Transmittal

Date: March 16, 2018 Reference No.: 062308

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

Subject: 2017 Annual Groundwater Monitoring Report

No. of Copies	Description/Title	Drawing No./ Document Ref.	Issue
1	2017 Annual Groundwater Monitoring Report		

Issued for: ☒ Your information ☐ As requested ☐ Construction ☐ Quotation
☐ 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: Richard Wright, Jacksons Food Stores

Completed by: Brian Peters [Please Print] Signed:

Filing: Correspondence File

GHD Services Inc.
20818 44th Avenue West Suite 190 Lynnwood Washington 98036 USA
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2017 Annual Groundwater Monitoring Report

Jacksons Food Store No. 5017
21641 Maple Valley Highway
Maple Valley, Washington

Jacksons Food Stores

GHD | 20818 44th Avenue West Suite 190 Lynnwood Washington 98036

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1. Introduction

GHD Services, Inc. (GHD) prepared this report on behalf of Jacksons Food Stores. This annual report includes all groundwater monitoring data collected in 2017.

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	Washington State Department of Ecology, Sonia Fernandez
Agency Case No.	23177881
VCP No.	NW2995

2. Site Activities and Findings

2.1 Current Activities

GHD gauged and sampled wells according to the established monitoring program during 2017.

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

2.2 Findings

Quarter/Date	1st /March 16, 2017
Groundwater Flow Direction	Estimated to the west
Hydraulic Gradient	0.02 foot/foot
Depth to Water	11.64 to 15.36 feet below top of well casing

