June 2, 2014

9-61M-102820

Daniel Hermann
Fred Meyer Stores, Inc.
3300 SE 22nd Ave.
Suite 23E
Portland, Oregon 97202-2999

Dale Myers
Washington State Department of Ecology
Toxics Cleanup Program
3190 160th Ave., SE
Bellevue, Washington 98008

Subject: SE Sedgwick Road Right-of-Way Subsurface Investigation
Fred Meyer Property (aka Bethel Texaco, Facility Site ID #2614)
1900 SE Sedgwick Road
Port Orchard, Washington
Ecology Site ID #2555, Agreed Order No. DE 9040

Dear Mr. Hermann and Mr. Myers:

This letter report documents the results of subsurface soil and groundwater sampling within the SE Sedgwick Road right-of-way conducted by AMEC Environment & Infrastructure, Inc. (AMEC) on behalf of Fred Meyer Stores, Inc. (Fred Meyer) for the above-referenced Site. The off-site sampling was completed up-gradient (i.e., north and northeast) of the Fred Meyer property to further evaluate the source of the intermittent benzene detections in Site groundwater monitoring wells MW-109 and MW-109A. Approval for the investigation work scope was provided by Dale Myers of the Washington State Department of Ecology (Ecology) on March 14, 2014 and the investigation was conducted on April 11, 2014.

BACKGROUND AND PURPOSE

The Site is located at the southeastern corner of the intersection of SE Sedgwick Road and Bethel Road SE in Port Orchard, Washington (Figure 1). Historical releases from a pre-1990 underground storage tank (UST) system associated with the Bethel Texaco service station (Facility/Site ID #2614) that formerly occupied the Site had impacted underlying soil and groundwater. Between 1999 and 2001, the Site was redeveloped with the existing Fred Meyer branded fuel station.

Fred Meyer has been remediating residual petroleum-related contamination in subsurface soil and groundwater beneath the Site by operating an air sparging (AS) and soil vapor extraction (SVE) system in accordance with the Cleanup Action Plan (AMEC, 2010) and pursuant to Agreed Order No. DE 9040 (State of Washington Department of Ecology, 2012). Previous investigations and remedial efforts conducted at the Site are documented in the Remedial Investigation Report (AMEC, 2010a).

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Petroleum constituents detected in quarterly groundwater monitoring events have steadily declined in source area monitoring wells over time. The March 2014 quarterly sampling results represented the sixth consecutive quarterly monitoring event wherein concentrations of gasoline-range organics (GRO) and volatile organic compounds (VOCs) remained below their Model Toxics Control Act (MTCA) Method A cleanup standards in all source area monitoring wells (AMEC, 2014). However, benzene has been intermittently detected in monitoring wells MW-109 and MW-109A above the MTCA Method A cleanup standard which are located up-gradient to cross-gradient from historical and potential current release sources on the Fred Meyer property.

Several lines of evidence discussed in AMEC's Third Quarter 2013 Progress report (AMEC, 2013) indicate that petroleum hydrocarbon constituents detected in monitoring wells MW-109 and MW-109A are not related to the former Bethel Texaco release, but rather appear to be from an up-gradient, off-site source. The Sedgwick 1 Stop facility, located approximately 125 feet to the north-northeast of MW-109 and MW-109A, in an up- to cross-gradient orientation, appears to be the likely source of the constituents detected in these wells.

PRE-INVESTIGATION ACTIVITIES

SITE-SPECIFIC HEALTH AND SAFETY PLAN

As required by the Occupational Safety and Health Administration (OSHA), the site-specific Health and Safety Plan was updated to cover field safety protocol for AMEC employees and subcontractors conducting the investigation.

RIGHT-OF-WAY ACCESS PERMITTING

AMEC obtained the required permits and approvals from the City of Port Orchard and the Washington Department of Transportation (WSDOT) to conduct sampling within the SE Sedgwick Road shoulder right-of-way (City of Port Orchard permit ROW000615).

UTILITY LOCATING

Prior to conducting the subsurface exploration, AMEC contacted local public utilities using the one-call public Utility Notification Service to field-mark any underground utilities in the investigation area. AMEC also subcontracted a private locating service, Applied Professional Services (North Bend, Washington) to locate and mark utilities in and near the proposed sampling areas.

INVESTIGATION FIELD WORK

The subsurface soil and groundwater sampling within the SE Sedgwick Road right-of-way was conducted on April 11, 2014. Four direct-push borings were completed in an unpaved portion of the SE Sedgwick Road shoulder to the north of the Fred Meyer fuel center property (AB-01 to AB-04, Figure 2). As an additional precaution to avoid damaging any unmarked subsurface utilities, the upper five feet of each boring were excavated with a hand auger before direct-push

drilling commenced at 5 feet below ground surface (bgs). Boring AB-01 was completed to total depth of 25 feet bgs and borings AB-02 to AB-04 were completed to 20 feet bgs. Drilling was performed by Pacific Soil and Water (Tigard, Oregon), a well driller licensed in the state of Washington.

Soil samples were collected continuously in 5-foot intervals, soil conditions permitting. An AMEC environmental scientist logged the character of the soil encountered in addition to any other observations (i.e., visual evidence of impact, olfactory indications of impact, and headspace readings). Soil was field screened for the presence of VOCs using a photoionization detector (PID). Boring logs including Unified Soil Classification System (USCS) soil lithology designations and other observations (e.g., visual and olfactory indications of impact) are included in Attachment A.

Subsurface conditions encountered in the borings beneath the approximately 2.5 to 4 feet of fill material generally consisted of fine silty sand with occasional gravel and interbedded layers of silt or sand with little to no fines. Saturated soils were generally initially observed at approximately 15 to 16 feet bgs. Slightly elevated PID headspace readings and petroleum odor were observed soil in borings AB-01, AB-02, and AB-04 at 21, 18.5, and 18 feet bgs, respectively. Soil samples were collected and submitted for laboratory analysis from depths exhibiting field evidence of petroleum impact (AB-02 at 18.5 feet bgs, and AB-05 at 18 feet bgs).

Groundwater samples were obtained from borings AB-01 to AB-03 using ¾-inch diameter PVC temporary well points screened between 15 to 20 feet bgs. Groundwater was sampled using new polyethylene tubing connected to a peristaltic pump. Groundwater was purged until the majority of the suspended sediment was removed and the turbidity decreased.

Soil and groundwater samples were placed in new, laboratory-provided sampling containers and placed on ice before transport to the analytical laboratory following chain of custody procedures. Borings were permanently backfilled with bentonite upon completion. Since soil borings were completed in an un-paved area of the road shoulder, no asphalt coring or restoration was required.

ANALYTICAL RESULTS

Sample analyses were performed by Apex Laboratories of Tigard, Oregon. Soil and groundwater samples were analyzed for:

- GRO by Northwest Method Total Petroleum Hydrocarbon-Gasoline (NWTPH-Gx); and
- Selected VOCs by United States Environmental Protection Agency (EPA) Method 8260B. VOCs tested include benzene, toluene, ethylbenzene, and total xylenes (BTEX), naphthalene, methyl tert-butyl ether (MTBE), 1,2-dibromotehane (EDB), and 1,2-dichloroethane (EDC).

Copies of the analytical report and the chain-of-custody documents are provided in Attachment B.

The April 2014 direct-push groundwater results are summarized on the attached Figure 2, along with the most recent Fred Meyer quarterly monitoring well results and selected historical data from the Sedgwick 1 Stop gas station located to the north. Petroleum constituents were detected in all three April 2014 direct-push groundwater samples located up-gradient to cross-gradient from historical and potential current release sources on the Fred Meyer property. Benzene and gasoline-range organics concentrations detected in borings AB-02 and AB-03 (north-northwest and north east of monitoring wells MW-109 and 109A, respectively) were substantially higher than have been recently detected in any of the Fred Meyer wells.

Benzene was detected in the soil sample collected from AB-02 at 18.5 feet bgs. Benzene, toluene, ethylbenzene, and xylenes were detected in the in the soil sample collected from AB-04 at 18 feet bgs.

INVESTIGATION-DERIVED WASTE

All drilling rods and other re-usable equipment were decontaminated between each boring. Soil cuttings and purge and decontamination water generated by the investigation were placed into two 55-gallon drums, labeled, and staged in the fence remediation compound on the Site. Disposal of the drummed waste is in process.

CONCLUSIONS

Petroleum contamination was detected in soil and groundwater in borings completed to the north and northeast of the Fred Meyer property in April 2014. Groundwater monitoring data from 2009 through 2014 indicate a consistent west-southwest shallow groundwater flow gradient on the Fred Meyer property. Soil borings AB-01 to AB-04 were located up-gradient to cross-gradient from monitoring wells MW-109 and MW109A and historical and potential current release sources on the Fred Meyer property. Borings AB-01 to AB-04 were located approximately 50 to 100 feet to the east and northeast of the former Bethel Texaco release source area on the northwest corner of the Fred Meyer property (i.e., near monitoring wells MW-110, MW-103, MW-105, and former monitoring well MW-104) and approximately 70 feet north of the nearest of Fred Meyer's currently operating fuel center product lines.

Groundwater samples from up- to- cross gradient borings AB-02 and AB-03 had significantly higher concentrations GRO and benzene than have been recently been detected in any Fred Meyer wells, including wells MW-109 and MW-109A. In contrast, site monitoring wells located near and within the former Texaco release source area (MW-110, MW-103, MW-105, and former monitoring well MW-104) have had no benzene detected since 2008.

