane-d4 (S)	%			92	75-125	
4-Bromofluorobenzene (S)	%			101	75-125	
Toluene-d8 (S)	%			94	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2136272 2136273

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		10330044001 Result	Spike Conc.	Spike Conc.	MS Result					
Benzene	ug/L	ND	20	20	22.4	22.3	112	112	53-139	0 30
Ethylbenzene	ug/L	ND	20	20	22.1	22.2	110	111	55-139	0 30
Toluene	ug/L	ND	20	20	21.9	22.3	110	111	52-148	2 30
Xylene (Total)	ug/L	ND	60	60	66.3	67.2	111	112	54-144	1 30
1,2-Dichloroethane-d4 (S)	%						96	92	75-125	
4-Bromofluorobenzene (S)	%						99	102	75-125	
Toluene-d8 (S)	%						95	95	75-125	

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### QUALITY CONTROL DATA

Project: 062305-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10330038

QC Batch: MSV/33824 Analysis Method: EPA 8260B  
QC Batch Method: EPA 8260B Analysis Description: 8260B MSV UST-WATER  
Associated Lab Samples: 10330038002, 10330038003

METHOD BLANK: 2138331 Matrix: Water  
Associated Lab Samples: 10330038002, 10330038003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	11/19/15 17:01	
Ethylbenzene	ug/L	ND	1.0	11/19/15 17:01	
Toluene	ug/L	ND	1.0	11/19/15 17:01	
Xylene (Total)	ug/L	ND	3.0	11/19/15 17:01	
1,2-Dichloroethane-d4 (S)	%	103	75-125	11/19/15 17:01	
4-Bromofluorobenzene (S)	%	102	75-125	11/19/15 17:01	
Toluene-d8 (S)	%	100	75-125	11/19/15 17:01	

LABORATORY CONTROL SAMPLE: 2138332

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.7	93	71-125	
Ethylbenzene	ug/L	20	19.3	96	75-125	
Toluene	ug/L	20	17.4	87	74-125	
Xylene (Total)	ug/L	60	58.8	98	75-125	
1,2-Dichloroethane-d4 (S)	%			98	75-125	
4-Bromofluorobenzene (S)	%			101	75-125	
Toluene-d8 (S)	%			102	75-125	

SAMPLE DUPLICATE: 2140818

Parameter	Units	10330107003 Result	Dup Result	RPD	Max RPD	Qualifiers
Benzene	ug/L	ND	ND			30
Ethylbenzene	ug/L	ND	.92J			30
Toluene	ug/L	2.4	2.3	6		30
Xylene (Total)	ug/L	4.5	4.5	0		30
1,2-Dichloroethane-d4 (S)	%	104	104	0		
4-Bromofluorobenzene (S)	%	101	103	1		
Toluene-d8 (S)	%	99	99	0		

SAMPLE DUPLICATE: 2141281

Parameter	Units	10330044008 Result	Dup Result	RPD	Max RPD	Qualifiers
Benzene	ug/L	ND	ND			30
Ethylbenzene	ug/L	ND	ND			30
Toluene	ug/L	ND	.42J			30
Xylene (Total)	ug/L	ND	ND			30

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**QUALITY CONTROL DATA**

Project: 062305-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10330038

SAMPLE DUPLICATE: 2141281

Parameter	Units	10330044008 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloroethane-d4 (S)	%.	105	101	4		
4-Bromofluorobenzene (S)	%.	100	101	2		
Toluene-d8 (S)	%.	98	100	2		

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: 062305-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10330038

QC Batch: OEXT/31702 Analysis Method: EPA 8011  
QC Batch Method: EPA 8011 Analysis Description: GCS 8011 EDB DBCP  
Associated Lab Samples: 10330038001

METHOD BLANK: 2138438 Matrix: Water  
Associated Lab Samples: 10330038001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	0.010	11/20/15 00:32	
4-Bromofluorobenzene (S)	%.	132	30-150	11/20/15 00:32	

LABORATORY CONTROL SAMPLE: 2138439

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	.11	0.12	111	60-140	
4-Bromofluorobenzene (S)	%.			134	30-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2138440 2138441

Parameter	Units	10330045001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
1,2-Dibromoethane (EDB)	ug/L	ND	.11	.11	0.12	0.12	115	116	60-140	0	20
4-Bromofluorobenzene (S)	%.						120	120	30-150		

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: 062305-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10330038

QC Batch: OEXT/31717 Analysis Method: NWTPH-Dx  
QC Batch Method: EPA 3510C Analysis Description: NWTPH-Dx GCS LV SG  
Associated Lab Samples: 10330038001, 10330038002, 10330038003

METHOD BLANK: 2139382 Matrix: Water  
Associated Lab Samples: 10330038001, 10330038002, 10330038003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	11/23/15 15:45	
Motor Oil Range SG	mg/L	ND	0.40	11/23/15 15:45	
n-Triacontane (S)	%	74	50-150	11/23/15 15:45	
o-Terphenyl (S)	%	71	50-150	11/23/15 15:45	

LABORATORY CONTROL SAMPLE & LCSD: 2139383

Parameter	Units	2139384						Max RPD	Qualifiers
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits		
Diesel Fuel Range SG	mg/L	2	1.1	1.2	56	62	50-150	10	20
Motor Oil Range SG	mg/L	2	1.2	1.3	60	66	50-150	10	20
n-Triacontane (S)	%				60	64	50-150		
o-Terphenyl (S)	%				62	66	50-150		

SAMPLE DUPLICATE: 2139385

Parameter	Units	10330037002 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	ND	ND		30	
Motor Oil Range SG	mg/L	ND	.11J		30	
n-Triacontane (S)	%	60	63	5		
o-Terphenyl (S)	%	58	62	8		

SAMPLE DUPLICATE: 2139389

Parameter	Units	10330064004 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	ND	ND		30	
Motor Oil Range SG	mg/L	ND	ND		30	
n-Triacontane (S)	%	74	59	21		
o-Terphenyl (S)	%	70	57	18		

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## QUALIFIERS

Project: 062305-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10330038

---

### 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.  
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.  
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

### BATCH QUALIFIERS

Batch: GCSV/17337

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

### ANALYTE QUALIFIERS

R1 RPD value was outside control limits.

