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GROUNDWATER MONITORING STATUS REPORT

FORMER CUMMINGS OIL LEASE SITE
908 NORTHWEST KERRON AVENUE
WINLOCK, WASHINGTON
VCP NO. SW0775

Farallon Consulting, L.L.C.
975 5th Avenue Northwest
Issaquah, Washington 98027

Farallon PN: 683-009

For:

BNSF RAILWAY

2454 Occidental Avenue South, Suite 1A
Seattle, Washington

March 24, 2011

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ACRONYMS AND ABBREVIATIONS

BNSF	BNSF Railway Company
BTEX	benzene, toluene, ethylbenzene, and xylenes
cPAHs	carcinogenic polycyclic aromatic hydrocarbons
DRO	diesel-range organics
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
Farallon	Farallon Consulting, L.L.C.
GRO	gasoline-range organics
µg/l	micrograms per liter
mg/l	milligrams per liter
MTCA	Washington State Model Toxics Control Act Cleanup Regulation
ORO	oil-range organics
ORP	oxidation-reduction potential
PAHs	polycyclic aromatic hydrocarbons
RLs	reporting limits
Site	Former Cummings Oil Lease Site at 908 Northwest Kerron Avenue in Winlock, Washington
TPH	total petroleum hydrocarbons
VCP	voluntary cleanup program

1.0 INTRODUCTION

This Groundwater Monitoring Status Report has been prepared on behalf of BNSF Railway Company (BNSF) to summarize the results of the groundwater monitoring and sampling event conducted on October 20, 2010 at the Former Cummings Oil Lease Site at 908 Northwest Kerron Avenue in Winlock, Lewis County, Washington (herein referred to as the Site) (Figure 1). Prior investigations and the cleanup action have confirmed that concentrations of total petroleum hydrocarbons (TPH) as gasoline-range organics (GRO), as diesel-range organics (DRO), and as oil-range organics (ORO); and benzene, toluene, ethylbenzene, and xylenes (BTEX) were released to the subsurface as a result of historical activities at the Site. Following the cleanup action, groundwater monitoring and sampling was implemented to monitor concentrations of TPH previously detected in groundwater above the Washington State Model Toxics Control Act Cleanup Regulation (MTCA) Method A cleanup level and to assess the effectiveness of the remedial action and determine whether natural attenuation is occurring.

The cleanup action at the Site was performed under the Washington State Department of Ecology (Ecology) Voluntary Cleanup Program (VCP) in accordance with MTCA, as established in Chapter 173-340 of the Washington Administrative Code (WAC 173-340), and the *Cleanup Action Work Plan, Former Cummings Oil Lease Site, 908 Northwest Kerron Avenue, Winlock, Washington* dated December 18, 2008, prepared by Farallon (Work Plan). The Site was entered into the VCP in 2006 and is listed in the Ecology Toxics Cleanup Program as Identification No. SW0775.

The Work Plan presented the selected cleanup approach and specified the cleanup standards and associated requirements for the cleanup action. The selected cleanup action for the Site was executed in conjunction with tank closure activities conducted at the Site between March 10 and August 1, 2008. The tank closure and cleanup action included removal of two underground storage tanks and four aboveground storage tanks, excavation and off-Site disposal of soil with concentrations of TPH above MTCA cleanup levels, and installation of monitoring wells to assess the nature and extent of TPH in groundwater and whether natural attenuation is occurring. The results of the tank closure and cleanup action are summarized in the *Tank Closure Report, Former Cummings Oil Lease Site, 908 Northwest Kerron Avenue, Winlock, Washington* dated March 11, 2010, prepared by Farallon (2010). Additional information regarding previous activities conducted at the Site is available in the documents listed in Section 4, References.

2.0 MONITORING ACTIVITIES AND RESULTS

The groundwater monitoring and sampling activities conducted at the Site by Farallon on October 20, 2010 included measuring groundwater levels and collecting groundwater quality data and samples for laboratory analysis. The monitoring activities and results are summarized in the following sections.

2.1 GROUNDWATER MONITORING ACTIVITIES

The October 20, 2010 groundwater monitoring and sampling event included:

- Measuring the depth to groundwater in monitoring wells MW-1 through MW-5;
- Purging and sampling monitoring wells MW-1 through MW-5 using U.S. Environmental Protection Agency (EPA) low-flow sampling methods;
- Measuring water quality parameters during monitoring well purging to assess natural attenuation; and
- Submitting the groundwater samples for laboratory analysis.

Farallon opened monitoring wells MW-1 through MW-5 to allow water levels to equilibrate with atmospheric pressure for a minimum of 15 minutes prior to obtaining groundwater level measurements. Groundwater levels in the accessible monitoring wells were measured to an accuracy of 0.01 foot using an electronic water-level meter.

Following collection of groundwater level measurements, monitoring wells MW-1 through MW-5 were purged and sampled using a peristaltic pump and polyethylene tubing. The purging was conducted at flow rates ranging from 100 to 300 milliliters per minute, with the intake tubing placed at a maximum of 3 feet below the water table in each monitoring well. During purging, water quality was monitored using a Yellow Springs Instrument water-quality meter equipped with a flow-through cell. The water quality parameters monitored and recorded during purging and sampling included temperature, pH, specific conductance, dissolved oxygen, and oxidation-reduction potential (ORP). The monitoring wells were purged until the water quality parameters stabilized in accordance with EPA guidelines for low-flow sampling. The groundwater samples were transferred directly from the tubing into laboratory-prepared containers. The containers from each sampling event were placed on ice in a cooler and transported to an Ecology-accredited laboratory under standard chain-of-custody protocols. The groundwater samples were analyzed for DRO and ORO by Northwest Method NWTPH-Dx, GRO by Northwest Method NWTPH-Gx, BTEX by EPA Method 5030B/8260, methane by Method RSK 175, nitrate and sulfate by EPA Method 300.0, and ferrous iron by SM 3500.

Purge water generated by groundwater sampling is stored in a 35-gallon drum located on the Site. The purge water will be scheduled for disposal during a future groundwater monitoring and sampling event.

2.2 GROUNDWATER MONITORING RESULTS

Groundwater level measurements and elevations are summarized in Table 1. Figure 2 provides a groundwater elevation contour map illustrating the estimated groundwater flow direction and gradient for the groundwater monitoring and sampling event conducted on October 20, 2010. The groundwater level measurements indicate an approximate groundwater flow direction to the west, and an average approximate hydraulic gradient at the Site of 0.05 foot per foot. The groundwater flow direction during previous groundwater monitoring events has varied from northwest to southwest.

The groundwater analytical results are summarized in Table 2. The analytical data for the groundwater samples collected on October 20, 2010 are illustrated on Figure 3.

The laboratory analytical results for October 20, 2010 indicated the following:

- Concentrations of GRO were not detected above the laboratory reporting limit (RL), with the exception of monitoring well MW-2, where concentrations of GRO were detected below the MTCA Method A cleanup level of 800 micrograms per liter (µg/l);
- Concentrations of DRO exceeded the MTCA Method A cleanup level of 500 µg/l in groundwater samples collected from monitoring wells MW-1, MW-2, and MW-3;
- Concentrations of ORO exceeded the MTCA Method A cleanup level of 500 µg/l in the groundwater sample collected from monitoring well MW-2; and
- Concentrations of BTEX were not detected above the RL, with the exception of benzene, which exceeded the MTCA Method A cleanup level of 5 µg/l in the groundwater sample collected from monitoring well MW-2.

The laboratory analytical report for the groundwater monitoring events is provided in Appendix A.

2.3 NATURAL ATTENUATION RESULTS

An assessment of the potential for natural attenuation via biodegradation processes to reduce the concentrations of residual TPH and BTEX in groundwater was conducted during the October 20, 2010 groundwater monitoring and sampling event. The assessment included laboratory analyses and measurement of field parameters that provide data to assess whether, and if so by what processes, biodegradation is occurring. The laboratory analyses and field measurements for the assessment included the following:

- Primary electron receptors that are potential energy sources for native bacteria capable of biodegradation of petroleum compounds, and indicators of groundwater geochemistry:
  - Dissolved oxygen (O_2);
  - Ferric Iron (Fe^{+2});
  - Nitrate (NO_3^-); and
  - Sulfate (SO_4^{-2}).
- Metabolic byproducts of biodegradation and indicators of groundwater geochemistry:

- Methane (CH_4).

- Geochemical indicators of whether the subsurface environment is amenable to biodegradation of petroleum compounds:
  - ORP;
  - Temperature; and
  - pH.

