FARALLON CONSULTING

March 28, 2023

Sandy Smith
Cleanup Project Manager
Toxics Cleanup Program – Southwest Regional Office
Washington State Department of Ecology
PO Box 47775
Olympia, Washington 98504-7775

RE: CONFIRMATIONAL GROUNDWATER MONITORING AND SAMPLING STATUS REPORT – 2022
FORMER EVERGREEN FUEL FACILITY
661 EAST PINE STREET, SHELTON, WASHINGTON
FARALLON PN: 863-001

Dear Sandy Smith:

Farallon Consulting, L.L.C. (Farallon) has prepared this letter report to present the results from the December 2022 confirmational groundwater monitoring and sampling event conducted at the former Evergreen Fuel Facility at 661 East Pine Street in Shelton, Washington (herein referred to as the Site) (Figure 1). As detailed in the requirements set forth under Exhibit C, Scope of Work and Schedule, Task 1, Section q-2 and Task 4 of Agreed Order No. DE 3937 entered into by the Washington State Department of Ecology (Ecology) and Chevron U.S.A. Inc. and C.C. Cole and Sons, Inc. (AO), confirmational monitoring and reporting was required to be conducted on a semi-annual basis (January to June and July to December). However, based on the proposed shoreline restoration work by the current property owner, the Shelton Yacht Club (SYC), and detailed in the email regarding Evergreen Fuels-Expectation Letter (DSARS 113119) dated June 27, 2022 from Sandy Smith of Ecology to Javan Ruark of Farallon, Ecology agreed to eliminate the June 2022 confirmational groundwater monitoring and sampling event but retain the December event for 2022. The confirmational groundwater monitoring and sampling was conducted to evaluate whether constituents of concern (COCs), which consist of total petroleum hydrocarbons as gasoline-range organics (GRO), as diesel-range organics (DRO), and as oil-range organics (ORO); and benzene, toluene, ethylbenzene, and xylenes (BTEX), have attenuated to concentrations less than Washington State Model Toxics Control Act Cleanup

Regulation (MTCA) Method A cleanup levels. The confirmational groundwater sampling also was conducted to comply with the requirements set forth in the following:

- *Draft Cleanup Action Plan, Evergreen Fuel Facility, 661 East Pine Street, Shelton, Washington* dated July 18, 2006 prepared by Farallon (Draft Cleanup Action Plan);
- AO;
- Letter regarding Transmittal of Ecology Comments on Request for No Further Action Determination and Revised Groundwater Monitoring Status Report – May 2013, Evergreen Fuel Facility, 661 East Pine Street, Shelton Washington, Agreed Order No. DE 3937 dated March 10, 2014, Facility/Site ID No. 6773108, Cleanup Site ID No. 4306, dated August 25, 2014 from Scott Rose of Ecology to Peter Jewett of Farallon (Ecology Comments Letter); and
- Email regarding Evergreen Fuels Monitoring dated August 6, 2015 from Jason Landskron of Ecology to Javan Ruark of Farallon (Ecology Email), detailing the required decommissioning of monitoring wells MW-5 and MW-6 based on historical concentrations of COCs not exceeding laboratory practical quantitation limits (PQLs).

This letter includes a summary of the Site background information, details of the confirmational groundwater monitoring and sampling, a discussion of the sampling results, and conclusions.

SITE BACKGROUND

A cleanup action was completed under the AO that was entered into by Ecology and potentially liable persons Chevron U.S.A. Inc. and C.C. Cole and Sons, Inc. The cleanup action was completed in accordance with the scope of work documented in the Draft Cleanup Action Plan, which was reviewed and approved by Ecology. Details regarding the cleanup activities are presented in the *Cleanup Action Summary Report, December 2006 to June 2007, Evergreen Fuel Facility, 661 East Pine Street, Shelton, Washington* dated July 30, 2007 prepared by Farallon. A general description of the cleanup action activities pertinent to the ongoing confirmational groundwater monitoring being conducted is provided below.

Cleanup action activities completed in January 2007 included excavation and removal of 7,508 tons of soil containing COCs, which consist of GRO, DRO, ORO, and BTEX, at concentrations exceeding regulatory cleanup levels. The excavation areas were backfilled with quarry spalls to above the water table at a depth of approximately 3 feet below ground

surface. A total of 4,000 pounds of Advanced Oxygen Release Compound manufactured by Regenesis, Inc. of San Clemente, California was mixed with the quarry spalls used for backfill beneath the water table prior to placement, to enhance aerobic biodegradation of residual COCs in saturated soil and groundwater. Confirmational groundwater monitoring and sampling was initiated in April 2007 to document the effects of the source removal action and ongoing biodegradation of residual COCs in groundwater. The Site is currently not paved and is used as a parking lot for the SYC.

Confirmational groundwater monitoring and sampling conducted from 2007 to 2013 indicated that source removal and oxygen release compound treatment had resulted in a significant reduction of COCs, with overall decreasing to stable conditions throughout the Site. However, DRO was detected at concentrations exceeding the MTCA Method A cleanup level in six of eight groundwater samples collected from monitoring well MW-10 during the 2007 to 2013 time period.

Farallon submitted the letter regarding Request for No Further Action Determination, Evergreen Fuel Facility, 661 East Pine Street, Shelton, Washington dated March 10, 2014 from Javan Ruark and Peter Jewett to Dominick Reale of Ecology (Request Letter). In its response to the Request Letter and as detailed in the Ecology Comments Letter, Ecology indicated that additional performance soil and confirmational groundwater monitoring and sampling were required to receive a No Further Action determination and closure of the Agreed Order requirements for the Site. In the Request Letter, Ecology was amenable to pursuing other regulatory pathways consistent with MTCA to achieve compliance for soil. The additional performance soil and confirmational groundwater monitoring and sampling required by Ecology consisted of the following:

- Collecting additional soil samples at locations where residual COCs were left in-place, to determine whether current concentrations were less than MTCA Method A cleanup levels for protection of groundwater. If concentrations of residual COCs still exceeded MTCA Method A cleanup levels, the locations with the highest concentrations of DRO were to be used to develop Site-specific Method B cleanup levels for direct contact and continued protection of groundwater.
- Performing semiannual confirmational groundwater monitoring and sampling at existing Site monitoring wells until MTCA Method A cleanup levels had been achieved and maintained for 1 year at all monitoring wells required to be sampled, as detailed in the AO. Once groundwater analytical results indicated that COCs were less than MTCA Method A cleanup levels for 1 year, four consecutive quarters of confirmational

groundwater monitoring and sampling were to be conducted to demonstrate that MTCA Method A cleanup levels for groundwater had been achieved for the Site. Neither of these requirements have been attained for DRO at monitoring well MW-10.

Ecology subsequently provided additional details regarding confirmational groundwater monitoring and sampling to occur at the Site in August 2015. The details included:

- Confirmational groundwater monitoring and sampling were to be conducted in accordance with the AO, and would include monitoring wells MW-8 through MW-10; and
- Monitoring wells MW-5 and MW-6, which were covered during re-grading activities conducted in the Site parking lot, were to be located and decommissioned in accordance with Chapter 173-160 of the Washington Administrative Code.

Monitoring well decommissioning activities were conducted in December 2017. Ecology concurred that the required soil sampling work would not be conducted until groundwater quality meets MTCA Method A cleanup levels for all COCs throughout the Site. The results from the confirmational groundwater sampling conducted in 2019 indicated that further confirmational groundwater monitoring and sampling at the Site was warranted to comply with the AO and subsequent Ecology communications.

On June 26, 2021, Ecology requested that groundwater samples collected from monitoring wells MW-9 and MW-10 be analyzed using the silica gel cleanup procedure. The purposes of the additional analysis were to gather supportive information for Ecology's update of the Northwest Total Petroleum Hydrocarbons-Dx method analysis, and to evaluate whether DRO detected in groundwater was petroleum-related or due to naturally occurring organic materials. Details of the Ecology request were provided in the email regarding Evergreen Fuels Shelton dated June 16, 2021 from Charles San Juan of Ecology to Javan Ruark of Farallon.