The presence of higher concentrations of petroleum constituents in groundwater samples from locations up-gradient to cross-gradient from Fred Meyer monitoring wells MW-109 and MW-109A

and from historical and potential current release sources on the Fred Meyer property indicates that benzene intermittently detected in monitoring wells MW-109 and MW-109A is from an up-gradient, off-site source. The findings of the April 2014 subsurface investigation and the other lines of evidence previously discussed in AMEC's Third Quarter 2013 Progress report (AMEC, 2013) indicate that petroleum hydrocarbon constituents that have been intermittently detected in monitoring wells MW-109 and MW-109A are not related to the former Bethel Texaco release, but rather appear to be from the up-gradient the Sedgwick 1 Stop facility.

CLOSING

AMEC appreciates the opportunity to be of service to Fred Meyer on this project. If you have any questions, or if we can be of further assistance, please contact the undersigned at (503) 639-3400.

AMEC Environment & Infrastructure, Inc.

Joel Eledge, CHMM
Environmental Scientist

Reviewed by:

Kurt Harrington, PE
Project Manager

JE/jm

Attachments:

Figure 1 - Site Location Map
Figure 2 - Site Plan and Select Groundwater Data
Attachment A - Boring Logs
Attachment B - Laboratory Analytical Report

LIMITATIONS

This report was prepared exclusively for Fred Meyer Stores, Inc. (Fred Meyer) and its agents by AMEC Environment & Infrastructure, Inc. (AMEC). The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in AMEC services and are based on: i) information available at the time of preparation; ii) data supplied by outside sources; and iii) the assumptions, conditions and qualifications set forth in this report. This report is intended for use by Fred Meyer, for the Site at 1900 SE Sedgwick Road, Port Orchard, Washington only, subject to the terms and conditions of its contract with AMEC. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

It should be noted that the presence of contaminants at a particular property may not always be apparent, and the completion of limited subsurface investigation cannot provide a guarantee that that all contaminants at a site have been identified. The purpose of an environmental site assessment is to reasonably evaluate the potential for adverse environmental impact to a property. In performing any site assessment a reasonable balance is sought between a cursory inquiry into the environmental issues and an exhaustive analysis of each conceivable issue of potential concern. In many instances, subsurface conditions in one area must be inferred based on other sampled locations.

The findings contained herein are relevant to the dates of the AMEC site visit and should not be relied upon to represent conditions at later dates. In the event that changes in the nature, usage, or layout of the property or nearby properties are made, the conclusions and recommendations contained in this report may not be valid. If additional information becomes available, it should be provided to AMEC so the original conclusions and recommendations can be modified as necessary.

REFERENCES

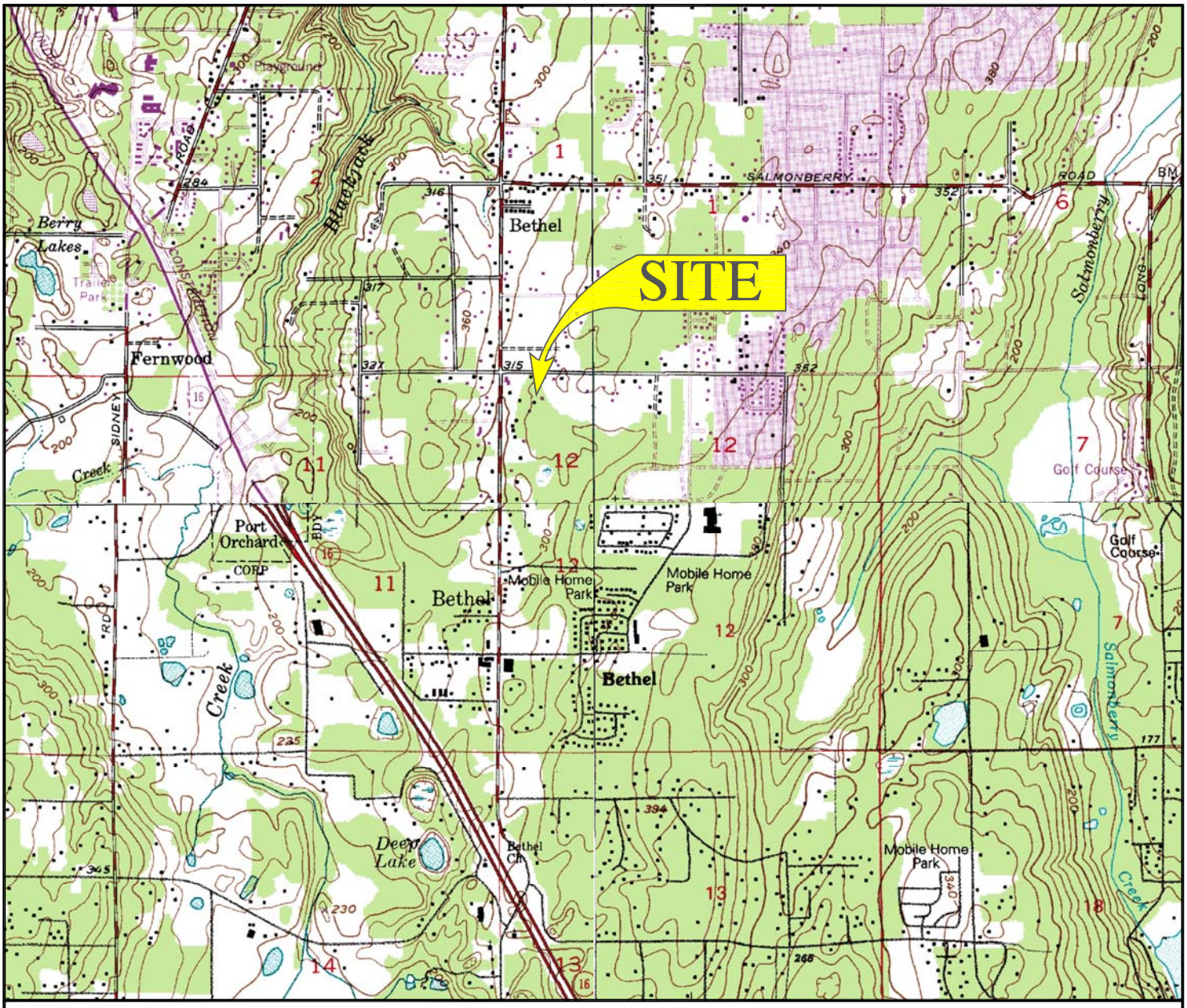
AMEC, 2010. Cleanup Action Plan, Fred Meyer Stores, Inc. - Port Orchard Site, 1900 SE Sedgwick Road, Port Orchard, Washington, Ecology Site ID #96424236 (formerly J5E03), May 4, 2010.

----, 2013. Progress Report - Third Quarter 2013, Fred Meyer Property (aka Bethel Texaco, Facility Site ID #2614), 1900 SE Sedgwick Road, Port Orchard, Washington. October 23, 2013.

----, 2014. Progress Report - First Quarter 2014, Fred Meyer Property (aka Bethel Texaco, Facility Site ID #2614), 1900 SE Sedgwick Road, Port Orchard, Washington. May 14, 2014.

State of Washington Department of Ecology (Ecology), 2012. Agreed Order No. 9040 for Final Cleanup Action and Compliance Monitoring. May 10, 2012.

FIGURES



Heavy-duty
Medium-duty
Light-duty
Unimproved dirt
U.S. Route
State Route
Interstate Route

BREMERTON WEST, WASH.
47122-E6-TF-024
1953
PHOTOREVISED 1981
DMA 1479 II SERIES V891

BREMERTON EAST, WASH.
N4730-W12230/7.5
1953
PHOTOREVISED 1981
DMA 1479 II SERIES V891

BURLEY, WASH.
47122-D6-TF-024
1953
PHOTOREVISED 1994
DMA 1478 II NW-SERIES V891

OLALLA, WASH.
47122-D5-TF-024
1953
PHOTOREVISED 1981
DMA 1478 I NE SERIES V891

WASHINGTON
QUADRANGLE LOCATION

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

SOURCE: USGS QUAD SHEET: BREMERTON WEST, BREMERTON EAST, BURLEY AND OLALLA, WASH.