The laboratory analytical results and field measurements for natural attenuation parameters and geochemical indicators are summarized in Table 3. The results of the assessment for the October 20, 2010 sampling event are as follows:

- **Dissolved Oxygen**—Measurements less than 1 milligram per liter (mg/l) indicate that available oxygen is trending toward more anaerobic conditions. The concentrations of dissolved oxygen in groundwater at monitoring wells MW-1, MW-2, MW-3, and MW-4 were below 1 mg/l during the October 20, 2010 monitoring and sampling event. These dissolved oxygen measurements indicate that the available oxygen likely is being used as an energy source for biodegradation in areas with residual petroleum hydrocarbons.

- **Nitrite**—Nitrite is formed by anaerobic microbial nitrate reduction, referred to as de-nitrification. The anaerobic respiratory process reduces nitrate (NO_3^-) to nitrite (NO_2^-). Concentrations of nitrate or nitrite were not detected in monitoring wells MW-1 through MW-4, indicating that anaerobic microbial respiration was not occurring through de-nitrification at these wells. Concentrations of nitrate were detected at MW-5, but nitrite was not detected above the laboratory RL at this well.

- **Sulfate**—Concentrations of sulfate greater than 1 mg/l indicate a favorable environment for sulfate-reducing conditions. The concentrations of sulfate in groundwater samples collected from all five monitoring wells ranged from 6.3 to 59.1 mg/l.

- **Methane**—Concentrations of methane were detected in the groundwater samples collected from monitoring wells MW-1, MW-2, MW-3, and MW-4. The concentrations of methane indicate that methanogenesis is occurring in these four monitoring wells.

- **Ferrous Iron**—Concentrations of ferrous iron were detected in the groundwater samples collected from monitoring wells MW-1, MW-2, MW-3, and MW-4 during the October 2010 monitoring and sampling event conducted at the Site. The concentrations of ferrous iron indicate that organisms are using ferric iron and producing ferrous iron through respiration in these four monitoring wells.

- **ORP**—The ORP measured in monitoring wells MW-1 and MW-5 during the monitoring event ranged from 12.1 to 75.5 millivolts, which is within a range typically considered indicative of moderately aerobic conditions. The ORP measured in monitoring wells MW-2 through MW-4 during the monitoring event ranged from -33.4 to -77.8 millivolts, which indicates an anaerobic environment.

- **Temperature**—The groundwater temperature measured at monitoring wells MW-1 through MW-5 ranged from 12.96 to 17.59 degrees Celsius during the groundwater monitoring and sampling event. Although biodegradation processes occur at these

temperatures, they typically are accelerated at higher temperatures, approaching 20 degrees Celsius or greater.

- **pH**—The values for pH measured at monitoring wells MW-1 through MW-5 ranged from 6.03 to 7.42, with 7 being a neutral value. These pH values are within a range amenable to the bacteria capable of biodegrading petroleum hydrocarbons.

3.0 CONCLUSIONS

The groundwater flow direction and hydraulic gradient estimated for the October 20, 2010 groundwater monitoring event was to the west, at an average gradient of 0.05 foot per foot. During previous monitoring events, groundwater flow direction has ranged from northwest to southwest.

GRO, DRO, ORO, or BTEX were not detected above the laboratory RL in groundwater samples collected from up-gradient monitoring well MW-4 or down-gradient monitoring well MW-5 during the October 2010 groundwater monitoring and sampling event. DRO above MTCA Method A cleanup levels was detected in samples collected from monitoring wells MW-1 and MW-2, directly west of the Former UST Excavation Area on the western portion of the Site. ORO and benzene above MTCA Method A cleanup levels were detected in monitoring well MW-2. Concentrations of DRO above the MTCA Method A cleanup levels were detected in samples collected from monitoring well MW-3, west of the Former AST Excavation Area on the western portion of the Site.

The rate of biodegradation of TPH and benzene in groundwater will be calculated after one additional quarter of sampling has been completed. However, the results of the assessment of natural attenuation and the trend toward lower concentrations of TPH and benzene in groundwater indicate that biodegradation of petroleum hydrocarbons is occurring under anaerobic conditions. Dissolved oxygen, an electron receptor, appears to be depleted in monitoring wells MW-1 through MW-4, indicating that the available oxygen is being used as an energy source for biodegradation. The concentrations of the metabolic by-product indicators sulfate, methane, and ferrous iron detected in groundwater in monitoring wells MW-1, MW-2, MW-3, and MW-4 also indicate that biodegradation of petroleum hydrocarbons is occurring.

4.0 REFERENCES

Farallon Consulting, L.L.C. (Farallon). 2006. *Supplemental Subsurface Investigation, BNSF Winlock, 908 Northwest Kerron Avenue, Winlock, Washington.* Prepared for BNSF Railway Company, Seattle, Washington. May 31.

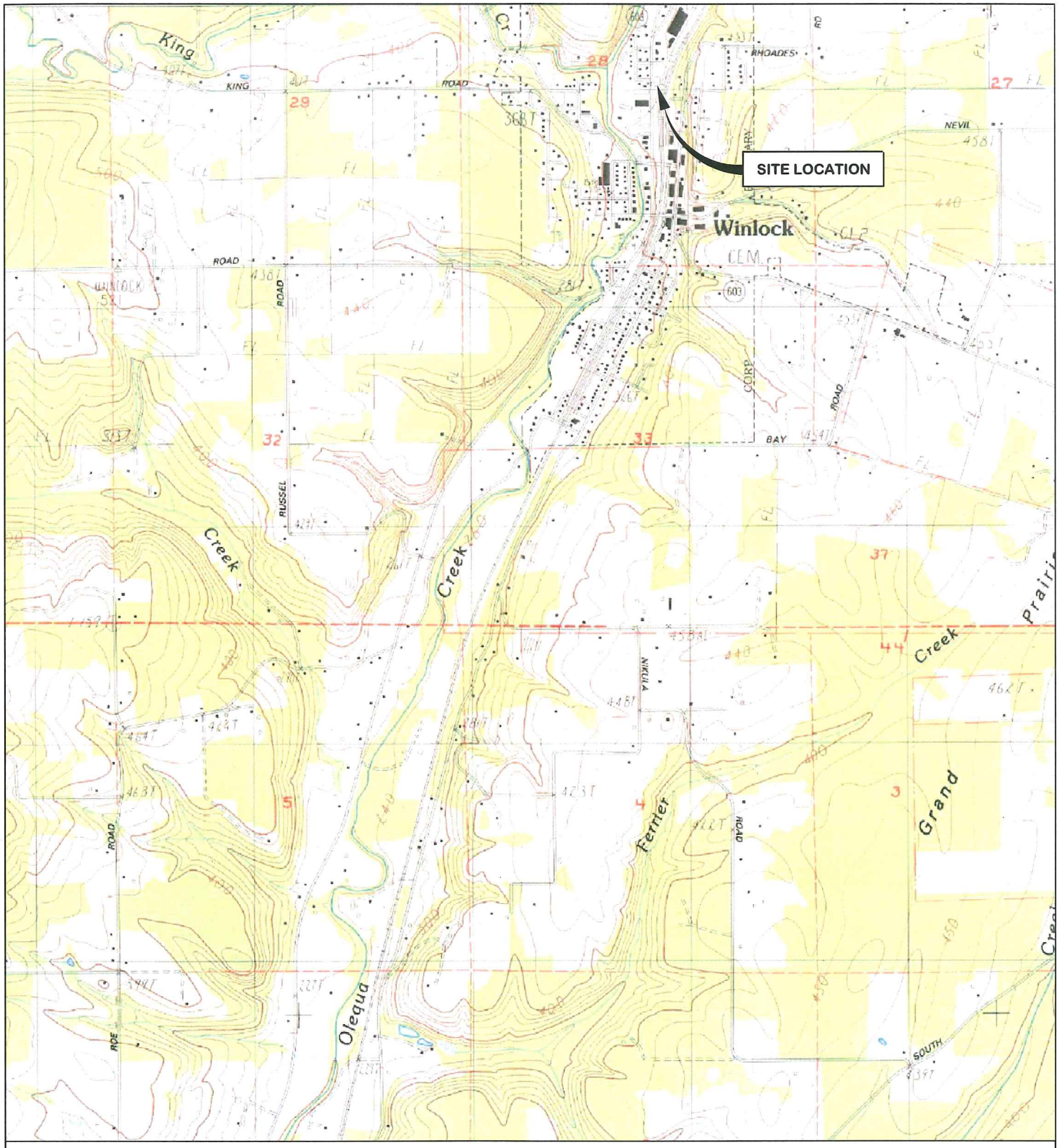
———. 2008. *Cleanup Action Work Plan, Former Cummings Oil Lease Site, 908 Northwest Kerron Avenue, Winlock, Washington.* Prepared for BNSF Railway Company, Seattle, Washington. December 18.

———. 2010. *Tank Closure Report, Former Cummings Oil Lease Site, 908 Northwest Kerron Avenue, Winlock, Washington.* Prepared for BNSF Railway Company, Seattle, Washington. March 11.