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### METHOD CROSS REFERENCE TABLE

Project: 062305-2015-\*\*\*\* JFS 5017-MapI

Pace Project No.: 10330038

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

### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: 062305-2015-\*\*\*\* JFS 5017-MapI  
Pace Project No.: 10330038

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10330038001	GW-062308-608-111215-MW-14	EPA 8011	OEXT/31702	EPA 8011	GCSV/17299
10330038001	GW-062308-608-111215-MW-14	EPA 3510C	OEXT/31717	NWTPH-Dx	GCSV/17337
10330038002	GW-062308-608-111215-MW-15	EPA 3510C	OEXT/31717	NWTPH-Dx	GCSV/17337
10330038003	GW-062308-608-111215-MW-16	EPA 3510C	OEXT/31717	NWTPH-Dx	GCSV/17337
10330038001	GW-062308-608-111215-MW-14	NWTPH-Gx	GCV/14639		
10330038002	GW-062308-608-111215-MW-15	NWTPH-Gx	GCV/14639		
10330038003	GW-062308-608-111215-MW-16	NWTPH-Gx	GCV/14639		
10330038004	Trip Blank	NWTPH-Gx	GCV/14639		
10330038002	GW-062308-608-111215-MW-15	EPA 8260B	MSV/33824		
10330038003	GW-062308-608-111215-MW-16	EPA 8260B	MSV/33824		
10330038004	Trip Blank	EPA 8260B	MSV/33796		

**REPORT OF LABORATORY ANALYSIS**

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	Document Name: Cooler Transfer Check List	Revised Date: 23Apr2013 Page 1 of 1
	Document Number: F-MN-C-120-rev.01	Issuing Authority: Pace Minnesota Quality Office

## Cooler Transfer Check List

Client: GHD Services

Project Manager: Jenni Gross

Profile/Line #: 35122#1

Received with Custody Seal:      Yes       No

Custody Seal Intact:      Yes      No       NA

	Temp Read	Corrected Temp	Correction Factor
Temperature C:	<u>4.8</u>	<u>4.9</u>	<u>+0.1</u>

IR Gun #  IR1     IR2

Samples on ice, cooling process has begun

Rush/Short Hold: NO

Containers Intact:       Yes      No

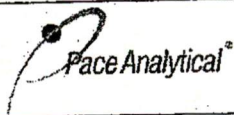
Re-packed and Re-Iced: ✓

Temp Blank Included:       Yes      No

Shipped By/Date: 06/12/15

Notes:





Document Name: Sample Condition Upon Receipt Form

Document Revised: 23Feb2015 Page 1 of 1

Document No.: F-MN-L-213-rev.13

Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: CRA

Project #: WO# 10330038

Barcode: 10330038

Courier:  Fed Ex  UPS  USPS  Client

Commercial  Pace  SpeeDee  Other:

Tracking Number: 6481 0864 6519

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:  B88A9130516413  B88A912167504  B88A0143310098

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

Cooler Temp Read (°C): 0.0 Cooler Temp Corrected (°C): 0.0

Biological Tissue Frozen?  Yes  No  N/A

Temp should be above freezing to 6°C Correction Factor: 0.0

Date and Initials of Person Examining Contents: 11/13/15

USDA Regulated Soil (N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, AZ, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or WA (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?	<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/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input 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.	
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 container
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 have been checked?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.	<input type="checkbox"/> HNO <sub>3</sub> <input type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> NaOH <input type="checkbox"/> HCl
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>12 Cyanide) Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water), DOC	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Sample #	
	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Initial when completed:	Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14.	
Trip Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	15.	
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

Field Data Required?  Yes  No

Person Contacted: \_\_\_\_\_

Date/Time: \_\_\_\_\_

Comments/Resolution: \_\_\_\_\_

Project Manager Review: Julie Bove

Date: 11/16/15

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).

September 09, 2015

Brian Peters  
GHD Services, Inc.  
20818 44th Avenue W  
Suite 190  
Lynnwood, WA 98036

RE: Project: 062308-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10320025

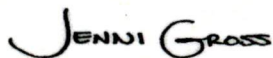
Dear Brian Peters:

Enclosed are the analytical results for sample(s) received by the laboratory on August 27, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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  
Project Manager

Enclosures

cc: Jeffrey Cloud, GHD Services Inc.



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 062308-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10320025

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### Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414

A2LA Certification #: 2926.01

Alaska Certification #: UST-078

Alaska Certification #MN00064

Alabama Certification #40770

Arizona Certification #: AZ-0014

Arkansas Certification #: 88-0680

California Certification #: 01155CA

Colorado Certification #Pace

Connecticut Certification #: PH-0256

EPA Region 8 Certification #: 8TMS-L

Florida/NELAP Certification #: E87605

Guam Certification #:14-008r

Georgia Certification #: 959

Georgia EPD #: Pace

Idaho Certification #: MN00064

Hawaii Certification #MN00064

Illinois Certification #: 200011

Indiana Certification#C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky Dept of Envi. Protection - DW #90062

Kentucky Dept of Envi. Protection - WWW #:90062

Louisiana DEQ Certification #: 3086

Louisiana DHH #: LA140001

Maine Certification #: 2013011

Maryland Certification #: 322

Michigan DEPH Certification #: 9909

Minnesota Certification #: 027-053-137

Mississippi Certification #: Pace

Montana Certification #: MT0092

Nevada Certification #: MN\_00064

Nebraska Certification #: Pace

New Jersey Certification #: MN-002

New York Certification #: 11647

North Carolina Certification #: 530

North Carolina State Public Health #: 27700

North Dakota Certification #: R-036

Ohio EPA #: 4150

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Certification #: MN200001

Oregon Certification #: MN300001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification

Saipan (CNMI) #:MP0003

South Carolina #:74003001

Texas Certification #: T104704192

Tennessee Certification #: 02818

Utah Certification #: MN000642013-4

Virginia DGS Certification #: 251

Washington Certification #: C486

West Virginia Certification #: 382

West Virginia DHHR #:9952C

Wisconsin Certification #: 999407970

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## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: 062308-2015-\*\*\*\* JFS 5017-MapI  
Pace Project No.: 10320025

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10320025001	GW-062308-608-082615-MW-14	Water	08/26/15 13:12	08/27/15 15:15
10320025002	GW-062308-608-082615-MW-15	Water	08/26/15 12:38	08/27/15 15:15
10320025003	GW-062308-608-082615-MW-16	Water	08/26/15 13:43	08/27/15 15:15

### REPORT OF LABORATORY ANALYSIS

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**SAMPLE ANALYTE COUNT**

Project: 062308-2015-\*\*\*\* JFS 5017-MapI  
Pace Project No.: 10320025

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10320025001	GW-062308-608-082615-MW-14	NWTPH-Dx	JRH	4	PASI-M
		NWTPH-Gx	KMZ	2	PASI-M
10320025002	GW-062308-608-082615-MW-15	NWTPH-Dx	JRH	4	PASI-M
		NWTPH-Gx	KMZ	2	PASI-M
		EPA 8260B	DJB	7	PASI-M
10320025003	GW-062308-608-082615-MW-16	NWTPH-Dx	JRH	4	PASI-M
		NWTPH-Gx	KMZ	2	PASI-M
		EPA 8260B	DJB	7	PASI-M

**REPORT OF LABORATORY ANALYSIS**

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## PROJECT NARRATIVE

Project: 062308-2015-\*\*\*\* JFS 5017-MapI  
Pace Project No.: 10320025

---

**Method:** NWTPH-Dx  
**Description:** NWTPH-Dx GCS Silica Gel LV  
**Client:** GHD Services Inc  
**Date:** September 09, 2015

### General Information:

3 samples were analyzed for NWTPH-Dx. 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 3510C 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: OEXT/30627

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

### 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: 062308-2015-\*\*\*\* JFS 5017-MapI  
Pace Project No.: 10320025

---

**Method:** NWTPH-Gx  
**Description:** NWTPH-Gx GCV  
**Client:** GHD Services Inc  
**Date:** September 09, 2015

**General Information:**

3 samples were analyzed for NWTPH-Gx. 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.