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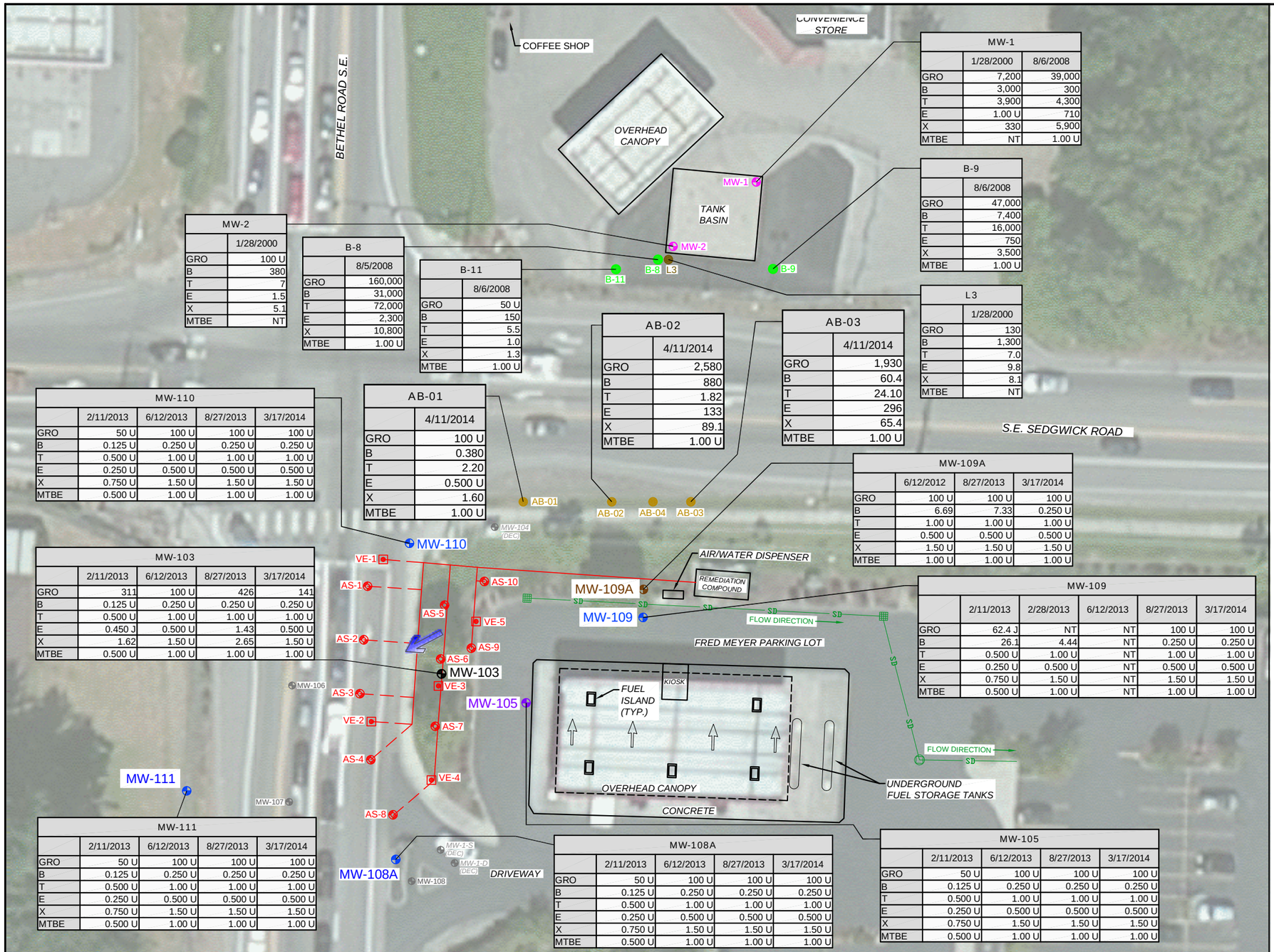
CLIENT: FRED MEYER

PROJECT: FRED MEYER - PORT ORCHARD	DWN BY: PM/SD	DATUM: -	DATE: SEPTEMBER 2013
TITLE: SITE LOCATION MAP	CHK'D BY: JE	REV. NO.: -	PROJECT NO.: 9-61M-10282-0
	PROJECTION: -	SCALE: 1:24,000	FIGURE NO.: 1

K:\10000\10200\10282\Quarterly Reports\2013\302103\Figures\Figure 1 - Site Location Map.dwg - - Sep. 05, 2013 10:02am - stephane.descombes



MW-1		
	1/28/2000	8/6/2008
GRO	7,200	39,000
B	3,000	300
T	3,900	4,300
E	1.00 U	710
X	330	5,900
MTBE	NT	1.00 U

B-9	
	8/6/2008
GRO	47,000
B	7,400
T	16,000
E	750
X	3,500
MTBE	1.00 U

L3	
	1/28/2000
GRO	130
B	1,300
T	7.0
E	9.8
X	8.1
MTBE	NT

MW-2	
	1/28/2000
GRO	100 U
B	380
T	7
E	1.5
X	5.1
MTBE	NT

B-8	
	8/5/2008
GRO	160,000
B	31,000
T	72,000
E	2,300
X	10,800
MTBE	1.00 U

B-11	
	8/6/2008
GRO	50 U
B	150
T	5.5
E	1.0
X	1.3
MTBE	1.00 U

AB-02	
	4/11/2014
GRO	2,580
B	880
T	1.82
E	133
X	89.1
MTBE	1.00 U

AB-03	
	4/11/2014
GRO	1,930
B	60.4
T	24.10
E	296
X	65.4
MTBE	1.00 U

MW-110				
	2/11/2013	6/12/2013	8/27/2013	3/17/2014
GRO	50 U	100 U	100 U	100 U
B	0.125 U	0.250 U	0.250 U	0.250 U
T	0.500 U	1.00 U	1.00 U	1.00 U
E	0.250 U	0.500 U	0.500 U	0.500 U
X	0.750 U	1.50 U	1.50 U	1.50 U
MTBE	0.500 U	1.00 U	1.00 U	1.00 U

AB-01	
	4/11/2014
GRO	100 U
B	0.380
T	2.20
E	0.500 U
X	1.60
MTBE	1.00 U

MW-109A			
	6/12/2012	8/27/2013	3/17/2014
GRO	100 U	100 U	100 U
B	6.69	7.33	0.250 U
T	1.00 U	1.00 U	1.00 U
E	0.500 U	0.500 U	0.500 U
X	1.50 U	1.50 U	1.50 U
MTBE	1.00 U	1.00 U	1.00 U

MW-103				
	2/11/2013	6/12/2013	8/27/2013	3/17/2014
GRO	311	100 U	426	141
B	0.125 U	0.250 U	0.250 U	0.250 U
T	0.500 U	1.00 U	1.00 U	1.00 U
E	0.450 J	0.500 U	1.43	0.500 U
X	1.62	1.50 U	2.65	1.50 U
MTBE	0.500 U	1.00 U	1.00 U	1.00 U

MW-109					
	2/11/2013	2/28/2013	6/12/2013	8/27/2013	3/17/2014
GRO	62.4 J	NT	NT	100 U	100 U
B	26.1	4.44	NT	0.250 U	0.250 U
T	0.500 U	1.00 U	NT	1.00 U	1.00 U
E	0.250 U	0.500 U	NT	0.500 U	0.500 U
X	0.750 U	1.50 U	NT	1.50 U	1.50 U
MTBE	0.500 U	1.00 U	NT	1.00 U	1.00 U

MW-111				
	2/11/2013	6/12/2013	8/27/2013	3/17/2014
GRO	50 U	100 U	100 U	100 U
B	0.125 U	0.250 U	0.250 U	0.250 U
T	0.500 U	1.00 U	1.00 U	1.00 U
E	0.250 U	0.500 U	0.500 U	0.500 U
X	0.750 U	1.50 U	1.50 U	1.50 U
MTBE	0.500 U	1.00 U	1.00 U	1.00 U

MW-108A				
	2/11/2013	6/12/2013	8/27/2013	3/17/2014
GRO	50 U	100 U	100 U	100 U
B	0.125 U	0.250 U	0.250 U	0.250 U
T	0.500 U	1.00 U	1.00 U	1.00 U
E	0.250 U	0.500 U	0.500 U	0.500 U
X	0.750 U	1.50 U	1.50 U	1.50 U
MTBE	0.500 U	1.00 U	1.00 U	1.00 U

MW-105				
	2/11/2013	6/12/2013	8/27/2013	3/17/2014
GRO	50 U	100 U	100 U	100 U
B	0.125 U	0.250 U	0.250 U	0.250 U
T	0.500 U	1.00 U	1.00 U	1.00 U
E	0.250 U	0.500 U	0.500 U	0.500 U
X	0.750 U	1.50 U	1.50 U	1.50 U
MTBE	0.500 U	1.00 U	1.00 U	1.00 U

LEGEND

- AS-10 — AIR SPARGING WELL NUMBER AND APPROXIMATE LOCATION
- VE-5 — VAPOR EXTRACTION WELL NUMBER AND APPROXIMATE LOCATION
- MW-103 — ACTIVE 4" DIAMETER MONITORING WELL (ECOLOGY, 1991)
- MW-105 — ACTIVE 2" DIAMETER MONITORING WELL (AGRA, 1999)
- MW-110 — ACTIVE 2" DIAMETER MONITORING WELL (AMEC, 2008)
- MW-109A — ACTIVE 2" DIAMETER MONITORING WELL (AMEC, 2013)
- MW-104 (DEC) — MONITORING WELL DECOMMISSIONED
- MW-108 (DESTROYED) — MONITORING WELL DESTROYED BY CONSTRUCTION ACTIVITIES
- B-8 — BORING LOCATION (EARTHTOUCH, 2008)
- L3 — BORING LOCATION (KEY ENGINEERING, 2000)
- AB-01 — BORING LOCATION (AMEC, 2014)
- MW-1 — MONITORING WELL (BP)
- REMEDIATION SYSTEM TRENCH
- ANGLED WELL LOCATION
- CATCH BASIN
- SD — STORMWATER LINE
- APPROXIMATE DIRECTION OF GROUNDWATER FLOW

N

0' 20' 40' 60'

1" = 40'

SOURCE: AHBL CIVIL AND STRUCTURAL ENGINEERS, FILE NAME: 98169-B.dwg.