FIGURES

GROUNDWATER MONITORING STATUS REPORT
Former Cummings Oil Lease Site
908 Northwest Kerron Avenue
Winlock, Washington
VCP No. SW0775

Farallon PN: 683-009



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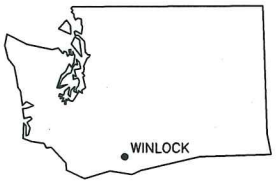

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FIGURE 1

SITE VICINITY MAP
FORMER CUMMINGS OIL LEASE SITE
908 NORTHWEST KERRON AVENUE
WINLOCK, WASHINGTON

FARALLON PN: 683-009

Drawn By: DEW	Checked By: SP	Date: 2/25/09	Disk Reference: 683009

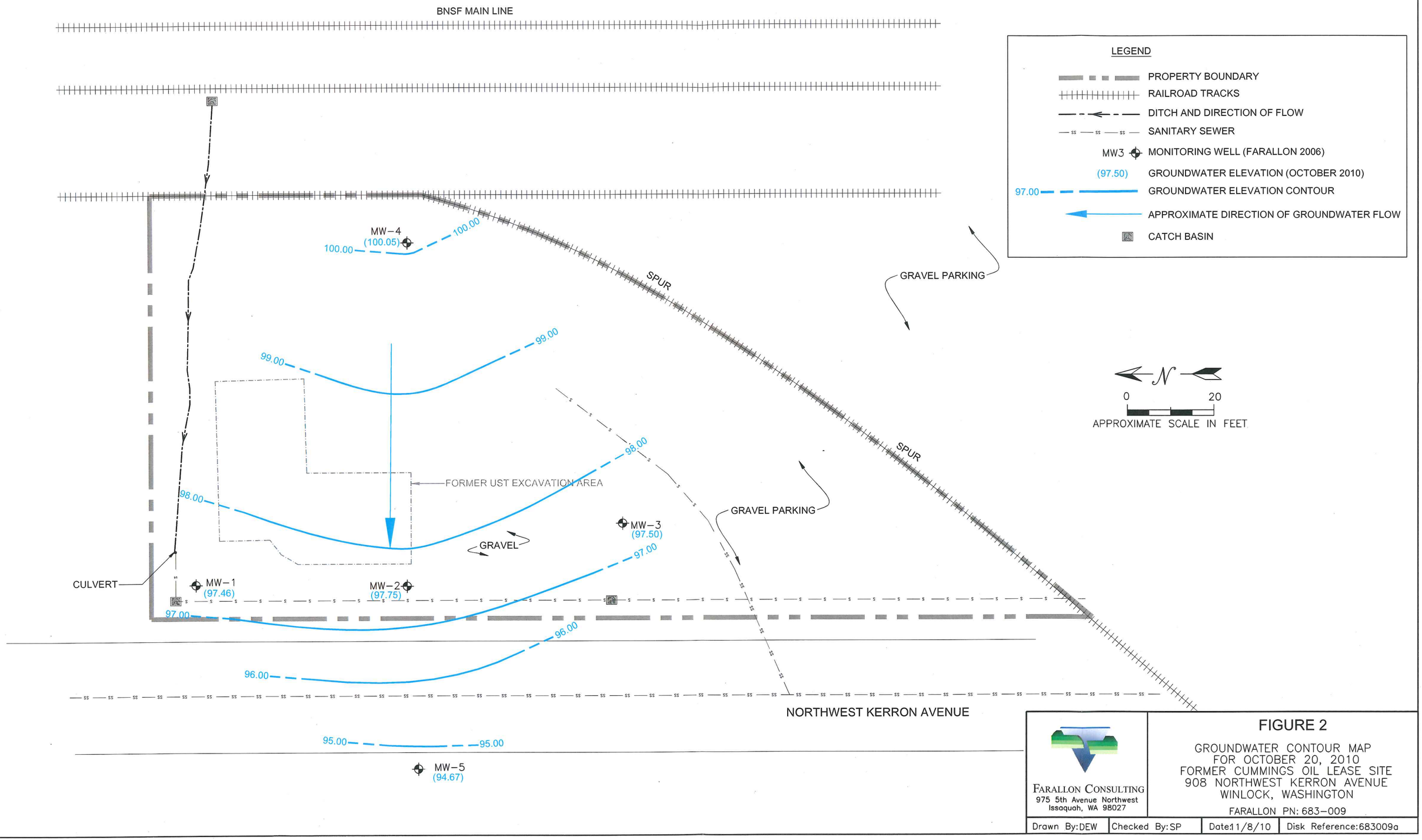

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FIGURE 2

GROUNDWATER CONTOUR MAP
FOR OCTOBER 20, 2010
FORMER CUMMINGS OIL LEASE SITE
908 NORTHWEST KERRON AVENUE
WINLOCK, WASHINGTON

FARALLON PN: 683-009

Drawn By: DEW	Checked By: SP	Date: 11/8/10	Disk Reference: 683009a

BNSF MAIN LINE

DATE	GRO	DRO	ORO	B	T	E	X	NAPHTHALENE
12/23/2005	<50.0	<238	<476	<0.500	<0.500	<0.500	<1.00	--
8/18/2008	<50.0	<243	<485	<0.500	<0.500	<0.500	<1.00	--
3/11/2010	<50.0	<78	<390	<1.0	<1.0	<1.0	<3.0	<0.016
6/9/2010	<50.0	<82	<410	<1.0	<1.0	<1.0	<3.0	<0.014
10/20/2010	<50.0	<86	<430	<1.0	<1.0	<1.0	<3.0	---

MW-4

SPUR

GRAVEL PARKING

AST EXCAVATION

UST EXCAVATION

DATE	GRO	DRO	ORO	B	T	E	X	NAPHTHALENE
12/23/2005	<50.0	<238	<476	<0.500	<0.500	<0.500	<1.00	--
8/18/2008	<50.0	**1,480**	**836**	<0.500	<0.500	<0.500	<1.00	--
3/11/2010	<50.0	**590**	**540**	<1.0	<1.0	<1.0	<3.0	<0.016
6/9/2010	<50.0	**720**	<460	<1.0	<1.0	<1.0	<3.0	0.020
10/20/2010	<50.0	**670**	<430	<1.0	<1.0	<1.0	<3.0	---

FORMER UST EXCAVATION AREA

GRAVEL PARKING

MW-3

GRAVEL

CULVERT

MW-1

MW-2

DATE	GRO	DRO	ORO	B	T	E	X	NAPHTHALENE
12/23/2005	465	<238	<476	**55.2**	2.84	3.46	35.6	--
8/18/2008	606	**876**	<500	**30.6**	1.12	2.56	30.9	--
3/11/2010	150	**660**	470	**27.7**	<1.0	<1.0	<3.0	<0.016
6/9/2010	116	**690**	440	**22.4**	<1.0	<1.0	<3.0	0.056
10/20/2010	95.2	**810**	**590**	**10.6**	<1.0	<1.0	<3.0	---

DATE	GRO	DRO	ORO	B	T	E	X	NAPHTHALENE
12/23/2005	<50.0	<238	<476	<0.500	<0.500	<0.500	<1.00	--
8/18/2008	<50.0	**1,660**	**887**	<0.500	<0.500	<0.500	<1.00	--
3/11/2010	NOT SAMPLED							
6/9/2010	<50.0	**830**	<400	<1.0	<1.0	<1.0	<3.0	<0.014
10/20/2010	<50.0	**900**	460	<1.0	<1.0	<1.0	<3.0	---

NORTHWEST KERRON AVENUE

MW-5

DATE	GRO	DRO	ORO	B	T	E	X	NAPHTHALENE
8/18/2008	<50.0	433	<481	<0.500	<0.500	<0.500	<1.00	--
3/11/2010	<50.0	<82	<410	<1.0	<1.0	<1.0	<3.0	<0.01
6/9/2010	<50.0	<84	<420	<1.0	<1.0	<1.0	<3.0	<0.014
10/20/2010	<50.0	<85	<430	<1.0	<1.0	<1.0	<3.0	---

LEGEND

- PROPERTY BOUNDARY
- RAILROAD TRACKS
- STORM LINE
- SANITARY SEWER
- DITCH AND DIRECTION OF FLOW
- MW-3 MONITORING WELL
- CATCH BASIN