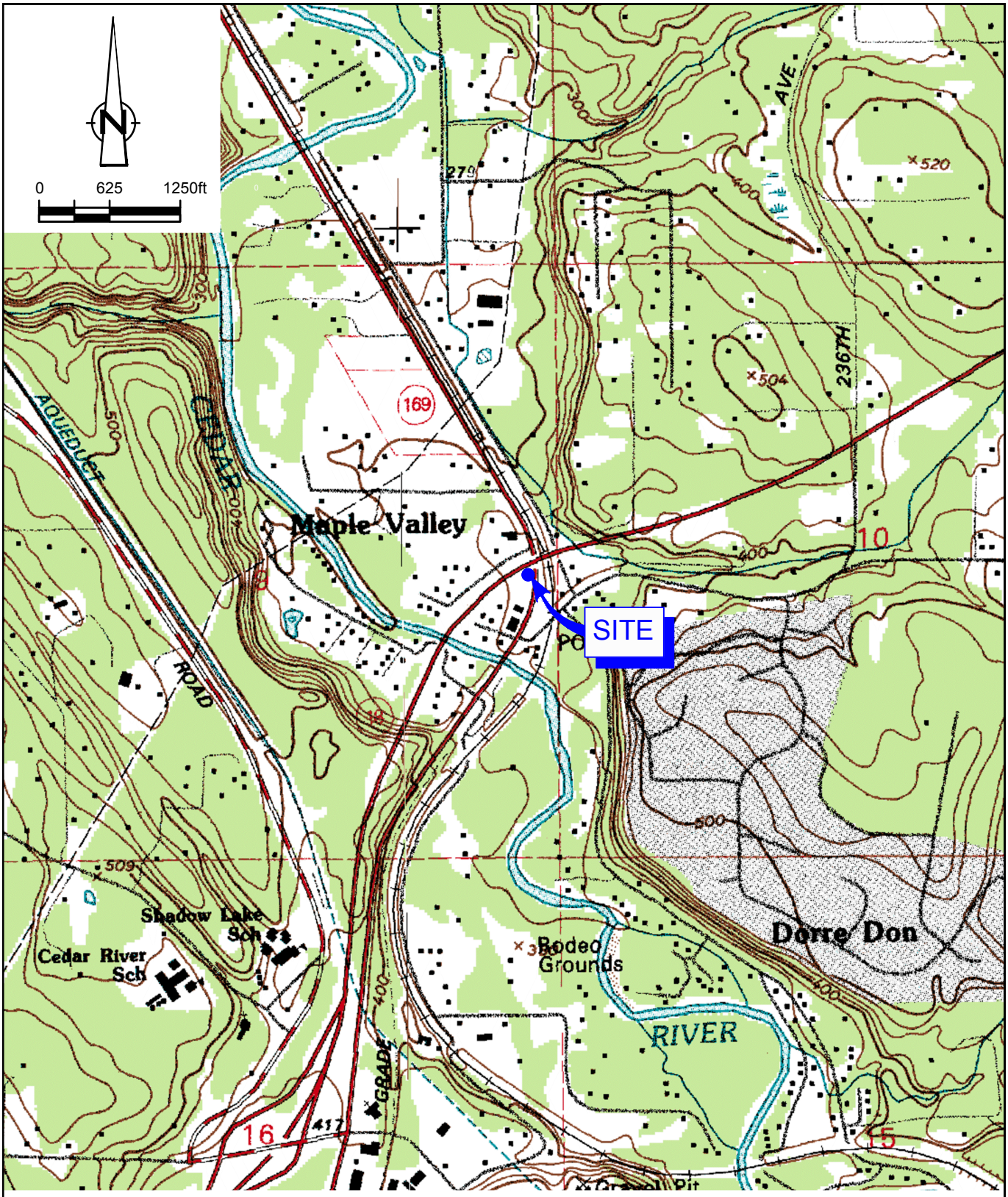
All of Which is Respectfully Submitted,

GHD

Brian Peters, LG

Brian Pauley

Figures

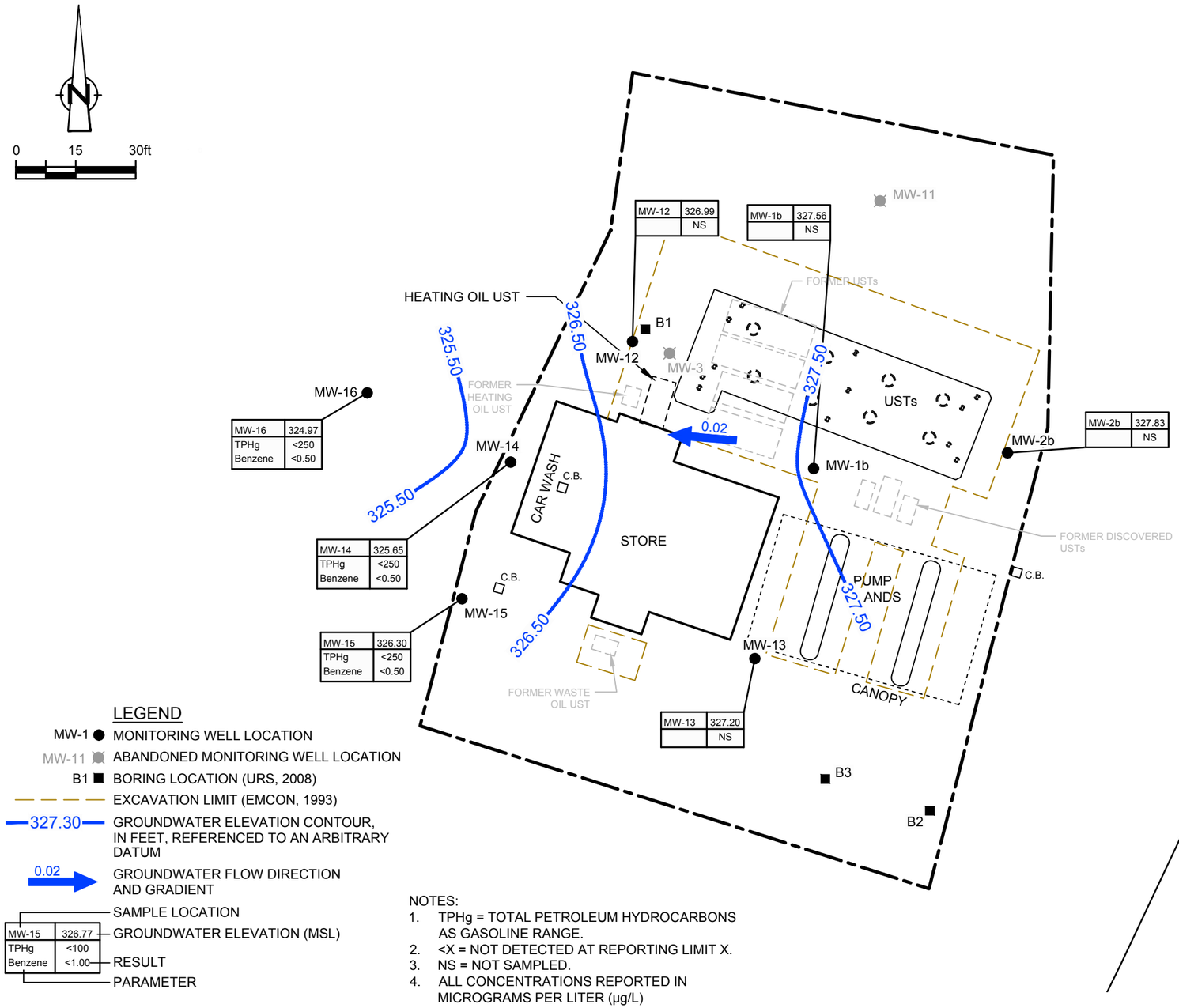


SOURCE: USGS QUADRANGLE MAP: MAPLE VALLEY, WA.

figure 1

VICINITY MAP
JACKSON'S FOOD STORE NO. 5017
21641 MAPLE VALLEY HIGHWAY
Maple Valley, Washington

GHD



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
- MW-15 | 326.77 — GROUNDWATER ELEVATION (MSL)
- 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 2

GROUNDWATER CONTOUR AND CHEMICAL CONCENTRATION MAP - MARCH 16, 2017
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
Jacksons Food Store
21641 Maple Valley Highway
Maple Valley, Washington

						HYDROCARBONS			VOCs													METALS	PAHs	PCBs
Sample ID	Date	TOC	DTW	SPH	GWE	TPHg	TPHd	TPHo	B	T	E	X	EDB	EDC	MTBE	TBA	DIPE	ETBE	TAME	PCE	Ethanol	Total Lead	Naphthalene	Total
	Model Toxics Control Act Method A Cleanup Levels					800/1000 ug/L	500 ug/L	500 ug/L	5 ug/L	1000 ug/L	700 ug/L	1000 ug/L	0.01 ug/L	5 ug/L	20 ug/L	N/A	N/A	N/A	N/A	5 ug/L	N/A	15 ug/L	160 ug/L	0.1 ug/L
				Feet																				
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-1b	03/25/16	340.54	13.35	---	327.19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-1b	07/11/16	340.54	14.00	---	326.54	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-1b	09/29/16	340.54	14.41	---	326.13	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-1b	12/06/16	340.54	13.57	---	326.97	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-1b	03/16/17	340.54	12.98	---	327.56	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
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-2b	03/25/16	339.47	11.94	---	327.53	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-2b	07/11/16	339.47	12.34	---	327.13	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-2b	09/29/16	339.47	12.78	---	326.69	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-2b	12/06/16	339.47	12.05	---	327.42	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-2b	03/16/17	339.47	11.64	---	327.83	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
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-12	03/25/16	340.34	13.75	---	326.59	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-12	07/11/16	340.34	14.37	---	325.97	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-12	09/29/16	340.34	14.74	---	325.60	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-12	12/06/16	340.34	13.96	---	326.38	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-12	03/16/17	340.34	13.35	---	326.99	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table 1

Summary of Groundwater Monitoring Data
Jacksons Food Store
21641 Maple Valley Highway
Maple Valley, Washington

						HYDROCARBONS			VOCs													METALS	PAHs	PCBs
Sample ID	Date	TOC	DTW	SPH	GWE	TPHg	TPHd	TPHo	B	T	E	X	EDB	EDC	MTBE	TBA	DIPE	ETBE	TAME	PCE	Ethanol	Total Lead	Naphthalene	Total
	Model Toxics Control Act Method A Cleanup Levels					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
				Feet		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-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-13	03/25/16	340.16	13.28	---	326.88	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-13	07/11/16	340.16	13.92	---	326.24	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-13	09/29/16	340.16	14.38	---	325.78	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-13	12/06/16	340.16	13.56	---	326.60	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-13	03/16/17	340.16	12.96	---	327.20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-14	06/12/14	340.34	13.74	---	326.60	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-14	06/18/14	340.34	13.74	---	326.60	**3,520**	**1,040 / 1,210 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	---	---	---	---	4	---	---	---	---	---	---	---	---	---	---	---
MW-14	11/12/15	340.34	13.81	---	326.53	**1,110**	<400	<400	---	---	---	---	<0.0017	---	---	---	---	---	---	---	---	---	---	---
MW-14	03/25/16	340.34	14.94	---	325.40	**1,800**	<400	<400	<1.0	<1.0	<1.0	<3.0	---	---	---	---	---	---	---	---	---	---	---	---
MW-14	07/11/16	340.34	15.48	---	324.86	**1,330**	450	<270	<0.50	<0.50	<0.50	<1.5	---	---	---	---	---	---	---	---	---	---	---	---
MW-14	09/29/16	340.34	15.81	---	324.53	799	490	280	<0.50	<0.50	<0.50	<1.5	---	---	---	---	---	---	---	---	---	---	---	---
MW-14	12/06/16	340.34	15.11	---	325.23	**1,460**	<220	<420	<1.0	0.12 J	0.14 J	<3.0	---	---	---	---	---	---	---	---	---	---	---	---
MW-14	03/16/17	340.34	14.69	---	325.65	<250	<470	<470	<0.50	<0.50	<0.50	<1.5	---	---	---	---	---	---	---	---	---	---	---	---
MW-15	06/12/14	340.16	12.75	---	327.41	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-15	06/18/14	340.16	13.19	---	326.97	<100	27.0 J / <93.9 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	<94.3 / <98.0 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	<93.9 / <93.9 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	---	---	---	---	---	---	---	---	---	---	---	---
MW-15	08/26/15	340.16	13.64	---	326.52	<100	<400	<400	<1.0	<1.0	<1.0	<3.0	---	---	---	---	---	---	---	---	---	---	---	---
MW-15	11/12/15	340.16	13.20	---	326.96	<100	<400	<400	<1.0	<1.0	<1.0	<3.0	---	---	---	---	---	---	---	---	---	---	---	---
MW-15	03/25/16	340.16	14.08	---	326.08	<100	<410	<410	<1.0	<1.0	<1.0	<3.0	---	---	---	---	---	---	---	---	---	---	---	---
MW-15	07/11/16	340.16	14.60	---	325.56	<250	<180	<270	<0.50	<0.50	<0.50	<1.5	---	---	---	---	---	---	---	---	---	---	---	---
MW-15	09/29/16	340.16	14.97	---	325.19	<250	<190	<280	<0.50	<0.50	<0.50	<1.5	---	---	---	---	---	---	---	---	---	---	---	---
MW-15	12/06/16	340.16	14.32	---	325.84	<100	<220	<420	<1.0	<1.0	<1.0	<3.0	---	---	---	---	---	---	---	---	---	---	---	---