**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: 062308-2015-\*\*\*\* JFS 5017-MapI

Pace Project No.: 10320025

---

**Method:** EPA 8260B

**Description:** 8260B MSV UST

**Client:** GHD Services Inc

**Date:** September 09, 2015

**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.

**Duplicate Sample:**

All duplicate sample results were within method 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: 062308-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10320025

**Sample:** GW-062308-608-082615-  
MW-14      **Lab ID:** 10320025001      Collected: 08/26/15 13:12      Received: 08/27/15 15:15      Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>		Analytical Method: NWTPH-Dx    Preparation Method: EPA 3510C						
Diesel Fuel Range SG	ND	mg/L	0.40	1	09/02/15 10:31	09/06/15 12:36	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	1	09/02/15 10:31	09/06/15 12:36	64742-65-0	
<b>Surrogates</b>								
o-Terphenyl (S)	64	%	50-150	1	09/02/15 10:31	09/06/15 12:36	84-15-1	
n-Triacontane (S)	69	%	50-150	1	09/02/15 10:31	09/06/15 12:36	638-68-6	
<b>NWTPH-Gx GCV</b>		Analytical Method: NWTPH-Gx						
TPH as Gas	<b>2390</b>	ug/L	500	5		08/31/15 18:08		
<b>Surrogates</b>								
a,a,a-Trifluorotoluene (S)	65	%	50-150	5		08/31/15 18:08	98-08-8	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: 062308-2015-\*\*\*\* JFS 5017-Mapl

Pace Project No.: 10320025

Sample: **GW-062308-608-082615-MW-15** Lab ID: **10320025002** Collected: 08/26/15 12:38 Received: 08/27/15 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>		Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C						
Diesel Fuel Range SG	ND	mg/L	0.40	1	09/02/15 10:31	09/06/15 13:18	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	1	09/02/15 10:31	09/06/15 13:18	64742-65-0	
<b>Surrogates</b>								
o-Terphenyl (S)	75	%	50-150	1	09/02/15 10:31	09/06/15 13:18	84-15-1	
n-Triacontane (S)	80	%	50-150	1	09/02/15 10:31	09/06/15 13:18	638-68-6	
<b>NWTPH-Gx GCV</b>		Analytical Method: NWTPH-Gx						
TPH as Gas	ND	ug/L	100	1		08/31/15 15:58		
<b>Surrogates</b>								
a,a,a-Trifluorotoluene (S)	91	%	50-150	1		08/31/15 15:58	98-08-8	
<b>8260B MSV UST</b>		Analytical Method: EPA 8260B						
Benzene	ND	ug/L	1.0	1		09/02/15 14:09	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		09/02/15 14:09	100-41-4	
Toluene	ND	ug/L	1.0	1		09/02/15 14:09	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		09/02/15 14:09	1330-20-7	
<b>Surrogates</b>								
1,2-Dichloroethane-d4 (S)	97	%	75-125	1		09/02/15 14:09	17060-07-0	
Toluene-d8 (S)	96	%	75-125	1		09/02/15 14:09	2037-26-5	
4-Bromofluorobenzene (S)	98	%	75-125	1		09/02/15 14:09	460-00-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: 062308-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10320025

**Sample:** GW-062308-608-082615-  
MW-16 **Lab ID:** 10320025003 **Collected:** 08/26/15 13:43 **Received:** 08/27/15 15:15 **Matrix:** Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>		Analytical Method: NWTPH-Dx Preparation Method: EPA 3510C						
Diesel Fuel Range SG	ND	mg/L	0.40	1	09/02/15 10:31	09/06/15 13:40	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	1	09/02/15 10:31	09/06/15 13:40	64742-65-0	
<b>Surrogates</b>								
o-Terphenyl (S)	59	%	50-150	1	09/02/15 10:31	09/06/15 13:40	84-15-1	
n-Triacontane (S)	63	%	50-150	1	09/02/15 10:31	09/06/15 13:40	638-68-6	
<b>NWTPH-Gx GCV</b>		Analytical Method: NWTPH-Gx						
TPH as Gas	ND	ug/L	100	1		08/31/15 16:20		
<b>Surrogates</b>								
a,a,a-Trifluorotoluene (S)	88	%	50-150	1		08/31/15 16:20	98-08-8	
<b>8260B MSV UST</b>		Analytical Method: EPA 8260B						
Benzene	ND	ug/L	1.0	1		09/02/15 14:26	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		09/02/15 14:26	100-41-4	
Toluene	ND	ug/L	1.0	1		09/02/15 14:26	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		09/02/15 14:26	1330-20-7	
<b>Surrogates</b>								
1,2-Dichloroethane-d4 (S)	100	%	75-125	1		09/02/15 14:26	17060-07-0	
Toluene-d8 (S)	97	%	75-125	1		09/02/15 14:26	2037-26-5	
4-Bromofluorobenzene (S)	101	%	75-125	1		09/02/15 14:26	460-00-4	

### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA**

Project: 062308-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10320025

QC Batch: GCV/14342 Analysis Method: NWTPH-Gx  
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water  
Associated Lab Samples: 10320025001, 10320025002, 10320025003

METHOD BLANK: 2064886 Matrix: Water  
Associated Lab Samples: 10320025001, 10320025002, 10320025003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	08/31/15 10:54	
a,a,a-Trifluorotoluene (S)	%.	91	50-150	08/31/15 10:54	

METHOD BLANK: 2064887 Matrix: Water  
Associated Lab Samples: 10320025001, 10320025002, 10320025003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	08/31/15 19:12	
a,a,a-Trifluorotoluene (S)	%.	81	50-150	08/31/15 19:12	

LABORATORY CONTROL SAMPLE & LCSD: 2064888

Parameter	Units	Spike Conc.	2064889		LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
			LCS Result	LCSD Result						
TPH as Gas	ug/L	1000	909	824	91	82	65-125	10	20	
a,a,a-Trifluorotoluene (S)	%.				105	95	50-150			

SAMPLE DUPLICATE: 2064891

Parameter	Units	10319606002 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	ND	30.4J		30	
a,a,a-Trifluorotoluene (S)	%.	90	93	4		

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**REPORT OF LABORATORY ANALYSIS**

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### QUALITY CONTROL DATA

Project: 062308-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10320025

QC Batch: MSV/33023 Analysis Method: EPA 8260B  
QC Batch Method: EPA 8260B Analysis Description: 8260B MSV UST-WATER  
Associated Lab Samples: 10320025002, 10320025003

METHOD BLANK: 2065889 Matrix: Water  
Associated Lab Samples: 10320025002, 10320025003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	09/02/15 12:15	
Ethylbenzene	ug/L	ND	1.0	09/02/15 12:15	
Toluene	ug/L	ND	1.0	09/02/15 12:15	
Xylene (Total)	ug/L	ND	3.0	09/02/15 12:15	
1,2-Dichloroethane-d4 (S)	%	96	75-125	09/02/15 12:15	
4-Bromofluorobenzene (S)	%	99	75-125	09/02/15 12:15	
Toluene-d8 (S)	%	95	75-125	09/02/15 12:15	

LABORATORY CONTROL SAMPLE: 2065890

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.2	91	71-125	
Ethylbenzene	ug/L	20	19.3	96	75-125	
Toluene	ug/L	20	19.0	95	74-125	
Xylene (Total)	ug/L	60	58.0	97	75-125	
1,2-Dichloroethane-d4 (S)	%			98	75-125	
4-Bromofluorobenzene (S)	%			98	75-125	
Toluene-d8 (S)	%			97	75-125	