ALL RESULTS IN MICROGRAMS PER LITER

GRO = TOTAL PETROLEUM HYDROCARBONS (TPH) AS GASOLINE-RANGE ORGANICS

DRO = TPH AS DIESEL-RANGE ORGANICS

ORO = TPH AS OIL-RANGE ORGANICS

B = BENZENE

T = TOLUENE

E = ETHYLBENZENE

X = TOTAL XYLENES

BOLD = INDICATES CONCENTRATIONS EXCEED WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION METHOD A CLEANUP LEVELS

< = INDICATES CONCENTRATIONS NOT DETECTED ABOVE THE STATED LABORATORY PRACTICAL QUANTITATION LIMIT

-- = NOT ANALYZED

N

0 20

APPROXIMATE SCALE IN FEET

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FIGURE 3

GROUNDWATER ANALYTICAL RESULTS
FOR OCTOBER 20, 2010
FORMER CUMMINGS OIL LEASE SITE
908 NW KERRON AVE
WINLOCK, WASHINGTON

FARALLON PN: 683-009

Drawn By: DEW	Checked By: SP	Date: 2/22/11	Disk Reference: 683009a

TABLES

GROUNDWATER MONITORING STATUS REPORT
Former Cummings Oil Lease Site
908 Northwest Kerron Avenue
Winlock, Washington
VCP No. SW0775

Farallon PN: 683-009

Table 1
Summary of Groundwater Elevation Data
Former Cummings Oil Lease Site
Winlock, Washington
Farallon PN: 683-009

Well Identification	Monitoring Date	Depth of Monitoring Well (feet)	Monitoring Well Screened Interval (feet bgs)	Wellhead Elevation [1] (feet)	Depth to Water (feet bgs)	Groundwater Elevation (feet)
MW-1	12/23/2005	12	5-12	100.46	2.13	98.33
	8/18/2008				4.50	95.96
	3/11/2010				3.00	97.46
	6/8/2010				4.20	96.26
	10/20/2010				3.00	97.46
MW-2	12/23/2005	11	5-11	100.4	2.50	97.90
	8/18/2008				4.67	95.73
	3/11/2010				1.88	98.52
	6/8/2010				2.28	98.12
	10/20/2010				2.65	97.75
MW-3	12/23/2005	10	5-10	100.18	2.21	97.97
	8/18/2008				4.40	95.78
	3/11/2010				--	--
	6/8/2010				2.26	97.92
	10/20/2010				2.68	97.50
MW-4	12/23/2005	12	5-12	102.45	0.50	101.95
	8/18/2008				5.02	97.43
	3/11/2010				1.90	100.55
	6/8/2010				1.45	101.00
	10/20/2010				2.40	100.05
MW-5	8/18/2008	10	5-10	99.92	5.54	94.38
	3/11/2010				3.29	96.63
	6/8/2010				4.00	95.92
	10/20/2010				5.25	94.67

NOTES
[1]Elevations based on survey conducted by Farallon Consulting, L.L.C. to a benchmark of 105.59.

bgs = below ground surface
-- = not measured

Table 2
Cumulative Summary of Groundwater Analytical Results for Total Petroleum Hydrocarbons
Former Cummings Oil Lease Site
Winlock, Washington
Farallon PN: 683-009

Sample Identification	Well Identification	Sample Date	Analytical Results (micrograms per liter)						
			GRO[1]	DRO[2]	ORO[2]	Benzene[3]	Toluene[3]	Ethylbenzene[3]	Total Xylenes[3]
MW1-122305	MW-1	12/23/2005	<50.0	<238	<476	<0.500	<0.500	<0.500	<1.00
MW1-081808		8/18/2008	<50.0	**1,480**	**836**	<0.500	<0.500	<0.500	<1.00
MW1-031110		3/11/2010	<50.0	**590**	**540**	<1.0	<1.0	<1.0	<6.0
MW1-060910		6/9/2010	<50.0	**720**	<460	<1.0	<1.0	<1.0	<3.0
MW1-102010		10/20/2010	<50.0	**670**	<430	<1.0	<1.0	<1.0	<3.0
MW2-122305	MW-2	12/23/2005	465	<238	<476	**55.2**	2.84	3.46	35.6
MW2-081808		8/18/2008	606	**876**	<500	**30.6**	1.12	2.56	30.9
MW2-031110		3/11/2010	150	**660**	470	**27.7**	<1.0	<1.0	<6.0
MW2-060910		6/9/2010	116	**690**	440	**22.4**	<1.0	<1.0	<3.0
MW2-102010		10/20/2010	95.2	**810**	**590**	**10.6**	<1.0	<1.0	<3.0
MW3-122305	MW-3	12/23/2005	<50.0	<238	<476	<0.500	<0.500	<0.500	<1.00
MW3-081808		8/18/2008	<50.0	**1,660**	**887**	<0.500	<0.500	<0.500	<1.00
Not Sampled		3/11/2010	--	--	--	--	--	--	--
MW3-060910		6/9/2010	<50.0	**830**	<400	<1.0	<1.0	<1.0	<3.0
MW3-102010		10/20/2010	<50.0	**900**	460	<1.0	<1.0	<1.0	<3.0
MW4-122305	MW-4	12/23/2005	<50.0	<238	<476	<0.500	<0.500	<0.500	<1.00
MW4-081808		8/18/2008	<50.0	<243	<485	<0.500	<0.500	<0.500	<1.00
MW4-031110		3/11/2010	<50.0	<78	<390	<1.0	<1.0	<1.0	<6.0
MW4-060910		6/9/2010	<50.0	<82	<410	<1.0	<1.0	<1.0	<3.0
MW4-102010		10/20/2010	<50.0	<86	<430	<1.0	<1.0	<1.0	<3.0
MW5-081808	MW-5	8/18/2008	<50.0	433	<481	<0.500	<0.500	<0.500	<1.00
MW5-031110		3/11/2010	<50.0	<82	<410	<1.0	<1.0	<1.0	<6.0
MW5-060910		6/9/2010	<50.0	<84	<420	<1.0	<1.0	<1.0	<3.0
MW5-102010		10/20/2010	<50.0	<85	<430	<1.0	<1.0	<1.0	<3.0
MTCA Method A Cleanup Levels[4]			**800**	**500**	**500**	**5**	**1,000**	**700**	**1,000**

NOTES

Results in **bold** denote concentrations above applicable cleanup levels.

< denotes analyte not detected at or above the reporting limit listed.

-- = not analyzed

[1] Analyzed by Northwest Method NWTPH-Gx.

[2] Analyzed by Northwest Method NWTPH-Dx.

[3] Analyzed by U.S. Environmental Protection Agency (EPA) Methods 8260B and 5030B/8260.

[4] Washington State Model Toxics Control Act Cleanup Regulation (MTCA) Method A Cleanup Levels for Groundwater, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, as revised November 2007.

DRO = total petroleum hydrocarbons (TPH) as diesel-range organics

GRO = TPH as gasoline-range organics

ORO = TPH as oil-range organics

SIM = Selective Ion Monitoring

Table 3
Cumulative Summary of Groundwater Geochemical Parameters
Former Cummings Oil Lease Site
Winlock, Washington
Farallon PN: 683-009

Well Identification	Sample Date	Geochemical Results											
		Temperature (°C)	Specific Conductance (mS/cm)	pH (pH units)	Dissolved Oxygen (mg/l)	Oxidation-Reduction Potential (mV)	Sulfate (mg/l)	Nitrate (mg/l as Nitrogen)	Nitrite (mg/l)	Methane (µg/l)	Ethane (µg/l)	Ethene (µg/l)	Ferrous Iron (mg/l)
MW-1	8/18/2008	17.60	0.221	6.03	0.92	-7.70	—	—	—	—	—	—	—
	3/11/2010	10.08	0.289	6.70	0.47	117.7	74.4	<0.20	<0.20	289	<10.0	<10.0	—
	6/9/2010	14.21	0.348	6.21	0.42	11.1	59.4	<0.050	0.012	520	—	—	9.8
	10/20/2010	16.20	0.234	6.13	0.64	12.1	59.1	<0.20	<0.10	388	—	—	2.3
MW-2	8/18/2008	17.65	0.316	6.64	0.99	-77.20	0.420	<0.200	—	1,660	<10.0	<10.0	—
	3/11/2010	9.93	0.247	7.28	0.77	101.2	30.31	<0.20	<0.10	1,620	<10.0	<10.0	—
	6/9/2010	14.48	0.277	6.84	1.00	75.8	7.9	<0.050	<0.010	3,500	—	—	3.2
	10/20/2010	16.76	0.279	6.61	0.91	-50.3	11.2	<0.20	<0.10	6,320	—	—	1.3
MW-3	8/18/2008	17.38	0.382	6.34	1.08	-75.60	—	—	—	—	—	—	—
	3/11/2010	—	—	—	—	—	—	—	—	—	—	—	—
	6/9/2010	13.87	0.387	6.36	0.50	-6.80	13.4	<0.050	<0.010	380	—	—	3.90
	10/20/2010	17.26	0.321	6.57	0.87	-33.4	14.6	<0.20	<0.10	338	—	—	1.50
MW-4	8/18/2008	13.78	0.241	6.75	0.97	-74.90	16.7	<0.200	—	22.8	<10.0	<10.0	—
	3/11/2010	9.59	0.255	7.92	0.57	85.60	17.6	<0.20	<0.20	47.6	<10.0	<10.0	—
	6/9/2010	12.42	0.260	7.16	0.51	85.5	12.5	<0.050	0.011	93	—	—	1.2
	10/20/2010	12.96	0.206	7.42	0.66	-77.8	14.1	<0.20	<0.10	16.9	—	—	0.52
MW-5	8/18/2008	17.57	0.466	6.62	1.45	-31.60	8.03	<0.200	—	40.6	<10.0	<10.0	—
	3/11/2010	10.30	0.067	7.63	5.66	107.9	3.2	0.61	<0.10	<10.0	<10.0	<10.0	—
	6/9/2010	14.74	0.074	5.76	2.27	213.5	4.7	0.87	<0.010	<2.3	—	—	<0.17
	10/20/2010	17.59	0.085	6.03	1.34	75.5	6.3	0.65	<0.10	<10.0	—	—	<0.20