Table 1

Summary of Groundwater Monitoring Data
Jacksons Food Store
21641 Maple Valley Highway
Maple Valley, Washington

						HYDROCARBONS			VOCs													METALS	PAHs	PCBs
Sample ID	Date	TOC	DTW	SPH	GWE	TPHg	TPHd	TPHo	B	T	E	X	EDB	EDC	MTBE	TBA	DIPE	ETBE	TAME	PCE	Ethanol	Total Lead	Naphthalene	Total
	Model Toxics Control Act Method A Cleanup Levels			Feet		800/1000 ug/L	500 ug/L	500 ug/L	5 ug/L	1000 ug/L	700 ug/L	1000 ug/L	0.01 ug/L	5 ug/L	20 ug/L	N/A	N/A	N/A	N/A	5 ug/L	N/A	15 ug/L	160 ug/L	0.1 ug/L
MW-15	03/16/17	340.16	13.86	---	326.30	<250	<480	<480	<0.50	<0.50	<0.50	<1.5	---	---	---	---	---	---	---	---	---	---	---	---
MW-16	12/12/14	340.33	14.19	---	326.14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-16	12/22/14	340.33	14.24	---	326.09	<100	<93.9 / <93.9 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	2.28	---	<2	<5.00	---
MW-16	06/19/15	340.33	14.43	---	325.90	<100	<400	<400	<1.0	<1.0	<1.0	<3.0	---	---	---	---	---	---	---	---	---	---	---	---
MW-16	08/26/15	340.33	14.80	---	325.53	<100	<400	<400	<1.0	<1.0	<1.0	<3.0	---	---	---	---	---	---	---	---	---	---	---	---
MW-16	11/12/15	340.33	14.35	---	325.98	<100	<400	<400	<1.0	<1.0	<1.0	<3.0	---	---	---	---	---	---	---	---	---	---	---	---
MW-16	03/25/16	340.33	15.58	---	324.75	<100	<380	<380	<1.0	<1.0	<1.0	<3.0	---	---	---	---	---	---	---	---	---	---	---	---
MW-16	07/11/16	340.33	15.98	---	324.35	<250	290	<280	<0.50	<0.50	<0.50	<1.5	---	---	---	---	---	---	---	---	---	---	---	---
MW-16	09/29/16	340.33	16.25	---	324.08	<250	<180	<280	<0.50	<0.50	<0.50	<1.5	---	---	---	---	---	---	---	---	---	---	---	---
MW-16	12/06/16	340.33	15.73	---	324.60	<100	<220	<420	<1.0	<1.0	<1.0	<3.0	---	---	---	---	---	---	---	---	---	---	---	---
MW-16	03/16/17	340.33	15.36	---	324.97	<250	<430	<430	<0.50	<0.50	<0.50	<1.5	---	---	---	---	---	---	---	---	---	---	---	---

Notes:
SPH = Separate phase hydrocarbons (thickness measured in feet)
DTW = Depth to Water in feet
GWE = Groundwater Elevation in feet relative to mean sea level
TOC = Top of Casing in feet relative to mean sea level
All results in micrograms per liter (µg/L) unless otherwise indicated
TPHg = Total petroleum hydrocarbons as gasoline analyzed by NWTPH-Gx unless otherwise noted.
TPHd = Total petroleum hydrocarbons as diesel, analyzed by NWTPH-Dx unless otherwise noted
TPHo = Total petroleum hydrocarbons as oil, analyzed by NWTPH-Dx unless otherwise noted
BTEX = Benzene, toluene, ethylbenzene, and xylenes analyzed by EPA Method 8260B unless otherwise noted.
EDB = 1,2-Dibromoethane analyzed by EPA Method 8011
EDC = 1,2-Dichloroethane analyzed by EPA Method 8260B
MTBE = Methyl tertiary-butyl ether analyzed by EPA Method 8260B
VOCs = Volatile organic compounds
PCE = Tetrachloroethene by EPA Method 8260B
PAHs = Polycyclic aromatic hydrocarbons analyzed by EPA Method 8270C-SIM
<x = Not detected at laboratory reporting limit x
--- = Not analyzed
Concentrations in bold type indicate the analyte was detected above MTCA Method A cleanup levels

* indicates the groundwater samples were additionally analyzed for full list of VOCs by EPA Method 8260B; some analytes concentrations were detected above the laboratory reporting limits but no concentrations were above MTCA Method A cleanup levels. Please see corresponding laboratory report for detected HVOCs.
a = diesel and heavy oil results were reported in two values. The first value is obtained by Method NWTPH-DX with Silica Gel Cleanup; the second value is obtained by NWTPH-Dx without Silica Gel Cleanup.
b = Compound was found in the blank and sample.
J = Result is less than the reporting limits but greater than or equal to the method detection limits and the concentration is an approximate value.

Appendices

Appendix A
Field Forms

GHD

DAILY FIELD REPORT

Submit copy to Company Safety Officer

Project Name: JFS maple valley	GHD Mgr: B. Peters	Field Rep: D. Trudeau
Project Number: 062308	Date: 3/16/17	Site Address: 21641 Maple Valley Hwy
General Tasks: GW Sampling / well gauging		
Emergency Drill Conducted:		
HASP Meeting Conducted (Y/N):	Equipment Checked (Y/N):	PID Calibrated (Y/N):

Time	Activity/Comments	SWA
0920	GHD onsite - purchase ice / ice sample cooler	
	- Inform attendant of activities.	
	- Tailgate Safety.	
	- Calibrate instruments	
	- ~~Flowcell~~ (U63890X) Fel turbmeter	
	0.1NTU — 0.17	
	15.0 — 15.0	
	100. — 99	
	- Flowcell U65515X	
	pH 7 - F034-09 - exp 2-18-18	
	pH 4 - F069-20 - 3-14-18	
	1.40 g_{NaCl} - E231-17 - 8-27-17	
	- water level meter J NFO 7162	
	- Begin gauging wells see water level record (sp-11)	
1030	Begin Pumping MW 16, 15, 14 see purge sheets.	
1300	- Dump purgewater. Inform attendant.	
	- Offsite.	