CLIENT: FRED MEYER

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Portland, OR. U.S.A. 97224

DWN BY: PM/SD
CHK'D BY: JE
DATUM: -
PROJECTION: -
SCALE: 1" = 40'

PROJECT: FRED MEYER - PORT ORCHARD

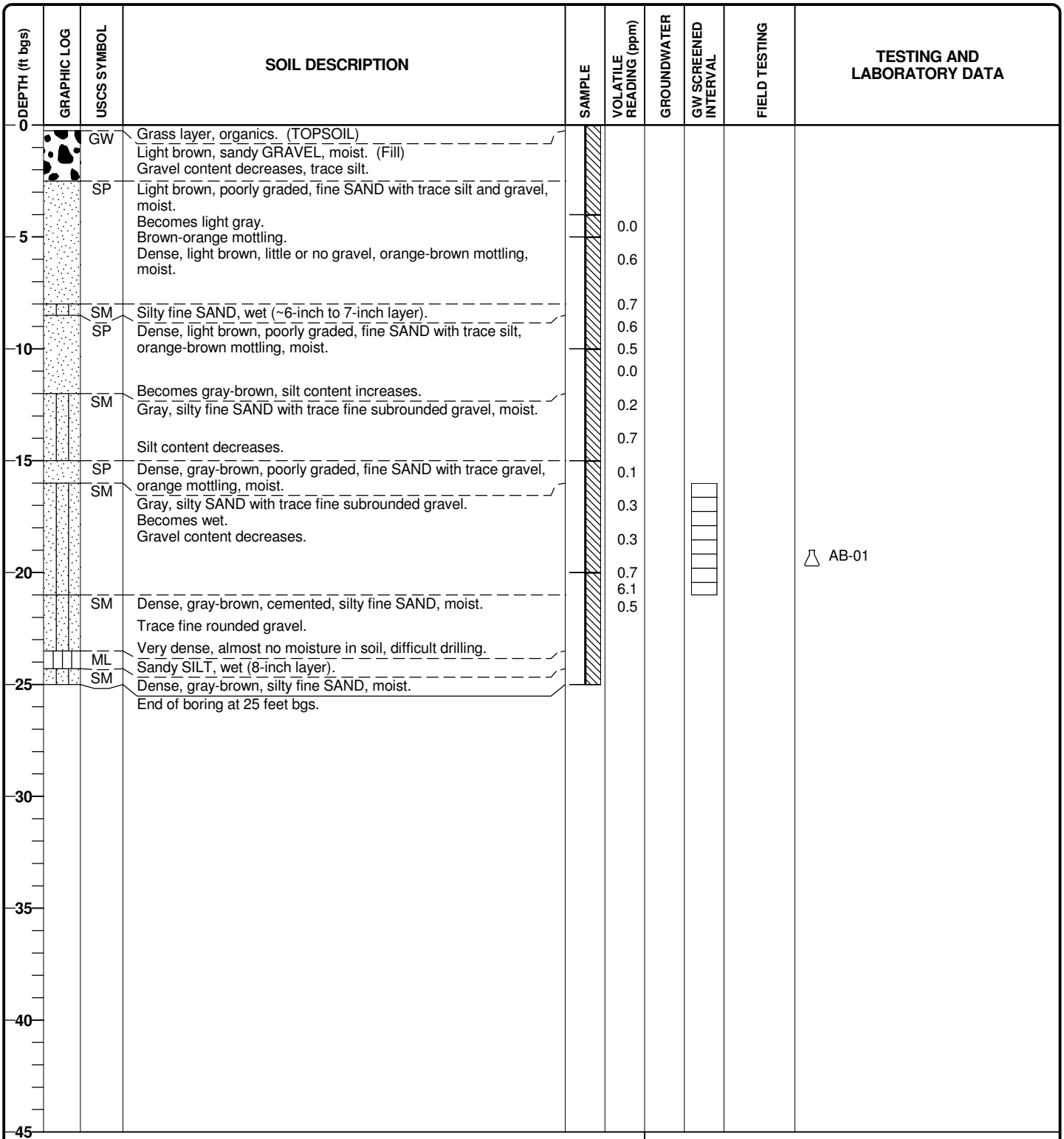
TITLE: SITE PLAN AND SELECT GROUNDWATER DATA

DATE: APRIL 2014
PROJECT NO.: 9-61M-10282-0
REV. NO.: -
FIGURE NO.: 2

K:\10000\10200\10282\2014 Subsurface Invst\dwg\Figure 2 – Site Plan and Select Groundwater Data.dwg – – – May. 30, 2014 12:48pm – stephane.descombes

ATTACHMENT A

Boring Logs



BORING METHOD: Direct Push

BOREHOLE DIAMETER:

DRILL RIG: Geoprobe 6600

CONTRACTOR: Pacific Soil & Water

LOGGED BY: J. Eledge

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

DRILLING DATES: 4/11/2014 - 4/11/2014

REMARKS:

Hand auger from 0-4 feet bgs.

Background PID = 0.2 ppm.

DIRECT PUSH BORING 9-61M-102820.GPJ AMEC PORTLAND.GDT 5/6/14

Fred Meyer Port Orchard

9-61M-102820

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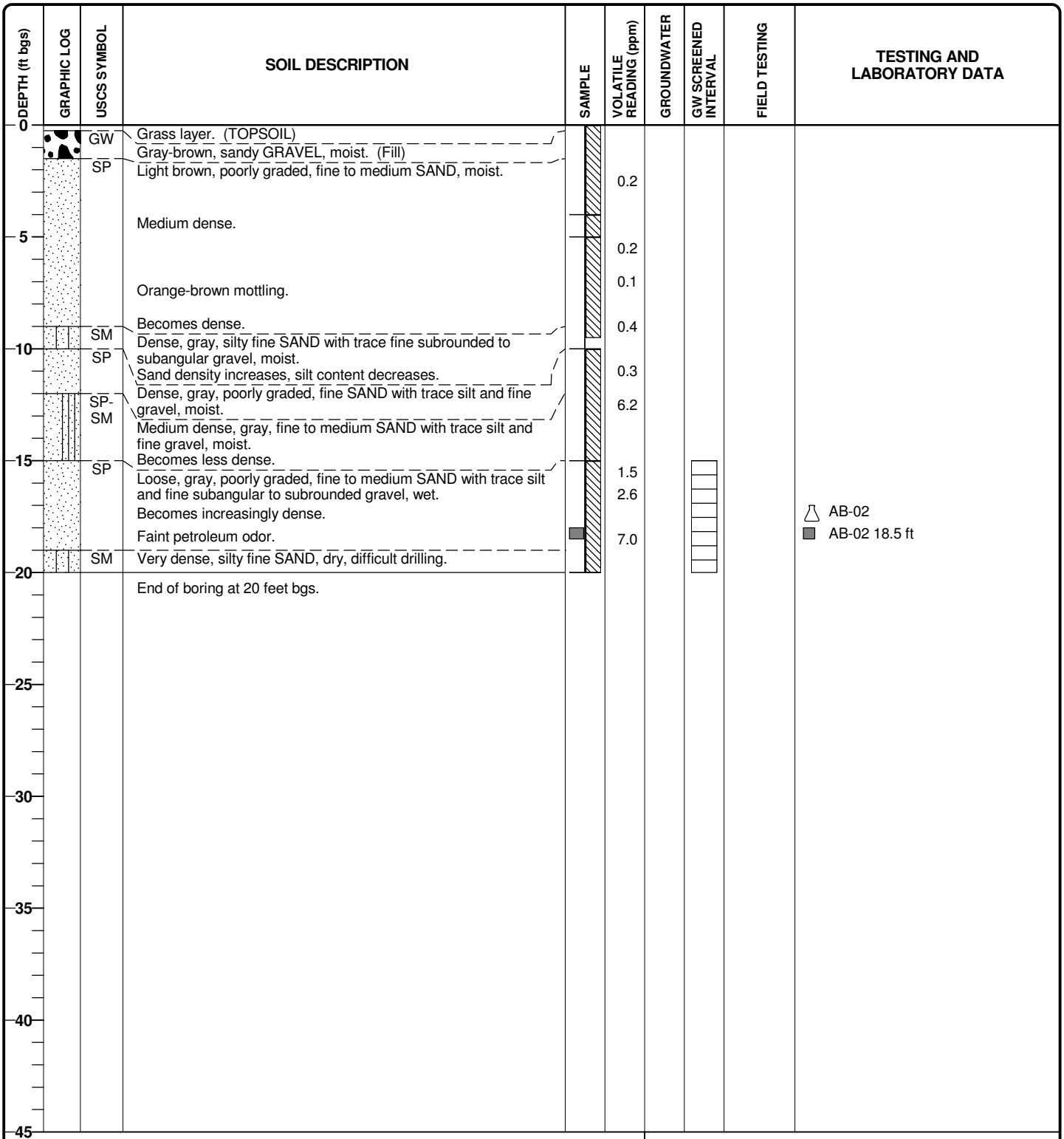
LOG OF BORING

AB-01



BORING METHOD: Direct Push

BOREHOLE DIAMETER:

DRILL RIG: Geoprobe 6600

CONTRACTOR: Pacific Soil & Water

LOGGED BY: J. Eledge

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

DRILLING DATES: 4/11/2014 - 4/11/2014

REMARKS:

Hand auger from 0-4 feet bgs.