NOTES
— = not measured/analyzed
°C = degrees Celsius
µg/l = micrograms per liter
mg/l = milligrams per liter
mS/cm = millisiemens per centimeter
mV = millivolts

APPENDIX A
LABORATORY ANALYTICAL REPORT

GROUNDWATER MONITORING STATUS REPORT
Former Cummings Oil Lease Site
908 Northwest Kerron Avenue
Winlock, Washington
VCP No. SW0775

Farallon PN: 683-009

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November 03, 2010

Stacy Patterson
Farallon Consulting LLC
975 5th Avenue Northwest
Issaquah, WA 98027

RE: Project: Winlock
Pace Project No.: 255411

Dear Stacy Patterson:
Enclosed are the analytical results for sample(s) received by the laboratory on October 20, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

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

Sincerely,

Ronald Boquist for
Jennifer Gross
jennifer.gross@pacelabs.com
Project Manager

Enclosures

cc: Carla Brock, Farallon Consulting

Pace Analytical Services, Inc.
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Seattle, WA 98108
(206)767-5060

CERTIFICATIONS

Project: Winlock
Pace Project No.: 255411

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Iowa Certification #: 368
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New Mexico Certification #: Pace
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: D9921
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Washington Certification #: C754
Wisconsin Certification #: 999407970

Washington Certification IDs

940 South Harney Street, Seattle, WA 98108
Alaska CS Certification #: UST-025
Alaska Drinking Water VOC Certification #: WA01230
Alaska Drinking Water Micro Certification #: WA01230
California Certification #: 01153CA
Florida/NELAP Certification #: E87617
Oregon Certification #: WA200007
Washington Certification #: C1229

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SAMPLE ANALYTE COUNT

Project: Winlock
Pace Project No.: 255411

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
255411001	MW4-102010	RSK 175	SK3	1	PASI-M
		NWTPH-Dx	DMT	4	PASI-S
		NWTPH-Gx	AY1	3	PASI-S
		EPA 5030B/8260	LPM	8	PASI-S
		SM 3500-Fe B#4	BPR	1	PASI-S
		EPA 300.0	CMS	2	PASI-S
		EPA 300.0	CMS	1	PASI-S
255411002	MW5-102010	RSK 175	SK3	1	PASI-M
		NWTPH-Dx	DMT	4	PASI-S
		NWTPH-Gx	AY1	3	PASI-S
		EPA 5030B/8260	LPM	8	PASI-S
		SM 3500-Fe B#4	BPR	1	PASI-S
		EPA 300.0	CMS	2	PASI-S
		EPA 300.0	CMS	1	PASI-S
255411003	MW1-102010	RSK 175	SK3	1	PASI-M
		NWTPH-Dx	DMT	4	PASI-S
		NWTPH-Gx	AY1	3	PASI-S
		EPA 5030B/8260	LPM	8	PASI-S
		SM 3500-Fe B#4	BPR	1	PASI-S
		EPA 300.0	CMS	2	PASI-S
		EPA 300.0	CMS	1	PASI-S
255411004	MW2-102010	RSK 175	SK3	1	PASI-M
		NWTPH-Dx	DMT	4	PASI-S
		NWTPH-Gx	AY1	3	PASI-S
		EPA 5030B/8260	LPM	8	PASI-S
		SM 3500-Fe B#4	BPR	1	PASI-S
		EPA 300.0	CMS	2	PASI-S
		EPA 300.0	CMS	1	PASI-S
255411005	MW3-102010	RSK 175	SK3	1	PASI-M
		NWTPH-Dx	DMT	4	PASI-S
		NWTPH-Gx	AY1	3	PASI-S
		EPA 5030B/8260	LPM	8	PASI-S
		SM 3500-Fe B#4	BPR	1	PASI-S
		EPA 300.0	CMS	2	PASI-S
		EPA 300.0	CMS	1	PASI-S
255411006	TRIP BLANK 1-102010	EPA 5030B/8260	LPM	8	PASI-S

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PROJECT NARRATIVE

Project: Winlock
Pace Project No.: 255411

Method: **RSK 175**
Description: RSK 175 AIR Headspace
Client: Farallon Consulting LLC
Date: November 03, 2010

General Information:
5 samples were analyzed for RSK 175. All samples were received in acceptable condition with any exceptions noted below.

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.

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

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

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

Additional Comments:

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PROJECT NARRATIVE

Project: Winlock
Pace Project No.: 255411

Method: **NWTPH-Dx**
Description: NWTPH-Dx GCS
Client: Farallon Consulting LLC
Date: November 03, 2010

General Information:
5 samples were analyzed for NWTPH-Dx. All samples were received in acceptable condition with any exceptions noted below.

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

Sample Preparation:
The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

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

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

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

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

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

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

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

Additional Comments:

Batch Comments:

A sample duplicate was not performed for this batch due to insufficient sample volume.
- QC Batch: GCSV / 2024

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PROJECT NARRATIVE

Project: Winlock
Pace Project No.: 255411

Method: **NWTPH-Gx**
Description: NWTPH-Gx GCV
Client: Farallon Consulting LLC
Date: November 03, 2010

General Information:
5 samples were analyzed for NWTPH-Gx. All samples were received in acceptable condition with any exceptions noted below.

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 with any exceptions noted below.

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

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

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

Additional Comments:

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PROJECT NARRATIVE

Project: Winlock
Pace Project No.: 255411

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Farallon Consulting LLC
Date: November 03, 2010

General Information:
6 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below.

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 with any exceptions noted below.

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

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

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

Additional Comments:

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PROJECT NARRATIVE

Project: Winlock
Pace Project No.: 255411

Method: **SM 3500-Fe B#4**
Description: Iron, Ferrous
Client: Farallon Consulting LLC
Date: November 03, 2010

General Information:
5 samples were analyzed for SM 3500-Fe B#4. All samples were received in acceptable condition with any exceptions noted below.

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

H6: Analysis initiated more than 15 minutes after sample collection.
- MW1-102010 (Lab ID: 255411003)
- MW2-102010 (Lab ID: 255411004)
- MW3-102010 (Lab ID: 255411005)
- MW4-102010 (Lab ID: 255411001)
- MW5-102010 (Lab ID: 255411002)

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

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

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

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

Additional Comments:

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PROJECT NARRATIVE

Project: Winlock
Pace Project No.: 255411

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: Farallon Consulting LLC
Date: November 03, 2010

General Information:
5 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below.

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.

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

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

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

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

Additional Comments:

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PROJECT NARRATIVE

Project: Winlock
Pace Project No.: 255411

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Farallon Consulting LLC
Date: November 03, 2010

General Information:
5 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below.

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.