As detailed in the email regarding Former Evergreen Fuel Facility dated September 29, 2021 from Joyce Mercuri to Javan Ruark of Farallon, Ecology provided notification that the current property owner, SYC, is in the process of applying for a U.S. Army Corps of Engineers 404 permit before implementing a habitat improvement project being conducted in conjunction with the Squaxin Island Tribe that is scheduled to begin in July 2023 pending receipt of permits and coordination with all stakeholders.

As detailed in the email regarding Former Evergreen Fuel Facility dated June 21, 2022 from Javan Ruark of Farallon to Sandy Smith of Ecology, as part of the requirements for certification under Section 401 of the Clean Water Act and prior to issuance, performance soil sampling was to be conducted at the Site. The purpose of the soil sampling would be to evaluate current soil conditions with respect to MTCA cleanup levels and to delineate the extent of potentially contaminated soil that exceeded the MTCA cleanup levels before initiating the proposed shoreline restoration work. The specific details regarding the performance soil sampling were presented in the Soil Sampling Work Plan, Addendum to Cleanup Action Plan, Former Evergreen Fuel Facility, 661 East Pine Street, Shelton, Washington, Agreed Order: DE 3937, Facility/Site No.: 6773108, Cleanup Site No.: 4306 dated October 11, 2022, prepared by Farallon (Work Plan). Farallon conducted performance soil sampling at the Site from October 26 through 28, 2022.

The results of the performance soil sampling indicated that neither DRO nor ORO are present in soil at concentrations requiring further action under MTCA. Ongoing biodegradation of DRO and ORO has likely been occurring. This is supported by the presence of polar metabolites in groundwater, which are by-products of biodegradation of DRO and ORO.

The results of the soil sampling also indicated multiple areas of residual GRO and benzene exceeding the MTCA cleanup levels for the Site. The limited detections of GRO and BTEX at only five of the 14 borings completed, coupled with the relatively low concentrations of GRO and BTEX, where detected in soil, support the presence of a limited residual mass of GRO and BTEX that is not affecting groundwater quality in a manner that would require further active cleanup measures for either soil or groundwater. Historical groundwater sampling data also have been non-detect for GRO and BTEX, suggesting that these compounds are likely sorbed to the soil matrix and the rate of biodegradation is greater than the rate of leaching into groundwater.

CONFIRMATIONAL GROUNDWATER MONITORING AND SAMPLING

A confirmational groundwater monitoring and sampling event was conducted on December 20, 2022 at monitoring wells MW-8 through MW-10 (Figure 2). Confirmational groundwater monitoring and sampling included measuring the depth to groundwater and collecting groundwater samples from monitoring wells MW-8 through MW-10 for laboratory analysis. Upon Farallon's arrival at the Site, monitoring wells MW-8 through MW-10 were opened, and the water level was permitted to equilibrate with atmospheric pressure for a minimum of

15 minutes before groundwater levels in the wells were measured. Groundwater levels were measured to an accuracy of 0.01 foot using an electronic water-level meter.

Monitoring wells MW-8 through MW-10 were purged and sampled using a peristaltic pump and dedicated polyethylene tubing at a flow rate of 120 milliliters per minute. The tubing intake was placed approximately 2 to 3 feet below the top of the water table in each monitoring well. During purging, water quality was monitored using a YSI water-quality meter equipped with a flow-through cell. The water-quality parameters monitored and recorded consisted of temperature, pH, specific conductance, dissolved oxygen, turbidity, and oxidation-reduction potential. Each monitoring well was purged until the temperature, pH, specific conductance, dissolved oxygen, and oxidation-reduction potential parameters stabilized.

Following purging, groundwater samples were collected directly from the pump outlet tubing located upstream of the flow-through cell, and placed directly into laboratory-prepared sample containers. The containers were placed on ice in a cooler and transported under standard chain-of-custody protocols to OnSite Environmental Inc. of Redmond, Washington for laboratory analysis for DRO and ORO by Northwest Method NWTPH-Dx with and without the silica gel cleanup procedure.

The silica gel cleanup procedure is being used to evaluate the nature of detections of DRO/ORO. Silica gel is a reagent used by the laboratory to remove both polar metabolites and naturally occurring biogenic organic compounds. Polar metabolites result from the degradation of petroleum hydrocarbons, primarily from biodegradation processes in the subsurface. Biogenic organic compounds include naturally occurring organic materials typically associated with degradation of plant-based materials and can exist in groundwater as particulate/colloidal matter or as dissolved matter. The silica gel cleanup procedure is indiscriminate in nature and removes both the polar metabolites, which although unregulated under MTCA, may be considered a potential risk to human health or the environment, and biogenic organic compounds, which are non-toxic. Evaluation of whether the extracted materials are polar metabolites versus biogenic organic compounds is being performed as a component of other work being conducted at the Site.

Analysis for GRO and BTEX was not performed, based on the following:

- Previous analytical data demonstrated that concentrations of GRO and BTEX detected in samples collected at the Site were less than MTCA Method A cleanup levels for four consecutive quarters; and

- Ecology has not required further analysis for GRO or BTEX, per the Ecology Comments Letter.

Purge water generated during the confirmational groundwater monitoring and sampling event was placed into a labeled 55-gallon steel drum and stored on the Site.

RESULTS

The results from the field activities and the laboratory analytical results for the confirmational groundwater monitoring and sampling event conducted on December 20, 2022 are presented below. Historical and current groundwater-level measurements and elevations are summarized in Table 1. Groundwater elevation contours for the December 20, 2022 confirmational groundwater monitoring is shown on Figure 3. Groundwater analytical results are summarized in Table 2 and shown on Figure 4. Chart 1 depicts the trends in concentrations of DRO and groundwater elevations at monitoring well MW-10. Groundwater geochemical parameters are summarized in Table 3. The laboratory analytical report is provided in Attachment A.

The December 20, 2022 groundwater elevation data indicated a southeastern groundwater flow direction toward Oakland Bay, with an average gradient of 0.05 foot per foot. (Figure 3). During the December 20, 2022 confirmational groundwater monitoring event, groundwater levels were measured during a low-tide cycle that had a minimum height of 7.30 feet below mean sea level at 10:56 a.m. according to National Ocean Service tidal prediction data accessed on March 5, 2023.[1]

Groundwater analytical results for monitoring well MW-10 were as follows:

- DRO and ORO were detected at concentrations exceeding the MTCA Method A cleanup level without the silica gel cleanup procedure during the December 20, 2022 confirmational groundwater monitoring and sampling event (Table 2; Figure 4). Neither DRO nor ORO was detected with the silica gel cleanup procedure at concentrations exceeding laboratory PQLs (Table 2; Figure 4).

Groundwater analytical results for monitoring wells MW-8 and MW-9 were as follows:

- Neither DRO nor ORO was detected at a concentration exceeding the MTCA Method A cleanup level either with or without the silica gel cleanup procedure during the

[1] Tide Predictions - NOAA Tides & Currents

December 20, 2022 confirmational groundwater monitoring and sampling event (Table 2; Figure 4).

CONCLUSIONS

Concentrations of DRO and ORO at monitoring wells MW-8 and MW-9 were less than MTCA Method A cleanup levels, which is consistent with historical trends for concentrations of DRO and ORO detected at these monitoring wells. The groundwater data continue to indicate that soil contamination left in-place at the monitoring well MW-8 location and up-gradient of monitoring well MW-9 is not impacting groundwater quality, and soil can be managed by institutional controls in accordance with MTCA.

DRO and ORO concentrations without the silica gel cleanup procedure at monitoring well MW-10 are consistently higher in the wetter seasonal conditions, which correlates with seasonal high groundwater elevation data (Chart 1). This outcome is representative of the historical trends at monitoring well MW-10 and indicates that soil with residual concentrations of DRO/ORO and/or related polar metabolites resulting from ongoing biodegradation, are present in a smear zone and leach from soil to groundwater when groundwater elevations are highest.