MATRIX SPIKE SAMPLE: 2065918

Parameter	Units	10320025002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	ND	20	20.9	104	53-139	
Ethylbenzene	ug/L	ND	20	21.7	109	55-139	
Toluene	ug/L	ND	20	21.4	107	52-148	
Xylene (Total)	ug/L	ND	60	65.6	109	54-144	
1,2-Dichloroethane-d4 (S)	%				100	75-125	
4-Bromofluorobenzene (S)	%				100	75-125	
Toluene-d8 (S)	%				97	75-125	

SAMPLE DUPLICATE: 2065919

Parameter	Units	10320025003 Result	Dup Result	RPD	Max RPD	Qualifiers
Benzene	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Toluene	ug/L	ND	ND		30	
Xylene (Total)	ug/L	ND	ND		30	

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**QUALITY CONTROL DATA**

Project: 062308-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10320025

SAMPLE DUPLICATE: 2065919

Parameter	Units	10320025003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloroethane-d4 (S)	%.	100	100		0	
4-Bromofluorobenzene (S)	%.	101	99		1	
Toluene-d8 (S)	%.	97	95		2	

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### QUALITY CONTROL DATA

Project: 062308-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10320025

QC Batch: OEXT/30627 Analysis Method: NWTPH-Dx  
QC Batch Method: EPA 3510C Analysis Description: NWTPH-Dx GCS LV SG  
Associated Lab Samples: 10320025001, 10320025002, 10320025003

METHOD BLANK: 2067067 Matrix: Water  
Associated Lab Samples: 10320025001, 10320025002, 10320025003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	09/06/15 11:31	
Motor Oil Range SG	mg/L	ND	0.40	09/06/15 11:31	
n-Triacontane (S)	%	87	50-150	09/06/15 11:31	
o-Terphenyl (S)	%	84	50-150	09/06/15 11:31	

LABORATORY CONTROL SAMPLE & LCSD: 2067068

Parameter	Units	2067069		LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
		Spike Conc.	LCS Result						
Diesel Fuel Range SG	mg/L	2	1.7	85	84	50-150	2	20	
Motor Oil Range SG	mg/L	2	1.8	92	93	50-150	1	20	
n-Triacontane (S)	%			91	91	50-150			
o-Terphenyl (S)	%			87	88	50-150			

SAMPLE DUPLICATE: 2067070

Parameter	Units	10320025001 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	ND	.2J		30	
Motor Oil Range SG	mg/L	ND	ND		30	
n-Triacontane (S)	%	69	76	9		
o-Terphenyl (S)	%	64	68	7		

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### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: 062308-2015-\*\*\*\* JFS 5017-MapI  
Pace Project No.: 10320025

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### 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.  
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.  
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

### BATCH QUALIFIERS

Batch: GCSV/16629

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

## REPORT OF LABORATORY ANALYSIS

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### METHOD CROSS REFERENCE TABLE

Project: 062308-2015-\*\*\*\* JFS 5017-MapI  
Pace Project No.: 10320025

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

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 062308-2015-\*\*\*\* JFS 5017-MapI

Pace Project No.: 10320025


Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10320025001	GW-062308-608-082615-MW-14	EPA 3510C	OEXT/30627	NWTPH-Dx	GCSV/16629
10320025002	GW-062308-608-082615-MW-15	EPA 3510C	OEXT/30627	NWTPH-Dx	GCSV/16629
10320025003	GW-062308-608-082615-MW-16	EPA 3510C	OEXT/30627	NWTPH-Dx	GCSV/16629
10320025001	GW-062308-608-082615-MW-14	NWTPH-Gx	GCV/14342		
10320025002	GW-062308-608-082615-MW-15	NWTPH-Gx	GCV/14342		
10320025003	GW-062308-608-082615-MW-16	NWTPH-Gx	GCV/14342		
10320025002	GW-062308-608-082615-MW-15	EPA 8260B	MSV/33023		
10320025003	GW-062308-608-082615-MW-16	EPA 8260B	MSV/33023		

### REPORT OF LABORATORY ANALYSIS

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-Pace MN-

	Document Name: Cooler Transfer Check List	Revised Date: 23Apr2013 Page 1 of 1
	Document Number: F-MN-C-120-rev.01	Issuing Authority: Pace Minnesota Quality Office

### Cooler Transfer Check List

Client: GHD Service

Project Manager: Jenni Gross

Profile/Line #: 35119 #1

Received with Custody Seal: Yes  No

Custody Seal Intact: Yes  No

	Temp Read	Corrected Temp	Correction Factor
Temperature C:	<u>10.7</u>	<u>10.8</u>	<u>+0.1</u>
IR Gun # / IR1 IR2	<u>(0281)</u>		

Samples on ice, cooling process has begun

Rush/Short Hold: NO


Containers Intact:  Yes  No

Re-packed and Re-iced: ✓

Temp Blank Included:  Yes  No

Shipped By/Date: Je 8/26/15

Notes: EDB by 8011

	Document Name: <b>Sample Condition Upon Receipt Form</b>	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: F-MN-L-213-rev.13	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt      Client Name: CRA      Project #: **WO#: 10320025**

Courier:  Fed Ex     UPS     USPS     Client  
 Commercial     Pace     SpeedDee     Other: \_\_\_\_\_

Tracking Number: 6451 0864 3921

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:  B88A9130516413     B88A912167504     B88A0143310098      Type of Ice:  Wet     Blue     None     Samples on Ice, cooling process has begun

Cooler Temp Read (°C): 0.6      Cooler Temp Corrected (°C): 0.4      Biological Tissue Frozen?  Yes     No     N/A  
Temp should be above freezing to 6°C      Correction Factor: -0.2      Date and Initials of Person Examining Contents: JM 8/27/15

USDA Regulated Soil (  N/A, water sample)  
Did samples originate in a quarantine zone within the United States: AL, AR, AZ, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or WA (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?	<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/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input 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.
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 container
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12. <u>No Analysis on samples</u>
-Includes Date/Time/ID/Analysis Matrix: <u>WT JM 8/27/15</u>		
All containers needing acid/base preservation have been checked?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13. <input type="checkbox"/> HNO <sub>3</sub> <input type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> NaOH <input type="checkbox"/> HCl
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Sample #
Exceptions <u>VOA</u> , Coliform, TOC, Oil and Grease, <u>DRO/8015 (water) DOC</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Initial when completed:      Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14.
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input 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: Brian Peters / Jeff Cloud      Date/Time: 8/28/15 9:47A

Comments/Resolution: OK to sub out EDB soil to local certified sublab, MN instrument down until further notice. etc

Project Manager Review: Jenny Goss      Date: 8/28/15

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:	Document Revised: 30Jul2014
	Sample Container Count	Page 1 of 1
	Document No.: F-MN-C-090-Rev.04	Issuing Authority: Pace Minnesota Quality Office

1124  
Vals - 1126

Client: GHD (CRA) Project #: 10820025 COC ID: — COC Page: 1 of 1

A63H

Sample Line Item	BP1U	BP2U	BP3U	BP3S	BP3N	AG1U	AG1H	AG3S	AGIT	JGFU	JGCU	BJFU	WPDU	VG9M	VG9H	GN	SP5T	DWC
<input type="checkbox"/>	Check the box to the left to indicate that the container(s) received for line items - are identical to the container(s) documented for line item 1 for this CoC.																	
1								2							9			
2								2							6			
3								2							6			
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		