DIRECT PUSH BORING 9-61M-102820.GPJ AMEC PORTLAND.GDT 5/6/14

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LOG OF BORING

AB-02

DEPTH (ft bgs)	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	VOLATILE READING (ppm)	GROUNDWATER	GW SCREENED INTERVAL	FIELD TESTING	TESTING AND LABORATORY DATA
0	GW	Grass layer. (TOPSOIL) Brown, sandy GRAVEL, moist. (Fill) Dark brown, some organics, moist.						
	SP	Medium dense, gray-brown, poorly graded, fine SAND with trace silt, moist.		0.0				
5	ML	Medium stiff, SILT with trace fine sand, moist (8-inch layer).		0.0				
	SP	Medium dense, gray-brown, poorly graded, fine SAND with trace silt, moist.		0.0				
	SP	Gray, poorly graded, fine to medium SAND with some fine subrounded to subangular gravel.						
	ML	Very stiff, gray SILT with trace fine sand and fine gravel, moist. Sand content increases.						
10	SP	Dense, gray, poorly graded, fine to medium SAND with trace fine subrounded to subangular gravel. Becomes less dense, wet. Dark brown mottling, increase in silt content, no odor.		0.0 0.2				
15	SP-SM	Medium dense, gray, fine to medium SAND with trace, fine gravel, trace silt. Becomes loose, silt content increases. Grades to gray-brown. Becomes dense, silt content decreases.		0.1 0.2 0.1		15–20		AB-03
20		End of boring at 20 feet bgs.						
25								
30								
35								
40								
45								

BORING METHOD: Direct Push
ELEVATION REFERENCE: NA
BOREHOLE DIAMETER:
DRILL RIG: Geoprobe 6600
GROUND SURFACE ELEVATION: NA
CONTRACTOR: Pacific Soil & Water
LOGGED BY: J. Eledge
DRILLING DATES: 4/11/2014 - 4/11/2014

REMARKS:
Hand auger from 0-2 feet bgs.
Background PID = 0.0 ppm.

Fred Meyer Port Orchard

9-61M-102820

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LOG OF BORING AB-03

DEPTH (ft bgs)	USCS SYMBOL	SOIL DESCRIPTION	VOLATILE READING (ppm)
0	GW	Grass layer, organics. Brown, sandy GRAVEL, moist. (Fill)	
	SP	Brown, poorly graded, fine to medium SAND, moist.	0.0
5	ML	Stiff, SILT, moist (2-inch layer).	
	SP	Brown, poorly graded, fine to medium SAND, moist. Trace gravel.	
	ML	Stiff, gray-brown SILT, moist (8-inch layer).	
10	SP	Dense, gray, poorly graded, fine SAND with trace gravel, moist.	0.5
		Sand becomes less dense and coarse.	
	SM	Dense, gray, silty fine SAND with trace fine subangular to subrounded gravel, moist.	0.3
			0.1
15		Becomes loose, wet.	0.0
	SP-SM	Dense, gray, fine SAND with trace silt, wet.	
		Gray-green staining, faint petroleum odor.	39
			2.1
20		Becomes very dense, less petroleum odor. End of boring at 20 feet bgs.	
25			
30			
35			
40			
45			

SAMPLE: ■ AB-04 18 ft

GROUNDWATER

GW SCREENED INTERVAL

FIELD TESTING

TESTING AND LABORATORY DATA

BORING METHOD: Direct Push

BOREHOLE DIAMETER:

DRILL RIG: Geoprobe 6600

CONTRACTOR: Pacific Soil & Water

LOGGED BY: J. Eledge

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

DRILLING DATES: 4/11/2014 - 4/11/2014

REMARKS:

Hand auger from 0-3 feet bgs.

Background PID = 0.0 ppm.

DIRECT PUSH BORING 9-61M-102820.GPJ AMEC PORTLAND.GDT 5/6/14

Fred Meyer Port Orchard

9-61M-102820

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7376 SW Durham Road
Portland, Oregon
USA 97224
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LOG OF BORING AB-04

ATTACHMENT B

Analytical Laboratory Report

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Monday, April 28, 2014

Kurt Harrington
Amec Environment & Infrastructure, Inc
7376 SW Durham Road
Portland, OR 97224

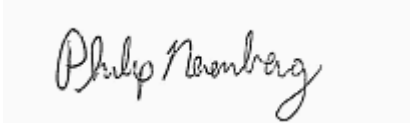
RE: Fred Meyer (FMPO) Port Orchard / 961M102820

Enclosed are the results of analyses for work order A4D0338, which was received by the laboratory on 4/14/2014 at 3:15:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories



Philip Nerenberg, Lab Director

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Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 961M102820	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	04/28/14 15:57

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AB-01	A4D0338-01	Water	04/11/14 10:45	04/14/14 15:15
AB-02, 18.5 ft	A4D0338-02	Soil	04/11/14 11:35	04/14/14 15:15
AB-02	A4D0338-03	Water	04/11/14 11:40	04/14/14 15:15
AB-03	A4D0338-04	Water	04/11/14 12:40	04/14/14 15:15
AB-04, 18 ft	A4D0338-05	Soil	04/11/14 13:50	04/14/14 15:15
Trip Blank	A4D0338-06	Water	04/11/14 00:00	04/14/14 15:15

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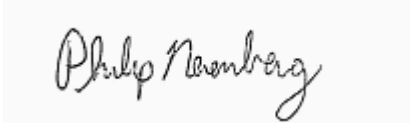

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7376 SW Durham Road	Project Number: 961M102820	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	04/28/14 15:57

ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
AB-01 (A4D0338-01)			**Matrix: Water**		**Batch: 4040371**			
Gasoline Range Organics	ND	---	0.100	mg/L	1	04/15/14 12:56	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 97 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*99 %*	*Limits: 50-150 %*	"	"	"	
AB-02, 18.5 ft (A4D0338-02)			**Matrix: Soil**		**Batch: 4040483**			**V-16**
Gasoline Range Organics	ND	---	5.20	mg/kg dry	50	04/17/14 14:21	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 104 %*	*Limits: 50-150 %*	1	"	"	
1,4-Difluorobenzene (Sur)			*110 %*	*Limits: 50-150 %*	"	"	"	
AB-02 (A4D0338-03)			**Matrix: Water**		**Batch: 4040371**			
Gasoline Range Organics	**2.58**	---	0.100	mg/L	1	04/15/14 13:49	NWTPH-Gx (MS)	F-03
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 93 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*96 %*	*Limits: 50-150 %*	"	"	"	
AB-03 (A4D0338-04)			**Matrix: Water**		**Batch: 4040371**			
Gasoline Range Organics	**1.93**	---	0.100	mg/L	1	04/15/14 14:16	NWTPH-Gx (MS)	F-03
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 95 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*98 %*	*Limits: 50-150 %*	"	"	"	
AB-04, 18 ft (A4D0338-05)			**Matrix: Soil**		**Batch: 4040407**			**V-16**
Gasoline Range Organics	ND	---	5.33	mg/kg dry	50	04/15/14 16:43	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 96 %*	*Limits: 50-150 %*	1	"	"	
1,4-Difluorobenzene (Sur)			*97 %*	*Limits: 50-150 %*	"	"	"	
Trip Blank (A4D0338-06)			**Matrix: Water**		**Batch: 4040371**			
Gasoline Range Organics	ND	---	0.100	mg/L	1	04/15/14 12:30	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 106 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*102 %*	*Limits: 50-150 %*	"	"	"	

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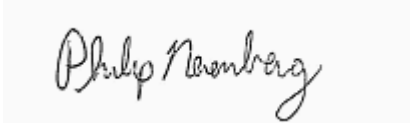

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Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 961M102820	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	04/28/14 15:57

ANALYTICAL SAMPLE RESULTS

RBCA Compounds (BTEX+) by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
AB-01 (A4D0338-01)			**Matrix: Water**		**Batch: 4040371**			
Benzene	**0.380**	---	0.250	ug/L	1	04/15/14 12:56	EPA 8260B	
Toluene	**2.20**	---	1.00	"	"	"	"	
Ethylbenzene	ND	---	0.500	"	"	"	"	
Xylenes, total	**1.60**	---	1.50	"	"	"	"	
Naphthalene	ND	---	2.00	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	---	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	---	0.500	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 118 %*	*Limits: 80-120 %*	"	"	"	
1,4-Difluorobenzene (Surr)			*100 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*124 %*	*Limits: 80-120 %*	"	"	"	*A-01a*
4-Bromofluorobenzene (Surr)			*119 %*	*Limits: 80-120 %*	"	"	"	
AB-02, 18.5 ft (A4D0338-02)			**Matrix: Soil**		**Batch: 4040483**			**V-16**
Benzene	**45.2**	---	13.0	ug/kg dry	50	04/17/14 14:21	5035/8260B	
Toluene	ND	---	52.0	"	"	"	"	
Ethylbenzene	ND	---	26.0	"	"	"	"	
Xylenes, total	ND	---	77.9	"	"	"	"	
Naphthalene	ND	---	104	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	---	52.0	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	---	26.0	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	---	26.0	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 122 %*	*Limits: 70-130 %*	1	"	"	
1,4-Difluorobenzene (Surr)			*107 %*	*Limits: 70-130 %*	"	"	"	
Toluene-d8 (Surr)			*106 %*	*Limits: 70-130 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*96 %*	*Limits: 70-130 %*	"	"	"	
AB-02 (A4D0338-03)			**Matrix: Water**		**Batch: 4040371**			
Toluene	**1.82**	---	1.00	ug/L	1	04/15/14 13:49	EPA 8260B	
Ethylbenzene	**133**	---	0.500	"	"	"	"	
Xylenes, total	**89.1**	---	1.50	"	"	"	"	
Naphthalene	**26.9**	---	2.00	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	---	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	---	0.500	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 111 %*	*Limits: 80-120 %*	"	"	"	
1,4-Difluorobenzene (Surr)			*97 %*	*Limits: 80-120 %*	"	"	"	