Groundwater analytical results from the December 2022 confirmational groundwater monitoring and sampling event, including at the points of compliance well network along the shoreline, indicate that DRO/ORO concentrations do not exceed MTCA Method A cleanup levels when using the silica gel cleanup procedure. Polar metabolites appear to be the primary or potentially sole source of the DRO/ORO detections at monitoring well MW-10 based on the silica gel cleanup procedure results for samples collected from monitoring wells MW-8 through MW-10. Biogenic organic compound contributions appear to be negligible for groundwater at the Site. This conclusion is based on the absence of DRO or ORO detections at either monitoring well MW-8 or MW-9 when analyzed without the silica gel cleanup procedure. Biogenic organic compound contributions would be expected to be present at all three well locations for DRO/ORO analysis without the silica gel cleanup procedure; however, DRO and/or ORO have not been detected in groundwater samples from monitoring wells MW-8 and MW-9. Therefore, the DRO and ORO detections in groundwater at monitoring well MW-10 are, on a more likely than not basis, polar metabolites.

Polar metabolites are not regulated under MTCA but according to the *Draft Guidance for Use of Silica Gel Cleanup in Washington State, Toxics Cleanup Program, Washington State Department of Ecology, Olympia, Washington*, Publication No. 22-09-059 dated September

2022 (Draft SGC Guidance), Ecology has recommended using the following screening levels for evaluation of toxicity of polar metabolites:

- Human health via drinking water pathway = 500 micrograms per liter;
- Aquatic freshwater species = 3,040 micrograms per liter; and
- Aquatic marine species = 2,120 micrograms per liter.

There are currently no established values for terrestrial ecologic receptor risk.

Based on the screening levels above and proximate to Oakland Bay, the aquatic marine species screening level would be appropriate to evaluate polar metabolite risk at the Site rather than human health risk. The concentrations of DRO and ORO have fluctuated over the past several years of monitoring, sometimes exceeding the applicable polar metabolite screening level. In accordance with the Draft SGC Guidance, monitored natural attenuation rather than active cleanup is the appropriate remedy for groundwater.

DRO and ORO concentrations have not exceeded MTCA Method A cleanup levels at monitoring wells MW-8 and MW-9 from August 2017 to December 2022. In addition, GRO and BTEX constituents have never been detected in groundwater at MW-9, and have not exceeded MTCA Method A cleanup levels at monitoring well MW-8 since October 2007. Therefore, Farallon recommends discontinuing confirmational groundwater monitoring at monitoring wells MW-8 and MW-9.

The results of the recent soil sampling and the historical groundwater sampling indicate that the prior cleanup activities have successfully eliminated the sources of highest concentrations of petroleum-related COCs at the Site. The soil and groundwater results further indicate that biodegradation of residual COCs is occurring, in a manner that requires no further active cleanup with regards to either soil or groundwater. Institutional controls can continue to be applied to mitigate direct contact exposure and prohibit use of groundwater at the Site. Future groundwater monitoring should be reduced to a frequency of once per 5-year periodic review period based on the historical groundwater sampling data that indicate that polar metabolites rather than COCs are present in groundwater.

CLOSING

Farallon trusts that this report provides sufficient information for your needs. Please contact either of the undersigned at (425) 295-0800 if you have questions or require additional information.

Sincerely,

Farallon Consulting, L.L.C.

Javan Ruark, L.G.
Associate Geologist

Jeffrey Kaspar, L.G., L.H.G.
Principal Geologist

Attachments: Figure 1, *Site Vicinity Map*
Figure 2, *Site Plan*
Figure 3, *Groundwater Elevation Contours and Flow Direction, December 20, 2022*
Figure 4, *Groundwater Analytical Data*
Table 1, *Summary of Groundwater Elevation Data*
Table 2, *Summary of Groundwater Analytical Results*
Table 3, *Summary of Groundwater Geochemical Parameters*
Chart 1, *DRO Concentrations in Groundwater versus Groundwater Elevation Data Trends for Monitoring Well MW-10*
Attachment A, Laboratory Analytical Report

cc: Andy Smith, Washington State Department of Ecology
Jacob Blair, Hillis Clark Martin & Peterson P.S.
William Joyce, Hillis Clark Martin & Peterson P.S.
Dave Mariano, Shelton Yacht Club
Brandon Palmer, Port of Shelton
Nathan Blomgren, Chevron U.S.A. Inc
Cheryl Cameron, Chevron U.S.A. Inc.

JR/JK:cm

LIMITATIONS

The conclusions contained in this report/assessment are based on professional opinions with regard to the subject matter. These opinions have been arrived at in accordance with currently accepted hydrogeologic and engineering standards and practices applicable to this location. The conclusions contained herein are subject to the following inherent limitations:

- Accuracy of Information. Farallon reviewed certain information used in this report/assessment from sources that were believed to be reliable. Farallon's conclusions, opinions, and recommendations are based in part on such information. Farallon's services did not include

verification of its accuracy. Should the information upon which Farallon relied prove to be inaccurate, Farallon may revise its conclusions, opinions, and/or recommendations.

- Reconnaissance and/or Characterization. Farallon performed a reconnaissance and/or characterization of the Site that is the subject of this report/assessment to document current conditions. Farallon focused on areas deemed more likely to exhibit hazardous materials conditions. Contamination may exist in other areas of the Site that were not investigated or were inaccessible. Site activities beyond Farallon's control could change at any time after the completion of this report/assessment.

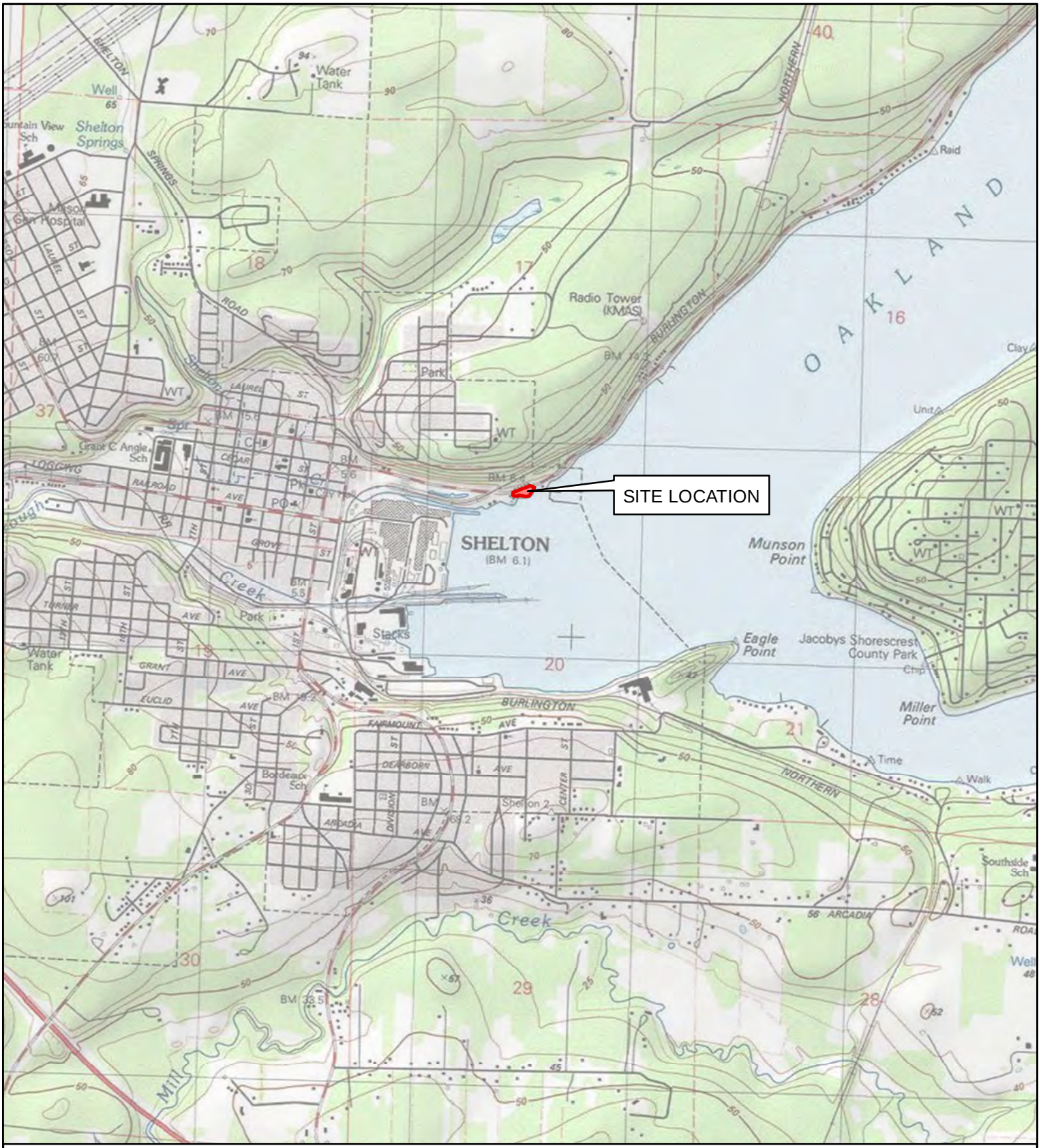
Farallon does not guarantee that the Site is free of hazardous or potentially hazardous substances or conditions, or that latent or undiscovered conditions will not become evident in the future. Farallon's observations, findings, and opinions are as of the date of the report.