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

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

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

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

Additional Comments:

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

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ANALYTICAL RESULTS

Project: Winlock
Pace Project No.: 255411

Sample: MW4-102010 **Lab ID: 255411001** Collected: 10/20/10 11:15 Received: 10/20/10 18:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175							
Methane	**16.9**	ug/L	10.0	1		10/25/10 13:27	74-82-8	
NWTPH-Dx GCS	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Range	ND	mg/L	0.086	1	10/26/10 11:00	10/31/10 06:39		
Motor Oil Range	ND	mg/L	0.43	1	10/26/10 11:00	10/31/10 06:39	64742-65-0	
n-Octacosane (S)	114	%	50-150	1	10/26/10 11:00	10/31/10 06:39	630-02-4	
o-Terphenyl (S)	93	%	50-150	1	10/26/10 11:00	10/31/10 06:39	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
Gasoline Range Organics	ND	ug/L	50.0	1		10/26/10 14:28		
a,a,a-Trifluorotoluene (S)	100	%	50-150	1		10/26/10 14:28	98-08-8	
4-Bromofluorobenzene (S)	88	%	50-150	1		10/26/10 14:28	460-00-4	
8260 MSV	Analytical Method: EPA 5030B/8260							
Benzene	ND	ug/L	1.0	1		10/24/10 04:01	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		10/24/10 04:01	100-41-4	
Toluene	ND	ug/L	1.0	1		10/24/10 04:01	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		10/24/10 04:01	1330-20-7	
4-Bromofluorobenzene (S)	102	%	80-120	1		10/24/10 04:01	460-00-4	
Dibromofluoromethane (S)	98	%	80-122	1		10/24/10 04:01	1868-53-7	
1,2-Dichloroethane-d4 (S)	93	%	80-124	1		10/24/10 04:01	17060-07-0	
Toluene-d8 (S)	99	%	80-123	1		10/24/10 04:01	2037-26-5	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4							
Iron, Ferrous	**0.52**	mg/L	0.20	1		10/23/10 17:10		H6
300.0 IC Anions	Analytical Method: EPA 300.0							
Nitrate as N	ND	mg/L	0.20	1		10/21/10 19:20	14797-55-8	
Nitrite as N	ND	mg/L	0.10	1		10/21/10 19:20	14797-65-0	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**14.1**	mg/L	1.0	1		10/21/10 19:20	14808-79-8	

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ANALYTICAL RESULTS

Project: Winlock
Pace Project No.: 255411

Sample: MW5-102010 **Lab ID: 255411002** Collected: 10/20/10 12:05 Received: 10/20/10 18:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175							
Methane	ND	ug/L	10.0	1		10/25/10 13:52	74-82-8	
NWTPH-Dx GCS	Analytical Method: NWTPH-Dx		Preparation Method: EPA 3510					
Diesel Range	ND	mg/L	0.085	1	10/26/10 11:00	10/31/10 07:29		
Motor Oil Range	ND	mg/L	0.43	1	10/26/10 11:00	10/31/10 07:29	64742-65-0	
n-Octacosane (S)	118	%	50-150	1	10/26/10 11:00	10/31/10 07:29	630-02-4	
o-Terphenyl (S)	108	%	50-150	1	10/26/10 11:00	10/31/10 07:29	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
Gasoline Range Organics	ND	ug/L	50.0	1		10/26/10 14:51		
a,a,a-Trifluorotoluene (S)	98	%	50-150	1		10/26/10 14:51	98-08-8	
4-Bromofluorobenzene (S)	87	%	50-150	1		10/26/10 14:51	460-00-4	
8260 MSV	Analytical Method: EPA 5030B/8260							
Benzene	ND	ug/L	1.0	1		10/24/10 04:25	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		10/24/10 04:25	100-41-4	
Toluene	ND	ug/L	1.0	1		10/24/10 04:25	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		10/24/10 04:25	1330-20-7	
4-Bromofluorobenzene (S)	100	%	80-120	1		10/24/10 04:25	460-00-4	
Dibromofluoromethane (S)	102	%	80-122	1		10/24/10 04:25	1868-53-7	
1,2-Dichloroethane-d4 (S)	90	%	80-124	1		10/24/10 04:25	17060-07-0	
Toluene-d8 (S)	99	%	80-123	1		10/24/10 04:25	2037-26-5	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4							
Iron, Ferrous	ND	mg/L	0.20	1		10/23/10 17:10		H6
300.0 IC Anions	Analytical Method: EPA 300.0							
Nitrate as N	**0.65**	mg/L	0.20	1		10/21/10 20:12	14797-55-8	
Nitrite as N	ND	mg/L	0.10	1		10/21/10 20:12	14797-65-0	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**6.3**	mg/L	1.0	1		10/21/10 20:12	14808-79-8	

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ANALYTICAL RESULTS

Project: Winlock
Pace Project No.: 255411

Sample: MW1-102010 **Lab ID: 255411003** Collected: 10/20/10 12:55 Received: 10/20/10 18:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175							
Methane	**388**	ug/L	10.0	1		10/25/10 14:18	74-82-8	
NWTPH-Dx GCS	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Range	**0.67**	mg/L	0.085	1	10/26/10 11:00	10/31/10 07:45		
Motor Oil Range	ND	mg/L	0.43	1	10/26/10 11:00	10/31/10 07:45	64742-65-0	
n-Octacosane (S)	117	%	50-150	1	10/26/10 11:00	10/31/10 07:45	630-02-4	
o-Terphenyl (S)	110	%	50-150	1	10/26/10 11:00	10/31/10 07:45	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
Gasoline Range Organics	ND	ug/L	50.0	1		10/26/10 15:39		
a,a,a-Trifluorotoluene (S)	92	%	50-150	1		10/26/10 15:39	98-08-8	
4-Bromofluorobenzene (S)	82	%	50-150	1		10/26/10 15:39	460-00-4	
8260 MSV	Analytical Method: EPA 5030B/8260							
Benzene	ND	ug/L	1.0	1		10/24/10 04:48	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		10/24/10 04:48	100-41-4	
Toluene	ND	ug/L	1.0	1		10/24/10 04:48	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		10/24/10 04:48	1330-20-7	
4-Bromofluorobenzene (S)	99	%	80-120	1		10/24/10 04:48	460-00-4	
Dibromofluoromethane (S)	98	%	80-122	1		10/24/10 04:48	1868-53-7	
1,2-Dichloroethane-d4 (S)	91	%	80-124	1		10/24/10 04:48	17060-07-0	
Toluene-d8 (S)	104	%	80-123	1		10/24/10 04:48	2037-26-5	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4							
Iron, Ferrous	**2.3**	mg/L	0.20	1		10/23/10 17:10		H6
300.0 IC Anions	Analytical Method: EPA 300.0							
Nitrate as N	ND	mg/L	0.20	1		10/21/10 20:29	14797-55-8	
Nitrite as N	ND	mg/L	0.10	1		10/21/10 20:29	14797-65-0	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**59.1**	mg/L	5.0	5		10/26/10 23:51	14808-79-8	

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ANALYTICAL RESULTS

Project: Winlock
Pace Project No.: 255411

Sample: MW2-102010 **Lab ID: 255411004** Collected: 10/20/10 13:45 Received: 10/20/10 18:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175							
Methane	**6320**	ug/L	10.0	1		10/25/10 14:43	74-82-8	
NWTPH-Dx GCS	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Range	**0.81**	mg/L	0.076	1	10/26/10 11:00	10/31/10 08:02		
Motor Oil Range	**0.59**	mg/L	0.38	1	10/26/10 11:00	10/31/10 08:02	64742-65-0	
n-Octacosane (S)	112	%	50-150	1	10/26/10 11:00	10/31/10 08:02	630-02-4	
o-Terphenyl (S)	107	%	50-150	1	10/26/10 11:00	10/31/10 08:02	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
Gasoline Range Organics	**95.2**	ug/L	50.0	1		10/26/10 16:03		
a,a,a-Trifluorotoluene (S)	97	%	50-150	1		10/26/10 16:03	98-08-8	
4-Bromofluorobenzene (S)	86	%	50-150	1		10/26/10 16:03	460-00-4	
8260 MSV	Analytical Method: EPA 5030B/8260							
Benzene	**10.6**	ug/L	1.0	1		10/24/10 05:12	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		10/24/10 05:12	100-41-4	
Toluene	ND	ug/L	1.0	1		10/24/10 05:12	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		10/24/10 05:12	1330-20-7	
4-Bromofluorobenzene (S)	100	%	80-120	1		10/24/10 05:12	460-00-4	
Dibromofluoromethane (S)	98	%	80-122	1		10/24/10 05:12	1868-53-7	
1,2-Dichloroethane-d4 (S)	91	%	80-124	1		10/24/10 05:12	17060-07-0	
Toluene-d8 (S)	103	%	80-123	1		10/24/10 05:12	2037-26-5	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4							
Iron, Ferrous	**1.3**	mg/L	0.20	1		10/23/10 17:10		H6
300.0 IC Anions	Analytical Method: EPA 300.0							
Nitrate as N	ND	mg/L	0.20	1		10/21/10 20:46	14797-55-8	
Nitrite as N	ND	mg/L	0.10	1		10/21/10 20:46	14797-65-0	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**11.2**	mg/L	1.0	1		10/21/10 20:46	14808-79-8	