Comments:

Container Codes:

AG1H	1 L amber glass HCl	BP1N	1 L plastic HNO3	DG9C	40 mL vial with ascorbic acid	VG9B	40 mL clear VOA vial Na Bisulfate
AG1S	1 L amber glass H2SO4	BP1S	1 L plastic H2SO4	DG9T	40 mL amber VOA vial Na Thio	VG9H	40 mL clear VOA vial HCl
AG1T	1 L amber glass Na Thiosulfate	BP1U	1 L plastic unpreserved	DG9U	40 mL amber VOA vial	VG9M	40 mL clear VOA vial MeOH
AG1U	1 L amber glass unpreserved	BP1Z	1 L plastic NaOH, Zn Ac	DWC	Dry weight container	VG9S	40 mL clear VOA vial H2SO4
AG2H	500 mL amber glass HCl	BP2A	500 mL plastic NaOH	EZH	25 g Encore	VG9T	40 mL clear VOA vial Na Thiosulfate
AG2N	500 mL amber glass HNO3	BP2N	500 mL plastic HNO3	GJ	1 Gallon jug	VG9U	40 mL clear VOA vial
AG2S	500 mL amber glass H2SO4	BP2S	500 mL plastic H2SO4	GN	General unpreserved	VG9W	40 mL clear VOA vial DI Water/stir bar
AG2U	500 mL amber unpreserved	BP2U	500 mL plastic unpreserved	GNN	General preserved with Nitric Acid	VSG	Headspace septa vial and HCl
AG3H	250 mL amber glass HCl	BP2Z	500 mL NaOH, Zn Ac	GNS	General with H2SO4	WGFX	4 oz wide jar and wipe Hexane
AG3S	250 mL amber glass H2SO4	BP3A	250 mL plastic NaOH, Asc Acid	JGCU	8 oz clear wide jar	WPDU	16 oz clear wide mouth jar
AG3U	250 mL amber glass unpreserved	BP3N	250 mL plastic HNO3	JGFM	4 oz amber wide jar MeOH	XAD	XAD trap
AG4S	120 mL amber glass H2SO4	BP3S	250 mL plastic H2SO4	JGFU	4 oz wide jar		
AG4U	125 mL amber glass unpreserved	BP3U	250 mL plastic unpreserved	PE	Clear zip-lock bag		
BJFM	4 oz clear jar MeOH	BP3Z	250 mL plastic NaOH, Zn Ac	PUP	Polyurethane Foam		
BJFU	4 oz amber tared weight	BP4N	125 mL plastic HNO3	SP5T	120 mL Coliform NA Thiosulfate		
BJTM	2 oz clear MeOH	BP4U	125 mL plastic unpreserved	T	Tedlar Bag		
BJTU	2 oz clear wide jar	C	Air Cassettes	TDT	Thermal desorption tube		
BP1A	1 L plastic NaOH	DG9H	40 mL amber VOA vial HCl	U	Summa Can		



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[info@fremontanalytical.com](mailto:info@fremontanalytical.com)

**Pace Analytical Seattle**  
Jennifer Gross  
940 South Harney  
Seattle, WA 98108

**RE: 062308-2015 JFS 5017-MapI**  
**Lab ID: 1509025**

September 08, 2015

**Attention Jennifer Gross:**

Fremont Analytical, Inc. received 1 sample(s) on 9/1/2015 for the analyses presented in the following report.

***1,2-Dibromoethane (EDB) by EPA Method 8011***

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

A handwritten signature in black ink, appearing to read "Chelsea Ward", written in a cursive style.

Chelsea Ward  
Project Manager



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**CLIENT:** Pace Analytical Seattle  
**Project:** 062308-2015 JFS 5017-Mapl  
**Lab Order:** 1509025

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**Work Order Sample Summary**

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<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Date/Time Collected</b>	<b>Date/Time Received</b>
1509025-001	GW-062308-608-082615-MW-14	08/26/2015 1:12 PM	09/01/2015 12:10 PM

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**CLIENT:** Pace Analytical Seattle  
**Project:** 062308-2015 JFS 5017-Mapl

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**I. SAMPLE RECEIPT:**

Samples receipt information is recorded on the attached Sample Receipt Checklist.

**II. GENERAL REPORTING COMMENTS:**

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

**III. ANALYSES AND EXCEPTIONS:**

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

### Qualifiers:

- \* - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below LOQ
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit

### Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



## Analytical Report

WO#: 1509025

Date Reported: 9/8/2015

Client: Pace Analytical Seattle

Collection Date: 8/26/2015 1:12:00 PM

Project: 062308-2015 JFS 5017-MapI

Lab ID: 1509025-001

Matrix: Water

Client Sample ID: GW-062308-608-082615-MW-14

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**1,2-Dibromoethane (EDB) by EPA Method 8011**

Batch ID: 11769

Analyst: AK

1,2-Dibromoethane (EDB)

ND

0.00994

µg/L

1

9/4/2015 10:45:00 AM



Date: 9/8/2015

Work Order: 1509025  
 CLIENT: Pace Analytical Seattle  
 Project: 062308-2015 JFS 5017-MapI

**QC SUMMARY REPORT**  
**1,2-Dibromoethane (EDB) by EPA Method 8011**

Sample ID: <b>MB-11769</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>9/3/2015</b>	RunNo: <b>24721</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>11769</b>		Analysis Date: <b>9/4/2015</b>	SeqNo: <b>465906</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2-Dibromoethane (EDB) ND 0.0100

Sample ID: <b>LCS-11779</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>9/4/2015</b>	RunNo: <b>24721</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>11769</b>		Analysis Date: <b>9/4/2015</b>	SeqNo: <b>465905</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2-Dibromoethane (EDB) 0.766 0.0100 1.000 0 76.6 60 140

Sample ID: <b>1509001-001ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>9/3/2015</b>	RunNo: <b>24721</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>11769</b>		Analysis Date: <b>9/4/2015</b>	SeqNo: <b>465891</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2-Dibromoethane (EDB) ND 0.0119 0 30

Sample ID: <b>1509025-001AMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>	Prep Date: <b>9/3/2015</b>	RunNo: <b>24721</b>							
Client ID: <b>GW-062308-608-082615</b>	Batch ID: <b>11769</b>		Analysis Date: <b>9/4/2015</b>	SeqNo: <b>465902</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2-Dibromoethane (EDB) 0.939 0.00987 0.9872 0 95.1 60 140



Client Name: <b>PACE</b>	Work Order Number: <b>1509025</b>
Logged by: <b>Clare Griggs</b>	Date Received: <b>9/1/2015 12:10:00 PM</b>

### Chain of Custody

1. Is Chain of Custody complete? Yes  No  Not Present
2. How was the sample delivered? FedEx

### Log In

3. Coolers are present? Yes  No  NA
4. Shipping container/cooler in good condition? Yes  No
5. Custody Seals present on shipping container/cooler?  
(Refer to comments for Custody Seals not intact) Yes  No  Not Required
6. Was an attempt made to cool the samples? Yes  No  NA
7. Were all items received at a temperature of >0°C to 10.0°C\* Yes  No  NA
8. Sample(s) in proper container(s)? Yes  No
9. Sufficient sample volume for indicated test(s)? Yes  No
10. Are samples properly preserved? Yes  No
11. Was preservative added to bottles? Yes  No  NA
12. Is there headspace in the VOA vials? Yes  No  NA
13. Did all samples containers arrive in good condition(unbroken)? Yes  No
14. Does paperwork match bottle labels? Yes  No
15. Are matrices correctly identified on Chain of Custody? Yes  No
16. Is it clear what analyses were requested? Yes  No
17. Were all holding times able to be met? Yes  No

### Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes  No  NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

### Item Information

Item #	Temp °C
Cooler	4.3
Sample	1.5

\* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C



July 01, 2015

Brian Peters  
GHD Services, Inc.  
20818 44th Avenue W  
Suite 190  
Lynnwood, WA 98036

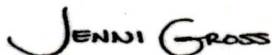
RE: Project: 062308-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10311296

Dear Brian Peters:

Enclosed are the analytical results for sample(s) received by the laboratory on June 20, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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  
Project Manager

Enclosures

cc: Jeffrey Cloud, GHD Services Inc.