This report/assessment has been prepared in accordance with the contract for services between Farallon and Chevron U.S.A. Inc. and CC Cole and Sons, Inc. No other warranties, representations, or certifications are made.

FIGURES

CONFIRMATIONAL GROUNDWATER MONITORING AND SAMPLING
STATUS REPORT – 2022
Former Evergreen Fuel Facility
661 East Pine Street
Shelton, Washington

Farallon PN: 863-001



REFERENCE: 7.5 MINUTE USGS QUADRANGLE SHELTON, WASHINGTON, DATED 2011

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FIGURE 1

SITE VICINITY MAP
FORMER EVERGREEN FUEL FACILITY
661 EAST PINE STREET
SHELTON, WASHINGTON

FARALLON PN: 863-001

Drawn By: vpehlivan Checked By: JR Date: 1/21/2022 Disc Reference:

Document Path: Q:\Projects\863 Former Evergreen Fuel\Mapfiles\GW Monitoring 202012\Figure-01 SiteVicinity.mxd

LEGEND

- MONITORING WELL (FARALLON 2005 AND 2007)
- DECOMMISSIONED MONITORING WELL (FARALLON 2017)
- UTILITY POLE
- FIRE HYRDANT
- BULKHEAD RETAINING WALL
- APPROXIMATE SITE BOUNDARY

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FIGURE 2

SITE PLAN
FORMER EVERGREEN FUEL FACILITY
661 EAST PINE STREET
SHELTON, WASHINGTON

FARALLON PN: 863-001

Drawn By: vpehlivan | Checked By: JR | Date: 1/21/2022 | Disc Reference:

Document Path: Q:\Projects\863 Former Evergreen Fuel\Mapfiles\GW_Monitoring_202012\Figure-02_SitePlan.mxd

LEGEND

- MONITORING WELL (FARALLON 2005 AND 2007)
- SITE BOUNDARY
- 13.00 — GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW DIRECTION
- (13.28) GROUNDWATER ELEVATION (12/20/2022)

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ALL LOCATIONS ARE APPROXIMATE.
FIGURES WERE PRODUCED IN COLOR.
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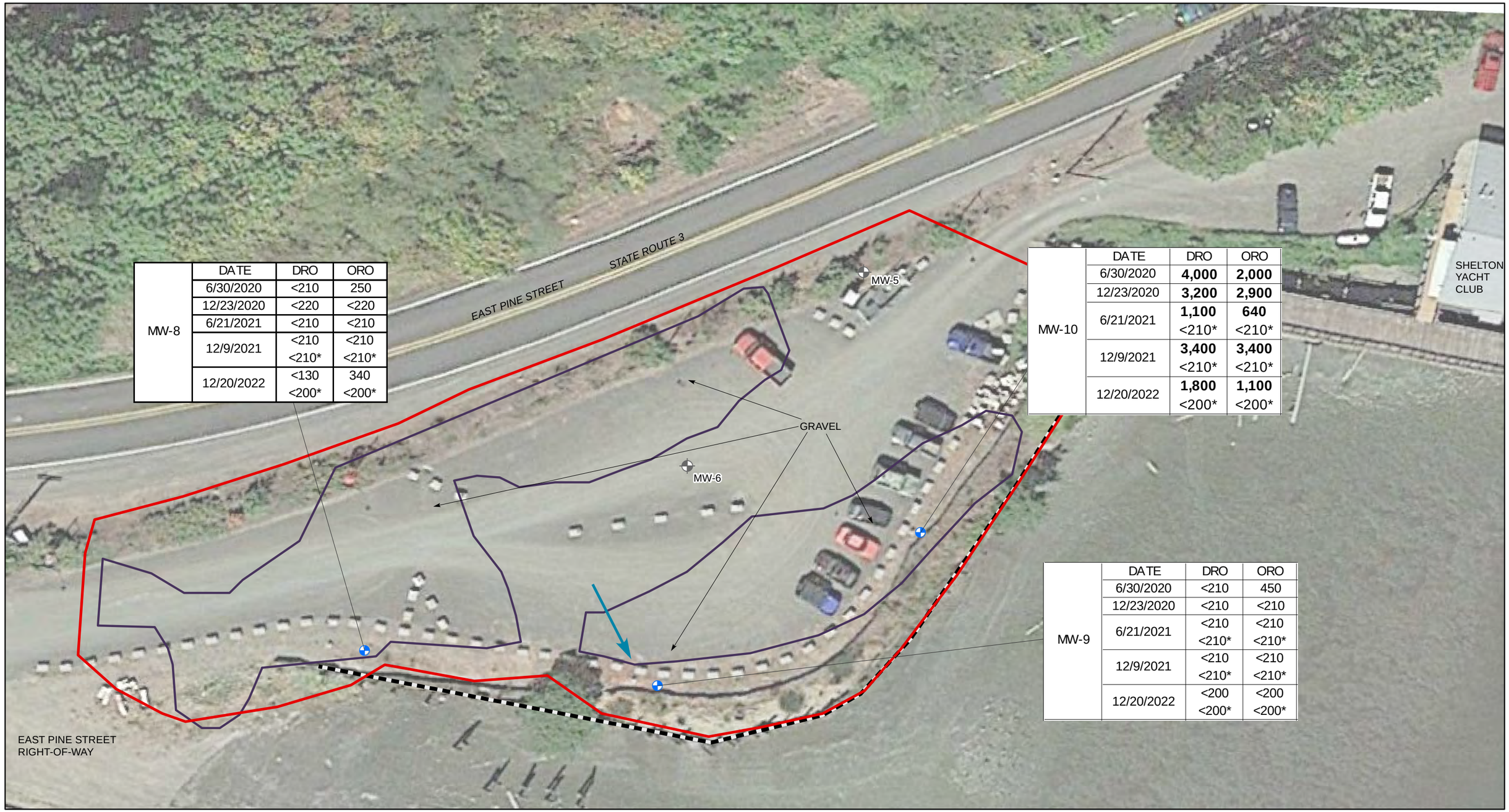
FIGURE 3

GROUNDWATER ELEVATION CONTOURS
AND FLOW DIRECTION
DECEMBER 20, 2022
FORMER EVERGREEN FUEL FACILITY
661 EAST PINE STREET
SHELTON, WASHINGTON

FARALLON PN: 863-001

Drawn By: lmurock | Checked By: JR | Date: 1/24/2023 | Disc Reference:

Document Path: Q:\Projects\863 Former Evergreen Fuel\Mapfiles\001 Fmr Evergreen Fuel Facility\044\Figure-06_GW_Contours_202212.mxd