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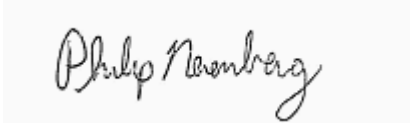

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7376 SW Durham Road	Project Number: 961M102820	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	04/28/14 15:57

ANALYTICAL SAMPLE RESULTS

RBCA Compounds (BTEX+) by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
AB-02 (A4D0338-03)			**Matrix: Water**		**Batch: 4040371**			
Surrogate: Toluene-d8 (Surr)			*Recovery: 123 %*	*Limits: 80-120 %*	1	"	EPA 8260B	*A-01a*
4-Bromofluorobenzene (Surr)			*117 %*	*Limits: 80-120 %*	"	"	"	
AB-02 (A4D0338-03RE1)			**Matrix: Water**		**Batch: 4040371**			
Benzene	**880**	---	12.5	ug/L	50	04/15/14 18:14	EPA 8260B	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 115 %*	*Limits: 80-120 %*	1	"	"	
1,4-Difluorobenzene (Surr)			*100 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*125 %*	*Limits: 80-120 %*	"	"	"	*A-01a*
4-Bromofluorobenzene (Surr)			*119 %*	*Limits: 80-120 %*	"	"	"	
AB-03 (A4D0338-04)			**Matrix: Water**		**Batch: 4040371**			
Toluene	**24.1**	---	1.00	ug/L	1	04/15/14 14:16	EPA 8260B	
Xylenes, total	**65.4**	---	1.50	"	"	"	"	
Naphthalene	**17.6**	---	2.00	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	---	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	---	0.500	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 116 %*	*Limits: 80-120 %*	"	"	"	
1,4-Difluorobenzene (Surr)			*98 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*127 %*	*Limits: 80-120 %*	"	"	"	*A-01a*
4-Bromofluorobenzene (Surr)			*121 %*	*Limits: 80-120 %*	"	"	"	*A-01a*
AB-03 (A4D0338-04RE1)			**Matrix: Water**		**Batch: 4040371**			
Benzene	**60.4**	---	1.25	ug/L	5	04/15/14 18:40	EPA 8260B	
Ethylbenzene	**296**	---	2.50	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 116 %*	*Limits: 80-120 %*	1	"	"	
1,4-Difluorobenzene (Surr)			*100 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*123 %*	*Limits: 80-120 %*	"	"	"	*A-01a*
4-Bromofluorobenzene (Surr)			*120 %*	*Limits: 80-120 %*	"	"	"	
AB-04, 18 ft (A4D0338-05)			**Matrix: Soil**		**Batch: 4040407**			**V-16**
Benzene	**183**	---	13.3	ug/kg dry	50	04/15/14 16:43	5035/8260B	
Toluene	**569**	---	53.3	"	"	"	"	
Ethylbenzene	**83.6**	---	26.6	"	"	"	"	
Xylenes, total	**256**	---	79.9	"	"	"	"	
Naphthalene	ND	---	107	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	---	53.3	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	---	26.6	"	"	"	"	

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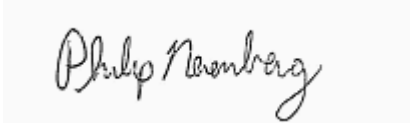

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Portland, OR 97224	Project Manager: Kurt Harrington	04/28/14 15:57

ANALYTICAL SAMPLE RESULTS

RBCA Compounds (BTEX+) by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
AB-04, 18 ft (A4D0338-05)			**Matrix: Soil**		**Batch: 4040407**			**V-16**
1,2-Dichloroethane (EDC)	ND	---	26.6	ug/kg dry	50	"	5035/8260B	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 109 %*	*Limits: 70-130 %*	1	"	"	
1,4-Difluorobenzene (Surr)			*101 %*	*Limits: 70-130 %*	"	"	"	
Toluene-d8 (Surr)			*102 %*	*Limits: 70-130 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*95 %*	*Limits: 70-130 %*	"	"	"	
Trip Blank (A4D0338-06)			**Matrix: Water**		**Batch: 4040371**			
Benzene	ND	---	0.250	ug/L	1	04/15/14 12:30	EPA 8260B	
Toluene	ND	---	1.00	"	"	"	"	
Ethylbenzene	ND	---	0.500	"	"	"	"	
Xylenes, total	ND	---	1.50	"	"	"	"	
Naphthalene	ND	---	2.00	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	---	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	---	0.500	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 121 %*	*Limits: 80-120 %*	"	"	"	*A-01a*
1,4-Difluorobenzene (Surr)			*103 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*120 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*120 %*	*Limits: 80-120 %*	"	"	"	

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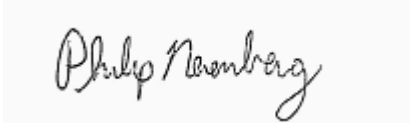

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7376 SW Durham Road	Project Number: 961M102820	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	04/28/14 15:57

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
AB-02, 18.5 ft (A4D0338-02)			**Matrix: Soil**		**Batch: 4040460**			
% Solids	**87.6**	---	1.00	% by Weight	1	04/17/14 10:20	EPA 8000C	
AB-04, 18 ft (A4D0338-05)			**Matrix: Soil**		**Batch: 4040460**			
% Solids	**87.5**	---	1.00	% by Weight	1	04/17/14 10:20	EPA 8000C	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040371 - EPA 5030B									**Water**			
Blank (4040371-BLK1)					Prepared: 04/15/14 09:00 Analyzed: 04/15/14 12:03							
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 108 %*		*Limits: 50-150 %*		*Dilution: 1x*						
1,4-Difluorobenzene (Sur)		*103 %*		*50-150 %*		*"*						
LCS (4040371-BS2)					Prepared: 04/15/14 09:00 Analyzed: 04/15/14 11:37							
NWTPH-Gx (MS)												
Gasoline Range Organics	0.509	---	0.100	mg/L	1	0.500	---	102	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 109 %*		*Limits: 50-150 %*		*Dilution: 1x*						
1,4-Difluorobenzene (Sur)		*101 %*		*50-150 %*		*"*						
Duplicate (4040371-DUP1)					Prepared: 04/15/14 11:54 Analyzed: 04/15/14 13:23							
QC Source Sample: AB-01 (A4D0338-01)												
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 94 %*		*Limits: 50-150 %*		*Dilution: 1x*						
1,4-Difluorobenzene (Sur)		*97 %*		*50-150 %*		*"*						
Batch 4040407 - EPA 5035A									**Soil**			
Blank (4040407-BLK1)					Prepared: 04/15/14 09:00 Analyzed: 04/15/14 11:49							
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 95 %*		*Limits: 50-150 %*		*Dilution: 1x*						
1,4-Difluorobenzene (Sur)		*100 %*		*50-150 %*		*"*						
LCS (4040407-BS2)					Prepared: 04/15/14 09:00 Analyzed: 04/15/14 11:24							
NWTPH-Gx (MS)												
Gasoline Range Organics	22.7	---	5.00	mg/kg wet	50	25.0	---	91	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 93 %*		*Limits: 50-150 %*		*Dilution: 1x*						
1,4-Difluorobenzene (Sur)		*104 %*		*50-150 %*		*"*						

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QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040483 - EPA 5035A							**Soil**					
Blank (4040483-BLK1)					Prepared: 04/17/14 09:00 Analyzed: 04/17/14 11:29							
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 95 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*103 %*	*50-150 %*			*"*					
LCS (4040483-BS2)					Prepared: 04/17/14 09:00 Analyzed: 04/17/14 11:04							
NWTPH-Gx (MS)												
Gasoline Range Organics	24.4	---	5.00	mg/kg wet	50	25.0	---	97	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 98 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*106 %*	*50-150 %*			*"*					

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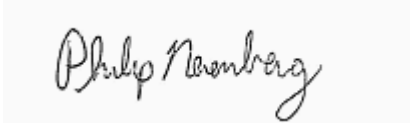

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Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 961M102820	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	04/28/14 15:57

QUALITY CONTROL (QC) SAMPLE RESULTS

RBCA Compounds (BTEX+) by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040371 - EPA 5030B							**Water**					
Blank (4040371-BLK1)					Prepared: 04/15/14 09:00 Analyzed: 04/15/14 12:03							
EPA 8260B												
Benzene	ND	---	0.250	ug/L	1	---	---	---	---	---	---	
Toluene	ND	---	1.00	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
Xylenes, total	ND	---	1.50	"	"	---	---	---	---	---	---	
Naphthalene	ND	---	2.00	"	"	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	"	"	---	---	---	---	---	---	
Isopropylbenzene	ND	---	1.00	"	"	---	---	---	---	---	---	
n-Propylbenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	---	1.00	"	"	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	---	1.00	"	"	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	"	"	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.500	"	"	---	---	---	---	---	---	
Surr: Dibromofluoromethane (Surr)		*Recovery: 123 %*		*Limits: 80-120 %*		*Dilution: 1x*						*A-01a*
1,4-Difluorobenzene (Surr)			*103 %*		*80-120 %*		*"*					
Toluene-d8 (Surr)			*118 %*		*80-120 %*		*"*					
4-Bromofluorobenzene (Surr)			*119 %*		*80-120 %*		*"*					
LCS (4040371-BS1)					Prepared: 04/15/14 09:00 Analyzed: 04/15/14 11:10							
EPA 8260B												
Benzene	17.7	---	0.250	ug/L	1	20.0	---	89	70-130%	---	---	
Toluene	19.0	---	1.00	"	"	"	---	95	"	---	---	
Ethylbenzene	19.5	---	0.500	"	"	"	---	97	"	---	---	
Xylenes, total	58.7	---	1.50	"	"	60.0	---	98	"	---	---	
Naphthalene	20.0	---	2.00	"	"	20.0	---	100	"	---	---	
Methyl tert-butyl ether (MTBE)	18.1	---	1.00	"	"	"	---	90	"	---	---	
Isopropylbenzene	19.5	---	1.00	"	"	"	---	98	"	---	---	
n-Propylbenzene	21.2	---	0.500	"	"	"	---	106	"	---	---	
1,2,4-Trimethylbenzene	21.2	---	1.00	"	"	"	---	106	"	---	---	
1,3,5-Trimethylbenzene	21.3	---	1.00	"	"	"	---	107	"	---	---	
1,2-Dibromoethane (EDB)	19.3	---	0.500	"	"	"	---	97	"	---	---	