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 062308-2015-\*\*\*\* JFS 5017-MapI  
Pace Project No.: 10311296

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### Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414  
A2LA Certification #: 2926.01  
Alaska Certification #: UST-078  
Alaska Certification #MN00064  
Alabama Certification #40770  
Arizona Certification #: AZ-0014  
Arkansas Certification #: 88-0680  
California Certification #: 01155CA  
Colorado Certification #Pace  
Connecticut Certification #: PH-0256  
EPA Region 8 Certification #: 8TMS-L  
Florida/NELAP Certification #: E87605  
Guam Certification #: 14-008r  
Georgia Certification #: 959  
Georgia EPD #: Pace  
Idaho Certification #: MN00064  
Hawaii Certification #MN00064  
Illinois Certification #: 200011  
Indiana Certification#C-MN-01  
Iowa Certification #: 368  
Kansas Certification #: E-10167  
Kentucky Dept of Envi. Protection - DW #90062  
Kentucky Dept of Envi. Protection - WWW #:90062  
Louisiana DEQ Certification #: 3086  
Louisiana DHH #: LA140001  
Maine Certification #: 2013011  
Maryland Certification #: 322  
Michigan DEPH Certification #: 9909

Minnesota Certification #: 027-053-137  
Mississippi Certification #: Pace  
Montana Certification #: MT0092  
Nevada Certification #: MN\_00064  
Nebraska Certification #: Pace  
New Jersey Certification #: MN-002  
New York Certification #: 11647  
North Carolina Certification #: 530  
North Carolina State Public Health #: 27700  
North Dakota Certification #: R-036  
Ohio EPA #: 4150  
Ohio VAP Certification #: CL101  
Oklahoma Certification #: 9507  
Oregon Certification #: MN200001  
Oregon Certification #: MN300001  
Pennsylvania Certification #: 68-00563  
Puerto Rico Certification  
Saipan (CNMI) #:MP0003  
South Carolina #:74003001  
Texas Certification #: T104704192  
Tennessee Certification #: 02818  
Utah Certification #: MN000642013-4  
Virginia DGS Certification #: 251  
Virginia/VELAP Certification #: Pace  
Washington Certification #: C486  
West Virginia Certification #: 382  
West Virginia DHHR #:9952C  
Wisconsin Certification #: 999407970

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## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: 062308-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10311296

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10311296001	GW-062308-608-061915-MW-14	Water	06/19/15 10:05	06/20/15 12:30
10311296002	GW-062308-608-061915-MW-15	Water	06/19/15 09:41	06/20/15 12:30
10311296003	GW-062308-608-061915-MW-16	Water	06/19/15 09:11	06/20/15 12:30

### REPORT OF LABORATORY ANALYSIS

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**SAMPLE ANALYTE COUNT**

Project: 062308-2015-\*\*\*\* JFS 5017-MapI  
Pace Project No.: 10311296

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10311296001	GW-062308-608-061915-MW-14	EPA 8011	XV1	2	PASI-M
		NWTPH-Dx	JRH	4	PASI-M
		NWTPH-Gx	AH2	2	PASI-M
		EPA 8260B	DJB	7	PASI-M
10311296002	GW-062308-608-061915-MW-15	NWTPH-Dx	JRH	4	PASI-M
		NWTPH-Gx	AH2	2	PASI-M
		EPA 8260B	DJB	7	PASI-M
10311296003	GW-062308-608-061915-MW-16	NWTPH-Dx	JRH	4	PASI-M
		NWTPH-Gx	AH2	2	PASI-M
		EPA 8260B	DJB	7	PASI-M

**REPORT OF LABORATORY ANALYSIS**

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## PROJECT NARRATIVE

Project: 062308-2015-\*\*\*\* JFS 5017-MapI  
Pace Project No.: 10311296

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**Method:** EPA 8011  
**Description:** 8011 GCS EDB and DBCP  
**Client:** Conestoga Rover's Association  
**Date:** July 01, 2015

**General Information:**

1 sample was analyzed for EPA 8011. 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 8011 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.

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: 062308-2015-\*\*\*\* JFS 5017-MapI  
Pace Project No.: 10311296

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**Method:** NWTPH-Dx  
**Description:** NWTPH-Dx GCS Silica Gel LV  
**Client:** Conestoga Rover's Association  
**Date:** July 01, 2015

**General Information:**

3 samples were analyzed for NWTPH-Dx. 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 3510 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: OEXT/29712

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

**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: 062308-2015-\*\*\*\* JFS 5017-MapI  
Pace Project No.: 10311296

---

**Method:** NWTPH-Gx  
**Description:** NWTPH-Gx GCV  
**Client:** Conestoga Rover's Association  
**Date:** July 01, 2015

**General Information:**

3 samples were analyzed for NWTPH-Gx. 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.

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: 062308-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10311296

---

**Method:** EPA 8260B  
**Description:** 8260B MSV UST  
**Client:** Conestoga Rover's Association  
**Date:** July 01, 2015

**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.

**Duplicate Sample:**

All duplicate sample results were within method 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: 062308-2015-\*\*\*\* JFS 5017-Mapl  
 Pace Project No.: 10311296

Sample: **GW-062308-608-061915-MW-14** Lab ID: **10311296001** Collected: 06/19/15 10:05 Received: 06/20/15 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8011 GCS EDB and DBCP</b>		Analytical Method: EPA 8011 Preparation Method: EPA 8011						
1,2-Dibromoethane (EDB)	ND	ug/L	0.0096	1	06/25/15 13:27	06/27/15 00:40	106-93-4	
<b>Surrogates</b>								
4-Bromofluorobenzene (S)	120	%	30-150	1	06/25/15 13:27	06/27/15 00:40	460-00-4	
<b>NWTPH-Dx GCS Silica Gel LV</b>		Analytical Method: NWTPH-Dx Preparation Method: EPA 3510						
Diesel Fuel Range SG	ND	mg/L	0.40	1	06/23/15 16:37	06/26/15 20:49	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	1	06/23/15 16:37	06/26/15 20:49	64742-65-0	
<b>Surrogates</b>								
o-Terphenyl (S)	61	%	50-150	1	06/23/15 16:37	06/26/15 20:49	84-15-1	
n-Triacontane (S)	71	%	50-150	1	06/23/15 16:37	06/26/15 20:49	638-68-6	
<b>NWTPH-Gx GCV</b>		Analytical Method: NWTPH-Gx						
TPH as Gas	<b>2540</b>	ug/L	1000	10		06/24/15 13:25		
<b>Surrogates</b>								
a,a,a-Trifluorotoluene (S)	125	%	50-150	10		06/24/15 13:25	98-08-8	
<b>8260B MSV UST</b>		Analytical Method: EPA 8260B						
Benzene	ND	ug/L	1.0	1		06/24/15 22:25	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		06/24/15 22:25	100-41-4	
Toluene	ND	ug/L	1.0	1		06/24/15 22:25	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		06/24/15 22:25	1330-20-7	
<b>Surrogates</b>								
1,2-Dichloroethane-d4 (S)	103	%	75-125	1		06/24/15 22:25	17060-07-0	
Toluene-d8 (S)	100	%	75-125	1		06/24/15 22:25	2037-26-5	
4-Bromofluorobenzene (S)	99	%	75-125	1		06/24/15 22:25	460-00-4	