MW-8	DATE	DRO	ORO
	6/30/2020	<210	250
	12/23/2020	<220	<220
	6/21/2021	<210	<210
	12/9/2021	<210 <210*	<210 <210*
	12/20/2022	<130 <200*	340 <200*

MW-10	DATE	DRO	ORO
	6/30/2020	**4,000**	**2,000**
	12/23/2020	**3,200**	**2,900**
	6/21/2021	**1,100** <210*	**640** <210*
	12/9/2021	**3,400** <210*	**3,400** <210*
	12/20/2022	**1,800** <200*	**1,100** <200*

MW-9	DATE	DRO	ORO
	6/30/2020	<210	450
	12/23/2020	<210	<210
	6/21/2021	<210 <210*	<210 <210*
	12/9/2021	<210 <210*	<210 <210*
	12/20/2022	<200 <200*	<200 <200*

LEGEND

- MONITORING WELL (FARALLON 2005 AND 2017)
- DECOMMISSIONED MONITORING WELL (FARALLON 2017)
- ESTIMATED GROUNDWATER FLOW DIRECTION
- BULKHEAD RETAINING WALL
- ESTIMATED LIMITES OF FORMER EXCAVATION AREA
- APPROXIMATE SITE BOUNDARY

NOTES:
UNITS ARE IN MICROGRAMS PER LITER (µg/L).

BOLD = DENOTES CONCENTRATIONS IN GROUNDWATER THAT EXCEED THE WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION (MTCA) CLEANUP LEVEL
< = DENOTES ANALYTE NOT DETECTED AT OR EXCEEDING THE REPORTING LIMIT LISTED.
* = SILICA GEL CLEANUP PROCESS APPLIED TO SAMPLE PRIOR TO ANALYSIS.
DRO = TOTAL PETROLEUM HYDROCARBONS (TPH) AS DIESEL-RANGE ORGANICS.
ORO = TPH AS OIL-RANGE ORGANICS

ALL LOCATIONS ARE APPROXIMATE. FIGURES WERE PRODUCED IN COLOR.
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FIGURE 4

GROUNDWATER ANALYTICAL DATA
FORMER EVERGREEN FUEL FACILITY
661 EAST PINE STREET
SHELTON, WASHINGTON

FARALLON PN: 863-001

Drawn By: lmurock Checked By: JK Date: 3/16/2023 Disc Reference:
Document Path: Q:\Projects\863 Former Evergreen Fuel\Mapfiles\001 Fmr Evergreen Fuel Facility\040\2023-03-10_Figure4_GW_TPH\Figure-04_GW_TPH_2022.mxd

TABLES

CONFIRMATIONAL GROUNDWATER MONITORING AND SAMPLING
STATUS REPORT – 2022
Former Evergreen Fuel Facility
661 East Pine Street
Shelton, Washington

Farallon PN: 863-001

Table 1
Summary of Groundwater Elevation Data
Former Evergreen Fuel Facility
Shelton, Washington
Farallon PN: 863-001

Well Identification	Well Screened Interval (feet bgs) [1]	Top of Monument Elevation [2]	Top of Casing Elevation [2]	Date Measured	Depth to Water (feet) [3]	Groundwater Elevation [2]
MW-5	5-15	16.94	16.46	4/5/2007	8.13	8.33
				7/11/2007	7.4	9.06
				10/11/2007	6.57	9.89
				1/11/2008	7.19	9.27
				5/13/2008	NM	NA
				10/1/2009	NM	NA
				1/19/2010	NM	NA
				5/1/2013	NM	NA
				2/16/2016	NM	NA
				8/23/2016	NM	NA
				8/10/2017	7.81	8.65
				Decommissioned 12/14/2017		
MW-6	3-12	14.93	14.47	4/5/2007	6.24	8.23
				7/11/2007	5.29	9.18
				10/11/2007	4.4	10.07
				1/11/2008	5.1	9.37
				5/13/2008	NM	NA
				10/1/2009	NM	NA
				1/19/2010	NM	NA
				5/1/2013	NM	NA
				2/16/2016	NM	NA
				8/23/2016	NM	NA
				8/10/2017	6.43	8.04
				Decommissioned 12/14/2017		
MW-8	3-15	18.85	18.48	4/5/2007	6.1	12.38
				7/11/2007	5.18	13.3
				10/11/2007	4.86	13.62
				1/11/2008	5.08	13.4
				5/13/2008	9.27	9.21
				10/1/2009	6.62	11.86
				1/19/2010	4.60	13.88
				5/1/2013	5.35	13.13
				2/16/2016	4.75	13.73
				8/23/2016	5.84	12.64
				8/10/2017	5.57	12.91
				12/14/2017	5.22	13.26
				6/28/2018	5.42	13.06
				12/27/2018	4.91	13.57
				6/27/2019	5.45	13.03
				12/5/2019	5.25	13.23
				6/30/2020	5.32	13.16
				12/23/2020	4.75	13.73
				6/21/2021	5.35	13.13
				12/9/2021	4.82	13.66
				12/13/2021	4.51	13.97
				12/20/2022	5.20	13.28

Table 1
Summary of Groundwater Elevation Data
Former Evergreen Fuel Facility
Shelton, Washington
Farallon PN: 863-001

Well Identification	Well Screened Interval (feet bgs) [1]	Top of Monument Elevation [2]	Top of Casing Elevation [2]	Date Measured	Depth to Water (feet) [3]	Groundwater Elevation [2]
MW-9	3-15	19.25	18.93	4/5/2007	10.05	8.88
				7/11/2007	9.50	9.43
				10/11/2007	7.50	11.43
				1/11/2008	7.68	11.25
				5/13/2008	5.78	13.15
				10/1/2009	10.21	8.72
				1/19/2010	6.99	11.94
				5/1/2013	8.84	10.09
				2/16/2016	8.3	10.63
				8/23/2016	9.94	8.99
				8/10/2017	9.14	9.79
				12/14/2017	8.62	10.31
				6/28/2018	9.29	9.64
				12/27/2018	7.82	11.11
				6/27/2019	9.49	9.44
				12/5/2019	8.65	10.28
				6/30/2020	8.68	10.25
				12/23/2020	8.50	10.43
				6/21/2021	8.50	10.43
				12/13/2021	8.31	10.62
				12/20/2022	8.16	10.77
MW-10	2-17	20.26	19.93	4/5/2007	9.14	10.79
				7/11/2007	8.65	11.28
				10/11/2007	7.00	12.93
				1/11/2008	7.73	12.20
				5/13/2008	8.82	11.11
				10/1/2009	10.5	9.43
				1/19/2010	7.13	12.80
				5/1/2013	8.43	11.50
				2/16/2016	7.89	12.04
				8/23/2016	10.51	9.42
				8/10/2017	10.17	9.76
				12/14/2017	9.00	10.93
				6/28/2018	10.32	9.61
				12/27/2018	8.27	11.66
				6/27/2019	10.40	9.53
				12/5/2019	9.64	10.29
				6/30/2020	9.81	10.12
				12/23/2020	8.48	11.45
				6/21/2021	9.42	10.51
				12/9/2021	8.55	11.38
				12/13/2021	8.35	11.58
				12/20/2022	8.90	11.03

NOTES:

[1]Screened interval in feet below ground surface (bgs).

[2]Elevations relative to vertical survey datum that is based on a mean lower low water elevation of 44.11 feet and referenced from a Washington State Department of Transportation brass cap set in a monument with a published elevation of 47.58 feet North American Vertical Datum.

[3]Depth to water measured in feet below the top of the well casing.