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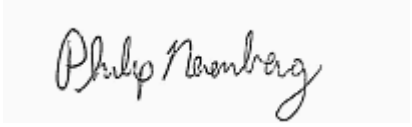

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Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 961M102820	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	04/28/14 15:57

QUALITY CONTROL (QC) SAMPLE RESULTS

RBCA Compounds (BTEX+) by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040371 - EPA 5030B							**Water**					
LCS (4040371-BS1)					Prepared: 04/15/14 09:00 Analyzed: 04/15/14 11:10							
1,2-Dichloroethane (EDC)	17.0	---	0.500	ug/L	"	"	---	85	"	---	---	
Surr: Dibromofluoromethane (Surr)			*Recovery: 118 %*		*Limits: 80-120 %*		*Dilution: 1x*					
1,4-Difluorobenzene (Surr)			*100 %*		*80-120 %*		*"*					
Toluene-d8 (Surr)			*124 %*		*80-120 %*		*"*					*A-01a*
4-Bromofluorobenzene (Surr)			*119 %*		*80-120 %*		*"*					
Duplicate (4040371-DUP1)					Prepared: 04/15/14 11:54 Analyzed: 04/15/14 13:23							
QC Source Sample: AB-01 (A4D0338-01)												
EPA 8260B												
Benzene	**0.290**	---	0.250	ug/L	1	---	0.380	---	---	27	30%	
Toluene	**1.05**	---	1.00	"	"	---	2.20	---	---	71	30%	Q-05
Ethylbenzene	ND	---	0.500	"	"	---	0.410	---	---	***	30%	
Xylenes, total	ND	---	1.50	"	"	---	1.60	---	---	***	30%	
Naphthalene	ND	---	2.00	"	"	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	"	"	---	ND	---	---	---	30%	
Isopropylbenzene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
n-Propylbenzene	ND	---	0.500	"	"	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	0.500	"	"	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	0.500	"	"	---	ND	---	---	---	30%	
Surr: Dibromofluoromethane (Surr)			*Recovery: 118 %*		*Limits: 80-120 %*		*Dilution: 1x*					
1,4-Difluorobenzene (Surr)			*99 %*		*80-120 %*		*"*					
Toluene-d8 (Surr)			*125 %*		*80-120 %*		*"*					*A-01a*
4-Bromofluorobenzene (Surr)			*122 %*		*80-120 %*		*"*					*A-01a*

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7376 SW Durham Road	Project Number: 961M102820	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	04/28/14 15:57

QUALITY CONTROL (QC) SAMPLE RESULTS

RBCA Compounds (BTEX+) by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040407 - EPA 5035A							**Soil**					
Blank (4040407-BLK1)					Prepared: 04/15/14 09:00 Analyzed: 04/15/14 11:49							
5035/8260B												
Benzene	ND	---	8.33	ug/kg wet	50	---	---	---	---	---	---	
Toluene	ND	---	33.3	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	---	16.7	"	"	---	---	---	---	---	---	
Xylenes, total	ND	---	50.0	"	"	---	---	---	---	---	---	
Naphthalene	ND	---	66.7	"	"	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	33.3	"	"	---	---	---	---	---	---	
Isopropylbenzene	ND	---	33.3	"	"	---	---	---	---	---	---	
n-Propylbenzene	ND	---	16.7	"	"	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	---	33.3	"	"	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	---	33.3	"	"	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	16.7	"	"	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	16.7	"	"	---	---	---	---	---	---	
Surr: Dibromofluoromethane (Surr)			*Recovery: 111 %*		*Limits: 70-130 %*				*Dilution: 1x*			
1,4-Difluorobenzene (Surr)			*102 %*		*70-130 %*				*"*			
Toluene-d8 (Surr)			*103 %*		*70-130 %*				*"*			
4-Bromofluorobenzene (Surr)			*96 %*		*70-130 %*				*"*			
LCS (4040407-BS1)					Prepared: 04/15/14 09:00 Analyzed: 04/15/14 11:00							
5035/8260B												
Benzene	951	---	12.5	ug/kg wet	50	1000	---	95	65-135%	---	---	
Toluene	987	---	50.0	"	"	"	---	99	"	---	---	
Ethylbenzene	1040	---	25.0	"	"	"	---	104	"	---	---	
Xylenes, total	3240	---	75.0	"	"	3000	---	108	"	---	---	
Naphthalene	844	---	100	"	"	1000	---	84	"	---	---	
Methyl tert-butyl ether (MTBE)	992	---	50.0	"	"	"	---	99	"	---	---	
Isopropylbenzene	1100	---	50.0	"	"	"	---	110	"	---	---	
n-Propylbenzene	1080	---	25.0	"	"	"	---	108	"	---	---	
1,2,4-Trimethylbenzene	1100	---	50.0	"	"	"	---	110	"	---	---	
1,3,5-Trimethylbenzene	1110	---	50.0	"	"	"	---	111	"	---	---	
1,2-Dibromoethane (EDB)	1070	---	25.0	"	"	"	---	107	"	---	---	

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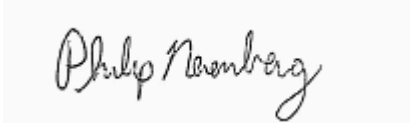

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7376 SW Durham Road	Project Number: 961M102820	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	04/28/14 15:57

QUALITY CONTROL (QC) SAMPLE RESULTS

RBCA Compounds (BTEX+) by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040407 - EPA 5035A							**Soil**					
LCS (4040407-BS1)					Prepared: 04/15/14 09:00 Analyzed: 04/15/14 11:00							
1,2-Dichloroethane (EDC)	1080	---	25.0	ug/kg wet	"	"	---	108	"	---	---	
Surr: Dibromofluoromethane (Surr)			*Recovery: 110 %*		*Limits: 70-130 %*			*Dilution: 1x*				
1,4-Difluorobenzene (Surr)			*101 %*		*70-130 %*			*"*				
Toluene-d8 (Surr)			*103 %*		*70-130 %*			*"*				
4-Bromofluorobenzene (Surr)			*91 %*		*70-130 %*			*"*				

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7376 SW Durham Road	Project Number: 961M102820	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	04/28/14 15:57

QUALITY CONTROL (QC) SAMPLE RESULTS

RBCA Compounds (BTEX+) by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040483 - EPA 5035A							**Soil**					
Blank (4040483-BLK1)					Prepared: 04/17/14 09:00 Analyzed: 04/17/14 11:29							
5035/8260B												
Benzene	ND	---	8.33	ug/kg wet	50	---	---	---	---	---	---	
Toluene	ND	---	33.3	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	---	16.7	"	"	---	---	---	---	---	---	
Xylenes, total	ND	---	50.0	"	"	---	---	---	---	---	---	
Naphthalene	ND	---	66.7	"	"	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	33.3	"	"	---	---	---	---	---	---	
Isopropylbenzene	ND	---	33.3	"	"	---	---	---	---	---	---	
n-Propylbenzene	ND	---	16.7	"	"	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	---	33.3	"	"	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	---	33.3	"	"	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	16.7	"	"	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	16.7	"	"	---	---	---	---	---	---	
Surr: Dibromofluoromethane (Surr)			*Recovery: 117 %*	*Limits: 70-130 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Surr)			*105 %*	*70-130 %*			*"*					
Toluene-d8 (Surr)			*106 %*	*70-130 %*			*"*					
4-Bromofluorobenzene (Surr)			*93 %*	*70-130 %*			*"*					
LCS (4040483-BS1)					Prepared: 04/17/14 09:00 Analyzed: 04/17/14 10:40							
5035/8260B												
Benzene	994	---	12.5	ug/kg wet	50	1000	---	99	65-135%	---	---	
Toluene	984	---	50.0	"	"	"	---	98	"	---	---	
Ethylbenzene	1050	---	25.0	"	"	"	---	105	"	---	---	
Xylenes, total	3300	---	75.0	"	"	3000	---	110	"	---	---	
Naphthalene	870	---	100	"	"	1000	---	87	"	---	---	
Methyl tert-butyl ether (MTBE)	1040	---	50.0	"	"	"	---	104	"	---	---	
Isopropylbenzene	1110	---	50.0	"	"	"	---	111	"	---	---	
n-Propylbenzene	1090	---	25.0	"	"	"	---	109	"	---	---	
1,2,4-Trimethylbenzene	1110	---	50.0	"	"	"	---	111	"	---	---	
1,3,5-Trimethylbenzene	1130	---	50.0	"	"	"	---	113	"	---	---	
1,2-Dibromoethane (EDB)	1110	---	25.0	"	"	"	---	111	"	---	---	