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ANALYTICAL RESULTS

Project: Winlock
Pace Project No.: 255411

Sample: MW3-102010 **Lab ID: 255411005** Collected: 10/20/10 14:45 Received: 10/20/10 18:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175							
Methane	**338**	ug/L	10.0	1		10/25/10 15:09	74-82-8	
NWTPH-Dx GCS	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Range	**0.90**	mg/L	0.085	1	10/26/10 11:00	10/31/10 08:18		
Motor Oil Range	**0.46**	mg/L	0.43	1	10/26/10 11:00	10/31/10 08:18	64742-65-0	
n-Octacosane (S)	114	%	50-150	1	10/26/10 11:00	10/31/10 08:18	630-02-4	
o-Terphenyl (S)	108	%	50-150	1	10/26/10 11:00	10/31/10 08:18	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
Gasoline Range Organics	ND	ug/L	50.0	1		10/26/10 16:27		
a,a,a-Trifluorotoluene (S)	95	%	50-150	1		10/26/10 16:27	98-08-8	
4-Bromofluorobenzene (S)	85	%	50-150	1		10/26/10 16:27	460-00-4	
8260 MSV	Analytical Method: EPA 5030B/8260							
Benzene	ND	ug/L	1.0	1		10/24/10 05:36	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		10/24/10 05:36	100-41-4	
Toluene	ND	ug/L	1.0	1		10/24/10 05:36	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		10/24/10 05:36	1330-20-7	
4-Bromofluorobenzene (S)	99	%	80-120	1		10/24/10 05:36	460-00-4	
Dibromofluoromethane (S)	98	%	80-122	1		10/24/10 05:36	1868-53-7	
1,2-Dichloroethane-d4 (S)	91	%	80-124	1		10/24/10 05:36	17060-07-0	
Toluene-d8 (S)	105	%	80-123	1		10/24/10 05:36	2037-26-5	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4							
Iron, Ferrous	**1.5**	mg/L	0.20	1		10/23/10 17:10		H6
300.0 IC Anions	Analytical Method: EPA 300.0							
Nitrate as N	ND	mg/L	0.20	1		10/21/10 21:04	14797-55-8	
Nitrite as N	ND	mg/L	0.10	1		10/21/10 21:04	14797-65-0	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**14.6**	mg/L	1.0	1		10/21/10 21:04	14808-79-8	

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ANALYTICAL RESULTS

Project: Winlock
Pace Project No.: 255411

Sample: TRIP BLANK 1-102010 **Lab ID: 255411006** Collected: 10/20/10 15:00 Received: 10/20/10 18:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
Benzene	ND	ug/L	1.0	1		10/24/10 03:14	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		10/24/10 03:14	100-41-4	
Toluene	ND	ug/L	1.0	1		10/24/10 03:14	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		10/24/10 03:14	1330-20-7	
4-Bromofluorobenzene (S)	105	%	80-120	1		10/24/10 03:14	460-00-4	
Dibromofluoromethane (S)	96	%	80-122	1		10/24/10 03:14	1868-53-7	
1,2-Dichloroethane-d4 (S)	91	%	80-124	1		10/24/10 03:14	17060-07-0	
Toluene-d8 (S)	100	%	80-123	1		10/24/10 03:14	2037-26-5	

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QUALITY CONTROL DATA

Project: Winlock
Pace Project No.: 255411

QC Batch: AIR/11131 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 255411001, 255411002, 255411003, 255411004, 255411005

METHOD BLANK: 878217 Matrix: Water
Associated Lab Samples: 255411001, 255411002, 255411003, 255411004, 255411005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Methane	ug/L	ND	10.0	10/25/10 10:16	

LABORATORY CONTROL SAMPLE & LCSD: 878218 878219

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Methane	ug/L	60.7	50.1	61.7	83	102	70-130	21	30	

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QUALITY CONTROL DATA

Project: Winlock
Pace Project No.: 255411

QC Batch: OEXT/2861 Analysis Method: NWTPH-Dx
QC Batch Method: EPA 3510 Analysis Description: NWTPH-Dx GCS
Associated Lab Samples: 255411001, 255411002, 255411003, 255411004, 255411005

METHOD BLANK: 46807 Matrix: Water
Associated Lab Samples: 255411001, 255411002, 255411003, 255411004, 255411005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range	mg/L	ND	0.080	10/31/10 05:49	
Motor Oil Range	mg/L	ND	0.40	10/31/10 05:49	
n-Octacosane (S)	%	111	50-150	10/31/10 05:49	
o-Terphenyl (S)	%	103	50-150	10/31/10 05:49	

LABORATORY CONTROL SAMPLE & LCSD: 46808 46809

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Range	mg/L	5	4.9	4.8	99	96	51-147	3	30	
Motor Oil Range	mg/L	5	5.7	5.5	113	109	20-160	4	30	
n-Octacosane (S)	%				116	110	50-150			
o-Terphenyl (S)	%				132	125	50-150			

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QUALITY CONTROL DATA

Project: Winlock
Pace Project No.: 255411

QC Batch: GCV/1975 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx GCV Water
Associated Lab Samples: 255411001, 255411002, 255411003, 255411004, 255411005

METHOD BLANK: 46762 Matrix: Water
Associated Lab Samples: 255411001, 255411002, 255411003, 255411004, 255411005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	10/26/10 13:09	
4-Bromofluorobenzene (S)	%	83	50-150	10/26/10 13:09	
a,a,a-Trifluorotoluene (S)	%	92	50-150	10/26/10 13:09	

LABORATORY CONTROL SAMPLE: 46763

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	250	230	92	50-163	
4-Bromofluorobenzene (S)	%			89	50-150	
a,a,a-Trifluorotoluene (S)	%			99	50-150	

SAMPLE DUPLICATE: 47257

Parameter	Units	255411002 Result	Dup Result	RPD	Qualifiers
Gasoline Range Organics	ug/L	ND	ND		
4-Bromofluorobenzene (S)	%	87	101	16	
a,a,a-Trifluorotoluene (S)	%	98	115	16	

SAMPLE DUPLICATE: 47258

Parameter	Units	255419002 Result	Dup Result	RPD	Qualifiers
Gasoline Range Organics	ug/L	79.0	67.3	16	
4-Bromofluorobenzene (S)	%	87	82	6	
a,a,a-Trifluorotoluene (S)	%	97	90	8	

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QUALITY CONTROL DATA

Project: Winlock
Pace Project No.: 255411

QC Batch: MSV/3318 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 255411001, 255411002, 255411003, 255411004, 255411005, 255411006

METHOD BLANK: 46764 Matrix: Water
Associated Lab Samples: 255411001, 255411002, 255411003, 255411004, 255411005, 255411006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	10/24/10 02:50	
Ethylbenzene	ug/L	ND	1.0	10/24/10 02:50	
Toluene	ug/L	ND	1.0	10/24/10 02:50	
Xylene (Total)	ug/L	ND	3.0	10/24/10 02:50	
1,2-Dichloroethane-d4 (S)	%	92	80-124	10/24/10 02:50	
4-Bromofluorobenzene (S)	%	105	80-120	10/24/10 02:50	
Dibromofluoromethane (S)	%	98	80-122	10/24/10 02:50	
Toluene-d8 (S)	%	101	80-123	10/24/10 02:50	

LABORATORY CONTROL SAMPLE & LCSD: 46765 46766

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/L	20	19.8	19.3	99	96	76-127	3	30	
Ethylbenzene	ug/L	20	18.2	17.6	91	88	72-125	4	30	
Toluene	ug/L	20	18.1	17.3	90	86	69-125	4	30	
Xylene (Total)	ug/L	60	54.1	52.3	90	87	74-124	3	30	
1,2-Dichloroethane-d4 (S)	%				88	89	80-124			
4-Bromofluorobenzene (S)	%				108	108	80-120			
Dibromofluoromethane (S)	%				100	100	80-122			
Toluene-d8 (S)	%				102	100	80-123			

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QUALITY CONTROL DATA

Project: Winlock
Pace Project No.: 255411

QC Batch: WET/2360 Analysis Method: SM 3500-Fe B#4
QC Batch Method: SM 3500-Fe B#4 Analysis Description: Iron, Ferrous
Associated Lab Samples: 255411001, 255411002, 255411003, 255411004, 255411005

METHOD BLANK: 46539 Matrix: Water
Associated Lab Samples: 255411001, 255411002, 255411003, 255411004, 255411005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Iron, Ferrous	mg/L	ND	0.20	10/23/10 17:10	H6

LABORATORY CONTROL SAMPLE: 46540

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	.8	0.82	102	80-120	H6

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 46541 46542

Parameter	Units	255411001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Iron, Ferrous	mg/L	0.52	.8	.8	1.3	1.4	100	104	50-150	3	H6

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QUALITY CONTROL DATA

Project: Winlock
Pace Project No.: 255411

QC Batch: WETA/1747 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 255411001, 255411002, 255411003, 255411004, 255411005

METHOD BLANK: 46509 Matrix: Water
Associated Lab Samples: 255411001, 255411002, 255411003, 255411004, 255411005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.20	10/21/10 19:03	
Nitrite as N	mg/L	ND	0.10	10/21/10 19:03	

LABORATORY CONTROL SAMPLE: 46510

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	2.5	2.6	103	90-110	
Nitrite as N	mg/L	2.5	2.6	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 46511 46512