NA = not available
NM = not measured

Table 2
Summary of Groundwater Analytical Results
Former Evergreen Fuel Facility
Shelton, Washington
Farallon PN: 863-001

Sample Identification	Sample Location	Sample Date	Analytical Results (micrograms per liter)						
			GRO[1]	DRO[2]	ORO[2]	Benzene[3]	Toluene[3]	Ethylbenzene[3]	Total Xylenes[3]
MW8-040507	MW-8	4/5/2007	190[4]	<250	<410	1.4	<1.0	<1.0	4.0
MW8-071107		7/11/2007	<100	<250	<400	2.6	<1.0	<1.0	<1.0
MW8-101107		10/11/2007	<100	<250	<400	**5.7**	<1.0	<1.0	<1.0
MW8-011108		1/11/2008	<100	<270	<440	<1.0	<1.0	<1.0	<1.0
MW8-051308		5/13/2008	<100	<270	<430	2.7	<1.0	<1.0	<1.0
MW8-100109		10/1/2009	--	<250	<400	1.4	--	--	--
MW8-011910		1/19/2010	--	<260	<410	<1.0	--	--	--
MW-8-050113		5/1/2013	<100	<250	<410	<1.0	<1.0	<1.0	<2.0
MW-8-021616		2/16/2016	--	<260	<410	--	--	--	--
MW-8-082316		8/23/2016	--	280	<410	--	--	--	--
MW-8-081017		8/10/2017	--	<260	<410	--	--	--	--
MW-8-121417		12/14/2017	--	<270	<440	--	--	--	--
MW-8-062818		6/28/2018	--	<260	<410	--	--	--	--
MW-8-122718		12/27/2018	--	<260	<410	--	--	--	--
MW-8-062719		6/27/2019	--	<260	<410	--	--	--	--
MW-8-120519		12/5/2019	--	<230	<240	--	--	--	--
MW-8-063020		6/30/2020	--	<210	250	--	--	--	--
MW-8-122320		12/23/2020	--	<220	<220	--	--	--	--
MW-8-062121		6/21/2021	--	< 210	< 210	--	--	--	--
MW-8-120921		12/9/2021	--	< 210 < 210[5]	< 210 < 210[5]	--	--	--	--
MW-08-122022		12/20/2022	--	<130 <200[5]	340 <200[5]	--	--	--	--
MW9-040507	MW-9	4/5/2007	<100	<260	<410	<1.0	<1.0	<1.0	<1.0
MW9-071107		7/11/2007	<100	<250	<400	<1.0	<1.0	<1.0	<1.0
MW9-101107		10/11/2007	<100	<250	<410	<1.0	<1.0	<1.0	<1.0
MW9-011108		1/11/2008	<100	<260	<410	<1.0	<1.0	<1.0	<1.0
MW-9-050113		5/1/2013	<100	310	<400	<1.0	<1.0	<1.0	<2.0
MW-9-021616		2/16/2016	--	<260	<410	--	--	--	--
MW-9-082316		8/23/2016	--	**1,200**	<550 U1	--	--	--	--
MW-9-081017		8/10/2017	--	420	<410	--	--	--	--
MW-9-121417		12/14/2017	--	<300	<480	--	--	--	--
MW-9-062818		6/28/2018	--	<260	<410	--	--	--	--
MW-9-122718		12/27/2018	--	280	<420	--	--	--	--
MW-9-062719		6/27/2019	--	<260	<410	--	--	--	--
MW-9-120519		12/5/2019	--	<200	<240	--	--	--	--
MW-9-063020		6/30/2020	--	<210	450	--	--	--	--
MW-9-122320		12/23/2020	--	<210	<210	--	--	--	--
MW-9-062121		6/21/2021	--	< 210 < 210[5]	< 210 < 210[5]	--	--	--	--
MW-9-120921		12/9/2021	--	< 210 < 210[5]	< 210 < 210[5]	--	--	--	--
MW-09-122022		12/20/2022	--	<200 <200[5]	<200 <200[5]	--	--	--	--
MTCA Method A Cleanup Levels[6]			**800/1,000 [7]**	**500**	**500**	**5**	**1,000**	**700**	**1,000**

Table 2
Summary of Groundwater Analytical Results
Former Evergreen Fuel Facility
Shelton, Washington
Farallon PN: 863-001

Sample Identification	Sample Location	Sample Date	Analytical Results (micrograms per liter)						
			GRO[1]	DRO[2]	ORO[2]	Benzene[3]	Toluene[3]	Ethylbenzene[3]	Total Xylenes[3]
MW10-040507	MW-10	4/5/2007	<400	**1,000**	<420	<4.0	<4.0	<4.0	<4.0
MW10-071107		7/11/2007	<100	**580**	<400	<1.0	<1.0	<1.0	<1.0
MW10-101107		10/11/2007	<400	**590**	<400	<4.0	<4.0	<4.0	<4.0
MW10-011108		1/11/2008	<100	<250	<410	<1.0	<1.0	<1.0	<1.0
MW10-051308		5/13/2008	220	**620**	<430	<1.0	<1.0	<1.0	<1.0
MW10-100109		10/1/2009	--	**750**	<410	<1.0	--	--	--
MW10-011910		1/19/2010	--	<260	<410	<1.0	--	--	--
MW-10-050113		5/1/2013	<100	**1,700**	<410	<1.0	<1.0	<1.0	<2.0
MW-10-021616		2/16/2016	--	**3,500**	<410	--	--	--	--
MW-10-021616		8/23/2016	--	**1,900**	<640 U1	--	--	--	--
MW-10-081017		8/10/2017	--	**3,000**	<580 U1	--	--	--	--
MW-10-121417		12/14/2017	--	**4,600**	<3,400 U1	--	--	--	--
MW-10-062818		6/28/2018	--	**1,900**	<520 U1	--	--	--	--
MW-10-122718		12/27/2018	--	**2,100**	<1,400 U1	--	--	--	--
MW-10-062719		6/27/2019	--	**1,600**	**580** N	--	--	--	--
MW-10-120519		12/5/2019	--	**6,300**	**3,100** N	--	--	--	--
MW-10-063020		6/30/2020	--	**4,000**	**2,000**	--	--	--	--
MW-10-122320		12/23/2020	--	**3,200**	**2,900**	--	--	--	--
MW-10-062121		6/21/2021	--	**1,100** < 210[5]	**640** < 210[5]	--	--	--	--
MW-10-120921		12/9/2021	--	**3,400** < 210[5]	**3,400** < 210[5]	--	--	--	--
MW-10-122022		12/20/2022	--	**1,800** <200[5]	**1,100** <200[5]	--	--	--	--
MTCA Method A Cleanup Levels[6]			**800/1,000 [7]**	**500**	**500**	**5**	**1,000**	**700**	**1,000**

NOTES:

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

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

-- denotes sample 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) Method 8260B.

[4]Laboratory analytical report indicated gasoline results are being influenced by the presence of diesel.

[5]Analyzed by Northwest Method NWTPH-Dx with silica-gel cleanup procedure.

[6]Washington State Model Toxics Control Act Cleanup Regulation (MTCA) Method A Cleanup Levels Groundwater, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrativ as revised November 2013.

[7]The cleanup level for GRO presented without/with the presence of benzene.

DRO = total petroleum hydrocarbons as diesel-range organics

GRO = total petroleum hydrocarbons as gasoline-range organics

N = hydrocarbons in the diesel range are impacting the oil result

ORO = total petroleum hydrocarbons as oil-range organics

U1 = the practical quantitation limit is elevated due to interferences present in the sample

Table 3
Summary of Groundwater Geochemical Parameters
Former Evergreen Fuel Facility
Shelton, Washington
Farallon PN: 863-001