SWA Key:	1: SPSA/Task Change	2: Pedestrian in Proximity	3: Unauthorized Personnel	4: Review Work Process
[illegible]spection	6: Safety Orientation	7: Uncontrollable Factor	8: Minor First Aid	9: Major (explain in notes)

Hours _____ Miles _____ Other _____ Shared _____

Water Level Record
(Form SP-11)

Project Name:	JFS maple valley	**Location:**	maple valley
Job No.:	062308	**Date:**	3/16/17
Client:	JFS	**Engineer/Geologist:**	D. Tudor

Observation Well	Top of Casing Elevation A		Depth to Water B		Water Level Elevation DTB A-B	
	feet	metres	feet	metres	feet	metres
MW-1B			12.98		24.62	
MW-2B			11.64		24.20	
MW-12			13.35		20.07	
MW-13			12.96		20.04	
MW-14			14.69		20.14	
MW-15			13.86		20.17	
MW-16			15.36		25.36	

GHD

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page : 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	GHD	Report To:	brian.peters@ghd.com	Attention:	Accounts Payable
Address:	20818 44th Ave W Lynnwood, WA	Copy To:	Jeffrey.cloud@ghd.com	Company Name:	GHD
				Address:	20818 44th Ave W
Email To:	B. Peters, J. Cloud	Purchase Order No.		Pace Quote Reference:	
Phone:	Fax	Client Project ID:	062306	Pace Project Manager:	Jenni Gloss
Requested Due Date/TAT:	10 Day (Standard)	Container Order Number:		Pace Profile #:	

Regulatory Agency

State / Location

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

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

ITEM#	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analyses Test: BTEX 8260	NWTPH Dx	NWTPH Dx	Residual Chlorine (Y/N)
1	GW-03/16/17-DT-MW-14	WT	G	3/16	1245	3/16	1245		3				3						X	X	X	
2	↓ ↓ ↓ ↓ 15	↓	↓	↓	1150	↓	1150		3				3						X	X	X	
3	↓ ↓ ↓ ↓ 16	↓	↓	↓	1105	↓	1105		3				3						X	X	X	
4	Trip blank	DT	G	↓		↓			4				4									
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	DT Tribeny	3/16/17	1330	[illegible]	3/16/17	13:30	8.9	U	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: D. Tribeny

SIGNATURE of SAMPLER: [signature] DATE Signed: 3/16/17

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
8.9	U	N	Y

Project Planning Completion and Follow-Up Checklist
(Form SP-02)

Date: 3/16/17 (mm/dd/yyyy) Reference No. 062308

Prior Planning and Coordination

- [x] Confirm well numbers, location and accessibility
- [x] Review of project documents, Health and Safety Plan (HASP), sampling Quality Assurance/Quality Control (QA/QC) and site-specific sampling requirements
- [ ] Historical well data; depth, pH, performance and disposition of purge water
- [x] Site access notification and coordination
- [x] Coordination with laboratory through GHD chemistry group
- [x] Procurement, inventory and inspection of all equipment and supplies
- [x] Prior equipment preparation, calibration or maintenance
- [x] All utilities located and approved

Filed Procedure

- [x] Instruments calibrated daily
- [x] Sampling equipment decontaminated in accordance with the QAPP
- [x] Field measurements and sampling details logged in appropriate field books or an appropriate field form
- [x] Well volume calculated and specified volumes removed
- [x] Specified samples, and QA/QC samples taken per Quality Assurance Project Plan (QAPP)
- [x] Samples properly labeled, preserved and packed
- [x] Sampling locations secured or completed according to work plan
- [x] Sample date times, locations and sample numbers have all been recorded in applicable log(s)
- [x] Samples have been properly stored if not shipped/delivered to lab same day
- [x] Samples were shipped with complete and accurate chain of custody record

Follow-Up Activities

- [x] Questionable measurements field verified
- [x] Confirm all samples collected
- [x] All equipment has been maintained and returned
- [x] Sampling information reduced and required sample keys and field data distributed
- [x] Chain of custody records filed
- [x] Expendable stock supplies replaced
- [x] GHD and client-controlled items returned (i.e., keys)
- [x] Arrange disposal of investigation generated wastes with client
- [x] Confirm all samples collected

Completed By: D. Trudeau (please print) Date: 3/16/17 (mm/dd/yyyy)

Groundwater Sampling Equipment and Supply Checklist
(Form SP-05)

Date: 3/16/17 (mm/dd/yyyy)

Reference No. 062308

Equipment

- [x] Required sampling equipment (as per work plan or QAPP)

Instruments

Water level indicator

Thermometer *

- [x] pH meter *
- [x] Conductivity probe *
- [x] Turbidity meter
- [ ] HNu/OVA/Microtip
- [ ] Air monitoring equipment

Supplies

- [ ] Gasoline can/gas
- [x] Polypropylene rope
- [x] Aluminum foil
- [x] Paper towels
- [x] pH buffer solution(s)
- [x] Conductivity standard solution(s)
- [x] Decontamination fluids (as per work plan and QAPP)
- [x] Sample jars (extra)
- [x] Sample jar labels (GHD) materials
- [x] Cooler(s)/ice packs/packing materials
- [x] Trash bags
- [x] Sample preservatives
- [x] Plastic spray bottles
- [x] Plastic basin or pan
- [x] Sample filter (on line or external filter)
- [x] Polyethylene sheeting
- [x] First aid kit
- [ ] Personal protective equipment (as per HASP)

Documentation

- [x] Chain of custody forms
- [x] Well logs
- [x] Notebook/Field book
- [x] Photolog
- [x] Site pass/badge
- [x] Federal Express manifests
- [x] Previous well logs/previous historical well data
- [x] Site map
- [x] Blank well data forms

Miscellaneous

- [x] Well cap keys
- [x] Bolt cutters
- [x] Camera/film
- [x] Knife
- [x] Spare batteries for instruments
- [ ] Lock deicer (winter)
- [x] Reinforced packing tape
- [x] Pen/pencil/indelible marking pen
- [x] Tool box
- [x] Spare locks/keys
- [ ] On site transportation (all-terrain vehicle/snowmobiles)

Completed By: D. Tandon (please print)

Date: 3.16.17 (mm/dd/yyyy)

DAILY OPERATOR CHECKLIST

Date:	3/16/17		Vehicle/License Number:	355 VAN	
Odometer:	30375 - 458		Driver: D. Tuden		
PRE-DEPARTURE CHECK				Status (√)	
				OK	Needs Attention
1. Lights	a. Headlights			✓	
	b. Tail Lights/Rear Lights			✓	
	c. Turn Signals/Indicator			✓	
	d. Brake Lights			✓	
	e. Emergency Flashers/Hazard Light			✓	
	f. Service Indicator Lights (e.g. check engine, oil check, etc.)			✓	
2. Tires - Gauge Check		Actual PSI	Recommended PSI (inside vehicle driver door)	✓	
3. Windshield/Windscreen and Windows (cracks or chips)				✓	
4. Mirrors (cracks, broken)				✓	
5. Horn				✓	
6. Paperwork (registration, insurance card, inspection sticker, tax disc)				✓	
7. Safety Items (first aid kit, fire extinguisher, road hazard kit)				✓	
Date of Fire Extinguisher Inspection:				✓	
Date of First Aid Kit Inspection:				✓	
8. Vehicle Requirements Met (3-point seatbelt, head restraints, ABS brakes, side-impact protection, and airbags)				✓	
POST-DEPARTURE CHECK				Status (√)	
				OK	Needs Attention
1. Engine	a. Overheating			✓	
	b. Oil Leaks			✓	
	c. Knocks			✓	
	d. Engine Lights			✓	
	e. Emergency Flashers/Hazard Light			✓	
2. Transmission (Shifting)				✓	
3. Service Indicator Lights (e.g. check engine light, oil check, etc.)				✓	
4. Brakes	a. Squeaking			✓	
	b. Excessive Pedal Travel			✓	
	c. Grinding			✓	
5. Steering	a. Alignment			✓	
	b. Grinding			✓	
	c. Steering Wheel Vibrations			✓	

Please note any observations on the maintenance board and report to your vehicle manager.

Additional Comments:

062308

Printed Name D. Tuden Signature

Return completed forms to your Vehicle Maintenance Manager.

Tailgate Safety Meeting Form
Small Group Format - Multiple Days

Date:	3/16/17	Time:	0930	Project No.:	062308
Presenter:	D. Trudeau			Project Name:	JFS maple valley

Safety topics/items discussed:

Slips/trips/falls. PPE

Emergency preparedness:

First Aid Provider(s):		Muster Point:	VAN
		Method of Communication:	cell
AED Responder:		Fire Extinguisher Location:	VAN
First Aid Kit Location:	GHD VAN	Eye Wash Location:	VAN

Print Name	Signature	Company
D. Trudeau		GHD

Date:		Time:		Project No.:	
Presenter:			Project Name:		

Safety topics/items discussed:

Emergency preparedness:

First Aid Provider(s):		Muster Point:	
		Emergency Communication:	
AED Responder:		Fire Extinguisher Location:	
First Aid Kit Location:		Eye Wash Location:	

Print Name	Signature	Company

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

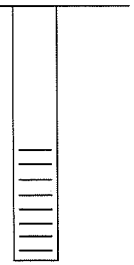
Project Name: 1FS Maple Valley
Ref. No.: 062308

Date: 3/16/17
Personnel: D. Trudeau

Monitoring Well Data:

Well No.: MW-14
Vapour PID (ppm):
Measurement Point: TOC
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 20.14
Depth of Sediment (m/ft):

Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2" PVC
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 14.69



Start pump at: 1205

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
		Precision Required:		±3 %	±0.005 or 0.01[5]	±10 %	±10 %	±0.1 Units	±10 mV		
1220	120	14.89	0.20	10.18	0.157	62.4	1.83	6.31	72.6		
1225		14.90	0.21	10.23	0.157	40.4	1.58	6.31	72.6		
1230		14.89	0.20	10.27	0.158	38.2	1.37	6.32	72.0		
1235		14.89	0.20	10.30	0.157	37.4	1.32	6.33	70.6		
1240		14.88	0.19	10.33	0.157	36.8	1.31	6.33	69.8		
1245	Sampled								total	4 cy purged	

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

(5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Sample NO.

GW-031617-DT-MW14

6x / DX / BEX

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

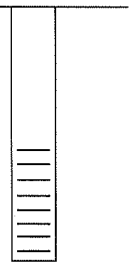
Project Name: Ifs Maple Valley
Ref. No.: 062308

Date: 3/16/17
Personnel: D. Jackson

Monitoring Well Data:

Well No.: MW 15
Vapour PID (ppm):
Measurement Point: TOC
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 20.17
Depth of Sediment (m/ft):

Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2" PVC
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 13.86



Start pump at: 1120

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
	Precision Required:			±3 %	±0.005 or 0.01[5]	±10 %	±10 %	±0.1 Units	±10 mV		
1135	120	13.86	0.00	11.57	0.177	2.72	5.15	6.25	40.0		
1140	"	13.86	0.00	11.56	0.177	2.59	5.12	6.25	41.2		
1145	"	13.86	0.00	11.53	0.177	2.80	5.09	6.25	43.9		
1150	Sampled								total	Cly purged.	

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

(5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Sample No

GW · 031617 · DT · MW 15

Gx, Dx, Bkx

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

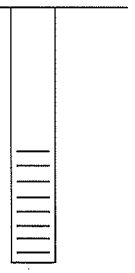
Project Name: JFS Maple Valley
Ref. No.: 062308

Date: 3/16/17
Personnel: D. Trudeau

Monitoring Well Data:

Well No.: MW-16
Vapour PID (ppm):
Measurement Point: TOC
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 25.36
Depth of Sediment (m/ft):

Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2"
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 15.36



Start Pump At: 1030

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required:				±3 %	±0.005 or 0.01[5]	±10 %	±10 %	±0.1 Units	±10 mV		
1045	120	15.37	0.01	10.87	0.164	21.1	5.64	6.18	20.5		
1050	"	15.37	0.01	11.17	0.152	20.3	5.61	6.18	19.0		
1055	"	15.37	0.01	11.20	0.150	20.6	5.58	6.20	18.0		
1100	"	15.37	0.01	11.25	0.148	14.8	5.55	6.61	18.3		
1105	Sampled								total	< 1y purged	

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

(5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Sample No.
GW-031617-DT-MW16
Gx Dx Btex

Appendix B
Laboratory Analytical Report

Pace Analytical Services, LLC
2795 Second Street - Suite 300
Davis, CA 95618
(530) 297-4800

March 27, 2017

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

RE: Project: 062308
Pace Project No.: 1284377

Dear Brian Peters:
Enclosed are the analytical results for sample(s) received by the laboratory on March 17, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Jennifer Gross
jennifer.gross@pacelabs.com
(530) 297-4800
Project Manager

Enclosures

cc: Jeffrey Cloud, GHD Services, Inc

Pace Analytical Services, LLC
2795 Second Street - Suite 300
Davis, CA 95618
(530) 297-4800

CERTIFICATIONS

Project: 062308
Pace Project No.: 1284377

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: UST-078
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: MN00064
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8 Certification #: 8TMS-L
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia WW Certification #: 382
Wisconsin Certification #: 999407970
Wyoming via EPA Region 8 Certification #: 8TMS-L

Davis Cerification IDs

2795 Second Street Suite 300 Davis, CA 95618
North Dakota Certification #: R-214
Oregon Certification #: CA300002
Washington Certification #: C926-15a
California Certification #: 08263CA
Minnesota Department of Health Certification #: 006-999-465

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
2795 Second Street - Suite 300
Davis, CA 95618
(530) 297-4800

SAMPLE SUMMARY

Project: 062308
Pace Project No.: 1284377

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1284377001	**GW.031617.DT.MW14**	Water	03/16/17 12:45	03/17/17 09:25
1284377002	**GW.031617.DT.MW15**	Water	03/16/17 11:50	03/17/17 09:25
1284377003	**GW.031617.DT.MW16**	Water	03/16/17 11:05	03/17/17 09:25
1284377004	**Trip Blank**	Water	03/16/17 00:00	03/17/17 09:25

Pace Analytical Services, LLC
2795 Second Street - Suite 300
Davis, CA 95618
(530) 297-4800