Parameter	Units	255411001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Nitrate as N	mg/L	ND	2.5	2.5	2.6	2.6	101	99	90-110	2	
Nitrite as N	mg/L	ND	2.5	2.5	2.6	2.5	103	99	90-110	3	

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QUALITY CONTROL DATA

Project: Winlock
Pace Project No.: 255411

QC Batch: WETA/1755 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 255411001, 255411002, 255411003, 255411004, 255411005

METHOD BLANK: 47002 Matrix: Water
Associated Lab Samples: 255411001, 255411002, 255411003, 255411004, 255411005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	10/21/10 19:03	

LABORATORY CONTROL SAMPLE: 47003

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	15	15.5	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 47004 47005

Parameter	Units	255411001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Sulfate	mg/L	14.1	15	15	29.7	29.5	104	103	90-110	.5	

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QUALIFIERS

Project: Winlock
Pace Project No.: 255411

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

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.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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

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

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LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-S	Pace Analytical Services - Seattle

BATCH QUALIFIERS

Batch: GCSV/2024

[1] A sample duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

H6 Analysis initiated more than 15 minutes after sample collection.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Winlock
Pace Project No.: 255411

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
255411001	MW4-102010	RSK 175	AIR/11131		
255411002	MW5-102010	RSK 175	AIR/11131		
255411003	MW1-102010	RSK 175	AIR/11131		
255411004	MW2-102010	RSK 175	AIR/11131		
255411005	MW3-102010	RSK 175	AIR/11131		
255411001	MW4-102010	EPA 3510	OEXT/2861	NWTPH-Dx	GCSV/2024
255411002	MW5-102010	EPA 3510	OEXT/2861	NWTPH-Dx	GCSV/2024
255411003	MW1-102010	EPA 3510	OEXT/2861	NWTPH-Dx	GCSV/2024
255411004	MW2-102010	EPA 3510	OEXT/2861	NWTPH-Dx	GCSV/2024
255411005	MW3-102010	EPA 3510	OEXT/2861	NWTPH-Dx	GCSV/2024
255411001	MW4-102010	NWTPH-Gx	GCV/1975		
255411002	MW5-102010	NWTPH-Gx	GCV/1975		
255411003	MW1-102010	NWTPH-Gx	GCV/1975		
255411004	MW2-102010	NWTPH-Gx	GCV/1975		
255411005	MW3-102010	NWTPH-Gx	GCV/1975		
255411001	MW4-102010	EPA 5030B/8260	MSV/3318		
255411002	MW5-102010	EPA 5030B/8260	MSV/3318		
255411003	MW1-102010	EPA 5030B/8260	MSV/3318		
255411004	MW2-102010	EPA 5030B/8260	MSV/3318		
255411005	MW3-102010	EPA 5030B/8260	MSV/3318		
255411006	TRIP BLANK 1-102010	EPA 5030B/8260	MSV/3318		
255411001	MW4-102010	SM 3500-Fe B#4	WET/2360		
255411002	MW5-102010	SM 3500-Fe B#4	WET/2360		
255411003	MW1-102010	SM 3500-Fe B#4	WET/2360		
255411004	MW2-102010	SM 3500-Fe B#4	WET/2360		
255411005	MW3-102010	SM 3500-Fe B#4	WET/2360		
255411001	MW4-102010	EPA 300.0	WETA/1747		
255411002	MW5-102010	EPA 300.0	WETA/1747		
255411003	MW1-102010	EPA 300.0	WETA/1747		
255411004	MW2-102010	EPA 300.0	WETA/1747		
255411005	MW3-102010	EPA 300.0	WETA/1747		
255411001	MW4-102010	EPA 300.0	WETA/1755		
255411002	MW5-102010	EPA 300.0	WETA/1755		
255411003	MW1-102010	EPA 300.0	WETA/1755		
255411004	MW2-102010	EPA 300.0	WETA/1755		
255411005	MW3-102010	EPA 300.0	WETA/1755		

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CHAIN-OF-CUSTODY / Analytical Request Document

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

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Section A Required Client Information:

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Phone: Fax:
Requested Due Date/TAT: STD TAT

Section B Required Project Information:

Report To: Stacey Patterson
Copy To: See above
Purchase Order No.: 683-009
Project Name: Winlock
Project Number: 683-009

Section C Invoice Information:

Attention: Stacy Patterson
Company Name: Farallon Consulting
Address: 975 5th Ave NW, 98027
Pace Quote Reference: 683-009
Pace Project Manager: ~~JN 683-009~~ Jennifer Grove
Pace Profile #: 683-009

REGULATORY AGENCY
☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: WA

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

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

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N: Alkalinity	Nitrate-Nitrite	8240 BTEX	EPA 300.0 Sulfate	EPA 300.0 Nitrate/Nitrite	RSK 175	Ferrous Iron	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW4-102010	WT	G	~~10/20/10~~ TR		10/20/10	1115		14	X	X	X						X	X	X	X	X	X	X	N	
2	MW5-102010	WT	G				1205		14	X	X	X						X	X	X	X	X	X	X	N	
3	MW1-102010	WT	G				1255		14	X	X	X						X	X	X	X	X	X	X	N	
4	MW2-102010	WT	G				1345		14	X	X	X						X	X	X	X	X	X	X	N	
5	MW3-102010	WT	G				1445		14	X	X	X						X	X	X	X	X	X	X	N	
6	TPH Blank 1-102010	WT	G				1500		3				X							X						N	
7	~~TPH Blank 2-102010~~	~~WT~~	~~G~~				1459		3				X							X						N	TR
8																											
9																											
10																											
11																											
12																											

JN

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Jennifer Farallon	10/20/10	1800	Colette Weaver/PACE	102010	1800		Y	Y	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Jason Rueth
SIGNATURE of SAMPLER:
DATE Signed (MM/DD/YY): 10/20/10

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

8.0c, 3.8c, 5.1c

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Sample Container Count

CLIENT: Farallon

COC PAGE 1 of 1

COC ID# _____

Sample Line Item	VG9H	AG1H	AG1U	BG1H	BP1U	BP2U	BP3U	BP2N	BP2S	WGFU	WGKU	BP3N	VSG3		Comments
1	6	2 LZ				1			1 LZ			1 LZ	3		
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															Trip Blank?

AG1H	1 liter HCL amber glass		BP2S	500mL H2SO4 plastic		JGFU	4oz unpreserved amber wide
AG1U	1liter unpreserved amber glass		BP2U	500mL unpreserved plastic		R	terra core kit
AG2S	500mL H2SO4 amber glass		BP2Z	500mL NaOH, Zn Ac		U	Summa Can
AG2U	500mL unpreserved amber glass		BP3C	250mL NaOH plastic		VG9H	40mL HCL clear vial
AG3S	250mL H2SO4 amber glass		BP3N	250mL HNO3 plastic		VG9T	40mL Na Thio. clear vial
BG1H	1 liter HCL clear glass		BP3S	250mL H2SO4 plastic		VG9U	40mL unpreserved **clear** vial
BG1U	1 liter unpreserved glass		BP3U	250mL unpreserved plastic		VG9W	40mL glass vial preweighted (EPA 5035)
BP1N	1 liter HNO3 plastic		DG9B	40mL Na Bisulfate amber vial		VSG	Headspace septa vial & HCL
BP1S	1 liter H2SO4 plastic		DG9H	40mL HCL amber voa vial		WGFU	4oz clear soil jar
BP1U	1 liter unpreserved plastic		DG9M	40mL MeOH clear vial		WGFX	4oz wide jar w/hexane wipe
BP1Z	1 liter NaOH, Zn, Ac		DG9T	40mL Na Thio amber vial		ZPLC	Ziploc Bag
BP2N	500mL HNO3 plastic		DG9U	40mL unpreserved **amber** vial			
BP2O	500mL NaOH plastic		I	Wipe/Swab			

Sample Condition Upon Receipt

Pace Analytical

Client Name: Faraflon Project # 255411

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

Tracking #: _____

Custody Seal on Cooler/Box Present: ☒ Yes ☐ No Seals intact: ☒ Yes ☐ No

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other _____ Temp. Blank Yes X No _____

Thermometer Used 132013 or 101731962 or 226099 Type of Ice: (Wet) Blue None ☒ Samples on ice, cooling process has begun

Cooler Temperature 8.0c, 3.8c, 5.1c Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/20/10 CW

Temp should be above freezing ≤ 6°C

		Comments:
Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☒Yes ☐No ☐N/A	6. Nitrate, Nitrite
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.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix:		
All containers needing preservation have been checked.	☒Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒Yes ☐No ☐N/A	
Exceptions: VOA, coliform, TOC, O&G		Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☒N/A	14.
Headspace in VOA Vials (>6mm):	☒Yes ☐No ☐N/A	15. MW-1 has headspace. 1/6
Trip Blanks Present:	☒Yes ☐No ☐N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☐N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: RSM Date: 10/22/10

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)