Well Identification	Sample Date	Geochemical Results				
		Temperature (^{o}C)	Specific Conductance (mS/cm)	pH (pH units)	Dissolved Oxygen (mg/l)	Oxidation-Reduction Potential (mV)
MW-5	4/5/2007	12.4	0.131	6.12	0.65	471.1
	7/11/2007	19.65	0.147	4.77	1.03	413.2
	10/11/2007	14.96	0.143	6.74	0.91	-10.4
	1/11/2008	11.97	0.177	6.30	0.47	99.9
	5/13/2008	NS	NS	NS	NS	NS
	10/1/2009	NS	NS	NS	NS	NS
	1/19/2010	NS	NS	NS	NS	NS
	2/16/2016	NS	NS	NS	NS	NS
	8/23/2016	NS	NS	NS	NS	NS
	8/10/2017	NS	NS	NS	NS	NS
	12/14/2017	Well Decommissioned 12/14/2017				
MW-6	4/5/2007	11.3	0.393	6.00	0.49	428.2
	7/11/2007	19.25	0.421	4.33	0.94	381.8
	10/11/2007	13.75	0.322	6.77	0.78	-82.8
	1/11/2008	9.6	0.32	6.70	0.74	-35.5
	5/13/2008	NS	NS	NS	NS	NS
	10/1/2009	NS	NS	NS	NS	NS
	1/19/2010	NS	NS	NS	NS	NS
	2/16/2016	NS	NS	NS	NS	NS
	8/23/2016	NS	NS	NS	NS	NS
	8/10/2017	NS	NS	NS	NS	NS
	12/14/2017	Well Decommissioned 12/14/2017				
MW-8	4/5/2007	11.43	0.270	6.70	1.29	443.6
	7/11/2007	21.54	0.386	4.12	0.93	511.9
	10/11/2007	14.59	0.323	7.17	1.62	68.2
	1/11/2008	8.38	0.252	7.37	2.48	-30.4
	5/13/2008	12.1	0.346	7.05	0.98	-44.4
	10/1/2009	17.53	0.468	7.21	4.22	-76
	1/19/2010	9.66	0.12	6.97	6.7	49.7
	5/1/2013	14.83	0.204	6.22	2.06	-7
	2/16/2016	10.62	0.092	6.64	4.37	147
	8/23/2016	21.60	0.235	6.72	0.61	-26
	8/10/2017	21.4	0.180	6.71	0.43	-31.5
	12/14/2017	11.0	0.190	6.64	0.71	9.1
	6/28/2018	17.7	0.224	6.46	1.03	-1.9
	12/27/2018	9.6	0.12	7.2	4.75	120.7
	6/27/2019	15.1	0.266	6.39	1.23	48.1
	12/5/2019	11.7	0.271	6.44	3.26	-255.3
	6/30/2020	18.5	0.198	13.37*	0.26	-176.5
	12/23/2020	8.9	0.082	6.96	6.18	179.6
	6/21/2021	20.6	0.244	6.29	1.10	-54.8
	12/9/2021	10.0	0.191	6.55	1.15	123.6
	12/20/2022	8.7	0.212	6.65	3.93	295.6

Table 3
Summary of Groundwater Geochemical Parameters
Former Evergreen Fuel Facility
Shelton, Washington
Farallon PN: 863-001

Well Identification	Sample Date	Geochemical Results				
		Temperature (^{o}C)	Specific Conductance (mS/cm)	pH (pH units)	Dissolved Oxygen (mg/l)	Oxidation-Reduction Potential (mV)
MW-9	4/5/2007	12.44	0.361	6.12	3.57	478.6
	7/11/2007	21.25	0.56	4.64	3.41	420
	10/11/2007	15.11	0.326	6.57	6.4	79.8
	1/11/2008	8.66	0.129	7.25	1.92	69.5
	5/13/2008	NS	NS	NS	NS	NS
	10/1/2009	NS	NS	NS	NS	NS
	1/19/2010	NS	NS	NS	NS	NS
	5/1/2013	16.20	0.135	6.25	0.89	-25
	2/16/2016	10.61	0.150	6.59	2.23	85
	8/23/2016	21.80	0.860	6.78	0.54	-40
	8/10/2017	19.4	0.248	6.61	0.41	-44.9
	12/14/2017	11.8	0.194	6.74	0.51	-47.3
	6/28/2018	16.2	0.331	6.63	1.14	-10.4
	12/27/2018	10.4	0.188	6.91	4.09	132.9
	6/27/2019	15.0	0.359	6.52	1.71	65.2
	12/5/2019	11.9	0.346	6.62	3.61	-218.7
	6/30/2020	16.0	0.315	12.35*	0.32	-182.2
	12/23/2020	9.9	0.119	6.99	4.94	178.7
	6/21/2021	19.7	0.281	6.68	2.90	-30.6
	12/9/2021	11.3	0.198	6.94	5.01	182.5
	12/20/2022	9.8	0.299	7.06	6.34	315.2

Table 3
Summary of Groundwater Geochemical Parameters
Former Evergreen Fuel Facility
Shelton, Washington
Farallon PN: 863-001

Well Identification	Sample Date	Geochemical Results				
		Temperature (^{o}C)	Specific Conductance (mS/cm)	pH (pH units)	Dissolved Oxygen (mg/l)	Oxidation-Reduction Potential (mV)
MW-10	4/5/2007	11.84	0.252	5.87	0.96	480.3
	7/11/2007	20.54	0.316	5.77	0.73	175
	10/11/2007	15.07	0.309	6.56	0.48	-12.7
	1/11/2008	9.4	0.141	6.66	6.13	109.8
	5/13/2008	12.21	0.209	6.72	1.28	-57.8
	10/1/2009	17.16	0.379	6.80	0.07	-91.8
	1/19/2010	10.65	0.108	6.72	1.95	23.2
	5/1/2013	13.99	0.133	5.99	1.00	-16
	2/16/2016	11.33	0.274	6.24	0.88	44
	8/23/2016	18.31	0.343	6.69	0.79	-70
	8/10/2017	18.0	0.201	6.70	0.28	-96.5
	12/14/2017	12.1	0.269	6.26	0.29	-108.9
	6/28/2018	15.5	0.277	6.70	0.9	-77.5
	12/27/2018	11.6	0.427	6.17	2.32	167.6
	6/27/2019	14.0	0.339	6.51	1.49	-15.2
	12/5/2019	13.3	0.536	6.20	2.67	-234.2
	6/30/2020	16.0	0.282	12.22*	0.24	-174.0
	12/23/2020	10.7	0.223	6.11	0.97	121.1
	6/21/2021	20.7	0.273	6.22	1.03	-56.6
	12/9/2021	12.2	0.329	5.93	0.33	77.8
	12/20/2022	10.1	0.279	6.34	1.17	191.3

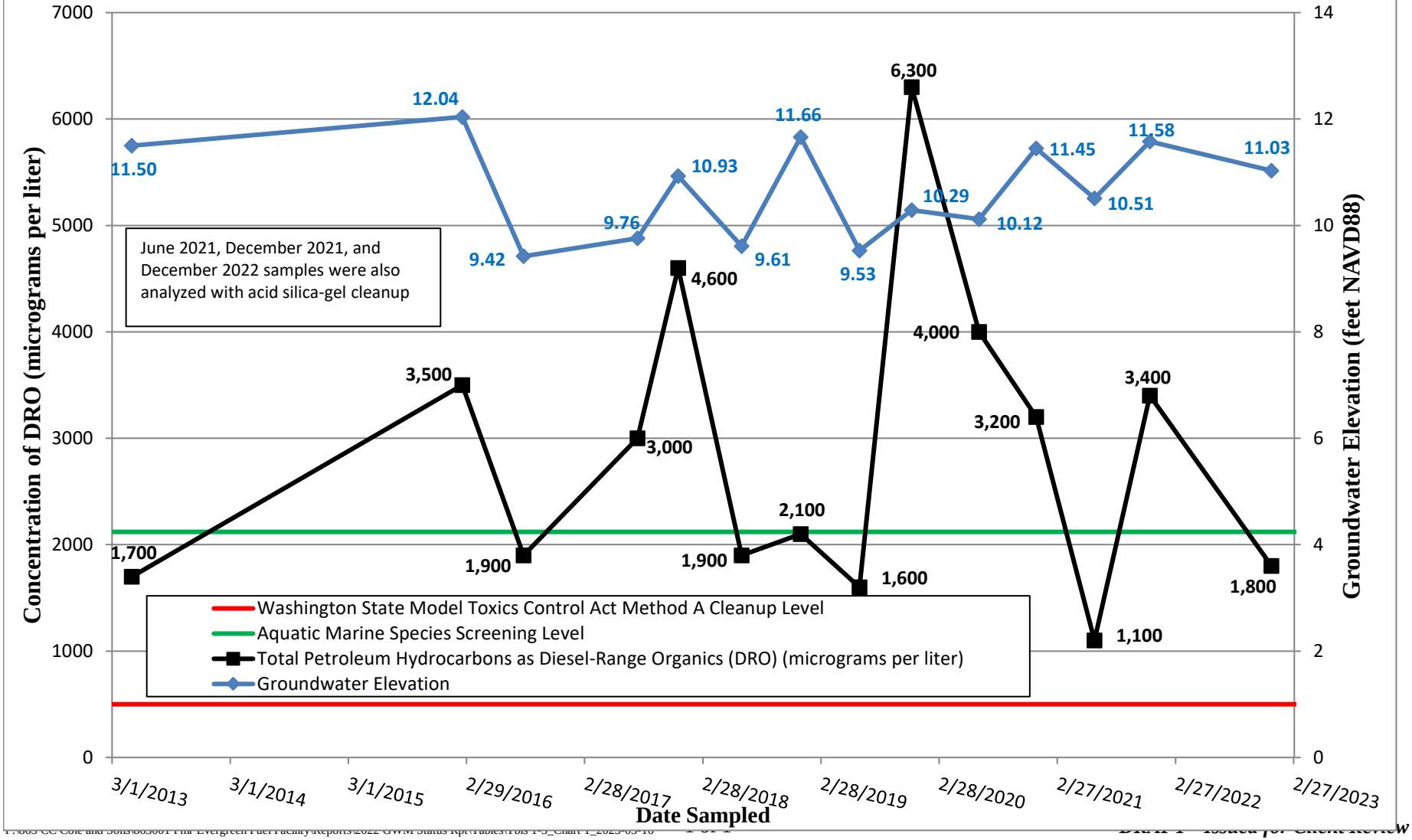
NOTES:
^{o}C = degrees Celsius
* = instrument error
mg/l = milligrams per liter
mS/cm = milliSiemens per centimeter
mV = millivolts
NS = not sampled

CHART

CONFIRMATIONAL GROUNDWATER MONITORING AND SAMPLING
STATUS REPORT – 2022
Former Evergreen Fuel Facility
661 East Pine Street
Shelton, Washington

Farallon PN: 863-001

Chart 1
DRO Concentrations in Groundwater versus Groundwater Elevation Data Trends for Monitoring Well MW-10
Former Evergreen Fuel Facility
Shelton, Washington
Farallon PN: 863-001



ATTACHMENT A
LABORATORY ANALYTICAL REPORT

CONFIRMATIONAL GROUNDWATER MONITORING AND SAMPLING
STATUS REPORT – 2022
Former Evergreen Fuel Facility
661 East Pine Street
Shelton, Washington

Farallon PN: 863-001

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

January 5, 2023

Javan Ruark
Farallon Consulting
975 5th Avenue NW
Issaquah, WA 98027

Re: Analytical Data for Project 863-001
Laboratory Reference No. 2212-232

Dear Javan:

Enclosed are the analytical results and associated quality control data for samples submitted on December 21, 2022.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: January 5, 2023
Samples Submitted: December 21, 2022
Laboratory Reference: 2212-232
Project: 863-001

Case Narrative

Samples were collected on December 20, 2022 and received by the laboratory on December 21, 2022. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: January 5, 2023
Samples Submitted: December 21, 2022
Laboratory Reference: 2212-232
Project: 863-001

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-08-122022**					
Laboratory ID:	12-232-01					
Diesel Range Organics	**ND**	0.13	NWTPH-Dx	12-30-22	12-31-22	
Lube Oil Range Organics	**0.34**	0.20	NWTPH-Dx	12-30-22	12-31-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*83*	*50-150*				
Client ID:	**MW-08-122022**					
Laboratory ID:	12-232-01					
Diesel Range Organics	**ND**	0.20	NWTPH-Dx	12-30-22	12-30-22	X2
Lube Oil Range Organics	**ND**	0.20	NWTPH-Dx	12-30-22	12-30-22	X2
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*93*	*50-150*				
Client ID:	**MW-09-122022**					
Laboratory ID:	12-232-02					
Diesel Range Organics	**ND**	0.20	NWTPH-Dx	12-30-22	12-31-22	
Lube Oil Range Organics	**ND**	0.20	NWTPH-Dx	12-30-22	12-31-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*77*	*50-150*				
Client ID:	**MW-09-122022**					
Laboratory ID:	12-232-02					
Diesel Range Organics	**ND**	0.20	NWTPH-Dx	12-30-22	12-30-22	X2
Lube Oil Range Organics	**ND**	0.20	NWTPH-Dx	12-30-22	12-30-22	X2
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*82*	*50-150*				
Client ID:	**MW-10-122022**					
Laboratory ID:	12-232-03					
Diesel Range Organics	**1.8**	0.13	NWTPH-Dx	12-30-22	12-31-22	
Lube Oil Range Organics	**1.1**	0.20	NWTPH-Dx	12-30-22	12-31-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*73*	*50-150*				
Client ID:	**MW-10-122022**					
Laboratory ID:	12-232-03					
Diesel Range Organics	**ND**	0.20	NWTPH-Dx	12-30-22	12-31-22	X2
Lube Oil Range Organics	**ND**	0.20	NWTPH-Dx	12-30-22	12-31-22	X2
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*78*	*50-150*				

Date of Report: January 5, 2023
Samples Submitted: December 21, 2022
Laboratory Reference: 2212-232
Project: 863-001

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1230W1					
Diesel Range Organics	**ND**	0.080	NWTPH-Dx	12-30-22	12-30-22	
Lube Oil Range Organics	**ND**	0.16	NWTPH-Dx	12-30-22	12-30-22	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*90*	*50-150*				
Laboratory ID:	MB1230W1					
Diesel Range Organics	**ND**	0.080	NWTPH-Dx	12-30-22	12-30-22	X2
Lube Oil Range Organics	**ND**	0.16	NWTPH-Dx	12-30-22	12-30-22	X2
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*108*	*50-150*				

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	SB1230W1								
	ORIG	DUP							
Diesel Fuel #2	**0.525**	**0.421**	NA	NA	NA	NA	22	NA	
Surrogate:									
o-Terphenyl					*114*	*96* *50-150*			
Laboratory ID:	SB1230W1								
	ORIG	DUP							
Diesel Fuel #2	**0.571**	**0.411**	NA	NA	NA	NA	33	NA	X2
Surrogate:									
o-Terphenyl					*130*	*98* *50-150*			

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Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1 - Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

X2 - Sample extract treated with a silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Y1 - Negative effects of the matrix from this sample on the instrument caused values for this analyte in the bracketing continuing calibration verification standard (CCVs) to be outside of 20% acceptance criteria. Because of this, quantitation limits and sample concentrations should be considered estimates.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

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Company: Farallon Consulting
Project Number: 863-001
Project Name: Fmr Evergreen Fuel Facility
Project Manager: Javan Buark
Sampled by: Michael Ysaguirre

Turnaround Request (in working days)

(Check One)

- ☐ Same Day ☐ 1 Day
- ☐ 2 Days ☐ 3 Days
- ☒ Standard (7 Days)
- ☐ _____ (other)

Laboratory Number: 12-232

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX (8021☐ 8260☐)	NWTPH-Gx	NWTPH-Dx (Acid / SG Clean-up☐)	Volatiles 8260	Halogenated Volatiles 8260	EDB EPA 8011 (Waters Only)	Semivolatiles 8270/SIM (with low-level PAHs)	PAHs 8270/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081	Organophosphorus Pesticides 8270/SIM	Chlorinated Acid Herbicides 8151	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664	% Moisture
1	MW-08-122022	12/20/22	1324	GW	2				X														
2	MW-09-122022	"	1402	"	"				X														
3	MW-10-122022	"	1524	"	"				X														

	Signature	Company	Date	Time
Relinquished		FLN	12/21/22	1414
Received		Alpha	12/21/22	16:10
Relinquished		Alpha	12/21/22	17:00
Received		OBE	12/21/22	1700
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

NWTPH-Dx with and without Silica/Gel cleanup procedure.

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