**REPORT OF LABORATORY ANALYSIS**

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### ANALYTICAL RESULTS

Project: 062308-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10311296

**Sample:** GW-062308-608-061915-  
MW-15 **Lab ID:** 10311296002 **Collected:** 06/19/15 09:41 **Received:** 06/20/15 12:30 **Matrix:** Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>		Analytical Method: NWTPH-Dx Preparation Method: EPA 3510						
Diesel Fuel Range SG	ND	mg/L	0.40	1	06/23/15 16:37	06/26/15 21:11	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	1	06/23/15 16:37	06/26/15 21:11	64742-65-0	
<b>Surrogates</b>								
o-Terphenyl (S)	61	%	50-150	1	06/23/15 16:37	06/26/15 21:11	84-15-1	
n-Triacontane (S)	72	%	50-150	1	06/23/15 16:37	06/26/15 21:11	638-68-6	
<b>NWTPH-Gx GCV</b>		Analytical Method: NWTPH-Gx						
TPH as Gas	ND	ug/L	2000	20		06/24/15 13:47		
<b>Surrogates</b>								
a,a,a-Trifluorotoluene (S)	105	%	50-150	20		06/24/15 13:47	98-08-8	
<b>8260B MSV UST</b>		Analytical Method: EPA 8260B						
Benzene	ND	ug/L	1.0	1		06/24/15 22:41	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		06/24/15 22:41	100-41-4	
Toluene	ND	ug/L	1.0	1		06/24/15 22:41	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		06/24/15 22:41	1330-20-7	
<b>Surrogates</b>								
1,2-Dichloroethane-d4 (S)	100	%	75-125	1		06/24/15 22:41	17060-07-0	
Toluene-d8 (S)	99	%	75-125	1		06/24/15 22:41	2037-26-5	
4-Bromofluorobenzene (S)	102	%	75-125	1		06/24/15 22:41	460-00-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: 062308-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10311296

Sample: **GW-062308-608-061915-MW-16** Lab ID: **10311296003** Collected: 06/19/15 09:11 Received: 06/20/15 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>NWTPH-Dx GCS Silica Gel LV</b>		Analytical Method: NWTPH-Dx Preparation Method: EPA 3510						
Diesel Fuel Range SG	ND	mg/L	0.40	1	06/23/15 16:37	06/26/15 21:33	68334-30-5	
Motor Oil Range SG	ND	mg/L	0.40	1	06/23/15 16:37	06/26/15 21:33	64742-65-0	
<b>Surrogates</b>								
o-Terphenyl (S)	62	%	50-150	1	06/23/15 16:37	06/26/15 21:33	84-15-1	
n-Triacontane (S)	75	%	50-150	1	06/23/15 16:37	06/26/15 21:33	638-68-6	
<b>NWTPH-Gx GCV</b>		Analytical Method: NWTPH-Gx						
TPH as Gas	ND	ug/L	100	1		06/24/15 17:33		
<b>Surrogates</b>								
a,a,a-Trifluorotoluene (S)	118	%	50-150	1		06/24/15 17:33	98-08-8	
<b>8260B MSV UST</b>		Analytical Method: EPA 8260B						
Benzene	ND	ug/L	1.0	1		06/24/15 22:57	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		06/24/15 22:57	100-41-4	
Toluene	ND	ug/L	1.0	1		06/24/15 22:57	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		06/24/15 22:57	1330-20-7	
<b>Surrogates</b>								
1,2-Dichloroethane-d4 (S)	101	%	75-125	1		06/24/15 22:57	17060-07-0	
Toluene-d8 (S)	99	%	75-125	1		06/24/15 22:57	2037-26-5	
4-Bromofluorobenzene (S)	102	%	75-125	1		06/24/15 22:57	460-00-4	

### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA**

Project: 062308-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10311296

QC Batch: GCV/13919 Analysis Method: NWTPH-Gx  
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water  
Associated Lab Samples: 10311296001, 10311296002, 10311296003

METHOD BLANK: 2004231 Matrix: Water  
Associated Lab Samples: 10311296001, 10311296002, 10311296003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	06/24/15 09:43	
a,a,a-Trifluorotoluene (S)	%	118	50-150	06/24/15 09:43	

METHOD BLANK: 2004232 Matrix: Water  
Associated Lab Samples: 10311296001, 10311296002, 10311296003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	06/24/15 14:32	
a,a,a-Trifluorotoluene (S)	%	118	50-150	06/24/15 14:32	

LABORATORY CONTROL SAMPLE & LCSD: 2004233

Parameter	Units	Spike Conc.	2004234		% Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
			LCS Result	LCSD Result						
TPH as Gas	ug/L	1000	923	840	92	84	65-125	9	20	
a,a,a-Trifluorotoluene (S)	%				140	130	50-150			

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**REPORT OF LABORATORY ANALYSIS**

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**QUALITY CONTROL DATA**

Project: 062308-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10311296

QC Batch: MSV/32003 Analysis Method: EPA 8260B  
QC Batch Method: EPA 8260B Analysis Description: 8260B MSV UST-WATER  
Associated Lab Samples: 10311296001, 10311296002, 10311296003

METHOD BLANK: 2004040 Matrix: Water  
Associated Lab Samples: 10311296001, 10311296002, 10311296003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	06/24/15 17:49	
Ethylbenzene	ug/L	ND	1.0	06/24/15 17:49	
Toluene	ug/L	ND	1.0	06/24/15 17:49	
Xylene (Total)	ug/L	ND	3.0	06/24/15 17:49	
1,2-Dichloroethane-d4 (S)	%	101	75-125	06/24/15 17:49	
4-Bromofluorobenzene (S)	%	100	75-125	06/24/15 17:49	
Toluene-d8 (S)	%	99	75-125	06/24/15 17:49	

LABORATORY CONTROL SAMPLE: 2004041

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	20.7	104	71-125	
Ethylbenzene	ug/L	20	20.4	102	75-125	
Toluene	ug/L	20	20.4	102	74-125	
Xylene (Total)	ug/L	60	62.6	104	75-125	
1,2-Dichloroethane-d4 (S)	%			102	75-125	
4-Bromofluorobenzene (S)	%			100	75-125	
Toluene-d8 (S)	%			101	75-125	