SAMPLE ANALYTE COUNT

Project: 062308
Pace Project No.: 1284377

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1284377001	**GW.031617.DT.MW14**	EPA 8260B	JCP	7	PASI-DAV
		NWTPH-Gx	JCP	4	PASI-DAV
		NWTPH-Dx	MT	4	PASI-M
1284377002	**GW.031617.DT.MW15**	EPA 8260B	JCP	7	PASI-DAV
		NWTPH-Gx	JCP	4	PASI-DAV
		NWTPH-Dx	MT	4	PASI-M
1284377003	**GW.031617.DT.MW16**	EPA 8260B	JCP	7	PASI-DAV
		NWTPH-Gx	JCP	4	PASI-DAV
		NWTPH-Dx	MT	4	PASI-M
1284377004	**Trip Blank**	EPA 8260B	JCP	7	PASI-DAV
		NWTPH-Gx	JCP	4	PASI-DAV

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PROJECT NARRATIVE

Project: 062308
Pace Project No.: 1284377

Method: **EPA 8260B**
Description: 8260 MSV Med Water
Client: GHD Services Inc.
Date: March 27, 2017

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

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

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

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

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

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

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

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

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

Additional Comments:

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PROJECT NARRATIVE

Project: 062308
Pace Project No.: 1284377

Method: **NWTPH-Gx**
Description: NWTPH-Gx MSV Water
Client: GHD Services Inc.
Date: March 27, 2017

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.

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

Additional Comments:

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PROJECT NARRATIVE

Project: 062308
Pace Project No.: 1284377

Method: **NWTPH-Dx**
Description: NWTPH-Dx GCS LV
Client: GHD Services Inc.
Date: March 27, 2017

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 Mod. 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.

QC Batch: 465025

S0: Surrogate recovery outside laboratory control limits.

- GW.031617.DT.MW16 (Lab ID: 1284377003)
  - n-Triacontane (S)
  - o-Terphenyl (S)

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

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

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

QC Batch: 465025

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:

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PROJECT NARRATIVE

Project: 062308
Pace Project No.: 1284377

Method: **NWTPH-Dx**
Description: NWTPH-Dx GCS LV
Client: GHD Services Inc.
Date: March 27, 2017

Analyte Comments:

QC Batch: 465025

P2: Re-extraction or re-analysis could not be performed due to insufficient sample amount.

- GW.031617.DT.MW16 (Lab ID: 1284377003)
  - n-Triacontane (S)
  - o-Terphenyl (S)

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

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ANALYTICAL RESULTS

Project: 062308
Pace Project No.: 1284377

Sample: GW.031617.DT.MW14 **Lab ID: 1284377001** Collected: 03/16/17 12:45 Received: 03/17/17 09:25 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		03/23/17 19:00	71-43-2	
Toluene	ND	ug/L	0.50	1		03/23/17 19:00	108-88-3	
Ethylbenzene	ND	ug/L	0.50	1		03/23/17 19:00	100-41-4	
Xylene (Total)	ND	ug/L	1.5	1		03/23/17 19:00	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	113	%.	70-130	1		03/23/17 19:00	17060-07-0	
Toluene-d8 (S)	105	%.	70-130	1		03/23/17 19:00	2037-26-5	
4-Bromofluorobenzene (S)	84	%.	70-130	1		03/23/17 19:00	460-00-4	
NWTPH-Gx MSV Water	Analytical Method: NWTPH-Gx							
TPH as Gas	ND	ug/L	250	1		03/24/17 15:40		
Surrogates								
1,2-Dichloroethane-d4 (S)	112	%.	50-150	1		03/24/17 15:40	17060-07-0	
Toluene-d8 (S)	104	%.	50-150	1		03/24/17 15:40	2037-26-5	
4-Bromofluorobenzene (S)	90	%.	50-150	1		03/24/17 15:40	460-00-4	
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range	ND	mg/L	0.47	1	03/22/17 08:26	03/23/17 10:26	68334-30-5	
Motor Oil Range	ND	mg/L	0.47	1	03/22/17 08:26	03/23/17 10:26		
Surrogates								
o-Terphenyl (S)	92	%.	50-150	1	03/22/17 08:26	03/23/17 10:26	84-15-1	
n-Triacontane (S)	88	%.	50-150	1	03/22/17 08:26	03/23/17 10:26	638-68-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 062308
Pace Project No.: 1284377

Sample: GW.031617.DT.MW15 **Lab ID: 1284377002** Collected: 03/16/17 11:50 Received: 03/17/17 09:25 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		03/24/17 00:20	71-43-2	
Toluene	ND	ug/L	0.50	1		03/24/17 00:20	108-88-3	
Ethylbenzene	ND	ug/L	0.50	1		03/24/17 00:20	100-41-4	
Xylene (Total)	ND	ug/L	1.5	1		03/24/17 00:20	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	115	%.	70-130	1		03/24/17 00:20	17060-07-0	
Toluene-d8 (S)	104	%.	70-130	1		03/24/17 00:20	2037-26-5	
4-Bromofluorobenzene (S)	84	%.	70-130	1		03/24/17 00:20	460-00-4	
NWTPH-Gx MSV Water	Analytical Method: NWTPH-Gx							
TPH as Gas	ND	ug/L	250	1		03/24/17 16:00		
Surrogates								
1,2-Dichloroethane-d4 (S)	112	%.	50-150	1		03/24/17 16:00	17060-07-0	
Toluene-d8 (S)	104	%.	50-150	1		03/24/17 16:00	2037-26-5	
4-Bromofluorobenzene (S)	91	%.	50-150	1		03/24/17 16:00	460-00-4	
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range	ND	mg/L	0.48	1	03/22/17 08:26	03/23/17 10:37	68334-30-5	
Motor Oil Range	ND	mg/L	0.48	1	03/22/17 08:26	03/23/17 10:37		
Surrogates								
o-Terphenyl (S)	88	%.	50-150	1	03/22/17 08:26	03/23/17 10:37	84-15-1	
n-Triacontane (S)	89	%.	50-150	1	03/22/17 08:26	03/23/17 10:37	638-68-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 062308
Pace Project No.: 1284377

Sample: GW.031617.DT.MW16 **Lab ID: 1284377003** Collected: 03/16/17 11:05 Received: 03/17/17 09:25 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		03/24/17 00:40	71-43-2	
Toluene	ND	ug/L	0.50	1		03/24/17 00:40	108-88-3	
Ethylbenzene	ND	ug/L	0.50	1		03/24/17 00:40	100-41-4	
Xylene (Total)	ND	ug/L	1.5	1		03/24/17 00:40	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	114	%.	70-130	1		03/24/17 00:40	17060-07-0	
Toluene-d8 (S)	104	%.	70-130	1		03/24/17 00:40	2037-26-5	
4-Bromofluorobenzene (S)	85	%.	70-130	1		03/24/17 00:40	460-00-4	
NWTPH-Gx MSV Water	Analytical Method: NWTPH-Gx							
TPH as Gas	ND	ug/L	250	1		03/24/17 16:19		
Surrogates								
1,2-Dichloroethane-d4 (S)	111	%.	50-150	1		03/24/17 16:19	17060-07-0	
Toluene-d8 (S)	103	%.	50-150	1		03/24/17 16:19	2037-26-5	
4-Bromofluorobenzene (S)	93	%.	50-150	1		03/24/17 16:19	460-00-4	
NWTPH-Dx GCS LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range	ND	mg/L	0.43	1	03/22/17 08:26	03/23/17 10:47	68334-30-5	
Motor Oil Range	ND	mg/L	0.43	1	03/22/17 08:26	03/23/17 10:47		
Surrogates								
o-Terphenyl (S)	38	%.	50-150	1	03/22/17 08:26	03/23/17 10:47	84-15-1	P2,S0
n-Triacontane (S)	36	%.	50-150	1	03/22/17 08:26	03/23/17 10:47	638-68-6	P2,S0

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 062308
Pace Project No.: 1284377

Sample: Trip Blank **Lab ID: 1284377004** Collected: 03/16/17 00:00 Received: 03/17/17 09:25 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		03/23/17 20:20	71-43-2	
Toluene	ND	ug/L	0.50	1		03/23/17 20:20	108-88-3	
Ethylbenzene	ND	ug/L	0.50	1		03/23/17 20:20	100-41-4	
Xylene (Total)	ND	ug/L	1.5	1		03/23/17 20:20	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	115	%.	70-130	1		03/23/17 20:20	17060-07-0	
Toluene-d8 (S)	105	%.	70-130	1		03/23/17 20:20	2037-26-5	
4-Bromofluorobenzene (S)	85	%.	70-130	1		03/23/17 20:20	460-00-4	
NWTPH-Gx MSV Water	Analytical Method: NWTPH-Gx							
TPH as Gas	ND	ug/L	250	1		03/24/17 16:39		
Surrogates								
1,2-Dichloroethane-d4 (S)	111	%.	50-150	1		03/24/17 16:39	17060-07-0	
Toluene-d8 (S)	104	%.	50-150	1		03/24/17 16:39	2037-26-5	
4-Bromofluorobenzene (S)	91	%.	50-150	1		03/24/17 16:39	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 062308
Pace Project No.: 1284377

QC Batch: 109059 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV Med Water
Associated Lab Samples: 1284377001, 1284377002, 1284377003, 1284377004

METHOD BLANK: 431488 Matrix: Water
Associated Lab Samples: 1284377001, 1284377002, 1284377003, 1284377004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	0.50	03/23/17 18:40	
Ethylbenzene	ug/L	ND	0.50	03/23/17 18:40	
Toluene	ug/L	ND	0.50	03/23/17 18:40	
Xylene (Total)	ug/L	ND	1.5	03/23/17 18:40	
1,2-Dichloroethane-d4 (S)	%.	113	70-130	03/23/17 18:40	
4-Bromofluorobenzene (S)	%.	83	70-130	03/23/17 18:40	
Toluene-d8 (S)	%.	104	70-130	03/23/17 18:40	

LABORATORY CONTROL SAMPLE: 431489

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	40	41.4	103	75-125	
Ethylbenzene	ug/L	40	37.7	94	75-125	
Toluene	ug/L	40	42.1	105	75-125	
Xylene (Total)	ug/L	120	111	92	75-125	
1,2-Dichloroethane-d4 (S)	%.			109	70-130	
4-Bromofluorobenzene (S)	%.			90	70-130	
Toluene-d8 (S)	%.			105	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 431490 431491

Parameter	Units	1284377001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	ND	40	40	43.9	43.2	110	108	75-125	2	30	
Ethylbenzene	ug/L	ND	40	40	40.1	39.6	100	99	74-125	1	30	
Toluene	ug/L	ND	40	40	44.7	43.7	112	109	75-125	2	30	
Xylene (Total)	ug/L	ND	120	120	118	116	98	97	61-129	1	30	
1,2-Dichloroethane-d4 (S)	%.						109	109	70-130			
4-Bromofluorobenzene (S)	%.						90	92	70-130			
Toluene-d8 (S)	%.						105	105	70-130			

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: 062308
Pace Project No.: 1284377

QC Batch: 109116 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx MSV Water
Associated Lab Samples: 1284377001, 1284377002, 1284377003, 1284377004

METHOD BLANK: 431771 Matrix: Water
Associated Lab Samples: 1284377001, 1284377002, 1284377003, 1284377004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	250	03/24/17 11:40	
1,2-Dichloroethane-d4 (S)	%.	111	50-150	03/24/17 11:40	
4-Bromofluorobenzene (S)	%.	90	50-150	03/24/17 11:40	
Toluene-d8 (S)	%.	104	50-150	03/24/17 11:40	

LABORATORY CONTROL SAMPLE: 431772

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH as Gas	ug/L	520	450	86	70-130	
1,2-Dichloroethane-d4 (S)	%.			112	50-150	
4-Bromofluorobenzene (S)	%.			91	50-150	
Toluene-d8 (S)	%.			104	50-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 431812 431813

Parameter	Units	1284280002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH as Gas	ug/L	268	520	520	698	696	83	82	70-130	0	25	
1,2-Dichloroethane-d4 (S)	%.						115	112	50-150			
4-Bromofluorobenzene (S)	%.						93	92	50-150			
Toluene-d8 (S)	%.						105	103	50-150			

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: 062308
Pace Project No.: 1284377

QC Batch: 465025 Analysis Method: NWTPH-Dx
QC Batch Method: EPA Mod. 3510C Analysis Description: NWTPH-Dx GCS LV
Associated Lab Samples: 1284377001, 1284377002, 1284377003

METHOD BLANK: 2542444 Matrix: Water
Associated Lab Samples: 1284377001, 1284377002, 1284377003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range	mg/L	ND	0.40	03/23/17 07:57	
Motor Oil Range	mg/L	ND	0.40	03/23/17 07:57	
n-Triacontane (S)	%.	86	50-150	03/23/17 07:57	
o-Terphenyl (S)	%.	84	50-150	03/23/17 07:57	

LABORATORY CONTROL SAMPLE & LCSD: 2542445 2542446

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range	mg/L	2	1.7	1.6	86	81	50-150	6	20	
Motor Oil Range	mg/L	2	2.0	1.9	101	97	50-150	4	20	
n-Triacontane (S)	%.				83	81	50-150			
o-Terphenyl (S)	%.				89	84	50-150			

SAMPLE DUPLICATE: 2542447

Parameter	Units	1284280001 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range	mg/L	ND	.2J		30	
Motor Oil Range	mg/L	ND	.076J		30	
n-Triacontane (S)	%.	84	88	0		
o-Terphenyl (S)	%.	86	90	0		

SAMPLE DUPLICATE: 2542448

Parameter	Units	1284377003 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range	mg/L	ND	ND		30	
Motor Oil Range	mg/L	ND	ND		30	
n-Triacontane (S)	%.	36	78	77		
o-Terphenyl (S)	%.	38	81	76		

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 062308
Pace Project No.: 1284377

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-DAV	Pace Analytical Services - Davis
PASI-M	Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 465223

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

ANALYTE QUALIFIERS

P2	Re-extraction or re-analysis could not be performed due to insufficient sample amount.
S0	Surrogate recovery outside laboratory control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 062308
Pace Project No.: 1284377

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1284377001	**GW.031617.DT.MW14**	EPA 8260B	109059		
1284377002	**GW.031617.DT.MW15**	EPA 8260B	109059		
1284377003	**GW.031617.DT.MW16**	EPA 8260B	109059		
1284377004	**Trip Blank**	EPA 8260B	109059		
1284377001	**GW.031617.DT.MW14**	NWTPH-Gx	109116		
1284377002	**GW.031617.DT.MW15**	NWTPH-Gx	109116		
1284377003	**GW.031617.DT.MW16**	NWTPH-Gx	109116		
1284377004	**Trip Blank**	NWTPH-Gx	109116		
1284377001	**GW.031617.DT.MW14**	EPA Mod. 3510C	465025	NWTPH-Dx	465223
1284377002	**GW.031617.DT.MW15**	EPA Mod. 3510C	465025	NWTPH-Dx	465223
1284377003	**GW.031617.DT.MW16**	EPA Mod. 3510C	465025	NWTPH-Dx	465223

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

1284377

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

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	GHD	Report To:	brian.peters@ghd.com	Attention:	Accounts Payable
Address:	20818 44th Ave W Lynnwood, WA	Copy To:	jeffrey.cloud@ghd.com	Company Name:	GHD
				Address:	20818 44 Ave W
Email To:	B.Peters, J.Cloud	Purchase Order No.		Pace Quote Reference:	
Phone:	Fax	Client Project ID:	062308	Pace Project Manager:	Jenni Gross
Requested Due Date/TAT:	10 Day (Standard)	Container Order Number:		Pace Profile #:	4825/3

Regulatory Agency	
State / Location	WA

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

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

ITEM#	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analyses Test: BTEX 8260	NWTPH GX	NWTPH DX	Residual Chlorine (Y/N)	
1	GW-031617-DT-MW14	WT	G	3/16	1245	3/16	1245		8				8					Y	X	X	X		1284377-001
2	MW15	WT	G	3/16	1150	3/16	1150		8				8					Y	X	X	X		002
3	MW16	WT	G	3/16	1105	3/16	1105		8				8					Y	X	X	X		003
4	Trip blank	OT	G	3/16		3/16			4				4										004
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	D.Trudeau	3/16/17	1330	Jenni Gross/Pace	3/16/17	13:30	8.9	Y	N	Y
	Jenni Gross/Pace	3/16/17	13:45	Pace Anderson	031717	0925	2.1	Y	Y	Y

SAMPLER NAME AND SIGNATURE			
PRINT Name of SAMPLER:	D. Trudeau		
SIGNATURE of SAMPLER:		DATE Signed:	3/16/17

TEMP in C | Received on ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Pace Analytical®	Document Name: Sample Condition Upon Receipt Form	Document Revised: 25Feb2015 Page 1 of 1
	Document No.: F-DAV-C-002-rev.02	Issuing Authority: Pace Davis, CA Quality Office

Sample Condition Upon Receipt

Client Name: GHD

Project #: WO# : 1284377 (1284377)

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

Tracking Number: 7222 2739 9400

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

Thermom. Used: ☑ DA1434 ☐ DA2285 Type of Ice: ☑ Wet ☐ Blue ☐ Dry Ice ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read(°C): 1.6 Cooler Temp Corrected(°C): 2.1

Temp should be above freezing to 6°C Correction Factor: +0.5

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Date and Initials of Person Examining Contents: DJD 03/17/17

				Comments:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1. No times or dates on client labels, SR will log in samples per COC times and dates.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No	☐ N/A	12. DJD 03/17/17
All containers needing acid/base preservation have been checked?	☐ Yes	☑ No	☐ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	Sample #
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC	☑ Yes	☐ No		Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☐ N/A	14.
Trip Blank Present?	☑ Yes	☐ No	☐ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☑ No	☐ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Brian Peters Date/Time: 03/15/17 08:36a

Comments/Resolution: Analyze Trip Blanks for BTEX by 8260.

Project Manager Review: JENNI GROSS **Date:** 03/20/17

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

Chain of Custody

10382378

Pace Analytical®
www.pacelabs.com

Workorder: 1284377 **Workorder Name:** 062308 **Owner Received Date:** 3/17/2017 **Results Requested By:** 3/30/2017

Report To	Subcontract To
Jennifer Gross Pace Analytical Davis 2795 Second Street Suite 300 Davis, CA 95618 Phone (530) 297-4800	Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612) 607-1700

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	Other	HCL				Requested Analysis: NWTPH-Dx GCS											LAB USE ONLY
1	GW.031617.DT.MW14	PS	3/16/2017 12:45	1284377001	Water			2				X											001
2	GW.031617.DT.MW15	PS	3/16/2017 11:50	1284377002	Water			2				X											002
3	GW.031617.DT.MW16	PS	3/16/2017 11:05	1284377003	Water			2				X											003
4																							
5																							

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	032017 1600	Chandler/PACE	3/21/17 9:45
2				
3				

Comments:
NWTPHDx include Diesel and Motor Oil.
No silica gel.

Cooler Temperature on Receipt 0.2 °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

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

1.1°C
CS6 3/21/17

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 19Dec2016 Page 1 of 2
	Document No.: **F-MN-L-213-rev.20**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: PACE CA

Project #: WO# : 10382378

10382378

Courier: ☒Fed Ex ☐UPS ☐USPS ☐Client

☐Commercial ☐Pace ☐SpeeDee ☐Other:_____

Tracking Number: 7786 9637 2831

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: ☒151401163 ☐151401164 **Type of Ice:** ☒Wet ☐Blue ☐None ☐Samples on ice, cooling process has begun

Cooler Temp Read (°C): 1.0 **Cooler Temp Corrected (°C):** 1.1 **Biological Tissue Frozen?** ☐Yes ☐No ☒N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** CSG 3/24/17

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

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

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

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

				COMMENTS:
Chain of Custody Present?	☒Yes	☐No		1.
Chain of Custody Filled Out?	☒Yes	☐No		2.
Chain of Custody Relinquished?	☒Yes	☐No		3.
Sampler Name and/or Signature on COC?	☐Yes	☐No	☒N/A	4.
Samples Arrived within Hold Time?	☒Yes	☐No		5.
Short Hold Time Analysis (<72 hr)?	☐Yes	☒No		6.
Rush Turn Around Time Requested?	☐Yes	☒No		7.
Sufficient Volume?	☒Yes	☐No		8.
Correct Containers Used?	☒Yes	☐No		9.
-Pace Containers Used?	☒Yes	☐No		
Containers Intact?	☒Yes	☐No		10.
Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☒N/A	11. Note if sediment is visible in the dissolved container
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒Yes	☐No		12.
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☒N/A	13. ☐HNO_3 ☐H_2SO_4 ☐NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐Yes	☐No	☒N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin.	☒Yes	☐No	☐N/A	Initial when completed:_____ Lot # of added preservative:_____
Headspace in VOA Vials (>6mm)?	☐Yes	☐No	☒N/A	14.
Trip Blank Present?	☐Yes	☐No	☒N/A	15.
Trip Blank Custody Seals Present?	☐Yes	☐No	☒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: _____ **Date:** 3/21/17

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).