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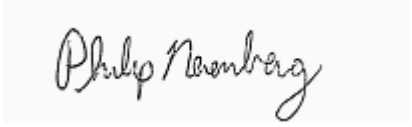

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7376 SW Durham Road	Project Number: 961M102820	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	04/28/14 15:57

QUALITY CONTROL (QC) SAMPLE RESULTS

RBCA Compounds (BTEX+) by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040483 - EPA 5035A							**Soil**					
LCS (4040483-BS1)					Prepared: 04/17/14 09:00 Analyzed: 04/17/14 10:40							
1,2-Dichloroethane (EDC)	1200	---	25.0	ug/kg wet	"	"	---	120	"	---	---	
Surr: Dibromofluoromethane (Surr)			*Recovery: 116 %*		*Limits: 70-130 %*			*Dilution: 1x*				
1,4-Difluorobenzene (Surr)			*104 %*		*70-130 %*			*"*				
Toluene-d8 (Surr)			*102 %*		*70-130 %*			*"*				
4-Bromofluorobenzene (Surr)			*90 %*		*70-130 %*			*"*				

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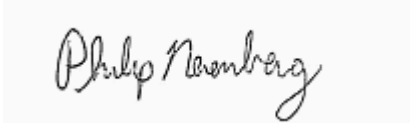

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7376 SW Durham Road	Project Number: 961M102820	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	04/28/14 15:57

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040460 - Total Solids (Dry Weight)												**Soil**

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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7376 SW Durham Road	Project Number: 961M102820	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	04/28/14 15:57

SAMPLE PREPARATION INFORMATION

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4040371							
A4D0338-01	Water	NWTPH-Gx (MS)	04/11/14 10:45	04/15/14 11:54	5mL/5mL	5mL/5mL	1.00
A4D0338-03	Water	NWTPH-Gx (MS)	04/11/14 11:40	04/15/14 11:54	5mL/5mL	5mL/5mL	1.00
A4D0338-04	Water	NWTPH-Gx (MS)	04/11/14 12:40	04/15/14 11:54	5mL/5mL	5mL/5mL	1.00
A4D0338-06	Water	NWTPH-Gx (MS)	04/11/14 00:00	04/15/14 11:54	5mL/5mL	5mL/5mL	1.00

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4040407							
A4D0338-05	Soil	NWTPH-Gx (MS)	04/11/14 13:50	04/15/14 11:15	12.39g/10mL	10g/10mL	0.81
Batch: 4040483							
A4D0338-02	Soil	NWTPH-Gx (MS)	04/11/14 11:35	04/16/14 12:18	12.719g/10mL	10g/10mL	0.79

RBCA Compounds (BTEX+) by EPA 8260B

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4040371							
A4D0338-01	Water	EPA 8260B	04/11/14 10:45	04/15/14 11:54	5mL/5mL	5mL/5mL	1.00
A4D0338-03	Water	EPA 8260B	04/11/14 11:40	04/15/14 11:54	5mL/5mL	5mL/5mL	1.00
A4D0338-03RE1	Water	EPA 8260B	04/11/14 11:40	04/15/14 11:54	5mL/5mL	5mL/5mL	1.00
A4D0338-04	Water	EPA 8260B	04/11/14 12:40	04/15/14 11:54	5mL/5mL	5mL/5mL	1.00
A4D0338-04RE1	Water	EPA 8260B	04/11/14 12:40	04/15/14 11:54	5mL/5mL	5mL/5mL	1.00
A4D0338-06	Water	EPA 8260B	04/11/14 00:00	04/15/14 11:54	5mL/5mL	5mL/5mL	1.00

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4040407							
A4D0338-05	Soil	5035/8260B	04/11/14 13:50	04/15/14 11:15	12.39g/10mL	10g/10mL	0.81
Batch: 4040483							
A4D0338-02	Soil	5035/8260B	04/11/14 11:35	04/16/14 12:18	12.719g/10mL	10g/10mL	0.79

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4040460							

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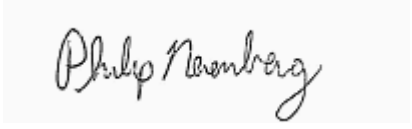

Philip Nerenberg, Lab Director

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Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 961M102820	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	04/28/14 15:57

SAMPLE PREPARATION INFORMATION

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A4D0338-02	Soil	EPA 8000C	04/11/14 11:35	04/16/14 14:52	1N/A/1N/A	1N/A/1N/A	NA
A4D0338-05	Soil	EPA 8000C	04/11/14 13:50	04/16/14 14:52	1N/A/1N/A	1N/A/1N/A	NA

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Notes and Definitions

Qualifiers:

A-01a	Surrogate recovery is outside of established control limits but within 20% of daily CCV value.
F-03	The result for this hydrocarbon range is elevated due to the presence of individual analyte peaks in the quantitation range that are not representative of the fuel pattern reported.
Q-05	Analyses are not controlled on RPD values from sample or duplicate concentrations below 5 times the reporting level.
V-16	Sample aliquot was subsampled from the sample container in the laboratory . The subsampled aliquot was not preserved within 48 hours of sampling.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepency with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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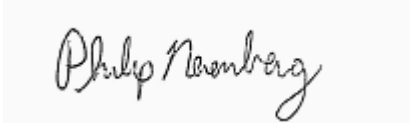

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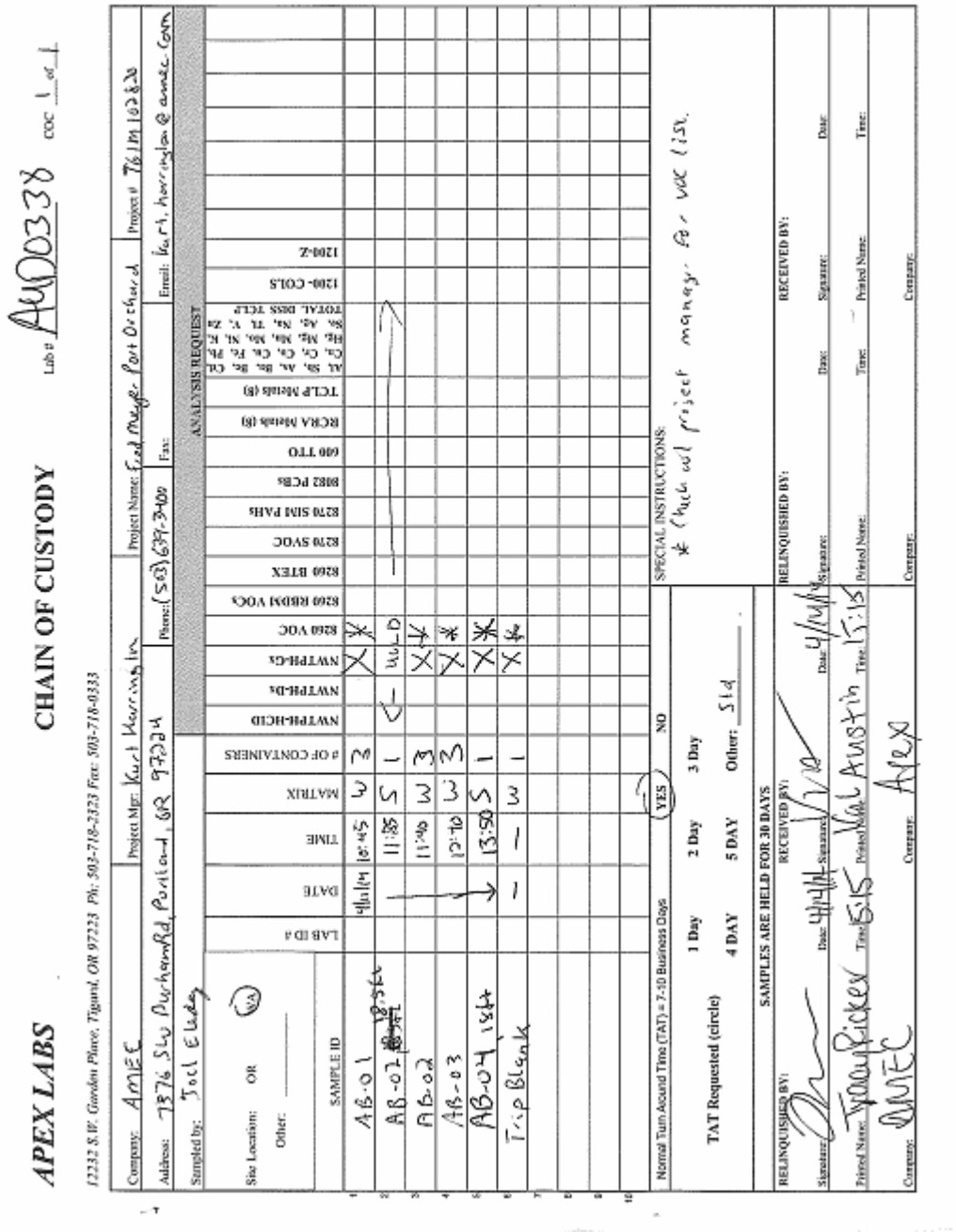

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