MATRIX SPIKE SAMPLE: 2004058

Parameter	Units	10311297001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	ND	20	24.2	121	53-139	
Ethylbenzene	ug/L	ND	20	23.1	115	55-139	
Toluene	ug/L	ND	20	23.6	118	52-148	
Xylene (Total)	ug/L	ND	60	70.1	117	54-144	
1,2-Dichloroethane-d4 (S)	%				102	75-125	
4-Bromofluorobenzene (S)	%				102	75-125	
Toluene-d8 (S)	%				102	75-125	

SAMPLE DUPLICATE: 2004059

Parameter	Units	10311297002 Result	Dup Result	RPD	Max RPD	Qualifiers
Benzene	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Toluene	ug/L	ND	ND		30	
Xylene (Total)	ug/L	ND	ND		30	

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**QUALITY CONTROL DATA**

Project: 062308-2015-\*\*\*\* JFS 5017-MapI  
Pace Project No.: 10311296

SAMPLE DUPLICATE: 2004059

Parameter	Units	10311297002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloroethane-d4 (S)	%.	100	101	1		
4-Bromofluorobenzene (S)	%.	101	101	1		
Toluene-d8 (S)	%.	100	100	0		

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**QUALITY CONTROL DATA**

Project: 062308-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10311296

QC Batch: OEXT/29764 Analysis Method: EPA 8011  
QC Batch Method: EPA 8011 Analysis Description: GCS 8011 EDB DBCP  
Associated Lab Samples: 10311296001

METHOD BLANK: 2005796 Matrix: Water  
Associated Lab Samples: 10311296001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	0.010	06/26/15 23:20	
4-Bromofluorobenzene (S)	%.	99	30-150	06/26/15 23:20	

LABORATORY CONTROL SAMPLE & LCSD: 2005797

2005798

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	.11	0.10	0.11	97	107	60-140	9	20	
4-Bromofluorobenzene (S)	%.				93	99	30-150			

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**QUALITY CONTROL DATA**

Project: 062308-2015-\*\*\*\* JFS 5017-Mapl  
Pace Project No.: 10311296

QC Batch: OEXT/29712 Analysis Method: NWTPH-Dx  
QC Batch Method: EPA 3510 Analysis Description: NWTPH-Dx GCS LV SG  
Associated Lab Samples: 10311296001, 10311296002, 10311296003

METHOD BLANK: 2002726 Matrix: Water  
Associated Lab Samples: 10311296001, 10311296002, 10311296003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range SG	mg/L	ND	0.40	06/26/15 18:39	
Motor Oil Range SG	mg/L	ND	0.40	06/26/15 18:39	
n-Triacontane (S)	%	75	50-150	06/26/15 18:39	
o-Terphenyl (S)	%	60	50-150	06/26/15 18:39	

LABORATORY CONTROL SAMPLE & LCSD: 2002727

Parameter	Units	2002728		LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
		Spike Conc.	LCS Result						
Diesel Fuel Range SG	mg/L	2	1.5	73	66	50-150	9	20	
Motor Oil Range SG	mg/L	2	1.5	74	68	50-150	8	20	
n-Triacontane (S)	%			74	69	50-150			
o-Terphenyl (S)	%			71	65	50-150			

SAMPLE DUPLICATE: 2002729

Parameter	Units	10311296003 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	mg/L	ND	.055J		30	
Motor Oil Range SG	mg/L	ND	ND		30	
n-Triacontane (S)	%	75	73	3		
o-Terphenyl (S)	%	62	63	0		

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## QUALIFIERS

Project: 062308-2015-\*\*\*\* JFS 5017-MapI  
Pace Project No.: 10311296

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### 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.  
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.  
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

### BATCH QUALIFIERS

Batch: GCSV/16034

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

## REPORT OF LABORATORY ANALYSIS

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### METHOD CROSS REFERENCE TABLE

Project: 062308-2015-\*\*\*\* JFS 5017-MapI  
Pace Project No.: 10311296

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

### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: 062308-2015-\*\*\*\* JFS 5017-MapI


Pace Project No.: 10311296

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10311296001	GW-062308-608-061915-MW-14	EPA 8011	OEXT/29764	EPA 8011	GCSV/16031
10311296001	GW-062308-608-061915-MW-14	EPA 3510	OEXT/29712	NWTPH-Dx	GCSV/16034
10311296002	GW-062308-608-061915-MW-15	EPA 3510	OEXT/29712	NWTPH-Dx	GCSV/16034
10311296003	GW-062308-608-061915-MW-16	EPA 3510	OEXT/29712	NWTPH-Dx	GCSV/16034
10311296001	GW-062308-608-061915-MW-14	NWTPH-Gx	GCV/13919		
10311296002	GW-062308-608-061915-MW-15	NWTPH-Gx	GCV/13919		
10311296003	GW-062308-608-061915-MW-16	NWTPH-Gx	GCV/13919		
10311296001	GW-062308-608-061915-MW-14	EPA 8260B	MSV/32003		
10311296002	GW-062308-608-061915-MW-15	EPA 8260B	MSV/32003		
10311296003	GW-062308-608-061915-MW-16	EPA 8260B	MSV/32003		

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<b>Sample Condition Upon Receipt</b>	Client Name: <u>CRA</u>	Project #: <b>WO# : 10311296</b>
	Courier: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> USPS <input type="checkbox"/> Client <input type="checkbox"/> Commercial <input type="checkbox"/> Pace <input type="checkbox"/> Speedee <input type="checkbox"/> Other: _____ Tracking Number: <u>7808 5227 6830</u>	

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:  B88A9130516413    B88A912167504    B88A0143310098     
 Type of Ice:  Wet    Blue    None    Samples on ice, cooling process has begun

Cooler Temp Read (°C): 1.1      Cooler Temp Corrected (°C): 1.3     
 Biological Tissue Frozen?  Yes    No    N/A  
 Temp should be above freezing to 6°C     
 Correction Factor: 1.2     
 Date and Initials of Person Examining Contents: BM 6/20/15

**USDA Regulated Soil** (  N/A, water sample)  
 Did samples originate in a quarantine zone within the United States: AL, AR, AZ, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or WA (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? <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/or Signature on COC? <input checked="" type="checkbox"/> Yes <input 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.
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 container
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 have been checked? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13. <input type="checkbox"/> HNO <sub>3</sub> <input type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> NaOH <input type="checkbox"/> HCl
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide) <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Sample #
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Initial when completed: _____ Lot # of added preservative: _____
Headspace in VOA Vials (>6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input 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: \_\_\_\_\_

**Project Manager Review:** Kurt Xiong      Date: June 22, 2015

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: Cooler Transfer Check List	Revised Date: 23Apr2013 Page 1 of 1
	Document Number: F-MN-C-120-rev.01	Issuing Authority: Pace Minnesota Quality Office

### Cooler Transfer Check List

Client: CRA

Project Manager: Jenni Gross

Profile/Line #: 35119#1

Received with Custody Seal: Yes  No

Custody Seal Intact: Yes  No  NA

	Temp Read	Corrected Temp	Correction Factor
Temperature C:	<u>2.3</u>	<u>2.2</u>	<u>-0.1</u>
IR Gun # IR1 IR2			

Samples on ice, cooling process has begun

Rush/Short Hold: No

Containers Intact: Yes  No

Re-packed and Re-Iced: /

Temp Blank Included: Yes  No

Shipped By/Date: NO 6/19/15

Notes: