

Annual Groundwater Monitoring Report 2023

Seaport Midstream Partners, LLC
Portland Terminal
9930 Northwest Saint Helens Road
Portland, Oregon

DEQ No. WMCVC-NWR-00-16
ECSI No. 1528

Revision 1

Project number: 60700373

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**Subject: Annual Groundwater Monitoring Report 2023
Portland Terminal
9930 Northwest Saint Helens Road
Portland, Oregon
ECSI No. 1528**

Dear Mr. Schatz,

AECOM has prepared the attached revised report on behalf of the Seaport Midstream Partners, LLC (SMP), incorporating comments received by the Oregon Department of Environmental Quality on May 13, 2024. This report describes the results of the groundwater monitoring and recovery of liquid phase petroleum hydrocarbons completed during 2023 at the SMP Portland Terminal.

If you have any questions or require additional information, please contact Thomas Bialobok at 503-477-8287.

Sincerely,

AECOM

Thomas J. Bialobok
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Expires January 1, 2025

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1. Introduction

This Annual Groundwater Monitoring Report 2023 summarizes the groundwater monitoring and liquid phase hydrocarbons (LPH) recovery at the Seaport Midstream Partners, LLC. (SMP), Portland Terminal facility (the Terminal). The Terminal is located at 9930 Northwest (NW) Saint Helens Road in Portland, Oregon (Figure 1). Annual groundwater monitoring activities included in this report were conducted in 2023 in accordance with the 2021 *Modified Annual Groundwater Monitoring Sampling and Analysis Plan Revision 1* (MSAP; AECOM, 2021a) and the requirements of the Voluntary Agreement No. WMCVC-NWR-00-16, dated June 20, 2000. Site activities conducted in 2023 and included in this report comprise:

- Quarterly groundwater elevation and LPH thickness monitoring
- Operation and maintenance of the Hydraulic Source Control Measure (SCM) System, including groundwater capture and LPH removal from individual wells
- Annual groundwater monitoring

Additional source identification activities and maintenance action related to the Terminal's sheet pile wall (seawall) conducted in 2023 have previously been reported under separate covers; *2023 Additional Action Summary Report Revision 2* (AECOM, 2023b) and *Seawall Tieback Inspection Summary Report* (AECOM, 2024).

1.1 Background and Site Description

The Terminal consists of a 14-acre facility with 27 above-ground storage tanks, a truck loading rack, several buildings, a remanufacturing warehouse, a dock structure, a boat house, and a seawall. The facility operation includes bulk petroleum storage, additive storage, fuel blending, and the transfer of bulk petroleum via pipeline, barge, and rail throughout the region. The Portland Terminal is bordered to the east by the Willamette River, to the west by NW Saint Helens Road, to the north by the former Linton Plywood Association property, and to the south by Exxon Mobil Bulk Terminal (Figure 2). The Portland Terminal is located at River Mile 4.9 of the lower Willamette River and is adjacent to the Portland Harbor Superfund Site. An additional description of the Terminal and the regulatory setting is available in the Terminal's Source Control Evaluation Report (SCE Report), last revised in November 2021 (2021 SCE; AECOM, 2021b).

1.2 Geology and Hydrogeology

The geology of the Terminal generally consists of four sedimentary units overlying basalt bedrock. The sedimentary units include:

- Sandy fill unit – a combination of sand, clayey sand, sandy gravel, silt, clayey silt, sandy silt, and localized organic material (wood chips, fibers, logs, and planks). The fill is in direct contact with the underlying fine-grained alluvial (FGA) deposits, except for localized areas where it is underlain by the paleochannel deposits.
- Paleochannel deposits – sand and silty sand, interbeds of silt and clayey silt, and the presence of rootlets and bioturbation locally incising the fine-grained alluvial layer. Located roughly in the center of the Terminal, trending southwest to northeast.
- Fine-grained alluvial (FGA) deposits – silt and lean clay, which locally grades to silty sand or includes silty sand interbeds.
- Sandy alluvial (SA) deposits – fine sand with interbeds of silty sand and silt dipping towards the river.

The SA unit is in contact with basalt bedrock 40 to 70 feet below ground surface. A detailed description of the geology and hydrogeology beneath the Terminal is provided in the *MSAP* (AECOM, 2021a) in addition to the 2021 SCE (AECOM, 2021b).

The two primary groundwater zones underlying the Terminal, the Shallow Groundwater Zone (SGZ) and the Deep Groundwater Zone (DGZ), are separated by the FGA. The sandy fill and paleochannel deposits together comprise the SGZ and the SA comprises the DGZ.

- **Shallow Groundwater Zone** – The SGZ is an unconfined groundwater system within the sandy fill and paleochannel deposits, which are observed to depths of -5 feet City of Portland Datum (CPD) adjacent to the Willamette River and +10 feet CPD in the western portion of the Terminal. The sandy fill and paleochannel deposits have higher permeability and are not separated by hydrogeologic barriers. Pumping and slug tests performed in 2008 and 2009 have shown hydraulic conductivities ranging from less than 1 foot per day to approximately 14 feet per day (ft/day) in the SGZ (URS, 2011).

Temporal groundwater elevation data from monitoring wells screened within the SGZ demonstrate the SGZ is poorly connected to the Willamette River and is perched above the Willamette River during most of the season (URS, 2013). The SGZ has a limited aerial extent, with the sandy fill unit pinching out near the western property boundary near Highway 30. The SGZ at the Terminal is controlled and contained by the Hydraulic SCM system, the Seawall Replacement SCM, and the Linnton Water Credits, LLC (LWC) SCM, as described in further detail in Section 1.3.

- **Deep Groundwater Zone** – The DGZ is a semiconfined groundwater system, which includes the SA, below the FGA, and above the basalt bedrock. The SA is observed to depths of -40 feet CPD near the Willamette River but is much shallower near the western edge of the Terminal. The DGZ is hydraulically connected to the Willamette River and is tidally influenced near the Willamette River. Pumping and slug tests were conducted in 2008 and 2009 to estimate hydraulic properties. The pumping tests showed hydraulic conductivities ranging from less than 1 ft/day to almost 12 ft/day. Slug tests were limited in range and provided conductivity values of 0.01 ft/day to approximately 2.5 ft/day (URS, 2011).

Temporal groundwater elevation measurements collected from monitoring wells screened within the DGZ demonstrate the DGZ is connected to the Willamette River (URS, 2013). The FGA prevents LPH migration to the DGZ; coarse-grained stream deposits incised into the underlying FGA, result in a local limited connection between the SGZ and DGZ at the center of the Site (URS, 2013).

SGZ flow is strongly influenced by precipitation and Hydraulic SCM system operation. DGZ flow at the Terminal is influenced by precipitation, Willamette River seasonal elevation changes, daily tidal variations, and Hydraulic SCM system operation. Groundwater elevations rise during winter high-water conditions, causing the lateral extent of LPH to increase while thickness decreases. In contrast, during low-water conditions in the late summer, groundwater elevations are low, and the lateral extent of LPH is smaller, but the vertical extent is thicker (URS, 2014).

1.3 Nature and Extent of Petroleum Impacts

Historical total petroleum hydrocarbons (TPH) releases, primarily consisting of diesel, have occurred at the Terminal and resulted in LPH in subsurface soil and dissolved-phase TPH and metals in groundwater. Chemicals of potential concern (COPCs) and chemicals of potential ecological concern (CPECs) associated with historic TPH releases include:

- TPH: gasoline range (TPH-G) and diesel range (TPH-D)
- Polycyclic aromatic hydrocarbons (PAHs): benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, indeno(1,2,3-cd)pyrene, and dibenzo(a,h)anthracene
- Metals: arsenic and barium

Previous monitoring and source control evaluations indicate the current extent of the LPH is stable and is generally confined to the SGZ along the coarse-grained paleochannel located in the center of the Terminal, which extends east from below the south-central boundary of the South Tank Farm to the Lube Oil Tank Farm (Figure 3). Elevated concentrations of dissolved-phase COPCs/CEPCs occur in a similar lateral extent as the LPH. Generally, during winter high-water conditions, SGZ elevations rise and the lateral extent of LPH increases, while thickness decreases. In contrast, during low-water conditions in the late summer, SGZ elevations are low and the lateral extent of LPH is smaller, but the vertical extent is thicker (URS, 2006). Recovered LPH is predominantly weathered diesel, based on odor and appearance. However, seasonal changes in SGZ elevation may result in increased gasoline-like LPH recovery (AECOM, 2021b). As described in the SCE Report, 100,000 gallons is the expected maximum potential LPH volume beneath the Terminal. LPH beneath the Terminal is contained by the current SCMs, as described in the following subsection.

1.4 Current Source Control Measures

Multiple SCMs are in place at the Terminal to prevent migration of LPH and dissolved-phase COPCs/CEPCs to the Willamette River and to reduce potential COPC/CEPC migration from the SGZ to the DGZ. SCMs include:

- **Hydraulic SCM system:** The Hydraulic SCM system captures groundwater and LPH beneath the Terminal, which creates a cone of depression and reverses the groundwater gradient from the seawall towards the center of the Terminal (AECOM, 2021b). The Hydraulic SCM system consists of 26 pumping wells, including hydraulic control wells (HC-1 through HC-3)¹ and source control wells (SC-1 through SC-23), outfitted with total fluid pumps (TFPs). Captured groundwater and LPH are pumped into the groundwater treatment system where LPH is removed by an oil/water separator (OWS) and groundwater is treated through a GAC adsorption treatment system before discharge to the Willamette River under NPDES 1500A permit #10035. As a maintenance measure for the Hydraulic SCM System, HC-1 was over-drilled, removed, and replaced with a deep well identified as HC-1D and an independent shallow well HC-1S was installed directly adjacent. Further details on HC-1D and HC-1S installations are included in Section 1.5.
- **Seawall Replacement SCM:** The Seawall Replacement SCM includes the installation of a sheet pile seawall east of the existing concrete seawall and revetment. The 914-foot long sheet pile seawall is embedded into the FGA and sheet pile joints are sealed with a petroleum-resistant sealant to prevent LPH and dissolved-phase TPHs present in the SGZ from migrating to the Willamette River. The space between the pre-existing concrete seawall and sheet pile seawall was filled with controlled-density fill (CDF). A perforated pipe was installed above the CDF within several inches of drain rock to collect precipitation falling between the concrete seawall and the sheet pile seawall. The Seawall Replacement SCM was completed in 2007 (URS, 2009).
- **Revetment Removal SCM:** The Revetment Removal SCM installation occurred concurrently and was followed by the installation of the Seawall Replacement SCM. It involved the removal of the former concrete revetment outboard of the newly installed sheet pile seawall and the voluntary removal of LPH and TPH-containing soil and Willamette River sediments underneath and outboard of the Terminal seawall. Approximately 13,300 cubic yards (cy) of riverbank soil and near-shore river sediment were excavated and disposed. The removal area was capped with 12,900 cy of clean backfill comprised of aggregate and sand, graded to be stable in the Willamette River fluvial environment, and planted with native species. Outfall protection pads consisting of class-100 rock underlain by a geotextile fabric were constructed beneath City and Terminal outfalls to armor the shoreline and reduce possible erosion caused by outfall discharge. The Revetment Removal SCM was completed in 2008 and the final restoration of the riverbank was completed in 2009 (URS, 2009).
- **LWC Property IRM Phase III SCM (LWC SCM):** The LWC SCM activities were completed in 2019 at the northern-adjacent LWC property. A 149-foot sheet pile wall was installed adjacent to the northern Terminal property boundary and embedded into the FGA to restrict groundwater and LPH migration from the SGZ to the LWC property. The LWC SCM also included excavation and off-site disposal of approximately 6,500 tons of TPH-containing soil from the LWC property and amendment of remaining soil to promote aerobic bioremediation of any residual TPH impacts (AECOM, 2020a).

Installation and operation of these SCMs have effectively eliminated LPH migration and transport of COPCs/CPECs from the Terminal to the Willamette River and from the SGZ to the DGZ, as confirmed by the Terminal's groundwater model, last updated in 2017 (AECOM, 2020a).

1.5 Replacement of Hydraulic SCM Well HC-1

As part of the Hydraulic SCM system, hydraulic control wells (HC-1, HC-2, and HC-3) were installed and screened across both the SGZ and DGZ to facilitate site groundwater capture. The three HC wells were installed as a redundancy measure to enable routine maintenance to occur while maintaining groundwater capture. During the 2nd and 3rd quarters of 2022, it was observed that filter pack material and formation sand were entering HC-1 through a damaged well screen, impeding system performance. Based on these conclusions, HC-1 was removed from operation in September 2022.

¹ Hydraulic control well HC-2 is currently primarily utilized as an extraction well, due to the tendency for this well to run dry.

During September 2023, HC-1 was over-drilled, removed, and replaced with a deep well identified as HC-1D. A shallow well identified as HC-1S was installed directly adjacent to HC-1D in January 2024. Wells HC-1S and HC-1D functionally replace HC-1. HC-1D is screened in the DGZ (30 - 40ft) and HC-1S is screened in the SGZ (10 to 20 ft). Boring logs for HC-1D and HC-1S are included in Appendix C. Both HC-1D and HC-1S have been integrated into the remediation system operations during 2024.

The redundancy of the Hydraulic SCM System wells allows for maintenance and/or replacement of the wells periodically within the system with a nominal impact on the cone of depression and the reverse groundwater gradient. Figures and Tables within this report include HC-1 during the 1st through 3rd quarters of 2023 and HC-1D in the 4th quarter of 2023.

1.6 Groundwater Monitoring Program

The current groundwater monitoring program is summarized in Table 1 and Figures 4 and 5.

The current groundwater monitoring program was implemented following the 2021 MSAP, with approval from DEQ (DEQ, 2021). The 2023 groundwater monitoring program also included two new monitoring wells, MW-18, and MW-19, which were installed in December 2022. Boring Logs for these wells are in Appendix C.

The groundwater monitoring program is summarized in Table 1 and includes:

- Quarterly depth-to-groundwater measurements in 70 wells.
- Annual groundwater sample collection from 24 wells for analysis of TPHs, including TPH-G, TPH-D, and TPH-O; site-specific volatile organic compounds (VOCs) consisting of benzene, toluene, ethylbenzene, total xylenes (BTEX) and methyl tert-butyl ether (MTBE); polycyclic aromatic hydrocarbons (PAHs); and site-specific total metals, consisting of the resource conservation and recovery act (RCRA) 8 list.
- One field duplicate for the above-listed analytes and trip blanks submitted for TPH-G and VOCs
- Annual monitoring of the newly installed MW-18 and MW-19 will continue to be performed for the foreseeable future.

2. Quarterly Groundwater Elevation and LPH Thickness Gauging

Groundwater elevation and LPH thickness are gauged quarterly at the Terminal to confirm that 1) the Hydraulic SCM continues to create a cone of depression and reverse the groundwater gradient from the seawall towards the center of the Terminal, and 2) the thickness and extent of LPH remains consistent with the Terminal's current conceptual site model.

The 2023 quarterly groundwater elevation and LPH thickness gauging events were conducted on February 14, April 11, August 29, and November 28, 2023. For 2023, the groundwater gauging program included the 70 wells identified in Table 1. LPH and groundwater gauging locations for 2023 are shown in Figure 4, and the groundwater elevation and LPH thickness monitoring measurements are summarized in Table 2. The quarterly events included depth to groundwater and depth to LPH measurements at monitoring wells screened in the SGZ and DGZ.

An electronic Solinst® water-product interface probe was used to measure the depth to groundwater and depth to LPH, when present. Depth to groundwater and depth to LPH were measured to the nearest 0.01 foot from a surveyed notch or permanent mark at the top of the polyvinyl chloride (PVC) monitoring well casing. These depths along with the monitoring date, time, and type of equipment installed in the well (i.e., pump or transducer) were recorded on electronic groundwater data collection forms. Groundwater gauging field measurements and other observations were recorded in field tablet computers into Earthsoft's EQUIS Collect software and then transferred digitally into the AECOM's EQUIS Enterprise database.

2.1 Groundwater Elevation Maps

Groundwater elevations at the Terminal are influenced by the fluctuations in the Willamette River stage, groundwater recharge from rainfall, and groundwater inflow from the Portland Hills (URS, 2013). Groundwater elevations were calculated each quarter. In Q1 through Q3, groundwater elevations were calculated for 52 program wells in the SGZ, 15 program wells in the DGZ, and 3 wells screened across the SGZ and DGZ. In Q4, groundwater elevations were calculated for 52 program wells in the SGZ, 16 program wells in the DGZ, and 2 wells screened across the SGZ and DGZ. The difference in counts is due to the reinstallation of HC-1D in September 2023 screened solely in the DGZ (see section 1.5). Groundwater elevations are calculated for each well by subtracting depth-to-groundwater measurements from professionally surveyed top-of-casing elevations. When LPH is present, groundwater elevations are corrected for LPH apparent thickness by applying a 0.858 correction factor to calculated LPH thicknesses and adding the result to the calculated elevation (Table 2). Groundwater elevation contours were interpolated between wells with the aid of computer software (Surfer® by Golden Software). Groundwater elevation contour maps are produced quarterly for the SGZ and DGZ.

SGZ groundwater elevation contours (Figures 6 through 9) demonstrate shallow groundwater is contained to the Terminal by the Hydraulic SCM system and Seawall Replacement SCM. SGZ groundwater elevations are not influenced by the Willamette River because the Seawall Replacement SCM extends into the FGA confining unit below the SGZ, which prevents a direct connection between the SGZ and the Willamette River.

DGZ groundwater elevation contours (Figures 10 through 13) demonstrate groundwater is flowing to the east towards the Willamette River with convergence toward the center of the Terminal due to the presence of the Hydraulic SCM system HC extraction wells. The DGZ is hydraulically connected to the Willamette River.

2.2 LPH Thickness

Depth to LPH and depth to groundwater measurements were used to calculate LPH thickness during quarterly groundwater monitoring events (Table 2 and Figure 4). Seasonal variation in LPH thickness is summarized in Table A, below, and in Figures 14 through 17. The conceptual lateral extent of LPH during

wet and dry seasons as previously presented in the 2021 SCE is also provided in these figures for comparative purposes (AECOM, 2021b).

Table A. LPH Thickness Summary

Quarter	SGZ			DGZ
	Wells with LPH Present	Thickness Range (feet)	Greatest LPH Thickness	Wells with LPH Present
1Q	10	0.05 to 5.90	SC-01	0
2Q	12	0.02 to 1.4	HC-3	0
3Q	8	0.03 to 0.6	SC-01	0
4Q	10	0.04 to 0.26	MW-11	0

Table Acronyms:

LPH = Liquid Phase Hydrocarbons

Q = Quarter

SGZ = Shallow Ground Zone

DGZ = Deep Ground Zone

LPH at the Terminal is considered slightly mobile because it accumulates in monitor wells, where it is recovered. However, previous groundwater monitoring and source control evaluations indicate the current extent of the LPH is stable and is confined to the SGZ. LPH is primarily present within the coarse-grained paleochannel unit located in the center of the Terminal. Quarterly evaluations from 2023 indicate the LPH thickness and lateral distribution within the SGZ are consistent with previous evaluations and confirm the current understanding of the vertical and lateral extent of LPH at the Terminal. Small amounts of LPH were present in SC-05 (0.02 ft) in April 2023 and MW-19 (0.04 ft) in August 2023. Similar detections of trace amounts of LPH have been found at SC-05 during previous quarterly sampling events (e.g. December 2019). LPH was not detected in wells screened within the DGZ.

3. LPH Recovery

Groundwater and LPH are continuously recovered using the hydraulic SCM system at the Terminal. Groundwater and LPH recovered from the north area extraction wells (SC-3 through SC-10 and SC-20 through SC-23) are routed to Oil Water Separator (OWS)-1 via groundwater lines #4 and #5. Groundwater and LPH recovered from the south and central areas (SC-01, SC-02, SC-11, SC-13 through SC-19, HC-1D, HC-3, RW-02, and CP-2) are routed to OWS-2 via groundwater lines #1, #2, and #3 (Figure 18).

Upon completion of each groundwater gauging event, LPH is also manually pumped from accessible wells, as summarized in Table 3. Beginning in May 2020, manual LPH recovery was performed using a peristaltic pump to provide more accurate information about the volume of LPH present at each well. Before May 2020, manual LPH recovery occurred using a vacuum truck, which removed LPH from a greater radius, potentially impacting LPH recovery in nearby wells and potentially generating a wide smear zone in the vicinity of each purged well. While the change in methods reduced the volume of LPH recovered during manual LPH recovery, this accounts for a small proportion of the total volume of LPH removed per year by the Hydraulic SCM system (Table 3).

To monitor the performance of the Hydraulic SCM and identify site-wide trends, LPH recovery volumes from the specified areas of the site are tracked. The total volume of LPH recovered is evaluated using two product tanks present within the remediation system treatment train. Product Tank 1 accumulates product recovered from the northern area and receives LPH from OWS-1. Product Tank 2 accumulates LPH recovered from the central/southern area and receives LPH from OWS-2 as well as from all manual recovery events. See Table 3 for identification of Hydraulic SCM system recovery wells and manual recovery wells within the northern LPH recovery area and the central/southern LPH recovery area.

3.1 LPH Recovery Volume

During 2023, a total of 1,008 gallons of LPH was recovered from the Terminal's Hydraulic SCM system and manual product recovery (Table 3). The volume of LPH recovered since the inception of the recovery system in April 1997 through December 2023 is approximately 125,523 gallons.

The total LPH recovered per quarter, as provided in Table 3, is the sum of the volumes of LPH removed from the extraction and monitor wells by the Hydraulic SCM system and manual product recovery following monthly monitoring. Reported LPH volume refers only to estimates of LPH volume recovered and excludes any incidentally collected groundwater from vacuum removal from the OWSs.

3.2 LPH Recovery Trends

LPH recovery is generally confined to the central portion of the Terminal in wells installed in or near the paleochannel deposit. LPH recovery volume fluctuates annually (Figure 19). LPH recovered from the central/southern area (around HC-1 and along the southern portion of the seawall) accounted for approximately 90% of the total LPH recovered during the reporting period following historic trends. LPH recoveries for 2023 were less than the area-specific annual averages for both the northern area and the central/southern area at the Terminal (Figure 19). The Hydraulic SCM system and Seawall Replacement SCM prevent LPH migration and the lateral extent of LPH does not appear to be increasing with time, except as noted in Section 5.

LPH recovery trends in the Northern Area and Central/Southern Areas at the Terminal were evaluated using Mann-Kendall analyses of available recovery data. The Mann-Kendall test provides a nonparametric assessment to confirm the probability that a trend exists. Specifically, the Mann-Kendall test evaluates whether a time series has a monotonic upward or downward trend and does not require that the data be normally distributed or linear. The test output includes the Mann-Kendall probability (p) value, the Z statistic, and the proportion of variability explained by R^2 . Mann-Kendall calculation sheets are provided in Appendix B. For visualization in Figure 19, a linear regression was also performed.

The results of the linear regression and Mann-Kendall analysis are summarized as follows:

- In the Northern Area, the linear regression trendline had an R^2 value of 0.0125 and the Mann-Kendall probability was 0.67, which indicates changes in LPH recovery have not significantly decreased over time.
- In the Central and South Area, the linear regression trendline has an R^2 value of 0.6126 and the Mann-Kendall probability was 0.0004, which indicates the decrease in LPH recovery volume over time is statistically significant.

4. Annual Groundwater Sampling

The 2023 annual groundwater sampling event was conducted between April 10 and April 13, 2022, in accordance with the 2021 MSAP, as summarized in Table 1 and Figure 5 (AECOM, 2021a). Groundwater samples were collected from the following monitor wells screened in the SGZ and DGZ:

- MW-18 and MW-19, as stated above were added to the list of program wells sampled (see Table 1).
- 14 of the 16 SGZ wells were sampled in 2023. Two SGZ wells (P-08 and MW-10) were not sampled due to the presence of LPH at the time of sampling.
- Eight DGZ wells were sampled in 2023.

4.1 Analytical Methods

SGZ and DGZ wells were purged and sampled using standard low-flow sampling techniques. Purged groundwater was field analyzed for temperature, conductivity, dissolved oxygen, pH, oxidation-reduction potential, and turbidity. Groundwater sampling field observations were recorded in field tablet computers into Earthsoft's EQuIS Collect software and then transferred digitally into the AECOM's EQuIS Enterprise database. Well data collection logs are included in Appendix A. Table 4 summarizes the final groundwater quality parameters measured during 2018 through 2023 groundwater monitoring events.

Field personnel wore powder-less disposable nitrile gloves while conducting low-flow purging and sampling. Groundwater samples were placed in laboratory-provided sample containers. The sample containers were tightly sealed, uniquely labeled, and stored on ice. Samples were submitted with Chain-of-Custody documentation to Eurofins TestAmerica in Tacoma, Washington:

- TPH-G by Method NWTPH-Gx;
- TPH-D and TPH-O by Method NWTPH-Dx with silica gel cleanup;
- Volatile organic compounds: benzene, ethylbenzene, toluene, o-xylene, BTEX, and MTBE by Environmental Protection Agency (EPA) Method 8260D;
- PAHs by EPA 8270E-Selected Ion Monitoring (SIM);
- Total RCRA eight recoverable metals: arsenic, barium, cadmium, chromium, lead, selenium, and silver by EPA Method 6010D and mercury by EPA Method 7470A.

The laboratory analytical reports and standard data quality review reports are included in Appendix D. Data components reviewed for compliance with laboratory control and/or method-specific metrics included Chain-of-Custody forms, field/method/trip/instrument blanks, holding times, matrix spike/matrix spike duplicate recoveries, surrogate recoveries, blank spike recoveries (laboratory control samples), laboratory and field duplicate results, reporting limits, and electronic data deliverables. Laboratory data were qualified as appropriate when discrepancies were identified. The data reported, as qualified, meet project objectives as outlined in the MSAP (AECOM, 2021a).

4.2 Groundwater Analytical Results

Groundwater analytical data is assessed annually to confirm data trends in COPC/CEPC concentrations in SGZ and DGZ and to monitor groundwater concentrations of COPCs/CEPCs for atypical concentrations that could be indicative of potential on-site constituent migration. Tables 5 through 7 provide groundwater analytical data for recent (2018 through 2023) sampling events. The analytical data is compared to project-specific screening level values, as described in the 2021 SCE (AECOM, 2021b) and summarized in Table 8. Data tables summarizing analytical data from both current and decommissioned monitor wells from 2001 through 2022 were provided in the 2022 Annual Groundwater Monitoring Report and are available upon request (AECOM, 2023c).

The groundwater monitoring network was updated in 2021, as described in the MSAP, as a result, the necessary analytical data needed for trend evaluation is not available for the newly added wells to the

monitoring network (P-08, P-12, P-13, P-23, MW-10, MW-18, MW-19, MD-08, MD-10, and MD-14) (AECOM, 2021a). More in-depth assessment of data trends for the newly added wells will become feasible once sufficient SGZ and DGZ data has been collected.

4.2.1 Dissolved-Phase Gasoline-Range TPH

The lateral and vertical extent of dissolved-phase TPH-G in groundwater from both the SGZ and DGZ generally show stable concentrations consistent with previous investigations (Table 5, Figure 20). As described in detail below, groundwater from select wells in the SGZ exhibited fluctuating concentrations of TPH-G. There is a strong correlation between the variability in dissolved-phase TPH-G and the fluctuation in groundwater elevation as seen in Figure 20. Additionally, during high water conditions when groundwater elevations rise, LPH impacts from the smear zone may be intercepted by the water table, resulting in increased detections of dissolved phase TPH on the perimeter of the known LPH impact boundary.

In the SGZ in 2023, dissolved-phase TPH-G was detected in 12 of the 16 annual network monitor wells, ranging from 310 µg/L (P-17) to 170,000 µg/L (MW-18), 2 wells were not sampled due to LPH (P-08 and MW-10). The greatest concentrations of TPH-G were reported in MW-18 (170,000 µg/L) and P-23 (3,900 µg/L), located outside the perimeter of the known LPH impact boundary.

Elevated concentrations of dissolved-phase TPH-G in the SGZ were detected in 2022 and 2023 in the groundwater located directly downgradient of the North Tank Farm (MW-17, MW-18, and MW-19). Following focused investigations (see Section 5), multiple lines of evidence indicated the mechanical integrity of the North Tank Farm process water system piping potentially contributed to elevated TPH-G groundwater concentrations. As noted in Section 5, details of the source identification investigation and focused groundwater sampling are reported under separate cover. Continued monitoring of dissolved-phase TPH-G down-gradient of the North Tank Farm in the newly installed MW-18 and MW-19 monitor wells will be conducted as part of the ongoing annual groundwater sampling.

TPH-G concentrations at monitor well P-23 have increased since 2021 (the first year of annual monitoring at this location), (Figure 20). Continued monitoring of dissolved-phase TPH-G at P-23 will be conducted as part of the annual groundwater sampling. This additional data will be used to evaluate if this increase can be attributed to seasonal groundwater elevation variability or potential constituent migration. TPH-G concentrations have also increased at MW-14 from 2021 and 2022, however, these concentration increases are consistent with previously reported values at this location (Figure 20).

In the DGZ, dissolved-phase TPH-G was detected in wells MD-01, MD-07, and MD-08 at concentrations ranging from 230 µg/L (MD-08) to 1,300 µg/L (MD-07). These DGZ wells are in the vicinity of known LPH impacts within the paleochannel. TPH-G concentrations in DGZ wells are consistent with previous concentrations reported in 2008 through 2022 (Figure 21).

TPH-G concentrations in the DGZ and the majority of the SGZ wells (except for those listed above) indicate the lateral distribution of TPH-G within the SGZ and DGZ are consistent with previous evaluations and confirm the current understanding of the vertical and lateral extent of TPH-G at the Terminal. However, additional analytical data is needed to understand trendlines for several SGZ wells (MW-18, MW-19, P-23).

4.2.2 Dissolved-Phase Diesel-Range TPH

The lateral and vertical extent of dissolved-phase TPH-D in groundwater from both the SGZ and DGZ generally show stable plume boundaries consistent with previous investigations (Table 5, Figures 21,22). Dissolved-phase TPH-D is currently present in the SGZ in the central and northern areas of the Terminal, which corresponds with areas of known LPH impacts.

In the SGZ in 2023, dissolved-phase TPH-D was detected in 12 of the 16 annual network monitor wells, ranging from 170 µg/L (P-04) to 5,300 µg/L (MW-P-12), 2 wells were not sampled due to LPH (P-08 and MW-10) (Table 5). The greatest concentrations of TPH-D were reported in P-12 (5,300 µg/L) and MW-18 (3,800 µg/L). Continued monitoring of dissolved-phase TPH-D at these locations will be conducted as part of the annual groundwater sampling, to understand potential trends in dissolved-phase TPH-D.

In the DGZ, dissolved-phase TPH-D was detected in three of the eight annual network monitor wells, MD-01, MD-07, and MD-08, at concentrations ranging from 230 µg/L to 1,300 µg/L. These DGZ wells are in the vicinity of the known LPH impacts within the paleochannel. TPH-D concentrations in DGZ wells are consistent with previous concentrations reported in 2008 through 2021 (Figure 22).

TPH-D concentrations in the DGZ and the majority of the SGZ wells (except for those listed above) indicate the lateral distribution of TPH-D within the SGZ and DGZ are consistent with previous evaluations and confirm the current understanding of the vertical and lateral extent of TPH-D at the Terminal. However, additional data is needed to confirm trendlines for several SGZ wells (P-12 and MW-18).

4.2.3 Other Constituents

Other COPCs/CEPCs at the Terminal include select VOCs, PAHs, and naturally occurring metals that could be mobilized by reducing conditions in groundwater. Concentrations of these constituents are analyzed in SGZ and DGZ wells to monitor for atypical concentrations that could be indicative of potential on-site constituent migration. This subsection provides a summary of analytical data. It assesses concentrations of these constituents in comparison to dissolved-phase TPH-G and TPH-D concentrations, as described above, and previously reported concentrations. Analytical data for these constituents are provided in the following locations:

- VOCs included in the current groundwater monitoring program include BTEX and MTBE. Table 5 provides VOC concentrations for recent (2018 through 2023) sampling events.
- PAHs are included in the current groundwater monitoring program. Table 6 provides PAH concentrations for recent (2018 through 2023) sampling events.
- Naturally occurring metals, specifically arsenic, and barium, can be mobilized by reducing conditions in groundwater due to the biodegradation of petroleum hydrocarbons; arsenic and barium have been identified as COPCs/CEPCs for the Terminal (AECOM, 2021b). Table 7 provides dissolved metal concentrations for recent (2018 through 2023) sampling events.

During 2023, concentrations of naturally occurring metals and PAHs are similar to previously reported concentrations and confirm the current understanding of COPC/CEPC distribution at the Terminal. Results from 2023 sampling in MW-17 demonstrate decreased VOC concentrations from 2022 values, as summarized in Table 5. Further discussion regarding atypical concentrations of VOCs present in MW-17 is presented in the *Additional Action Summary Report - Revision 2* (AECOM, 2023b) report. These constituents will continue to be monitored, as described above and in Section 5.

5. Additional Source Identification Activities

A description and the results of the activities conducted in 2022 and 2023 to better understand and identify potential sources of the sheen observed on the surface water outboard of the seawall in December 2021 are included in the following documents previously submitted to ODEQ:

- *Seawall Maintenance Construction Completion Report (AECOM, 2022a)*
- *Revised Additional Action Work Plan (AECOM, 2022b)*
- *2023 Tieback Inspection Work Plan (AECOM, 2023a)*
- *2023 Additional Action Summary Report - Revision 2 (AECOM, 2023b)*
- *Seawall Tieback Inspection Summary Report, (AECOM, 2024)*

Monitor wells MW-18 and MW-19, were installed as part of the additional action activities and have been incorporated into the annual groundwater monitoring network for the foreseeable future. The groundwater monitoring network as described in the MSAP (with the addition of MW-18 and MW-19) is sufficient for long-term monitoring of COPCs/CEPCs at the Terminal.

6. Conclusions and Recommendations

Annual groundwater monitoring at the Terminal in 2023 included quarterly groundwater elevation gauging, quarterly LPH thickness monitoring, and annual groundwater sampling. The 2023 distribution of LPH and dissolved-phase COPCs/CEPCs in groundwater is generally consistent with the area of extent detailed in the *Upland Feasibility Study*, the *Groundwater Modeling Report*, and the 2021 SCE (URS, 2012, URS, 2013 and AECOM, 2021b).

Specifically, the 2023 annual groundwater monitoring activities indicate:

- A total of 1,008 gallons of LPH was recovered by the Hydraulic SCM system and directly from SGZ wells.
- The Hydraulic SCM system consistently generated an artificial upward hydraulic gradient in the center of the Terminal during 2023.
- Shallow groundwater within the SGZ and associated LPH and dissolved-phase COPCs/CEPCs are contained to the Terminal by the Hydraulic SCM system, the Seawall Replacement SCM, and the LWC SCM. DGZ groundwater flows east towards the Willamette River
- LPH is present within the SGZ, primarily within the coarse-grained paleochannel unit and overlying sandy fill unit located in the center and southern portions of the Terminal. LPH is not present in wells screened within the DGZ. The LPH thickness and lateral distribution within the SGZ in 2022 is generally constant with previous evaluations and confirm the current understanding of the vertical and lateral extent of LPH at the Terminal. A small amount of LPH was detected in the newly installed MW-19. This location is directly adjacent to the known LPH impact boundary.
- Concentrations of dissolved-phase TPH-G and TPH-D have remained stable over time in the vicinity of the paleochannel. The presence of LPH in this area is likely to prevent a significant reduction of dissolved-phase gasoline concentrations in SGZ.
- Dissolved phase COPCs/CEPCs impacts, as indicated by TPH-G and TPH-D concentrations in groundwater, were generally present in the SGZ in the central and northern areas of the Terminal, which corresponds with areas where LPH is principally present. The lateral extent of elevated concentrations of TPH-G and TPH-D are mostly consistent with previous groundwater monitoring events and confirm the current understanding of the vertical and lateral extent of COPCs/CEPCs at the Terminal.
- Continued annual groundwater monitoring will take place in 2024 following the program outline in Table 1.
- Recent elevated concentrations of dissolved phase TPH-G and VOC down-gradient of the North Tank Farm (as detected and evaluated during the Additional Response Action) will continue to be monitored through the addition of MW-18 and MW-19 into the annual monitoring well network.
- TPH-G concentrations at monitor well P-23 will continue to be monitored to understand trends at this location.

7. References

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- AECOM, 2022a. *Seawall Maintenance Construction Completion Report*, Seaport Midstream Partners, LLC, Portland Terminal. May 9, 2022
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- DEQ, 2021. DEQ letter response to *Modification – Annual Groundwater Monitoring Sampling and Analysis Plan*. June 24.
- URS, 2006. *Final Source Control Implementation Report*. Prepared for BP West Coast Products, LLC for the BP Bulk Terminal 22T, Portland, Oregon. July.
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- URS, 2011. *Groundwater Recontamination Assessment Report*, Prepared for Atlantic Richfield Company for the BP Bulk Terminal 22T, Portland, Oregon. January.
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- URS, 2013. *Groundwater Modeling Report*, Prepared by URS Corporation for Atlantic Richfield Company for BP Bulk Terminal 22T, Portland, Oregon. July 2013.
- URS, 2014. *Interim Remedial Measure Work Plan*, Prepared by URS for Atlantic Richfield Company for BP Bulk Terminal 22T, Portland, Oregon. July 2014.

Tables

Table 1. Groundwater Monitoring Program
Annual Groundwater Monitoring Report 2023
SMP Portland Terminal
Portland, Oregon

Well ID	Screen Interval (feet bgs)	Well Use	Groundwater Zone	Included in Quarterly Gauging Program	Included in Annual Sampling Program	Comments
P-01	3 - 13	MW	SGZ	X	X	
P-02	3 - 18	MW	SGZ	X	X	
P-03	3 - 18	MW	SGZ	X	--	
P-04	5 - 15	MW	SGZ	X	X	
P-05	7 - 17	MW	SGZ	X	--	
P-08	15 - 30	MW	SGZ	--	X	Not sampled due to presence of LPH
P-09	13.5 - 29	MW	SGZ	--	--	
P-11	4 - 24	MW	SGZ	--	--	
P-12	10 - 25	MW	SGZ	X	X	
P-13	10 - 25	MW	SGZ	X	X	
P-14	5 - 20	MW	SGZ	X	--	
P-16	3 - 18	MW	SGZ	X	--	
P-17	4 - 18	MW	SGZ	X	X	
P-18	5 - 25	MW	SGZ	X	X	
P-19	5 - 20	MW	SGZ	X	--	
P-20	5 - 20	MW	SGZ	X	--	
P-21	4.5 - 19.5	MW	SGZ	X	--	
P-22	5 - 20	MW	SGZ	X	--	
P-23	6 - 21	MW	SGZ	X	X	
MW-01	10 - 30	MW	SGZ	--	--	
MW-02	7 - 30	MW	SGZ	X	--	
MW-05	4 - 17	MW	SGZ	X	X	
MW-06	4 - 17	MW	SGZ	X	--	
MW-07	15 - 35	MW	SGZ	X	--	
MW-08	15 - 35	MW	SGZ	--	--	
MW-09	17.5 - 39	MW	SGZ	--	--	
MW-10	10 - 35	MW	SGZ	X	X	Not sampled due to presence of LPH
MW-11	10 - 35	MW	SGZ	X	--	
MW-12	25 - 60	MW	SGZ	--	--	
MW-13	25 - 60	MW	SGZ	--	--	
MW-14	22 - 24	MW	SGZ	X	X	
MW-15	13 - 28	MW	SGZ	X	--	
MW-16	14 - 24	MW	SGZ	--	X	
MW-17	15 - 25	MW	SGZ	X	X	
MW-18	14.5-24.5	MW	SGZ	X	X	Installed in December 2022
MW-19	14-24	MW	SGZ	X	X	Installed in December 2022
RW-01	7 - 17	MW	SGZ	X	--	
RW-02	7 - 17	MW	SGZ	X	--	

Table 1. Groundwater Monitoring Program
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Portland, Oregon

Well ID	Screen Interval (feet bgs)	Well Use	Groundwater Zone	Included in Quarterly Gauging Program	Included in Annual Sampling Program	Comments
CP-1	13.5 - 63.5	MW	SGZ	--	--	
CP-2	17 - 54	MW	SGZ	X	--	
SC-01	10 - 35	EX	SGZ	X	--	
SC-02	10 - 35	EX	SGZ	X	--	
SC-03	20 - 41	EX	SGZ	X	--	
SC-04	20 - 41.5	EX	SGZ	X	--	
SC-05	20 - 41.5	EX	SGZ	X	--	
SC-06	20 - 40	EX	SGZ	X	--	
SC-07	20 - 40	EX	SGZ	X	--	
SC-08	20 - 40	EX	SGZ	X	--	
SC-09	20 - 40	EX	SGZ	X	--	
SC-10	20 - 40	EX	SGZ	X	--	
SC-11	20 - 40	EX	SGZ	X	--	
SC-13	20 - 40	EX	SGZ	X	--	
SC-14	20 - 40	EX	SGZ	X	--	
SC-15	20 - 40	EX	SGZ	X	--	
SC-16	20 - 40	EX	SGZ	X	--	
SC-17	20 - 40	EX	SGZ	X	--	
SC-18	20 - 40	EX	SGZ	X	--	
SC-19	20 - 40	EX	SGZ	X	--	
SC-20	13 - 36	EX	SGZ	X	--	
SC-21	13 - 21	EX	SGZ	X	--	
SC-22	12 - 27	EX	SGZ	X	--	
SC-23	8 - 24	EX	SGZ	X	--	
HC-1 ^a (HC-1D)	13 - 63.5 (30-40)	EX	SGZ/DGZ (DGZ)	X	--	HC-1 reinstalled in September 2023 as HC-1D.
HC-2	17 - 52	EX	SGZ/DGZ	X	--	
HC-3	15 - 55	EX	SGZ/DGZ	X	--	
DW-01	24 - 59	MW	SGZ	--	--	
DW-04	17 - 42	MW	DGZ	X	--	
MD-01	33 - 38	MW	DGZ	X	X	
MD-02	33 - 38	MW	DGZ	X	X	
MD-03	33 - 39	MW	DGZ	X	--	
MD-04	33 - 38	MW	DGZ	X	--	
MD-05	33 - 39	MW	DGZ	X	--	
MD-06	43 - 48	MW	DGZ	X	X	
MD-07	36 - 41	MW	DGZ	X	X	
MD-08	38 - 43	MW	DGZ	X	X	
MD-09	33 - 38	MW	DGZ	X	--	

Table 1. Groundwater Monitoring Program
Annual Groundwater Monitoring Report 2023
SMP Portland Terminal
Portland, Oregon

Well ID	Screen Interval (feet bgs)	Well Use	Groundwater Zone	Included in Quarterly Gauging Program	Included in Annual Sampling Program	Comments
MD-10	38 - 43	MW	DGZ	X	X	
MD-11	43 - 48.5	MW	DGZ	X	--	
MD-12	32 - 38	MW	DGZ	X	--	
MD-13	33 - 38	MW	DGZ	X	X	DEQ Background well
MD-14	42 - 52	MW	DGZ	X	X	
W-1	15 - 30	MW	SGZ	--	--	
Total locations per groundwater zone			SGZ	52	16	Excludes HC wells
			DGZ	15	8	
Total locations				70	24	

Notes and Acronyms:

Annual groundwater sampling program consists of:

- TPH-G by Method NWTPH-Gx;
- TPH-D and TPH-O by Method NWTPH-Dx with SGC;
- BTEX and MTBE by EPA Method 8260D;
- PAHs by EPA Method 8270E-Selective Ion Mode (SIM);
- Total RCRA 8 metals by EPA SW-846 Method 6010D and Method 7470A.

-- = not included in sample program

BTEX = benzene, toluene, ethylbenzene, and xylenes

DGZ = deep groundwater zone

EX = extraction well

feet bgs = feet below ground surface

LPH = liquid phase hydrocarbons

MTBE = methyl tert-butyl ether

MW = monitoring well

PAHs = polycyclic aromatic hydrocarbons

RCRA 8 metals = arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver

SGC = analyzed following silica gel cleanup

SGZ = shallow groundwater zone

TPH-D (SGC) = diesel-range total petroleum hydrocarbons

TPH-G = gasoline-range total petroleum hydrocarbons

TPH-O (SGC) = oil-range total petroleum hydrocarbons

X = included in sample program

^aHC-1 was over-drilled, removed, and replaced with a deep well identified as HC-1D in September of 2023. A shallow well identified as HC-1S was installed directly adjacent to HC-1D in January of 2024. Wells HC-1S and HC-1D functionally replace HC-1. Well HC-1S is not portrayed in this table because it was not gauged or sampled in 2023.

Table 2. Groundwater Elevations and Liquid Phase Hydrocarbon Thickness

Annual Groundwater Monitoring Report 2023

SMP Portland Terminal

Portland, Oregon

Well ID	Groundwater Zone	State Plane Y-Coordinate (Northing)	State Plane X-Coordinate (Easting)	TOC Elevation (feet CPD)	Gauging Date	Depth to LPH	Depth to Groundwater (feet btoc)	LPH Thickness (feet)	Groundwater Elevation (feet CPD)	Corrected Groundwater Elevation (feet CPD)
CP-2	SGZ	711,046	7,619,288	33.73	2/14/2023	24.7	24.85	0.15	8.88	9.00
					4/11/2023	--	23.06	0.00	10.67	10.67
					8/29/2023	25.80	25.94	0.14	7.79	7.91
					11/28/2023	25.29	25.85	0.56	7.88	8.36
DW-04	DGZ	710,728	7,619,001	40.30	2/14/2023	--	11.70	0.00	28.60	28.60
					4/11/2023	--	10.02	0.00	30.28	30.28
					8/29/2023	--	13.32	0.00	26.98	26.98
					11/28/2023	--	12.89	0.00	27.41	27.41
HC-1 ^a	SGZ/DGZ	711,077	7,619,350	31.40	2/14/2023	--	22.62	0.00	8.78	8.78
					4/11/2023	20.93	21.38	0.45	10.02	10.41
					8/29/2023	--	22.76	0.00	8.64	8.64
HC-1D ^a	(DGZ)				11/28/2023	25.06	25.11	0.05	6.29	6.33
HC-2	SGZ/DGZ	711,041	7,619,275	32.06	2/14/2023	--	16.45	0.00	15.61	15.61
					4/11/2023	--	17.14	0.00	14.92	14.92
					8/29/2023	--	16.28	0.00	15.78	15.78
					11/28/2023	--	17.19	0.00	14.87	14.87
HC-3	SGZ/DGZ	711,057	7,619,308	31.85	2/14/2023	27.09	27.90	0.81	3.95	4.65
					4/11/2023	26.68	28.08	1.40	3.77	4.97
					8/29/2023	25.19	25.60	0.41	6.25	6.60
					11/28/2023	26.94	27.70	0.76	4.15	4.80
MD-01	DGZ	711,038	7,619,196	33.68	2/14/2023	--	13.92	0.00	19.76	19.76
					4/11/2023	--	12.43	0.00	21.25	21.25
					8/29/2023	--	15.14	0.00	18.54	18.54
					11/28/2023	--	14.55	0.00	19.13	19.13
MD-02	DGZ	711,220	7,619,199	33.72	2/14/2023	--	15.32	0.00	18.40	18.40
					4/11/2023	--	13.77	0.00	19.95	19.95
					8/29/2023	--	16.52	0.00	17.20	17.20
					11/28/2023	--	16.00	0.00	17.72	17.72
MD-03	DGZ	711,145	7,619,251	33.78	2/14/2023	--	24.50	0.00	9.28	9.28
					4/11/2023	--	22.54	0.00	11.24	11.24
					8/29/2023	--	25.20	0.00	8.58	8.58
					11/28/2023	--	25.28	0.00	8.50	8.50
MD-04	DGZ	711,094	7,619,361	33.14	2/14/2023	--	24.55	0.00	8.59	8.59
					4/11/2023	--	22.75	0.00	10.39	10.39
					8/29/2023	--	25.21	0.00	7.93	7.93
					11/28/2023	--	25.15	0.00	7.99	7.99
MD-05	DGZ	711,074	7,619,299	33.25	2/14/2023	--	24.18	0.00	9.07	9.07
					4/11/2023	--	22.58	0.00	10.67	10.67
					8/29/2023	--	24.72	0.00	8.53	8.53
					11/28/2023	--	24.64	0.00	8.61	8.61

Table 2. Groundwater Elevations and Liquid Phase Hydrocarbon Thickness

Annual Groundwater Monitoring Report 2023

SMP Portland Terminal

Portland, Oregon

Well ID	Groundwater Zone	State Plane Y-Coordinate (Northing)	State Plane X-Coordinate (Easting)	TOC Elevation (feet CPD)	Gauging Date	Depth to LPH	Depth to Groundwater (feet btoc)	LPH Thickness (feet)	Groundwater Elevation (feet CPD)	Corrected Groundwater Elevation (feet CPD)
MD-06	DGZ	711,138	7,619,396	31.28	2/14/2023	--	23.00	0.00	8.28	8.28
					4/11/2023	--	21.29	0.00	9.99	9.99
					8/29/2023	--	23.85	0.00	7.43	7.43
					11/28/2023	--	23.93	0.00	7.35	7.35
MD-07	DGZ	711,016	7,619,433	33.33	2/14/2023	--	24.60	0.00	8.73	8.73
					4/11/2023	--	22.80	0.00	10.53	10.53
					8/29/2023	--	25.84	0.00	7.49	7.49
					11/28/2023	--	25.61	0.00	7.72	7.72
MD-08	DGZ	710,944	7,619,371	35.68	2/14/2023	--	26.80	0.00	8.88	8.88
					4/11/2023	--	24.97	0.00	10.71	10.71
					8/29/2023	--	27.71	0.00	7.97	7.97
					11/28/2023	--	27.59	0.00	8.09	8.09
MD-09	DGZ	711,405	7,618,986	31.84	2/14/2023	--	10.89	0.00	20.95	20.95
					4/11/2023	--	10.31	0.00	21.53	21.53
					8/29/2023	--	12.77	0.00	19.07	19.07
					11/28/2023	--	12.35	0.00	19.49	19.49
MD-10	DGZ	710,835	7,619,426	32.88	2/14/2023	--	12.50	0.00	20.38	20.38
					4/11/2023	--	10.52	0.00	22.36	22.36
					8/29/2023	--	14.63	0.00	18.25	18.25
					11/28/2023	--	11.47	0.00	21.41	21.41
MD-11	DGZ	710,732	7,619,522	32.66	2/14/2023	--	8.40	0.00	24.26	24.26
					4/11/2023	--	6.58	0.00	26.08	26.08
					8/29/2023	--	12.03	0.00	20.63	20.63
					11/28/2023	--	7.99	0.00	24.67	24.67
MD-12	DGZ	710,744	7,619,327	33.99	2/14/2023	--	8.90	0.00	25.09	25.09
					4/11/2023	--	6.23	0.00	27.76	27.76
					8/29/2023	--	10.56	0.00	23.43	23.43
					11/28/2023	--	8.72	0.00	25.27	25.27
MD-13	DGZ	711,186	7,618,916	32.43	2/14/2023	--	3.50	0.00	28.93	28.93
					4/11/2023	--	1.43	0.00	31.00	31.00
					8/29/2023	--	5.67	0.00	26.76	26.76
					11/28/2023	--	5.16	0.00	27.27	27.27
MD-14	DGZ	711,360	7,619,199	32.15	2/14/2023	--	23.11	0.00	9.04	9.04
					4/11/2023	--	20.87	0.00	11.28	11.28
					8/29/2023	--	23.92	0.00	8.23	8.23
					11/28/2023	--	24.14	0.00	8.01	8.01
MW-02	SGZ	710,965	7,619,051	35.31	2/14/2023	6.5	6.55	0.05	28.76	28.80
					4/11/2023	5.47	5.72	0.25	29.59	29.80
					8/29/2023	--	7.97	0.00	27.34	27.34
					11/28/2023	7.84	7.88	0.04	27.43	27.46

Table 2. Groundwater Elevations and Liquid Phase Hydrocarbon Thickness

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MW-05	SGZ	710,669	7,619,079	39.91	2/14/2023	--	6.00	0.00	33.91	33.91
					4/11/2023	--	1.30	0.00	38.61	38.61
					8/29/2023	--	12.79	0.00	27.12	27.12
					11/28/2023	--	8.46	0.00	31.45	31.45
MW-06	SGZ	710,571	7,619,162	39.51	2/14/2023	--	5.68	0.00	33.83	33.83
					4/11/2023	--	1.66	0.00	37.85	37.85
					8/29/2023	--	11.44	0.00	28.07	28.07
					11/28/2023	--	7.08	0.00	32.43	32.43
MW-07	SGZ	711,070	7,619,382	33.64	2/14/2023	22.02	22.19	0.17	11.45	11.60
					4/11/2023	20.21	20.36	0.15	13.28	13.41
					8/29/2023	--	25.50	0.00	8.14	8.14
					11/28/2023	22.13	22.30	0.17	11.34	11.49
MW-10	SGZ	711,111	7,619,362	32.72	2/14/2023	21.9	22.03	0.13	10.69	10.80
					4/11/2023	20.03	20.06	0.03	12.66	12.69
					8/29/2023	25.62	25.72	0.10	7.00	7.09
					11/28/2023	21.98	22.11	0.13	10.61	10.72
MW-11	SGZ	711,084	7,619,307	32.13	2/14/2023	23.03	24.10	1.07	8.03	8.95
					4/11/2023	21.4	22.38	0.98	9.75	10.59
					8/29/2023	Trace	23.52	0.00	8.61	8.61
					11/28/2023	23.16	25.00	1.84	7.13	8.71
MW-14	SGZ	711,167	7,619,290	33.83	2/14/2023	--	19.65	0.00	14.18	14.18
					4/11/2023	--	18.73	0.00	15.10	15.10
					8/29/2023	--	21.81	0.00	12.02	12.02
					11/28/2023	--	20.11	0.00	13.72	13.72
MW-15	SGZ	711,074	7,619,363	33.73	2/14/2023	24.98	25.20	0.22	8.53	8.72
					4/11/2023	21.42	21.60	0.18	12.13	12.28
					8/29/2023	25.4	25.62	0.22	8.11	8.30
					11/28/2023	24.88	25.27	0.39	8.46	8.79
MW-17	SGZ	711,357	7,619,195	32.76	2/14/2023	--	20.50	0.00	12.26	12.26
					4/11/2023	--	19.12	0.00	13.64	13.64
					8/29/2023	--	21.42	0.00	11.34	11.34
					11/28/2023	--	20.67	0.00	12.09	12.09
MW-18	SGZ	711,194	7,618,661	32.75	2/14/2023	--	19.40	0.00	13.35	13.35
					4/11/2023	--	18.00	0.00	14.75	14.75
					8/29/2023	--	21.34	0.00	11.41	11.41
					11/28/2023	--	19.72	0.00	13.03	13.03

Table 2. Groundwater Elevations and Liquid Phase Hydrocarbon Thickness

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MW-19	SGZ	711,154	7,618,692	32.59	2/14/2023	--	19.50	0.00	13.09	13.09
					4/11/2023	--	18.67	0.00	13.92	13.92
					8/29/2023	21.40	21.44	0.04	11.15	11.18
					11/28/2023	--	19.97	0.00	12.62	12.62
P-01	SGZ	711,117	7,618,844	30.36	2/14/2023	--	3.40	0.00	26.96	26.96
					4/11/2023	--	1.28	0.00	29.08	29.08
					8/29/2023	--	4.83	0.00	25.53	25.53
					11/28/2023	--	4.47	0.00	25.89	25.89
P-02	SGZ	711,342	7,618,824	32.16	2/14/2023	--	6.06	0.00	26.10	26.10
					4/11/2023	--	4.48	0.00	27.68	27.68
					8/29/2023	--	9.32	0.00	22.84	22.84
					11/28/2023	--	6.87	0.00	25.29	25.29
P-03	SGZ	711,105	7,619,022	31.37	2/14/2023	--	2.52	0.00	28.85	28.85
					4/11/2023	--	1.65	0.00	29.72	29.72
					8/29/2023	--	4.61	0.00	26.76	26.76
					11/28/2023	--	3.88	0.00	27.49	27.49
P-04	SGZ	711,399	7,618,990	31.35	2/14/2023	--	12.50	0.00	18.85	18.85
					4/11/2023	--	10.57	0.00	20.78	20.78
					8/29/2023	--	14.68	0.00	16.67	16.67
					11/28/2023	--	13.33	0.00	18.02	18.02
P-05	SGZ	711,217	7,619,174	33.87	2/14/2023	--	14.89	0.00	18.98	18.98
					4/11/2023	--	12.62	0.00	21.25	21.25
					8/29/2023	--	15.29	0.00	18.58	18.58
					11/28/2023	--	15.02	0.00	18.85	18.85
P-12	SGZ	710,974	7,619,423	34.38	2/14/2023	--	17.13	0.00	17.25	17.25
					4/11/2023	--	15.86	0.00	18.52	18.52
					8/29/2023	--	19.06	0.00	15.32	15.32
					11/28/2023	--	16.86	0.00	17.52	17.52
P-13	SGZ	710,920	7,619,483	33.09	2/14/2023	--	15.85	0.00	17.24	17.24
					4/11/2023	--	14.62	0.00	18.47	18.47
					8/29/2023	--	17.74	0.00	15.35	15.35
					11/28/2023	--	15.56	0.00	17.53	17.53
P-14	SGZ	710,791	7,619,540	32.27	2/14/2023	--	15.00	0.00	17.27	17.27
					4/11/2023	--	13.81	0.00	18.46	18.46
					8/29/2023	--	16.82	0.00	15.45	15.45
					11/28/2023	--	14.71	0.00	17.56	17.56

Table 2. Groundwater Elevations and Liquid Phase Hydrocarbon Thickness

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P-16	SGZ	710,690	7,619,427	33.38	2/14/2023	--	14.30	0.00	19.08	19.08
					4/11/2023	--	12.98	0.00	20.40	20.40
					8/29/2023	--	15.23	0.00	18.15	18.15
					11/28/2023	--	14.31	0.00	19.07	19.07
P-17	SGZ	710,776	7,619,319	33.89	2/14/2023	--	10.90	0.00	22.99	22.99
					4/11/2023	--	9.65	0.00	24.24	24.24
					8/29/2023	--	12.66	0.00	21.23	21.23
					11/28/2023	--	10.96	0.00	22.93	22.93
P-18	SGZ	710,941	7,619,361	35.71	2/14/2023	--	13.74	0.00	21.97	21.97
					4/11/2023	--	12.46	0.00	23.25	23.25
					8/29/2023	--	14.67	0.00	21.04	21.04
					11/28/2023	--	13.84	0.00	21.87	21.87
P-19	SGZ	710,911	7,619,288	35.52	2/14/2023	--	12.26	0.00	23.26	23.26
					4/11/2023	--	9.72	0.00	25.80	25.80
					8/29/2023	--	13.49	0.00	22.03	22.03
					11/28/2023	--	12.50	0.00	23.02	23.02
P-20	SGZ	710,863	7,619,236	35.87	2/14/2023	--	12.60	0.00	23.27	23.27
					4/11/2023	--	10.06	0.00	25.81	25.81
					8/29/2023	13.79	13.82	0.03	22.05	22.08
					11/28/2023	--	12.86	0.00	23.01	23.01
P-21	SGZ	710,855	7,619,401	32.59	2/14/2023	--	13.32	0.00	19.27	19.27
					4/11/2023	--	12.19	0.00	20.40	20.40
					8/29/2023	--	14.29	0.00	18.30	18.30
					11/28/2023	--	13.21	0.00	19.38	19.38
P-22	SGZ	710,849	7,619,298	33.50	2/14/2023	--	10.80	0.00	22.70	22.70
					4/11/2023	--	8.56	0.00	24.94	24.94
					8/29/2023	12.38	12.42	0.04	21.08	21.12
					11/28/2023	--	11.04	0.00	22.46	22.46
P-23	SGZ	710,832	7,619,548	31.91	2/14/2023	--	14.91	0.00	17.00	17.00
					4/11/2023	--	13.70	0.00	18.21	18.21
					8/29/2023	--	16.45	0.00	15.46	15.46
					11/28/2023	--	14.63	0.00	17.28	17.28
RW-01	SGZ	710,998	7,619,117	34.48	2/14/2023	12.96	13.19	0.23	21.29	21.49
					4/11/2023	10.88	10.96	0.08	23.52	23.59
					8/29/2023	--	14.47	0.00	20.01	20.01
					11/28/2023	--	13.83	0.00	20.65	20.65

Table 2. Groundwater Elevations and Liquid Phase Hydrocarbon Thickness

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RW-02	SGZ	711,003	7,619,246	33.61	2/14/2023	14.40	15.30	0.90	18.31	19.08
					4/11/2023	12.16	12.88	0.72	20.73	21.35
					8/29/2023	--	15.77	0.00	17.84	17.84
					11/28/2023	15.25	16.11	0.86	17.50	18.24
SC-01	SGZ	711,026	7,619,303	33.43	2/14/2023	21.24	27.14	5.90	6.29	11.35
					4/11/2023	22.85	23.68	0.83	9.75	10.46
					8/29/2023	25.02	25.62	0.60	7.81	8.32
					11/28/2023	24.78	25.80	1.02	7.63	8.50
SC-02	SGZ	711,056	7,619,357	33.18	2/14/2023	--	25.06	0.00	8.12	8.12
					4/11/2023	--	24.98	0.00	8.20	8.20
					8/29/2023	--	25.36	0.00	7.82	7.82
					11/28/2023	--	25.02	0.00	8.16	8.16
SC-03	SGZ	711,373	7,619,230	30.96	2/14/2023	--	26.38	0.00	4.58	4.58
					4/11/2023	--	26.40	0.00	4.56	4.56
					8/29/2023	--	26.49	0.00	4.47	4.47
					11/28/2023	--	24.37	0.00	6.59	6.59
SC-04	SGZ	711,333	7,619,260	32.71	2/14/2023	--	29.90	0.00	2.81	2.81
					4/11/2023	--	29.78	0.00	2.93	2.93
					8/29/2023	--	29.62	0.00	3.09	3.09
					11/28/2023	--	28.25	0.00	4.46	4.46
SC-05	SGZ	711,289	7,619,280	33.25	2/14/2023	--	27.00	0.00	6.25	6.25
					4/11/2023	26.96	26.98	0.02	6.27	6.28
					8/29/2023	--	27.02	0.00	6.23	6.23
					11/28/2023	--	26.94	0.00	6.31	6.31
SC-06	SGZ	711,252	7,619,312	31.27	2/14/2023	--	24.82	0.00	6.45	6.45
					4/11/2023	--	24.79	0.00	6.48	6.48
					8/29/2023	--	24.89	0.00	6.38	6.38
					11/28/2023	--	24.65	0.00	6.62	6.62
SC-07	SGZ	711,232	7,619,327	30.34	2/14/2023	--	24.74	0.00	5.60	5.60
					4/11/2023	--	24.73	0.00	5.61	5.61
					8/29/2023	--	24.75	0.00	5.59	5.59
					11/28/2023	--	24.66	0.00	5.68	5.68
SC-08	SGZ	711,210	7,619,342	30.15	2/14/2023	--	24.91	0.00	5.24	5.24
					4/11/2023	--	24.75	0.00	5.40	5.40
					8/29/2023	--	24.80	0.00	5.35	5.35
					11/28/2023	--	24.90	0.00	5.25	5.25

Table 2. Groundwater Elevations and Liquid Phase Hydrocarbon Thickness

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SC-09	SGZ	711,193	7,619,353	29.88	2/14/2023	--	24.05	0.00	5.83	5.83
					4/11/2023	--	24.51	0.00	5.37	5.37
					8/29/2023	--	25.12	0.00	4.76	4.76
					11/28/2023	--	24.97	0.00	4.91	4.91
SC-10	SGZ	711,170	7,619,372	30.23	2/14/2023	--	21.25	0.00	8.98	8.98
					4/11/2023	--	24.49	0.00	5.74	5.74
					8/29/2023	--	24.67	0.00	5.56	5.56
					11/28/2023	--	23.90	0.00	6.33	6.33
SC-11	SGZ	711,149	7,619,388	30.28	2/14/2023	--	25.06	0.00	5.22	5.22
					4/11/2023	24.73	24.75	0.02	5.53	5.55
					8/29/2023	--	24.63	0.00	5.65	5.65
					11/28/2023	--	24.70	0.00	5.58	5.58
SC-13	SGZ	711,105	7,619,412	31.34	2/14/2023	--	24.52	0.00	6.82	6.82
					4/11/2023	--	22.34	0.00	9.00	9.00
					8/29/2023	--	24.09	0.00	7.25	7.25
					11/28/2023	--	24.20	0.00	7.14	7.14
SC-14	SGZ	711,069	7,619,446	31.36	2/14/2023	--	24.78	0.00	6.58	6.58
					4/11/2023	--	24.76	0.00	6.60	6.60
					8/29/2023	--	24.90	0.00	6.46	6.46
					11/28/2023	--	19.67	0.00	11.69	11.69
SC-15	SGZ	711,022	7,619,479	30.94	2/14/2023	--	24.47	0.00	6.47	6.47
					4/11/2023	--	24.31	0.00	6.63	6.63
					8/29/2023	--	24.51	0.00	6.43	6.43
					11/28/2023	--	24.09	0.00	6.85	6.85
SC-16	SGZ	710,968	7,619,495	30.66	2/14/2023	--	25.11	0.00	5.55	5.55
					4/11/2023	--	24.10	0.00	6.56	6.56
					8/29/2023	--	25.10	0.00	5.56	5.56
					11/28/2023	--	25.14	0.00	5.52	5.52
SC-17	SGZ	710,942	7,619,535	30.53	2/14/2023	--	25.10	0.00	5.43	5.43
					4/11/2023	--	24.98	0.00	5.55	5.55
					8/29/2023	--	25.19	0.00	5.34	5.34
					11/28/2023	--	25.06	0.00	5.47	5.47
SC-18	SGZ	710,901	7,619,565	30.01	2/14/2023	--	24.43	0.00	5.58	5.58
					4/11/2023	--	24.33	0.00	5.68	5.68
					8/29/2023	--	24.41	0.00	5.60	5.60
					11/28/2023	--	24.44	0.00	5.57	5.57

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SC-19	SGZ	710,862	7,619,594	30.87	2/14/2023	--	25.04	0.00	5.83	5.83
					4/11/2023	--	25.03	0.00	5.84	5.84
					8/29/2023	--	24.88	0.00	5.99	5.99
					11/28/2023	--	25.09	0.00	5.78	5.78
SC-20	SGZ	711,494	7,619,134	30.61	2/14/2023	--	25.30	0.00	5.31	5.31
					4/11/2023	--	25.29	0.00	5.32	5.32
					8/29/2023	--	25.28	0.00	5.33	5.33
					11/28/2023	--	25.27	0.00	5.34	5.34
SC-21	SGZ	711,474	7,619,090	30.34	2/14/2023	--	21.84	0.00	8.50	8.50
					4/11/2023	--	22.11	0.00	8.23	8.23
					8/29/2023	--	22.21	0.00	8.13	8.13
					11/28/2023	--	21.93	0.00	8.41	8.41
SC-22	SGZ	711,432	7,619,071	32.77	2/14/2023	--	16.52	0.00	16.25	16.25
					4/11/2023	--	14.57	0.00	18.20	18.20
					8/29/2023	--	18.68	0.00	14.09	14.09
					11/28/2023	--	18.70	0.00	14.07	14.07
SC-23	SGZ	711,447	7,619,017	31.68	2/14/2023	--	18.70	0.00	12.98	12.98
					4/11/2023	--	18.68	0.00	13.00	13.00
					8/29/2023	--	18.72	0.00	12.96	12.96
					11/28/2023	--	18.72	0.00	12.96	12.96

Notes and Acronyms:When LPH present, groundwater elevation corrected using the following equation: $[TOC - DTW + (LPHt \times 0.858)]$

-- = not measured or not present

btoc = below top of casing

CPD = City of Portland Datum

DGZ = deep groundwater zone

DTW = Depth to groundwater

LPH = liquid phase hydrocarbons

LPHt = LPH thickness

SGZ = shallow groundwater zone

TOC = top of well casing

^aHC-1 was over-drilled, removed, and replaced with a deep well identified as HC-1D in September of 2023. A shallow well identified as HC-1S was installed directly adjacent to HC-1D in January of 2024. Wells HC-1S and HC-1D functionally replace HC-1. Well HC-1S is not portrayed in this table because it was not gauged in 2023.

Table 3. 2023 Quarterly Liquid Phase Hydrocarbon Recovery

Annual Groundwater Monitoring Report 2023

SMP Portland Terminal

Portland, Oregon

Well ID or LPH Source	Groundwater Zone	LPH Recovery Area	Quarter	Quarterly LPH Recovery (gallons)
CP-2	SGZ	Central/Southern	Q1	--
			Q2	--
			Q3	0.34
			Q4	--
HC-3	SGZ/DGZ	Southern	Q1	--
			Q2	--
			Q3	3.20
			Q4	1.25
MW-01	SGZ	Central/Southern	Q1	1.25
			Q2	0.25
			Q3	0.50
			Q4	0.24
MW-07	SGZ	Central/Southern	Q1	0.50
			Q2	--
			Q3	1.35
			Q4	0.25
MW-08	SGZ	Central/Southern	Q1	--
			Q2	--
			Q3	--
			Q4	--
MW-11	SGZ	Central/Southern	Q1	12.25
			Q2	13.50
			Q3	0.66
			Q4	3.60
MW-13	SGZ	Central/Southern	Q1	0.50
			Q2	2.50
			Q3	0.98
			Q4	1.25
MW-15	SGZ	Central/Southern	Q1	1.50
			Q2	--
			Q3	0.19
			Q4	--
P-08	SGZ	Northern	Q1	--
			Q2	0.60
			Q3	0.50
			Q4	0.10
P-09	SGZ	Central/Southern	Q1	--
			Q2	--
			Q3	0.24
			Q4	0.50
P-11	SGZ	Central/Southern	Q1	9.75
			Q2	22.00
			Q3	2.05
			Q4	0.90

Table 3. 2023 Quarterly Liquid Phase Hydrocarbon Recovery

Annual Groundwater Monitoring Report 2023

SMP Portland Terminal

Portland, Oregon

Well ID or LPH Source	Groundwater Zone	LPH Recovery Area	Quarter	Quarterly LPH Recovery (gallons)
RW-01	SGZ	Central/Southern	Q1	0.25
			Q2	--
			Q3	0.19
			Q4	--
RW-02	SGZ	Central/Southern	Q1	--
			Q2	--
			Q3	--
			Q4	--
SC-01	SGZ	Central/Southern	Q1	13.50
			Q2	10.50
			Q3	7.83
			Q4	3.25
SC-02	SGZ	Central/Southern	Q1	--
			Q2	--
			Q3	--
			Q4	--
W-1	SGZ	Central/Southern	Q1	0.12
			Q2	--
			Q3	--
			Q4	--
Product Tank 1 ^a	N/A	Northern	Q1	35.00
			Q2	90.00
			Q3	5.00
			Q4	20.00
Product Tank 2 ^b	N/A	Central/Southern	Q1	215.00
			Q2	302.00
			Q3	139.30
			Q4	201.60
		Q1 Total LPH Recovery ^c		250
		Q2 Total LPH Recovery ^c		392
		Q3 Total LPH Recovery ^c		144
		Q4 Total LPH Recovery ^c		222
		2023 Total LPH Recovery		1,008

Notes and Acronyms:

For each well, product is removed manually when LPH thickness is least 0.25 inches.

^aProduct Tank 1 receives LPH from OWS-1. OWS-1 receives LPH and groundwater from extraction wells in the northern area, including wells SC-03 through SC-10 and SC-20 through SC-23.^bProduct Tank 2 receives LPH from OWS-2 and from all manual recovery. OWS-2 receives LPH and groundwater from extraction wells in the central and southern areas, including wells SC-01, SC-02, SC-11, SC-13 through SC-19, HC-1, HC-3, RW-02, and CP-2. The following wells are gauged for the potential presence LPH: MW-01, MW-07, MW-08, MW-11, MW-13, MW-15, P-08, P-09, P-11, RW-01, and W-1.^cTotal LPH recovery is determined using the product tank volumes. Product tank volumes account for both system and manual recovery.

-- = No LPH recovered

Central/Southern = well located in the central or southern portion of the site

DGZ = deep groundwater zone

LPH = liquid phase hydrocarbons

N/A = not applicable

Northern = well located in the northern portion of the site

OWS = oil water separator

Q = quarter

SGZ = shallow groundwater zone

Table 4. Groundwater Monitoring Field Parameters

Annual Groundwater Monitoring Report 2023

SMP Portland Terminal

Portland, Oregon

Well ID	Sample Date	Temperature (°C)	Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	pH (SU)	ORP (mV)	Turbidity (NTU)
Shallow Groundwater Zone							
P-01	2018-Mar-06	9.70	0.072	3.21	5.63	265	8.7
	2019-Mar-05	11.60	0.196	1.47	5.96	81	47.3
	2020-Mar-10	10.96	0.217	3.12	5.43	156	5.1
	2021-Apr-20	16.00	0.174	0.91	5.50	129	4.4
	2022-Apr-27	13.74	0.213	1.45	6.44	147	0.9
	2023-Apr-12	10.65	0.155	7.96	6.43	245.3	0.34
P-02	2018-Mar-06	13.52	0.667	0.95	6.65	-106	4.8
	2019-Mar-06	8.51	0.661	1.90	6.47	21	14.7
	2020-Mar-10	11.35	0.879	0.89	5.67	-4	13.4
	2021-Apr-20	23.22	0.640	0.39	6.29	-85	30.1
	2022-Apr-27	11.45	0.574	0.07	6.68	-94	2.4
	2023-Apr-12	9.97	0.558	0.0	6.49	-169.9	1.95
P-04	2018-Mar-06	10.81	0.721	0.15	6.63	-104	0.0
	2019-Mar-05	9.76	0.837	1.04	6.53	25	14.7
	2020-Mar-10	11.90	0.933	0.79	5.94	-11	0.0
	2021-Apr-20	15.15	0.766	0.27	8.11	-193	2.2
	2021-Jun-16	16.40	0.666	0.68	6.70	-75	611.5
	2022-Apr-27	12.18	0.657	0.10	6.61	-86	0.6
	2023-Apr-12	10	0.419	0.0	6.58	-155.9	0.41
P-12	2021-Apr-19	17.68	0.817	0.29	6.82	-86	0.1
	2022-May-02	--	0.919	0.06	6.69	-226	43.7
	2023-Apr-13	13.1	0.915	0.0	6.56	-195.5	15.75
P-13	2023-Apr-13	12.62	0.240	0.02	6.12	-78.2	18
P-17	2018-Mar-05	12.86	0.412	1.70	6.52	-135	0.0
	2019-Mar-05	12.24	0.498	1.59	6.62	14	0.0
	2020-Mar-11	11.94	0.690	1.25	6.33	-4	4.0
	2021-Apr-21	13.97	0.434	0.21	6.89	-102	4.1
	2021-Jun-16	13.99	0.350	0.56	6.16	-14	0.9
	2022-Apr-28	12.10	0.359	0.00	6.75	-65	0.4
	2023-Apr-13	11.3	0.343	1.41	6.66	-108.3	0.00
P-18	2018-Mar-07	12.29	0.593	0.00	7.72	-71	12.1
	2019-Mar-06	10.66	0.713	0.00	6.72	-96	0.0
	2020-Mar-11	15.83	1.080	1.05	6.52	-18	0.0
	2021-Apr-21	15.52	0.598	0.12	8.12	-170	33.0
	2021-Jun-15	16.93	0.665	0.53	6.57	-90	1.9
	2022-Apr-28	13.12	0.549	0.11	6.72	-79	0.0
	2023-Apr-13	12.38	0.528	0.14	6.67	-123.6	0.18
P-23	2021-Apr-21	16.39	0.623	0.19	8.49	-216	19.6
	2021-Jun-16	17.24	0.661	0.51	6.94	-88	17.8
	2022-Apr-28	13.77	0.070	5.70	6.33	-39	7.0
	2023-Apr-13	13.81	0.591	0.17	6.53	-125.8	0.00
MW-05	2018-Mar-07	12.73	0.183	2.80	5.70	75	5.1
	2019-Mar-06	7.97	0.189	3.18	5.90	109	0.0
	2020-Mar-10	13.40	0.183	1.98	5.88	161	63.1
	2021-Apr-22	12.47	0.129	2.75	7.47	134	25.6
	2021-Jun-16	14.41	0.135	2.40	5.78	167	29.0
	2022-May-02	13.71	0.157	4.52	6.12	204	104.6
	2023-Apr-11	11.26	0.147	5.68	5.75	154.6	15.84
MW-14	2019-Mar-07	10.09	0.690	2.02	7.14	-98	32.1
	2020-Mar-10	15.71	0.694	4.43	6.42	-111	6.8
	2021-Apr-19	16.53	0.540	0.22	6.79	-123	1.9
	2023-Apr-10	14.71	0.595	0.01	6.56	-179.8	0.00
MW-16	2018-Mar-05	9.40	0.817	0.14	5.52	0	3.5
	2019-Mar-07	7.91	0.848	0.00	6.17	-43	0.0
	2020-Mar-12	15.51	0.869	3.30	6.09	-66	0.0
	2021-Apr-22	13.71	0.897	0.32	6.20	-60	0.0
	2022-Apr-27	15.44	0.821	2.84	6.31	-41	1.3
	2023-Apr-12	13.33	0.595	0.1	6.12	-165.2	1.34

Table 4. Groundwater Monitoring Field Parameters

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SMP Portland Terminal

Portland, Oregon

Well ID	Sample Date	Temperature (°C)	Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	pH (SU)	ORP (mV)	Turbidity (NTU)
MW-17	2021-Apr-20	17.63	0.644	0.25	8.50	-193	1.6
	2021-Jun-17	16.78	0.669	0.52	6.90	-78	0.0
	2022-Apr-27	14.70	0.520	0.00	6.77	-69	1.3
	2023-Apr-11	13.74	0.505	0.05	6.58	-155	0.26
MW-18	2023-Apr-10	13.73	0.001	0.06	6.65	-165.8	122.11
MW-19	2023-Apr-10	14.55	0.705	0.0	6.6	-207.4	0.00
Deep Groundwater Zone							
MD-01	2018-Mar-07	11.56	0.335	1.01	6.67	-79	0.0
	2019-Mar-07	14.38	0.340	1.06	6.82	-16	0.0
	2020-Mar-11	15.47	0.408	0.00	6.73	-151	0.0
	2021-Apr-21	18.58	0.245	0.11	8.52	-248	646.5
	2022-May-03	15.77	0.261	0.17	6.93	-115	7.4
	2023-Apr-13	15.65	0.295	0.09	6.72	-137.8	8.74
MD-02	2018-Mar-07	10.77	0.215	8.41	6.14	261	6.3
	2019-Mar-07	10.56	0.217	4.15	7.34	149	5.8
	2020-Mar-11	10.48	0.275	9.72	6.56	150	0.0
	2021-Apr-21	17.65	0.191	3.37	6.79	82	0.0
	2022-Apr-26	14.39	0.206	2.92	6.27	304	0.6
	2023-Apr-10	13.45	0.00	3.03	6.46	173.6	0.0
MD-06	2018-Mar-05	13.75	0.745	0.62	5.91	50	0.0
	2019-Mar-06	3.77	0.036	2.18	6.51	59	15.3
	2020-Mar-12	14.04	1.550	0.00	5.70	-25	70.4
	2021-Apr-19	19.09	0.273	2.09	6.62	161	0.2
	2022-May-03	15.53	0.000	9.07	6.73	101	0.3
	2023-Apr-12	13.73	0.335	1.18	7.09	-10	0.23
MD-07	2018-Mar-05	15.03	0.817	0.00	5.82	-74	1.3
	2019-Mar-06	10.86	0.752	1.02	6.66	-138	9.0
	2020-Mar-11	15.18	0.989	0.04	6.73	-134	0.0
	2021-Apr-19	17.16	0.776	0.23	6.99	-131	0.5
	2022-May-03	14.94	0.000	9.05	6.82	13	0.3
	2023-Apr-13	13.79	0.565	0.18	6.77	-132.9	1.04
MD-08	2021-Jun-17	22.04	0.200	0.52	6.41	-34	347.2
	2022-May-02	11.76	0.122	5.51	5.84	190	12.9
	2023-Apr-12	14.27	0.144	0.06	5.9	-85	0.00
MD-10	2021-Jun-16	17.76	0.311	0.97	7.29	-106	40.8
	2022-Apr-28	13.95	0.357	0.28	7.08	-90	8.3
	2023-Apr-13	13.25	0.350	0.32	7.05	-189.8	6.27
MD-13	2018-Mar-06	15.85	0.316	1.56	6.13	53	0.0
	2019-Mar-06	7.68	0.354	1.47	6.31	55	32.1
	2019-May-10	16.89	0.364	2.99	6.28	143	102.0
	2020-Mar-11	10.97	0.217	7.71	6.21	133	0.0
	2021-Apr-20	16.90	0.291	0.40	7.81	40	176.3
	2021-Jun-15	15.69	0.308	0.63	6.38	101	51.5
	2021-Sep-23	15.48	0.328	0.46	6.30	82	22.0
	2022-Apr-27	13.90	0.333	0.09	6.42	227	175.2
	2023-Apr-12	11.23	0.00	0.22	6.25	147	0.28
MD-14	2021-Apr-20	17.81	0.259	0.36	6.81	121	5.2
	2021-Jun-17	18.34	0.256	0.50	6.93	17	31.0
	2022-May-02	13.84	0.259	0.03	6.63	95	274.5
	2023-Apr-11	14.47	0.00	0.25	6.27	74.5	0.11

Notes and Acronyms:

-- = not analyzed

°C = degrees Celsius

mg/L = milligrams per liter

mS/cm = milliSiemens per centimeter

mV = millivolts

NTU = nephelometric turbidity units

SU = pH standard units

Table 5. Analytical Results - Total Petroleum Hydrocarbons and Volatile Organic Compounds

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SMP Portland Terminal

Portland, Oregon

Well ID	Sample Date	TPH-G (µg/L)	TPH-D (µg/L)	TPH-O (µg/L)	Benzene (µg/L)	Ethyl- benzene (µg/L)	Toluene (µg/L)	m,p- Xylene (µg/L)	o-Xylene (µg/L)	MTBE (µg/L)
Project specific SLV		1,000	1,000	1,000	1.4	7.3	9.8	13	13	--
Shallow Groundwater Zone										
P-01	2018-Mar-06	50 U	66 U	97 U	0.53 U	0.50 U	0.39 U	0.75 U	0.15 U	0.44 U
	2019-Mar-05	140 J	100 J	100 U	0.030 U	0.030 U	0.050 U	0.12 U	0.15 U	0.070 U
	2020-Mar-10	100 U	63 U	94 U	0.53 UJ	0.50 UJ	0.39 UJ	0.75 UJ	0.39 UJ	0.44 UJ
	2021-Apr-20	100 U	72 J	91 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
	2022-Apr-27	14 U	70 U	100 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
	2023-Apr-12	14 U	69 U	100 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
P-02	2018-Mar-06	540	260	98 U	0.53 U	0.50 U	0.39 U	0.75 U	0.15 U	0.44 U
	2019-Mar-06	520	230	100 U	0.033 J	0.030 U	0.050 U	0.12 U	0.15 U	0.070 U
	2020-Mar-10	430	260	90 U	0.53 U	0.50 U	0.39 U	0.75 U	0.39 U	0.44 U
	2021-Apr-20	200 J	250	93 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
	2022-Apr-27	14 U	220	100 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
	2023-Apr-12	480	230	97 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
P-04	2018-Mar-06	1,400	620	98 U	0.53 U	0.50 U	0.39 U	0.75 U	0.15 U	0.44 U
	2019-Mar-05	1,300	580	110 U	0.12 J	0.22 J	0.26	0.90 J	0.54	0.070 U
	2020-Mar-10	1,300	330	94 U	0.53 U	0.50 U	0.39 U	0.75 U	0.44 J	0.44 U
	2020-Mar-10 -FD	1,200	310	92 U	0.53 U	0.50 U	0.39 U	0.75 U	0.39 U	0.44 U
	2021-Apr-20	990	440	88 U	-	-	-	-	-	-
	2021-Apr-20 -FD	980	340	91 U	-	-	-	-	-	-
	2021-Jun-16	-	-	-	0.30 J	4.7	0.39 U	22	1.2	0.44 U
	2022-Apr-27	1,400	250	110 U	33	3.3	5.6	11	2.7	0.44 U
	2023-Apr-12	610	190	100 U	0.30 J	0.50 U	0.39 U	2.5	0.49 J	0.44 U
	2023-Apr-12 -FD	650	170	100 J	0.41 J	0.50 U	0.44 J	3.0	0.57 J	0.44 U
P-08	2022-Apr-26	Not sampled due to presence of LPH								
	2023-Apr-11	Not sampled due to presence of LPH								
P-12	2021-Apr-19	260	800	100 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
	2022-May-02	770 J	980	190 J	0.30 U	0.40 U	0.25 J	2.0 U	0.40 U	0.20 U
	2023-Apr-13	1,900	5,300	580 J	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
P-13	2022-Apr-26	Not sampled due to presence of LPH								
	2023-Apr-13	610	1,400	700	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
P-17	2018-Mar-05	620	720	100 U	0.53 U	0.50 U	0.39 U	0.75 U	0.15 U	0.44 U
	2018-Mar-05 -FD	580	670	160 J	0.53 U	0.50 U	0.39 U	0.75 U	0.15 U	0.44 U
	2019-Mar-05	620	1400	130 J	0.044 J	0.030 U	0.075 J	0.12 U	0.21 J	0.070 U
	2020-Mar-11	440	1700	110 J	0.53 U	0.50 UJ	0.39 UJ	0.75 UJ	0.39 UJ	0.44 U
	2021-Apr-21	430	1100	94 U	-	-	-	-	-	-
	2021-Jun-16	-	-	-	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
	2022-Apr-28	570 J	460	100 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
	2023-Apr-13	310	650	100 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
P-18	2018-Mar-07	1,800 J	1,200	98 U	0.53 U	0.50 U	0.39 U	0.75 U	0.15 U	0.44 U
	2019-Mar-06	2,000	2,400	120 J	0.14 J	0.25 J	0.27	0.81 J	0.62	0.070 U
	2019-Mar-06 -FD	2,000	1,700	99 J	0.14 J	0.24 J	0.28	0.82 J	0.65	0.070 U
	2020-Mar-11	1,600	1,100 J	93 UJ	0.53 U	0.50 U	0.39 U	0.75 U	0.39 J	0.44 U
	2020-Mar-11 -FD	1,500	840 J	96 U	0.53 U	0.50 U	0.39 U	0.75 U	0.39 J	0.44 U
	2021-Apr-21	-	730	94 U	0.24 UJ	0.50 UJ	0.39 UJ	0.56 J	0.45 J	0.44 UJ
	2021-Jun-15	1,600 J	-	-	-	-	-	-	-	-
	2022-Apr-28	2,000 J	690	110 U	0.24 U	0.50 U	0.39 U	0.53 U	0.49 J	0.44 U
	2023-Apr-13	1,900	1,200	100 U	0.24 U	0.50 U	0.39 U	0.68 J	0.44 J	0.44 U
P-23	2021-Apr-21	520	450	93 U	-	-	-	-	-	-
	2021-Jun-16	-	-	-	0.24 U	0.50 U	0.39 U	0.54 J	0.44 J	0.44 U
	2021-Jun-16 -FD	-	-	-	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
	2022-Apr-28	620 J	540	110 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
	2023-Apr-13	3,900	1,100	370 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
MW-05	2018-Mar-07	50 U	76 U	110 U	0.53 U	0.50 U	0.39 U	0.75 U	0.15 U	0.44 U
	2019-Mar-06	100 U	72 U	110 U	0.030 U	0.030 U	0.050 U	0.12 U	0.15 U	0.070 U
	2019-Mar-06 -FD	100 U	67 U	100 U	0.030 U	0.030 U	0.050 U	0.12 U	0.15 U	0.070 U
	2020-Mar-10	100 U	69 U	100 U	0.53 U	0.50 U	0.39 U	0.75 U	0.39 U	0.44 U
	2021-Apr-22	-	120	110 U	0.24 UJ	0.50 UJ	0.39 UJ	0.53 UJ	0.39 UJ	0.44 UJ
	2021-Jun-16	100 U	-	-	-	-	-	-	-	-
	2022-May-02	19 UJ	72 U	420	0.30 U	0.40 U	0.20 U	2.0 U	0.40 U	0.20 U
	2023-Apr-11	14 U	70 U	320 J	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U

Table 5. Analytical Results - Total Petroleum Hydrocarbons and Volatile Organic Compounds

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SMP Portland Terminal

Portland, Oregon

Well ID	Sample Date	TPH-G (µg/L)	TPH-D (µg/L)	TPH-O (µg/L)	Benzene (µg/L)	Ethyl- benzene (µg/L)	Toluene (µg/L)	m,p- Xylene (µg/L)	o-Xylene (µg/L)	MTBE (µg/L)
Project specific SLV		1,000	1,000	1,000	1.4	7.3	9.8	13	13	--
MW-10	2022-Apr-26	Not sampled due to presence of LPH								
	2023-Apr-11	Not sampled due to presence of LPH								
MW-14	2018-Mar-05	Not sampled due to presence of LPH								
	2019-Mar-07	1,400	5,400	850	0.10 J	0.030 U	0.15 J	0.12 U	0.41 J	0.070 U
	2020-Mar-10	1,700	1,200	120 J	0.53 U	0.50 U	0.39 U	0.75 U	0.39 U	0.44 U
	2021-Apr-19	1,200	870	100 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
	2022-Apr-26	Not sampled due to presence of LPH								
	2023-Apr-10	2,700	1,200	360 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
MW-16	2018-Mar-05	600	880	250 J	0.53 UJ	1.4 J	0.39 UJ	5.5 J	2.2 J	0.44 UJ
	2019-Mar-07	590 J	750	110 J	0.030 U	0.030 U	0.050 U	0.12 U	0.15 U	0.070 U
	2020-Mar-12	100 U	160 J	110 U	0.53 U	0.50 U	0.39 U	0.75 U	0.39 U	1.1 J
	2021-Apr-22	330 J	280	99 J	0.24 UJ	0.50 UJ	0.39 UJ	0.53 UJ	0.39 UJ	1.2 J
	2022-Apr-27	910	210	110 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
	2023-Apr-12	470	240	150 J	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
MW-17	2021-Apr-20	100 U	200	100 U	-	-	-	-	-	-
	2021-Jun-17	-	-	-	4.1	1.2	0.39 U	6.9	1.6	0.44 U
	2022-Apr-27	4,300	730	110 U	210 J	52	42	140	64	0.44 U
	2022-Apr-27 -FD	4,300 J	720	100 U	210 J	53	44	140	65	0.44 U
	2023-Apr-11	2,800	700	350 U	72	5.1	7.9	30	1.5	0.44 U
	2023-Apr-11 -FD	2,600	940	100 U	73	5.0	7.9	30	1.5	0.44 U
MW-18	2023-Apr-10	170,000	3,800	180 J	1,100	3,700	30,000	14,000	6,100	44 U
MW-19	2023-Apr-10	1,400	750	260 J	1.4	0.50 U	0.39 U	0.62 J	2.2	0.44 U
Deep Groundwater Zone										
MD-01	2018-Mar-07	590	610	110 U	0.53 U	0.50 U	0.39 U	0.75 U	0.15 U	0.44 U
	2019-Mar-07	650	1,200	100 U	0.031 J	0.030 U	0.050 U	0.12 U	0.15 U	0.070 U
	2020-Mar-11	510	710	89 U	0.53 U	0.50 U	0.39 U	0.75 U	0.39 U	0.44 U
	2021-Apr-21	600 J	710	91 U	0.24 UJ	0.50 UJ	0.39 UJ	0.53 UJ	0.39 UJ	0.44 UJ
	2022-May-03	580 J	500	150 J	0.30 U	0.40 U	0.20 U	2.0 U	0.40 U	0.20 U
	2023-Apr-13	900	640	100 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
MD-02	2018-Mar-07	50 U	66 U	97 U	0.53 U	0.50 U	0.39 U	0.75 U	0.15 U	0.44 U
	2019-Mar-07	100 U	76 U	110 U	0.030 U	0.030 U	0.050 U	0.12 U	0.15 U	0.070 U
	2020-Mar-11	100 U	69 U	100 U	0.53 U	0.50 U	0.39 U	0.75 U	0.39 U	0.44 U
	2021-Apr-21	100 UJ	66 U	97 U	0.24 UJ	0.50 UJ	0.39 UJ	0.53 UJ	0.39 UJ	0.44 UJ
	2022-Apr-26	14 U	65 U	97 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
	2023-Apr-10	14 U	67 U	360 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
MD-06	2018-Mar-05	50 U	66 U	97 U	0.53 U	0.50 U	0.39 U	0.75 U	0.15 U	0.44 U
	2019-Mar-06	100 U	320	300 J	0.030 U	0.030 U	0.050 U	0.12 U	0.15 U	0.070 U
	2020-Mar-12	100 U	64 U	94 U	0.53 U	0.50 U	0.39 U	0.75 U	0.39 U	2.9
	2021-Apr-19	590	280	100 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
	2022-May-03	52 J	71 U	160 J	0.30 U	0.40 U	0.20 U	2.0 U	0.40 U	0.20 U
	2023-Apr-12	14 U	69 U	160 J	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	3.3
MD-07	2018-Mar-05	670	390	110 J	0.53 U	0.50 U	0.39 U	0.75 U	0.15 U	0.44 U
	2019-Mar-06	680	680	98 U	0.049 J	0.030 U	0.050 U	0.12 U	0.15 U	0.070 U
	2020-Mar-11	650	320 J	94 U	0.53 U	0.50 U	0.39 U	0.75 U	0.39 U	0.44 U
	2021-Apr-19	100 U	61 U	91 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
	2022-May-03	970 J	280	140 J	0.30 U	0.40 U	0.20 U	2.0 U	0.40 U	0.20 U
	2023-Apr-13	1,300	480	140 J	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
MD-08	2021-Jun-17	250	210	99 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
	2022-May-02	19 UJ	69 U	100 U	0.30 U	0.40 U	0.20 U	2.0 U	0.40 U	0.20 U
	2023-Apr-12	230	200	100 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
MD-10	2021-Jun-16	100 U	69 U	100 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
	2022-Apr-28	19 UJ	69 U	100 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
	2023-Apr-13	14 U	67 U	140 J	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
MD-13	2018-Mar-06	50 U	68 U	100 U	0.53 UJ	0.50 U	0.39 UJ	0.75 U	0.15 U	0.44 UJ
	2019-Mar-06	100 U	89 J	100 U	0.030 U	0.030 U	0.050 U	0.12 U	0.15 U	0.070 U
	2020-Mar-11	100 U	61 U	90 U	0.53 U	0.50 U	0.39 U	0.75 U	0.39 U	0.44 U
	2021-Sep-23	100 U	67 U	100 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
	2022-Apr-27	14 U	75 U	110 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
	2023-Apr-12	14 U	69 U	370 U	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U

Table 5. Analytical Results - Total Petroleum Hydrocarbons and Volatile Organic Compounds

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Well ID	Sample Date	TPH-G (µg/L)	TPH-D (µg/L)	TPH-O (µg/L)	Benzene (µg/L)	Ethyl- benzene (µg/L)	Toluene (µg/L)	m,p- Xylene (µg/L)	o-Xylene (µg/L)	MTBE (µg/L)
Project specific SLV		1,000	1,000	1,000	1.4	7.3	9.8	13	13	--
MD-14	2021-Apr-20	100 U	110	100 U	-	-	-	-	-	-
	2021-Jun-17	-	-	-	0.24 U	0.50 U	0.39 U	0.53 U	0.39 U	0.44 U
	2022-May-02	19 UJ	73 U	120 J	0.30 U	0.40 U	0.20 U	2.0 U	0.40 U	0.20 U
	2023-Apr-11	14 U	66 U	98 U	0.26 J	1.1	5.7	3.6	1.2	0.44 U

Notes and Acronyms:

For comparison purposes, this table provides the most conservative SLVs as described in the 2021 Source Control Evaluation (AECOM, 2021b) and presented in Table 8 of this report.

Values in **bold** were greater than the project-specific SLV

-- = data not analyzed or not available

µg/L = micrograms/liter

FD = field duplicate

J = estimated concentration

LPH = liquid phase hydrocarbons

MTBE = methyl tert-butyl ether

SLV = screening level value

TPH-D = diesel-range total petroleum hydrocarbons

TPH-G = gasoline-range total petroleum hydrocarbons

TPH-O = oil-range total petroleum hydrocarbons

U = analyte not detected above method detection limit

Table 6. Analytical Results - Polycyclic Aromatic Hydrocarbons

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SMP Portland Terminal

Portland, Oregon

Well ID	Sample Date	1-Methyl naphthalene (µg/L)	2-Methyl naphthalene (µg/L)	Ace naphthen e (µg/L)	Ace naphthylene (µg/L)	Anthracene (µg/L)	Benzo(a) anthracene (µg/L)	Benzo(a) pyrene (µg/L)	Benzo(b) fluoranthene (µg/L)	Benzo(g,h,i) pyrene (µg/L)	Benzo(k) fluor anthene (µg/L)	Chrysene (µg/L)	Dibenz(a,h) anthracene (µg/L)	Fluor anthene (µg/L)	Fluorene (µg/L)	Indeno (1,2,3-cd) pyrene (µg/L)	Naphthalene (µg/L)	Phen anthrene (µg/L)	Pyrene (µg/L)
Project specific SLV		75	72	56	307	21	0.0018	0.0018	0.0018	0.44	0.0018	0.0018	0.0018	7.1	39	0.0018	194	19	10
Shallow Groundwater Zone																			
P-01	2018-Mar-06	0.0061 U	0.0091 U	0.0020 U	0.0020 U	0.0030 U	0.0020 U	0.0030 U	0.0081 U	0.0030 U	0.0091 U	0.0061 U	0.0020 U	0.0020 U	0.0030 U	0.0071 U	0.013 U	0.0040 U	0.0040 U
	2019-Mar-05	0.020 U	0.042 U	0.053 J	0.0097 UJ	0.024 UJ	0.015 U	0.012 UJ	0.012 U	0.013 U	0.013 U	0.017 U	0.011 U	0.054 U	0.064 J	0.015 U	0.037 J	0.033 U	0.035 UJ
	2020-Mar-10	0.027 J	0.037 U	0.021 J	0.0086 U	0.021 U	0.013 U	0.011 U	0.011 U	0.011 U	0.011 U	0.015 U	0.025 U	0.048 U	0.023 J	0.013 U	0.030 UJ	0.030 U	0.032 U
	2021-Apr-20	0.018 U	0.037 U	0.013 U	0.0084 U	0.021 U	0.013 U	0.010 U	0.010 U	0.011 U	0.011 U	0.015 U	0.014 U	0.047 U	0.016 U	0.013 U	0.029 U	0.029 U	0.031 U
	2022-Apr-27	0.034 U	0.040 U	0.014 U	0.0092 U	0.023 U	0.014 U	0.023 U	0.023 U	0.012 U	0.012 U	0.038 U	0.015 U	0.055 U	0.017 U	0.014 U	0.17 U	0.032 U	0.034 U
	2023-Apr-12	0.034 U	0.040 U	0.022 J	0.0092 U	0.022 U	0.014 U	0.022 U	0.022 U	0.012 U	0.012 U	0.038 U	0.015 U	0.055 U	0.020 J	0.014 U	0.17 U	0.032 U	0.034 U
P-02	2018-Mar-06	0.095	0.0091 U	0.21	0.026	0.020 J	0.0020 U	0.0030 U	0.0081 U	0.0030 U	0.0091 U	0.0061 U	0.0020 U	0.0020 U	0.21	0.0071 U	0.35	0.021 J	0.023 J
	2019-Mar-06	0.039 J	0.041 U	0.084 J	0.011 J	0.023 U	0.015 U	0.012 U	0.012 U	0.013 U	0.013 U	0.017 U	0.011 U	0.053 U	0.093 J	0.015 U	0.24	0.033 U	0.035 U
	2020-Mar-10	0.041 J	0.036 U	0.20	0.019 J	0.029 J	0.013 U	0.010 U	0.010 U	0.011 U	0.011 U	0.015 U	0.024 U	0.054 J	0.27	0.013 U	0.40	0.029 U	0.033 J
	2021-Apr-20	0.020 U	0.040 U	0.16	0.0093 U	0.024 J	0.014 U	0.011 U	0.011 U	0.012 U	0.012 U	0.016 U	0.015 U	0.055 J	0.21	0.014 U	0.032 U	0.032 U	0.034 U
	2022-Apr-27	0.035 U	0.041 U	0.19	0.0094 U	0.036 J	0.015 U	0.023 U	0.023 U	0.013 U	0.013 U	0.039 U	0.016 U	0.093 J	0.27	0.015 U	0.26 J	0.033 U	0.060 J
	2023-Apr-12	0.035 U	0.042 U	0.31	0.020 J	0.042 J	0.015 U	0.023 U	0.023 U	0.013 U	0.013 U	0.040 U	0.016 U	0.095 J	0.36	0.015 U	0.25 J	0.033 U	0.059 J
P-04	2018-Mar-06	0.084	0.0093 U	0.16	0.025	0.0031 U	0.0021 U	0.0031 U	0.0083 U	0.0031 U	0.0093 U	0.0062 U	0.0021 U	0.0021 U	0.17	0.0073 U	0.23	0.071	0.0042 U
	2019-Mar-05	0.087 J	0.043 UJ	0.11 J	0.0099 UJ	0.024 UJ	0.015 UJ	0.012 UJ	0.012 UJ	0.013 UJ	0.013 UJ	0.018 UJ	0.011 UJ	0.055 UJ	0.077 J	0.015 UJ	0.58 J	0.034 UJ	0.036 UJ
	2020-Mar-10	0.028 J	0.037 U	0.16	0.019 J	0.021 U	0.013 U	0.011 U	0.011 U	0.011 U	0.011 U	0.015 U	0.025 U	0.048 U	0.10	0.013 U	0.37	0.030 U	0.032 U
	2020-Mar-10 -FD	0.025 J	0.037 U	0.17	0.0086 U	0.021 U	0.013 U	0.011 U	0.011 U	0.012 U	0.012 U	0.015 U	0.025 U	0.048 U	0.12	0.013 U	0.42	0.030 U	0.032 U
	2021-Apr-20	0.044 J	0.036 U	0.18	0.022 J	0.020 U	0.013 U	0.010 U	0.010 U	0.011 U	0.011 U	0.015 U	0.014 U	0.046 U	0.13	0.013 U	0.028 U	0.028 U	0.030 U
	2021-Apr-20 -FD	0.040 J	0.036 U	0.15	0.0084 U	0.021 U	0.013 U	0.010 U	0.010 U	0.011 U	0.011 U	0.015 U	0.014 U	0.047 U	0.11	0.013 U	0.029 U	0.030 J	0.031 U
	2022-Apr-27	0.051 J	0.046 U	0.053 J	0.011 U	0.026 U	0.017 U	0.026 U	0.026 U	0.014 U	0.014 U	0.044 U	0.018 U	0.064 U	0.044 J	0.017 U	0.19 U	0.037 U	0.039 U
	2023-Apr-12	0.034 U	0.041 U	0.017 J	0.0094 U	0.023 U	0.015 U	0.023 U	0.023 U	0.012 U	0.012 U	0.039 U	0.016 U	0.056 U	0.018 U	0.015 U	0.17 U	0.032 U	0.034 U
2023-Apr-12 -FD	0.086 J	0.072 J	0.063 J	0.0097 U	0.024 U	0.015 U	0.024 U	0.024 U	0.013 U	0.013 U	0.040 U	0.016 U	0.058 U	0.047 J	0.015 U	0.18 U	0.042 J	0.036 U	
P-08	2022-Apr-26	Not sampled due to presence of LPH																	
	2023-Apr-11	Not sampled due to presence of LPH																	
P-12	2021-Apr-19	0.19	0.042 U	1.3	0.34	0.024 U	0.028 J	0.021 J	0.023 J	0.016 J	0.013 U	0.030 J	0.016 U	0.054 U	3.2	0.017 J	0.033 U	0.033 U	0.12
	2022-May-02	0.46	0.19 J	1.6	0.10 U	0.025 U	0.016 U	0.025 U	0.030 J	0.014 U	0.014 U	0.043 U	0.017 U	0.10 J	1.9	0.019 J	1.0	0.036 U	0.14
	2023-Apr-13	0.34 U	0.40 U	0.14 U	0.092 U	0.22 U	0.14 U	0.22 U	0.22 U	0.12 U	0.12 U	0.38 U	0.15 U	0.55 U	0.17 U	0.14 U	1.7 U	0.32 U	0.34 U
P-13	2022-Apr-26	Not sampled due to presence of LPH																	
	2023-Apr-13	0.18 U	0.21 U	0.075 U	0.048 U	0.12 U	0.075 U	0.12 J	0.12 U	0.073 J	0.064 U	0.20 U	0.080 U	0.29 U	0.091 U	0.075 U	0.87 U	0.17 U	0.39 J
P-17	2018-Mar-05	0.21	0.0093 U	0.78	0.17	0.056	0.0021 U	0.0031 U	0.0083 U	0.0031 U	0.0093 U	0.0062 U	0.0021 U	0.0021 U	1.9	0.0072 U	0.23	0.39	0.037 J
	2018-Mar-05 -FD	0.24	0.0095 U	0.86	0.19	0.067	0.0021 U	0.0032 U	0.0084 U	0.0032 U	0.0095 U	0.0063 U	0.0021 U	0.0021 U	2.0	0.0074 U	0.26	0.48	0.040 J
	2019-Mar-05	0.18	0.042 U	1.1	0.27 J	0.10 J	0.015 U	0.012 UJ	0.012 U	0.013 U	0.013 U	0.017 U	0.011 U	0.054 J	2.1	0.015 U	0.45	0.41	0.056 J
	2020-Mar-11	0.14	0.037 U	0.69	0.14	0.060 J	0.013 U	0.010 U	0.010 U	0.011 U	0.011 U	0.015 U	0.025 U	0.048 U	1.6	0.013 U	0.45	0.31	0.040 J
	2021-Apr-21	0.019 U	0.038 U	0.54	0.0088 U	0.022 U	0.026 J	0.025 J	0.029 J	0.023 J	0.012 U	0.025 J	0.015 U	0.094 J	1.1	0.022 J	0.030 U	0.030 U	0.12
	2022-Apr-28	0.035 U	0.042 U	0.88	0.0096 U	0.048 J	0.015 U	0.024 U	0.024 U	0.013 U	0.013 U	0.040 U	0.016 U	0.058 U	2.1	0.015 U	0.24 J	0.28	0.036 J
	2023-Apr-13	0.037 U	0.044 U	0.76	0.010 U	0.025 U	0.016 U	0.025 U	0.025 U	0.013 U	0.013 U	0.042 U	0.017 U	0.061 U	1.7	0.016 U	0.23 J	0.035 U	0.037 U
P-18	2018-Mar-07	0.19	0.18	1.0	0.29	0.10	0.0020 U	0.0030 U	0.0081 U	0.0030 U	0.0091 U	0.023	0.0020 U	0.085	2.3	0.0071 U	1.1	1.9	0.11
	2019-Mar-06	0.25	0.039 U	1.8	0.45 J	0.50 J	0.014 U	0.011 UJ	0.011 U	0.012 U	0.012 U	0.016 U	0.010 U	0.079 J	3.4	0.014 U	1.4	1.8	0.075 J
	2019-Mar-06 -FD	0.19	0.039 U	1.8	0.53 J	0.50 J	0.014 U	0.011 UJ	0.011 U	0.012 U	0.012 U	0.016 U	0.010 U	0.069 J	3.4	0.014 U	1.4	2.0	0.076 J
	2020-Mar-11	0.17	0.038 U	0.74	0.15	0.055 J	0.013 U	0.011 U	0.011 U	0.012 U	0.012 U	0.015 U	0.025 U	0.061 J	1.5	0.013 U	0.83	1.3	0.078 J
	2020-Mar-11 -FD	0.19	0.038 U	0.71	0.17	0.059 J	0.014 U	0.011 U	0.011 U	0.012 U	0.012 U	0.016 U	0.025 U	0.059 J	1.7	0.014 U	0.85	1.3	0.080 J
	2021-Apr-21	0.20	0.037 U	1.1	0.26	0.095	0.013 U	0.010 U	0.010 U	0.011 U	0.011 U	0.015 U							

Table 6. Analytical Results - Polycyclic Aromatic Hydrocarbons

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Well ID	Sample Date	1-Methyl naphthalene (µg/L)	2-Methyl naphthalene (µg/L)	Ace naphthen e (µg/L)	Ace naphthylene (µg/L)	Anthracene (µg/L)	Benzo(a) anthracene (µg/L)	Benzo(a) pyrene (µg/L)	Benzo(b) fluoranthene (µg/L)	Benzo(g,h,i) pyrene (µg/L)	Benzo(k) fluor anthene (µg/L)	Chrysene (µg/L)	Dibenz(a,h) anthracene (µg/L)	Fluor anthene (µg/L)	Fluorene (µg/L)	Indeno (1,2,3-cd) pyrene (µg/L)	Naphthalene (µg/L)	Phen anthrene (µg/L)	Pyrene (µg/L)
Project specific SLV		75	72	56	307	21	0.0018	0.0018	0.0018	0.44	0.0018	0.0018	0.0018	7.1	39	0.0018	194	19	10
MW-14	2018-Mar-06	Not sampled due to presence of LPH																	
	2019-Mar-07	2.4	0.087 J	0.87	0.30 J	0.18 J	0.048 J	0.042 J	0.042 J	0.044 J	0.013 J	0.038 J	0.011 J	0.15 J	2.2	0.056 J	0.31	1.7	0.20 J
	2020-Mar-10	1.9	0.042 U	0.91	0.23	0.051 J	0.015 U	0.012 U	0.012 U	0.013 U	0.013 U	0.017 U	0.028 U	0.069 J	2.2	0.015 U	0.54	2.0	0.062 J
	2021-Apr-19	0.37	0.041 U	0.57	0.10	0.023 U	0.015 U	0.012 U	0.012 U	0.013 U	0.013 U	0.017 U	0.016 U	0.054 J	1.3	0.015 U	0.033 U	0.43	0.057 J
	2022-Apr-26	Not sampled due to presence of LPH																	
2023-Apr-10	0.11	0.040 U	1.1	0.33	0.066 J	0.014 U	0.022 U	0.022 U	0.012 U	0.012 U	0.012 U	0.038 U	0.015 U	0.055 U	2.8	0.014 U	0.57	2.4	0.077 J
MW-16	2018-Mar-05	0.060	0.0091 U	0.16	0.049	0.0030 U	0.0020 U	0.0030 U	0.0081 U	0.0030 U	0.0091 U	0.0061 U	0.0020 U	0.054	0.21	0.0071 U	0.22	0.042	0.071
	2019-Mar-07	0.043 J	0.039 U	0.14	0.021 J	0.022 UJ	0.014 U	0.011 UJ	0.011 U	0.012 U	0.012 U	0.016 U	0.010 U	0.050 U	0.11	0.014 U	0.13	0.031 U	0.033 UJ
	2020-Mar-12	0.029 J	0.040 U	0.065 J	0.018 J	0.023 U	0.015 U	0.017 J	0.016 J	0.021 J	0.012 U	0.017 U	0.027 U	0.052 U	0.078 J	0.016 J	0.19	0.032 U	0.040 J
	2021-Apr-22	0.038 J	0.037 U	0.085 J	0.0086 U	0.021 U	0.013 U	0.011 U	0.011 U	0.011 U	0.011 U	0.015 U	0.014 U	0.048 U	0.12	0.013 U	0.030 U	0.030 U	0.032 J
	2022-Apr-27	0.036 U	0.043 U	0.13	0.0099 U	0.024 U	0.015 U	0.024 U	0.024 U	0.013 U	0.013 U	0.041 U	0.016 U	0.059 U	0.21	0.015 U	0.18 U	0.034 U	0.043 J
2023-Apr-12	0.13	0.040 U	0.16	0.028 J	0.023 J	0.014 U	0.023 U	0.023 U	0.012 U	0.012 U	0.038 U	0.015 U	0.056 U	0.17	0.014 U	0.17 U	0.032 U	0.043 J	
MW-17	2021-Apr-20	0.018 U	0.037 U	0.013 U	0.0085 U	0.021 U	0.013 U	0.010 U	0.010 U	0.011 U	0.011 U	0.015 U	0.014 U	0.047 U	0.016 U	0.013 U	0.029 U	0.029 U	0.031 U
	2022-Apr-27	0.036 U	0.042 U	6.2	0.0097 U	0.78 J	0.015 U	0.024 U	0.024 U	0.013 U	0.013 U	0.041 J	0.016 U	1.0 J	4.6	0.015 U	2.0	5.2 J	0.62 J
	2022-Apr-27 -FD	0.038 U	0.045 U	6.8	0.010 U	0.83 J	0.016 U	0.025 U	0.025 U	0.014 U	0.014 U	0.043 J	0.017 U	1.1 J	5.0	0.016 U	2.6	5.7 J	0.67 J
	2023-Apr-11	0.22	0.041 U	6.0	0.27	0.80	0.038 J	0.023 U	0.023 U	0.012 U	0.012 U	0.039 J	0.016 U	0.89	4.4	0.015 U	2.7	5.1	0.58
	2023-Apr-11 -FD	0.19	0.049 J	5.5	0.24	0.74	0.035 J	0.023 U	0.023 U	0.013 U	0.013 U	0.039 U	0.016 U	0.78	4.0	0.015 U	2.5	4.8	0.50
MW-18	2023-Apr-10	19	40	0.36	0.0096 U	0.038 J	0.029 J	0.023 U	0.047 J	0.043 J	0.041 J	0.045 J	0.11 U	0.066 J	0.59	0.056 J	150	0.20	0.050 J
MW-19	2023-Apr-10	0.13	0.043 J	1.1	0.31	0.050 J	0.015 U	0.023 U	0.023 U	0.013 U	0.013 U	0.039 U	0.016 U	0.057 U	2.5	0.015 U	0.60	1.2	0.061 J
Deep Groundwater Zone																			
MD-01	2018-Mar-07	25	0.12	0.70	0.25	0.097	0.0022 U	0.0033 U	0.0087 U	0.0033 U	0.0098 U	0.0065 U	0.0022 U	0.0022 U	2.1	0.0076 U	0.37	2.6	0.058
	2019-Mar-07	31	0.071 J	0.62	0.14 J	0.11 J	0.015 U	0.012 UJ	0.012 U	0.013 U	0.013 U	0.017 U	0.010 U	0.052 U	1.6	0.015 U	0.14	3.2	0.072 J
	2020-Mar-11	28	0.16 J	0.66	0.17	0.087 J	0.015 U	0.012 U	0.012 U	0.013 U	0.013 U	0.017 U	0.028 U	0.061 J	1.9	0.015 U	0.33	2.2	0.060 J
	2021-Apr-21	38	0.038 U	1.1	0.28	0.17	0.014 U	0.011 U	0.011 U	0.012 U	0.012 U	0.016 U	0.015 U	0.049 U	3.0	0.014 U	0.030 U	3.8	0.089 J
	2022-May-03	20	0.044 U	0.85	0.15	0.025 U	0.016 U	0.025 U	0.025 U	0.014 U	0.014 U	0.042 U	0.017 U	0.061 U	2.1	0.016 U	0.18 U	2.3	0.064 J
	2023-Apr-13	15	0.042 U	0.86	0.0097 U	0.024 U	0.015 U	0.024 U	0.024 U	0.013 U	0.013 U	0.040 U	0.016 U	0.058 U	2.4	0.015 U	0.33 J	2.7	0.065 J
MD-02	2018-Mar-07	0.0061 U	0.0091 U	0.0020 U	0.0020 U	0.0030 U	0.0020 U	0.0030 U	0.0081 U	0.0030 U	0.0091 U	0.0061 U	0.0020 U	0.0020 U	0.0030 U	0.0071 U	0.013 U	0.0040 U	0.0040 U
	2019-Mar-07	0.019 U	0.039 U	0.014 U	0.0091 UJ	0.022 UJ	0.014 U	0.011 UJ	0.011 U	0.012 U	0.012 U	0.016 U	0.010 U	0.051 U	0.017 U	0.014 U	0.031 U	0.031 U	0.033 UJ
	2020-Mar-11	0.020 U	0.040 U	0.015 U	0.0093 U	0.023 U	0.015 U	0.011 U	0.011 U	0.012 U	0.012 U	0.017 U	0.027 U	0.052 U	0.018 U	0.015 U	0.032 U	0.032 U	0.034 U
	2021-Apr-21	0.019 U	0.039 U	0.014 U	0.0089 U	0.022 U	0.014 U	0.011 U	0.011 U	0.012 U	0.012 U	0.016 U	0.015 U	0.050 U	0.017 U	0.014 U	0.031 U	0.031 U	0.033 U
	2022-Apr-26	0.035 U	0.041 U	0.13 J	0.0096 U	0.023 U	0.015 U	0.023 U	0.023 U	0.013 U	0.013 U	0.039 U	0.016 U	0.057 U	0.094 J	0.015 U	0.17 U	0.10 J	0.035 U
	2023-Apr-10	0.033 UJ	0.039 UJ	0.014 J	0.014 J	0.022 UJ	0.014 UJ	0.022 UJ	0.022 UJ	0.013 J	0.012 UJ	0.037 UJ	0.015 UJ	0.055 UJ	0.020 J	0.014 UJ	0.16 UJ	0.031 UJ	0.033 UJ
MD-06	2018-Mar-05	0.0061 U	0.0091 U	0.0020 U	0.0020 U	0.0030 U	0.0020 U	0.0030 U	0.0081 U	0.0030 U	0.0091 U	0.0061 U	0.0020 U	0.0020 U	0.0030 U	0.0071 U	0.013 U	0.0040 U	0.0040 U
	2019-Mar-06	0.020 U	0.040 U	0.014 U	0.0093 UJ	0.023 UJ	0.014 U	0.011 UJ	0.024 J	0.018 J	0.012 U	0.017 U	0.010 U	0.052 U	0.018 U	0.031 J	0.032 U	0.032 U	0.034 UJ
	2020-Mar-12	0.020 U	0.041 U	0.015 U	0.0094 U	0.040 J	0.015 U	0.011 U	0.011 U	0.012 U	0.012 U	0.017 U	0.027 U	0.092 J	0.018 U	0.015 U	0.032 U	0.21	0.055 J
	2021-Apr-19	0.019 U	0.039 U	0.53	0.12	0.022 U	0.014 U	0.011 U	0.011 U	0.012 U	0.012 U	0.016 U	0.015 U	0.050 U	0.96	0.014 U	0.031 U	0.16	0.033 U
	2022-May-03	0.037 U	0.044 U	0.016 U	0.010 U	0.025 U	0.016 U	0.025 U	0.025 U	0.014 U	0.014 U	0.042 U	0.017 U	0.061 U	0.019 U	0.016 U	0.18 U	0.035 U	0.037 U
	2023-Apr-12	0.035 U	0.041 U	0.015 U	0.0095 U	0.023 U	0.015 U	0.023 U	0.023 U	0.013 U	0.013 U	0.039 U	0.016 U	0.057 U	0.018 U	0.015 U	0.17 U	0.033 U	0.035 U
MD-07	2018-Mar-05	0.083	0.0091 U	0.50	0.11	0.029 J	0.0020 U	0.0030 U	0.0081 U	0.0030 U	0.0091 U	0.0060 U	0.0020 U	0.0020 U	0.81	0.0071 U	0.34	0.19	0.031 J
	2019-Mar-06	0.14 J	0.13 J	0.52 J	0.12 J	0.061 J	0.037 J	0.041 J	0.052 J	0.050 J	0.035 J	0.027 J	0.055 J	0.051 UJ	0.76 J	0.061	0.38 J	0.21 J	0.044 J
	2020-Mar-11	0.08																	

Table 6. Analytical Results - Polycyclic Aromatic Hydrocarbons

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Well ID	Sample Date	1-Methyl naphthalene (µg/L)	2-Methyl naphthalene (µg/L)	Ace naphthen e (µg/L)	Ace naphthylene (µg/L)	Anthracene (µg/L)	Benzo(a) anthracene (µg/L)	Benzo(a) pyrene (µg/L)	Benzo(b) fluoranthene (µg/L)	Benzo(g,h,i) pyrene (µg/L)	Benzo(k) fluor anthene (µg/L)	Chrysene (µg/L)	Dibenz(a,h) anthracene (µg/L)	Fluor anthene (µg/L)	Fluorene (µg/L)	Indeno (1,2,3-cd) pyrene (µg/L)	Naphthalene (µg/L)	Phen anthrene (µg/L)	Pyrene (µg/L)
Project specific SLV		75	72	56	307	21	0.0018	0.0018	0.0018	0.44	0.0018	0.0018	0.0018	7.1	39	0.0018	194	19	10
MD-14	2021-Apr-20	0.020 U	0.042 U	0.015 U	0.0096 U	0.023 U	0.015 U	0.012 U	0.012 U	0.013 U	0.013 U	0.017 U	0.016 U	0.053 U	0.018 U	0.015 U	0.033 U	0.033 U	0.035 U
	2022-May-02	0.036 U	0.043 U	0.015 U	0.0099 U	0.024 U	0.015 U	0.024 U	0.024 U	0.013 U	0.013 U	0.041 U	0.016 U	0.059 U	0.019 U	0.015 U	0.18 U	0.034 U	0.036 U
	2023-Apr-11	0.034 U	0.040 U	0.014 U	0.0092 U	0.023 U	0.017 J	0.023 U	0.023 U	0.031 J	0.019 J	0.038 U	0.022 J	0.055 U	0.017 U	0.026 J	0.17 U	0.032 U	0.034 U

Notes and Acronyms:

For comparison purposes, this table provides the most conservative SLVs as described in the 2021 Source Control Evaluation (AECOM, 2021b) and presented in Table 8 of this report.

Values in **bold** were greater than the project-specific SLV

-- = data not analyzed or not available

µg/L = micrograms/liter

FD = field duplicate

J = estimated concentration

LPH = liquid phase hydrocarbons

SLV = screening level value

U = analyte not detected above method detection limit

Table 7. Analytical Results - Total Metals
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Well ID	Sample Date	Arsenic (µg/L)	Barium (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Lead (µg/L)	Selenium (µg/L)	Silver (µg/L)	Mercury (µg/L)
Project specific SLV		2.1	4	2.2	11	2.5	5	0.12	--
Shallow Groundwater Zone									
P-01	2018-Mar-06	7.2 U	3.9 U	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.15 U
	2019-Mar-05	7.2 U	5.8 J	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.19 J
	2020-Mar-10	7.2 U	10 J	0.50 U	3.3 U	14 J	8.7 U	8.5 U	0.15 U
	2021-Apr-20	7.2 U	23	0.20 U	1.3 U	3.2 J	8.7 U	8.5 U	0.15 U
	2022-Apr-27	7.2 U	17 J	0.90 U	2.7 U	5.1 J	8.7 U	8.5 U	0.15 U
	2023-Apr-12	7.2 U	9.3 J	0.90 U	2.7 U	9.4 J	8.7 U	8.5 U	0.15 U
P-02	2018-Mar-06	7.2 U	200	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.15 U
	2019-Mar-06	7.2 U	170	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.15 U
	2020-Mar-10	7.2 U	190	0.50 U	3.3 U	15 J	8.7 U	8.5 U	0.15 U
	2021-Apr-20	7.2 U	170	0.20 U	1.3 U	5.1 J	8.7 U	8.5 U	0.15 U
	2022-Apr-27	7.2 U	160	0.90 U	2.7 U	7.8 J	8.7 U	8.5 U	0.15 U
	2023-Apr-12	7.2 U	170	0.90 U	2.7 U	2.7 U	8.7 U	8.5 U	0.15 U
P-04	2018-Mar-06	7.2 U	240	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.15 U
	2019-Mar-05	7.2 U	280	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.33
	2020-Mar-10	7.2 U	300	0.50 U	3.3 U	13 J	8.7 U	8.5 U	0.15 U
	2020-Mar-10 -FD	7.2 U	290	0.50 U	3.3 U	12 J	8.7 U	8.5 U	0.15 U
	2021-Apr-20	7.2 U	220	0.20 U	1.3 U	4.9 J	8.7 U	8.5 U	0.15 U
	2021-Apr-20 -FD	7.2 U	230	0.20 U	1.3 U	4.9 J	8.7 U	8.5 U	0.15 U
	2022-Apr-27	7.8 J	310	0.90 U	2.7 U	9.2 J	8.7 U	8.5 U	0.15 U
	2023-Apr-12	7.2 U	320	0.90 U	2.7 U	5.4 J	8.7 U	8.5 U	0.15 U
	2023-Apr-12 -FD	7.2 U	330	0.90 U	2.7 U	4.6 J	8.7 U	8.5 U	0.15 U
P-08	2022-Apr-26	Not sampled due to presence of LPH							
	2023-Apr-11	Not sampled due to presence of LPH							
P-12	2021-Apr-19	7.2 U	430	0.20 U	1.3 U	3.6 J	8.7 U	8.5 U	0.15 U
	2022-May-02	7.2 U	360	0.90 U	2.7 U	2.7 U	8.7 U	8.5 U	0.15 U
	2023-Apr-13	7.2 U	240	0.90 U	2.7 U	7.3 J	8.7 U	8.5 U	0.15 U
P-13	2022-Apr-26	Not sampled due to presence of LPH							
	2023-Apr-13	45 J	95	0.90 U	2.7 U	9.6 J	8.7 U	8.5 U	0.15 U
P-17	2018-Mar-05	7.2 U	68	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.15 U
	2018-Mar-05 -FD	7.2 U	68	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.15 U
	2019-Mar-05	7.2 U	82	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.20 J
	2020-Mar-11	7.2 U	87	0.50 U	3.3 U	13 J	8.7 U	8.5 U	0.15 U
	2021-Apr-21	7.2 U	88	0.20 U	1.3 U	4.1 J	8.7 U	8.5 U	0.15 U
	2022-Apr-28	7.2 U	78	0.90 U	2.7 U	5.9 J	8.7 U	8.5 U	0.15 U
	2023-Apr-13	7.2 U	75	0.90 U	2.7 U	6.3 J	8.7 U	8.5 U	0.15 U
P-18	2018-Mar-07	7.2 U	260	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.15 U
	2019-Mar-06	7.2 U	350	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.15 U
	2019-Mar-06 -FD	7.2 U	360	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.15 U
	2020-Mar-11	7.2 U	380 J	0.50 U	3.3 U	18 J	8.7 U	8.5 U	0.15 U
	2020-Mar-11 -FD	7.2 U	400	0.50 U	3.3 U	19 J	8.7 U	8.5 U	0.15 U
	2021-Apr-21	7.2 U	310	0.20 U	1.3 U	4.6 J	8.7 U	8.5 U	0.15 U
	2022-Apr-28	7.2 U	230	0.90 U	2.7 U	3.9 J	8.7 U	8.5 U	0.15 U
	2023-Apr-13	7.2 U	280	0.90 U	2.7 U	5.0 J	8.7 U	8.5 U	0.15 U
P-23	2021-Apr-21	7.2 U	240	0.20 U	1.3 U	2.9 J	8.7 U	8.5 U	0.27 J
	2022-Apr-28	7.2 U	210	0.90 U	2.7 U	5.1 J	8.7 U	8.5 U	0.15 U
	2023-Apr-13	7.2 U	220	0.90 U	2.7 U	6.1 J	8.7 U	8.5 U	0.15 U
MW-05	2018-Mar-07	7.2 U	34	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.15 U
	2019-Mar-06	7.2 U	36	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.15 U
	2019-Mar-06 -FD	7.2 U	36	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.15 U
	2020-Mar-10	7.2 U	45	0.50 U	3.3 U	15 J	8.7 U	8.5 U	0.15 U
	2021-Apr-22	7.2 U	34	0.20 U	1.3 U	5.4 J	8.7 U	8.5 U	0.15 U
	2022-May-02	7.2 U	37	0.90 U	2.7 U	2.7 U	8.7 U	8.5 U	0.15 U
	2023-Apr-11	7.2 U	35	0.90 U	2.7 U	4.9 J	8.7 U	8.5 U	0.15 U
MW-10	2022-Apr-26	Not sampled due to presence of LPH							
	2023-Apr-11	Not sampled due to presence of LPH							

Table 7. Analytical Results - Total Metals
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Well ID	Sample Date	Arsenic (µg/L)	Barium (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Lead (µg/L)	Selenium (µg/L)	Silver (µg/L)	Mercury (µg/L)
Project specific SLV		2.1	4	2.2	11	2.5	5	0.12	--
MW-14	2018-Mar-06	Not sampled due to presence of LPH							
	2019-Mar-07	7.2 U	270	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.15 U
	2020-Mar-10	7.2 U	320	0.50 U	3.3 U	14 J	8.7 U	8.5 U	0.15 U
	2021-Apr-19	7.2 U	370	0.20 U	1.3 U	5.4 J	8.7 U	8.5 U	0.16 J
	2022-Apr-26	Not sampled due to presence of LPH							
MW-16	2023-Apr-10	7.2 U	420	0.90 U	2.7 U	7.2 J	8.7 U	8.5 U	0.15 U
	2018-Mar-05	7.2 U	210	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.15 U
	2019-Mar-07	7.2 U	230	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.15 U
	2020-Mar-12	7.2 U	270	0.50 U	3.3 U	32	8.7 U	8.5 U	0.15 U
	2021-Apr-22	7.2 U	280	0.20 U	1.3 U	8.3 J	8.7 U	8.5 U	0.15 U
MW-17	2022-Apr-27	7.2 U	230	0.90 U	2.7 U	8.3 J	8.7 U	8.5 U	0.15 U
	2023-Apr-12	7.2 U	200	0.90 U	2.7 U	10 J	8.7 U	8.5 U	0.15 U
	2021-Apr-20	7.2 U	60	0.20 U	1.3 U	3.9 J	8.7 U	8.5 U	0.15 U
	2022-Apr-27	7.2 U	570	0.90 U	2.7 U	6.0 J	8.7 U	8.5 U	0.15 U
	2022-Apr-27 -FD	7.2 U	550	0.90 U	2.7 U	4.7 J	8.7 U	8.5 U	0.15 U
MW-18	2023-Apr-11	7.2 U	560	0.90 U	2.7 U	4.1 J	8.7 U	8.5 U	0.15 U
	2023-Apr-11 -FD	7.2 U	570	0.90 U	2.7 U	4.1 J	8.7 U	8.5 U	0.15 U
MW-19	2023-Apr-10	7.2 U	870	0.90 U	2.7 U	10 J	8.7 U	8.5 U	0.15 U
MW-19	2023-Apr-10	7.7 J	180	0.90 U	2.7 U	7.7 J	8.7 U	8.5 U	0.15 U
Deep Groundwater Zone									
MD-01	2018-Mar-07	7.2 U	35	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.15 U
	2019-Mar-07	37 J	36	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.15 U
	2020-Mar-11	38 J	32	0.50 U	3.3 U	25 J	8.7 U	8.5 U	0.15 U
	2021-Apr-21	45 J	36	0.20 U	1.3 U	7.9 J	8.7 U	8.5 U	0.15 U
	2022-May-03	38 J	27	0.90 U	2.7 U	9.3 J	8.7 U	8.5 U	0.15 U
MD-02	2023-Apr-13	41 J	43	0.90 U	2.7 U	16 J	8.7 U	8.5 U	0.15 U
	2018-Mar-07	7.2 U	3.9 U	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.15 U
	2019-Mar-07	7.2 U	13 J	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.15 U
	2020-Mar-11	7.2 U	13 J	0.50 U	3.3 U	15 J	8.7 U	8.5 U	0.15 U
	2021-Apr-21	7.2 U	12 J	0.20 U	1.3 U	4.6 J	8.7 U	8.5 U	0.15 U
MD-06	2022-Apr-26	7.2 U	13 J	0.90 U	2.7 U	5.9 J	8.7 U	8.5 U	0.15 U
	2023-Apr-10	7.2 U	11 J	0.90 U	2.7 U	13 J	8.7 U	8.5 U	0.15 U
	2018-Mar-05	7.2 U	63	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.15 U
	2019-Mar-06	7.2 U	27	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.15 U
	2020-Mar-12	7.2 U	110	0.50 U	3.3 U	21 J	8.7 U	8.5 U	0.15 U
MD-07	2021-Apr-19	93	130	0.20 U	1.3 U	6.7 J	8.7 U	8.5 U	0.15 U
	2022-May-03	7.2 U	19 J	0.90 U	2.7 U	2.7 U	8.7 U	8.5 U	0.15 U
	2023-Apr-12	7.2 U	51	0.90 U	2.7 U	6.9 J	8.7 U	8.5 U	0.15 U
	2018-Mar-05	75	130	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.15 U
	2019-Mar-06	85	110	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.18 J
MD-08	2020-Mar-11	100	120	0.50 U	3.3 U	37	8.7 U	8.5 U	0.15 U
	2021-Apr-19	7.2 U	40	0.20 U	1.5 J	7.0 J	8.7 U	8.5 U	0.26 J
	2022-May-03	120	120	0.90 U	2.7 U	12 J	8.7 U	8.5 U	0.15 U
	2023-Apr-13	93	98	0.90 U	2.7 U	16 J	8.7 U	8.5 U	0.15 U
	2021-Jun-17	7.2 U	30	0.20 U	1.3 U	11 J	8.7 U	8.5 U	0.15 U
MD-10	2022-May-02	7.2 U	20	0.90 U	2.7 U	8.5 J	8.7 U	8.5 U	0.15 U
	2023-Apr-12	7.2 U	22	0.90 U	2.7 U	15 J	8.7 U	8.5 U	0.15 U
	2021-Jun-16	7.2 U	70	0.20 U	1.3 U	7.6 J	8.7 U	8.5 U	0.15 U
MD-13	2022-Apr-28	7.2 U	77	0.90 U	2.7 U	6.6 J	8.7 U	8.5 U	0.15 U
	2023-Apr-13	7.2 U	73	0.90 U	2.7 U	15 J	8.7 U	8.5 U	0.15 U
	2018-Mar-06	7.2 U	32	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.15 U
	2019-Mar-06	7.2 U	37	0.50 U	3.3 U	2.7 U	8.7 U	8.5 U	0.15 U
	2020-Mar-11	7.2 U	130	0.50 U	3.3 U	7.4 J	8.7 U	8.5 U	0.15 U
MD-13	2021-Sep-23	7.2 U	28	0.20 U	1.3 U	3.9 J	8.7 U	8.5 U	0.15 U
	2022-Apr-27	7.2 U	47	0.90 U	2.7 U	6.5 J	8.7 U	8.5 U	0.15 U
	2023-Apr-12	7.2 U	28	0.90 U	2.7 U	17 J	8.7 U	8.5 U	0.15 U

Table 7. Analytical Results - Total Metals
Annual Groundwater Monitoring Report 2023
SMP Portland Terminal
Portland, Oregon

Well ID	Sample Date	Arsenic (µg/L)	Barium (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Lead (µg/L)	Selenium (µg/L)	Silver (µg/L)	Mercury (µg/L)
Project specific SLV		2.1	4	2.2	11	2.5	5	0.12	--
MD-14	2021-Apr-20	7.2 U	27	0.20 U	1.3 U	3.2 J	8.7 U	8.5 U	0.15 U
	2022-May-02	7.2 U	20	0.90 U	2.7 U	6.1 J	8.7 U	8.5 U	0.15 U
	2023-Apr-11	7.2 U	20	0.90 U	2.7 U	10 J	8.7 U	8.5 U	0.15 U

Notes and Acronyms:

For comparison purposes, this table provides the most conservative SLVs as described in the 2021 Source Control Evaluation (AECOM, 2021b) and presented in Table 8 of this report.

Values in **bold** were greater than the project-specific SLV

-- = data not analyzed or not available

µg/L = micrograms/liter

FD = field duplicate

J = estimated concentration

LPH = liquid phase hydrocarbons

SLV = screening level value

U = analyte not detected above method detection limit

Table 8. Screening Level Values for Groundwater
Annual Groundwater Monitoring Report 2023
SMP Portland Terminal
Portland, Oregon

Analyte		COPC/ CPEC ¹	Project-specific SLV	Human Health Screening Level Values		Ecological Screening Level Values	
				µg/L	Source	µg/L	Source
TPH	Gasoline	Yes	1,000	1,000	National Pollutant Elimination System permit level ²	NA	
	Diesel	Yes	1,000	1,000		NA	
	Heavy Oil		1,000	1,000		NA	
VOCs	Benzene		1.4	1.4	DEQ WQC ³	130	DEQ Level II Ecological SLVs ⁴
	Toluene		9.8	1,500		9.8	
	Ethylbenzene		7.3	210		7.3	
	Xylenes		13	NA		13	
	Methyl tert-butyl ether		NA	NA		NA	
PAHs	Acenaphthene		56	99	DEQ WQC ³	56	EPA PAH specific FCV ⁵
	Acenaphthylene		307	NA		307	
	Anthracene		21	4,000		21	
	Benzo(a)anthracene	Yes	0.0018	0.0018		2.2	
	Benzo(a)pyrene	Yes	0.0018	0.0018		0.9	
	Benzo(b)fluoranthene	Yes	0.0018	0.0018		0.68	
	Benzo(k)fluoranthene	Yes	0.0018	0.0018		0.64	
	Benzo(g,h,i)pyrene		0.44	NA		0.44	
	Chrysene	Yes	0.0018	0.0018		2.0	
	Dibenz(a,h)anthracene	Yes	0.0018	0.0018		0.28	
	Dibenzothiophene		NA	NA		NA	
	Fluoranthene		7.1	14		7.1	
	Fluorene		39	530		39	
	Indeno(1,2,3-cd)pyrene	Yes	0.0018	0.0018		0.275	
	1-Methylnaphthalene		75	NA		75	
	2-Methylnaphthalene		72	NA		72	
	Naphthalene		194	NA		194	
	Phenanthrene		19	4,000		19	
	Pyrene		10	400		10	
Metals	Arsenic	Yes	2.1	2.1	DEQ WQC ³	150	DEQ Level II Ecological SLVs ⁴
	Barium	Yes	4	NA		4	
	Cadmium		2.2	NA		2.2	
	Chromium		11	NA		11	
	Lead		2.5	NA		2.5	
	Mercury		NA	NA		NA	
	Selenium		5	420		5	
	Silver		0.12	NA		0.12	

Notes and Acronyms:

¹ = COPCs/CPECs and relevant SLVs for the Terminal were originally identified in the *Groundwater Modeling Report*. Prepared for Atlantic Richfield Company for BP Bulk Portland Terminal, Portland, Oregon. July 2013.

² = 2022 National Pollutant Elimination System #1500 permit, Site ID # 4248

³ = DEQ, 2011. Oregon Department of Environmental Quality, Table 40: Human Health Water Quality Criteria for Toxic Pollutants (Organism Only). Effective October 17, 2011.

⁴ = DEQ, 2001. Oregon Department of Environmental Quality, Ecological Risk Assessment Level II Ecological Screening Level Values. Table 1. Surface Water. December 2001.

⁵ = EPA, 2003. United States Environmental Protection Agency, Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks for the Protection of Benthic Organisms: PAH Mixtures. Table 3-4 EPA PAH specific FCV.

Project-specific SLV = lowest SLV for each constituent, as provided in the 2021 Source Control Evaluation.

µg/L = micrograms per liter

COPC = Contaminant of potential concern

CPEC = Contaminant of potential ecological concern

DEQ = Oregon Department of Environmental Quality

EPA = US Environmental Protection Agency

NA = not available

PAHs = polycyclic aromatic hydrocarbons

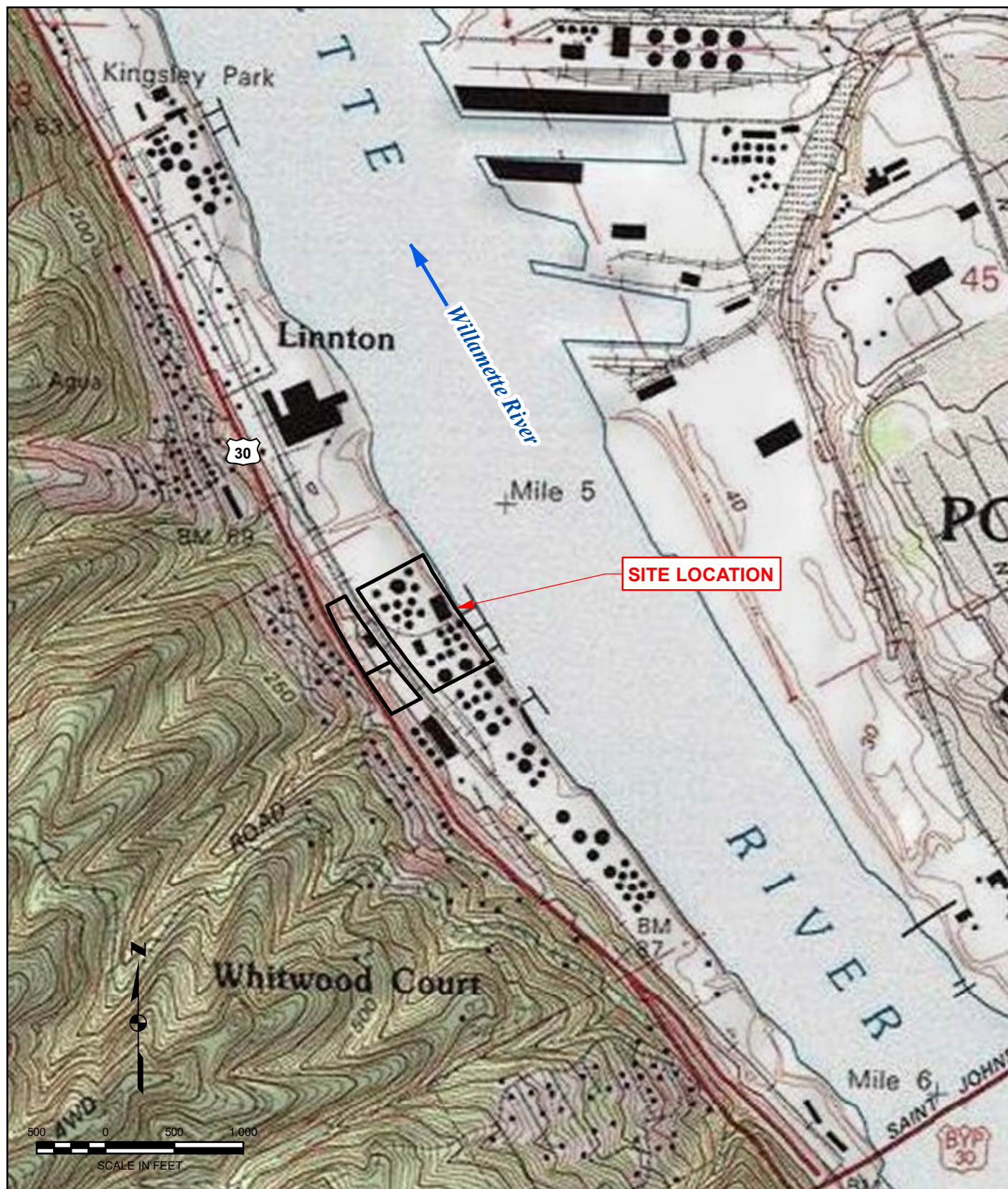
SLV = screening level value

TPH = Total petroleum hydrocarbon

VOCs = volatile organic compounds

WQC = water quality criteria

Figures



Source: USGS 2020. Copyright: © 2013 National Geographic Society, i-cubed

AECOM

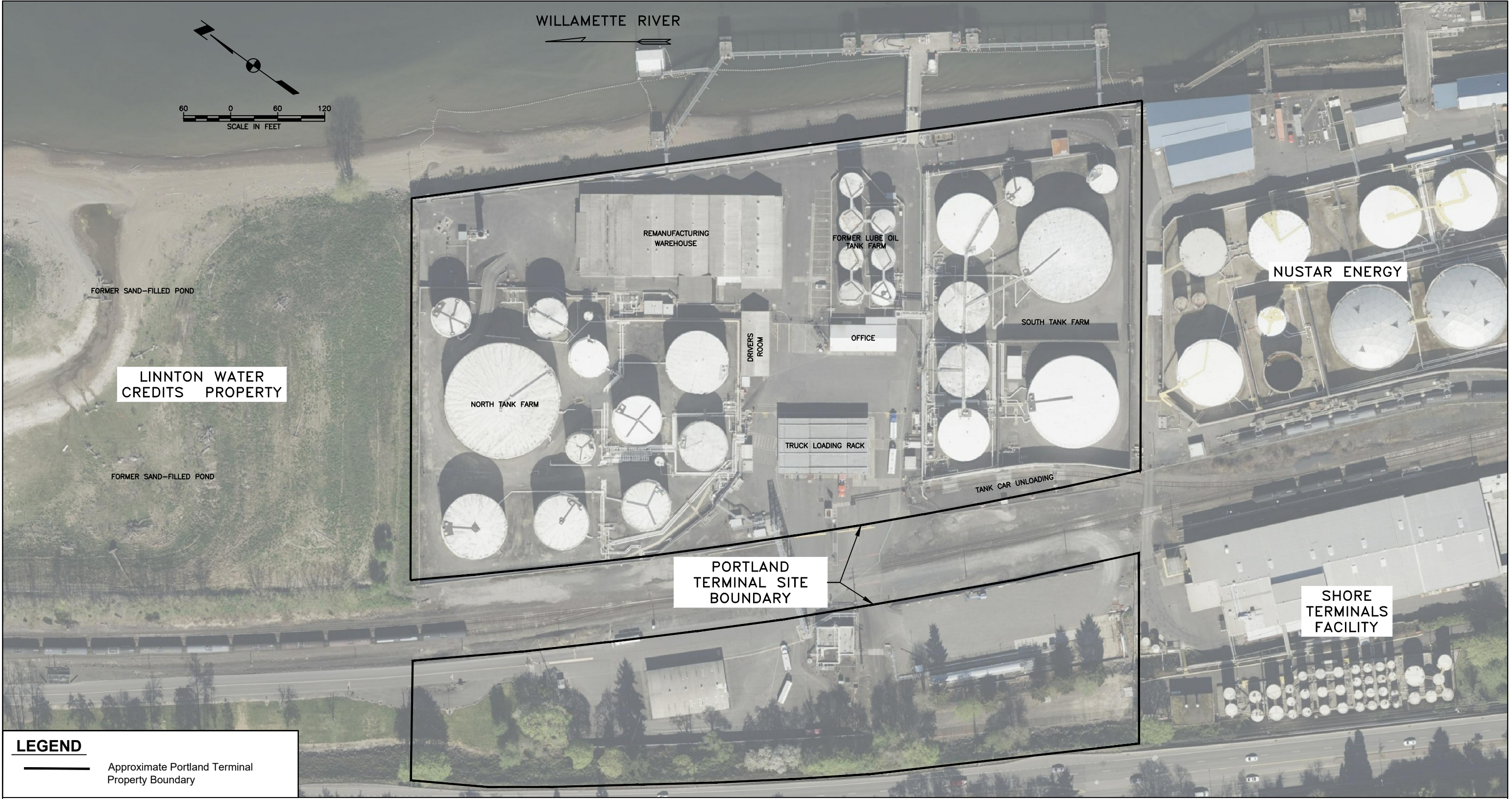
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SITE VICINITY MAP

PORTLAND TERMINAL
9930 NW ST HELENS ROAD
PORTLAND, OREGON

FIGURE 1

K:\BP\GW_Contours\2023\Annual_GW_Report_2023\Fig 2 Site Location Map.dwg Jun 17, 2024 - 1:14pm



Imagery Source: Microsoft Bing ©2023

AECOM

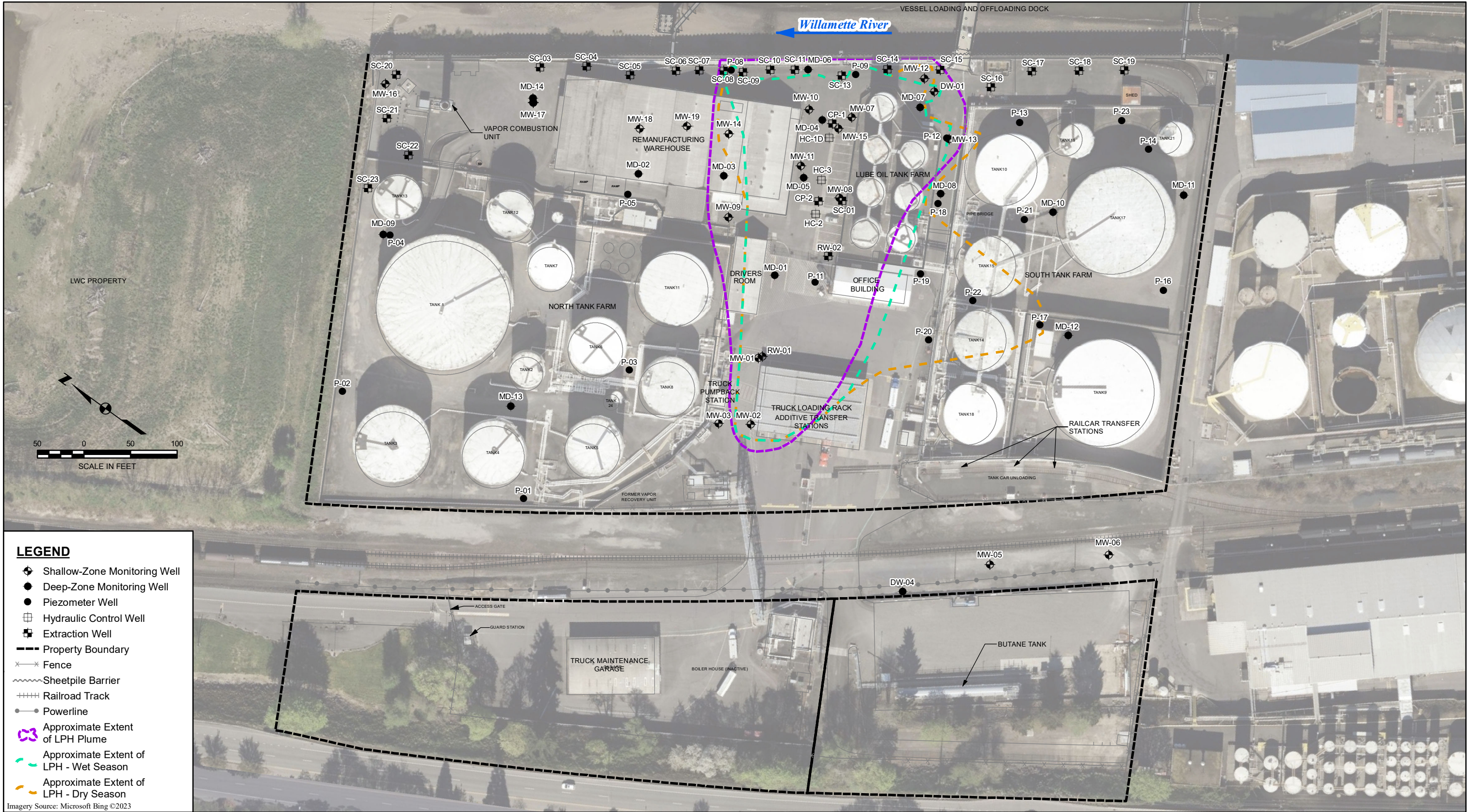
SITE MAP OF TERMINAL AND SURROUNDING PROPERTY

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PORTLAND TERMINAL
9930 NW ST HELENS
PORTLAND, OREGON

FIGURE 2

K:\BP\GW_Contours\2023\Annual_GW_Report_2023\Fig 3 Approximate LPH Lateral Extent.mxd



Notes: Source documentation for approximate extent of LPH available in the Terminal's 2021 Source Control Evaluation.
HC-1 was over-drilled, removed, and replaced with a deep well identified as HC-1D in September 2023. A shallow well identified as HC-1S was installed directly adjacent to HC-1D in January 2024.
Wells HC-1S and HC-1D functionally replace HC-1. Well HC-1S is not portrayed in this figure because it was not gauged/sampled in 2023.
LPH = Liquid Phase Hydrocarbons

CONCEPTUAL LATERAL EXTENT OF LIQUID PHASE HYDROCARBON

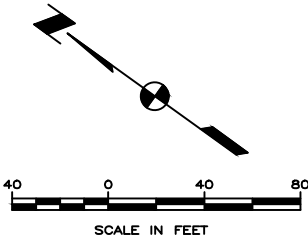
PORTLAND TERMINAL
SOURCE CONTROL EVALUATION REPORT 2021
PORTLAND, OREGON

AECOM

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FIGURE 3

K:\BP\GW_Contours\2023\Annual_GW_Report_2023\Fig 4 Quarterly Depth to GW Gauging Locations.dwg Mar 21, 2024 - 10:35am



LEGEND

- Approximate Property Line
- Concrete Retaining Wall
- Fence
- Railroad Tracks
- Sheetpile Barrier
- Gate
- Powerline
- SGZ Monitoring Well
- SGZ Extraction Well
- DGZ Monitoring Well
- SGZ/DGZ Extraction Well

SGZ Monitoring wells gauged quarterly shown in **BLUE**
SGZ Extraction well gauged quarterly shown in **GREEN**
DGZ Monitoring wells gauged quarterly shown in **BROWN**
SGZ/DGZ Extraction well gauged quarterly shown in **PURPLE**
Wells not gauged quarterly shown in **BLACK**

Notes:
CMT = Continuous Multichannel Tubing
DGZ = Deep Groundwater Zone
SGZ = Shallow Groundwater Zone



QUARTERLY GROUNDWATER GAUGING LOCATIONS

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PORTLAND TERMINAL
9930 NW ST HELENS
PORTLAND, OREGON

FIGURE 4

K:\BP\GW_Contours\2023\Annual_GW_Report_2023\Fig 5 Annual GW Sample Locations.dwg Mar 21, 2024 - 10:34am

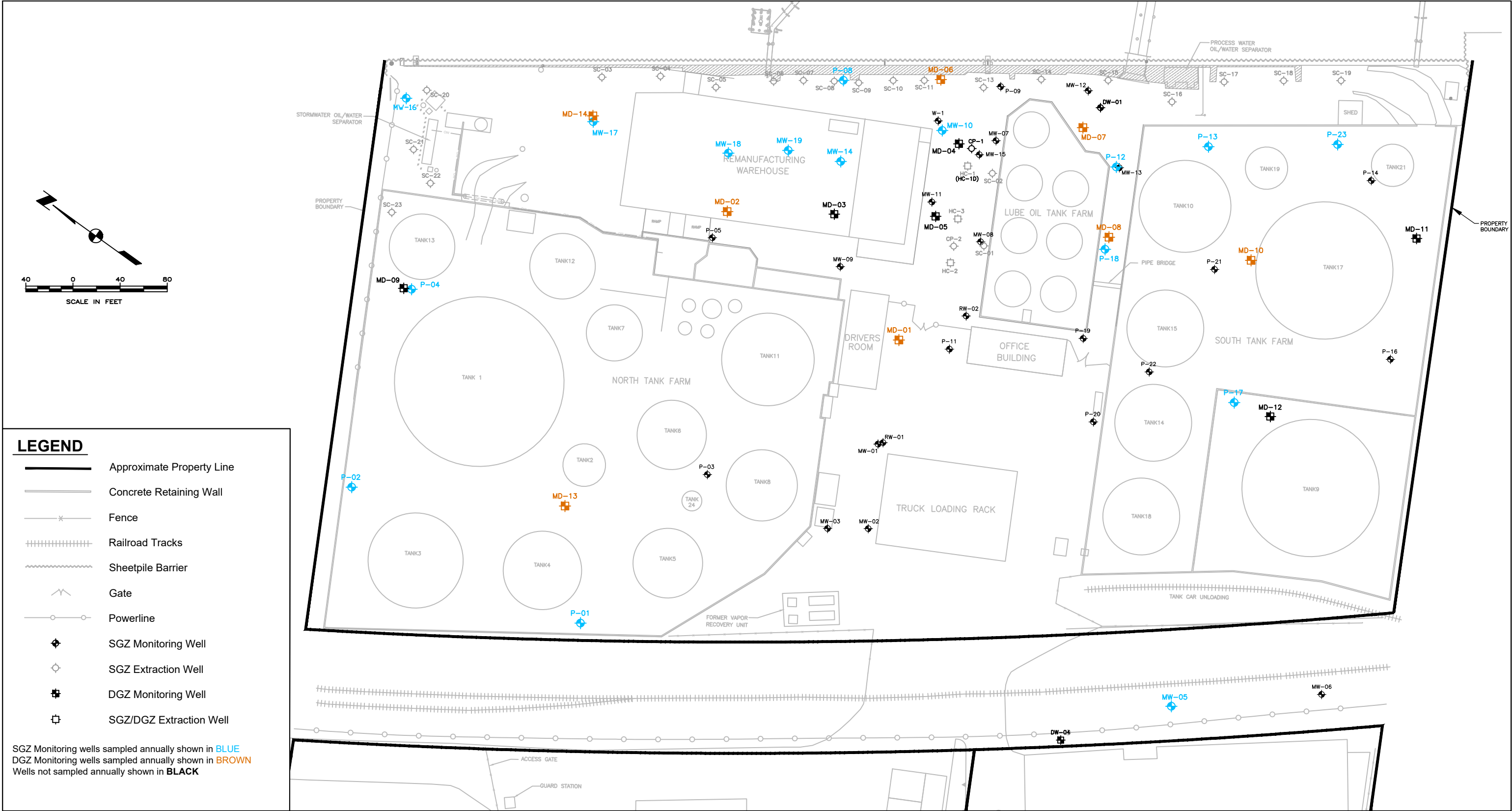
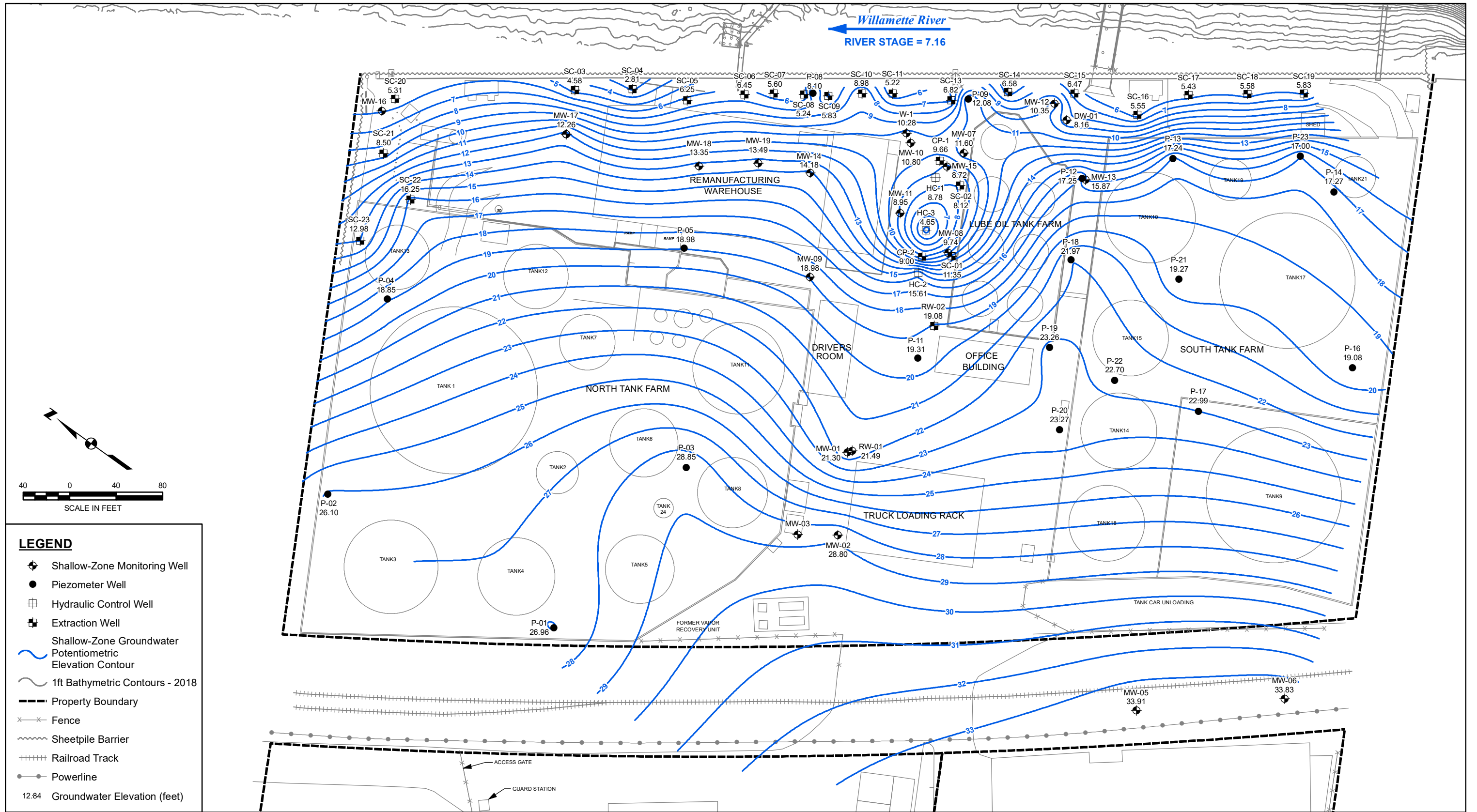


FIGURE 5

K:\BP\GW_Contours\2023\Annual_GW_Report_2023\Fig 6 1Q Shallow_2023.mxd



Note: River stage is the daily average measured at the Morrison Bridge gauge, US Geological Survey station 14211720
River stage elevation was converted from NGVD 29 (North American Vertical Datum of 1929) to City of Portland datum by adding 2.92 feet.

FIRST QUARTER 2023 SHALLOW ZONE GROUNDWATER ELEVATIONS (FEBRUARY 14, 2023)

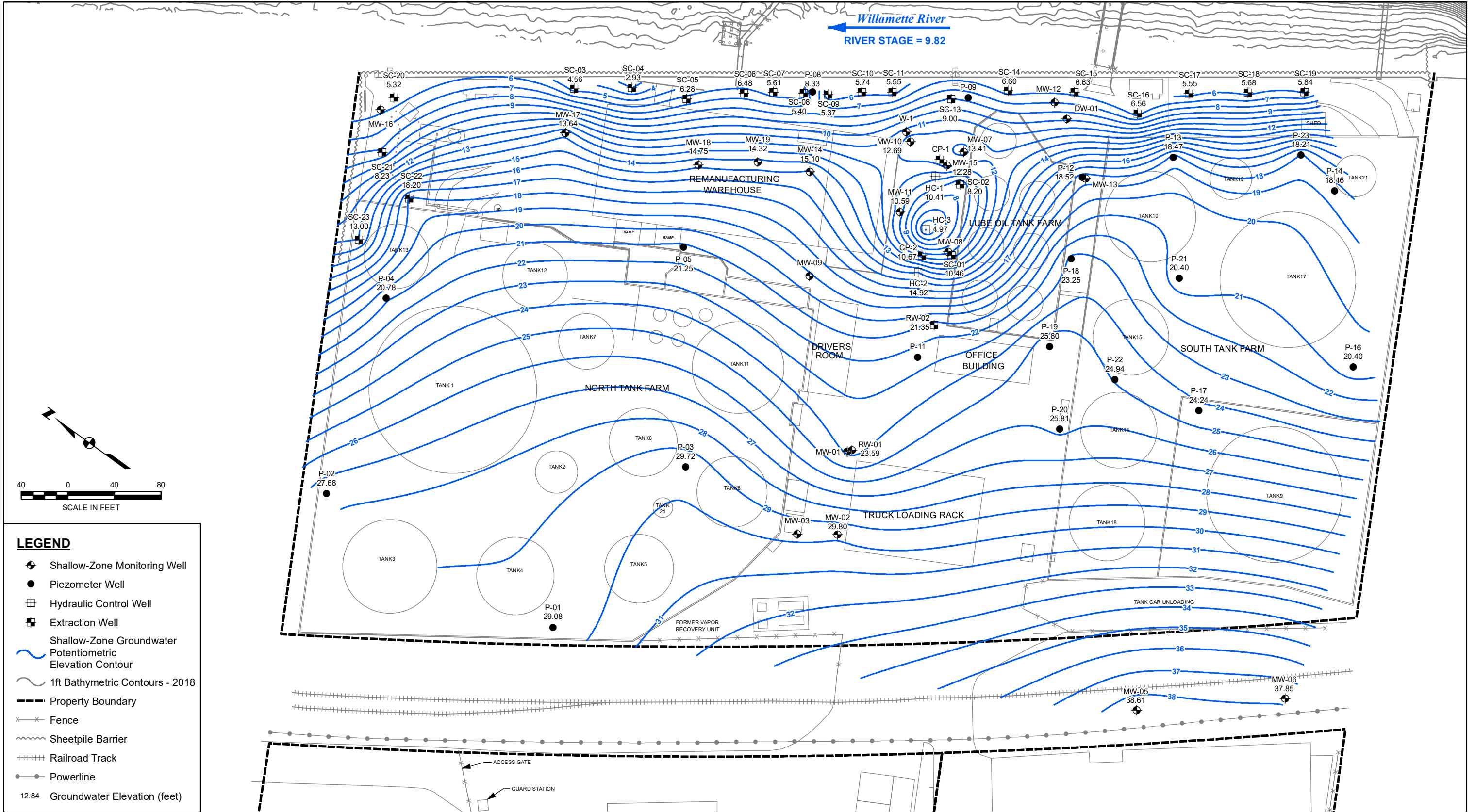
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PORTLAND TERMINAL
9930 NW ST HELENS
PORTLAND, OREGON

AECOM

FIGURE 6

K:\BP\GW_Contours\2023\Annual_GW_Report_2023\Fig 7 2D Shallow_2023.mxd



Note: River stage is the daily average measured at the Morrison Bridge gauge, US Geological Survey station 14211720
River stage elevation was converted from NGVD 29 (North American Vertical Datum of 1929) to City of Portland datum by adding 2.92 feet.

SECOND QUARTER 2023 SHALLOW ZONE GROUNDWATER ELEVATIONS (APRIL 11, 2023)

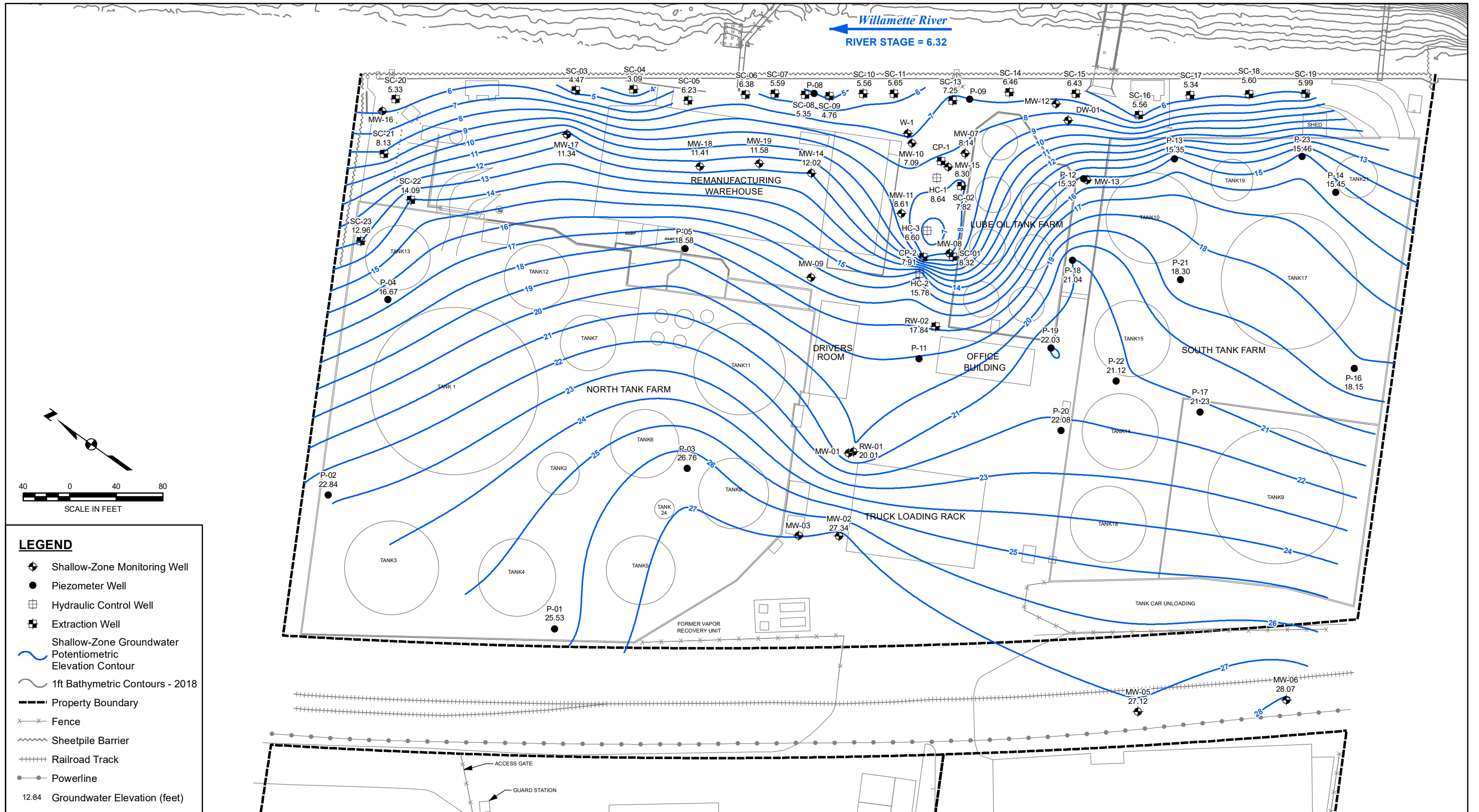


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PORTLAND TERMINAL
9930 NW ST HELENS
PORTLAND, OREGON

FIGURE 7

K:\BP\GW_Contours\2023\Annual_GW_Report_2023\Fig 8 3Q Shallow_2023.mxd



Note: River stage is the daily average measured at the Morrison Bridge gauge, US Geological Survey station 14211720
River stage elevation was converted from NGVD 29 (North American Vertical Datum of 1929) to City of Portland datum by adding 2.92 feet.

THIRD QUARTER 2023 SHALLOW ZONE GROUNDWATER ELEVATIONS (AUGUST 29, 2023)

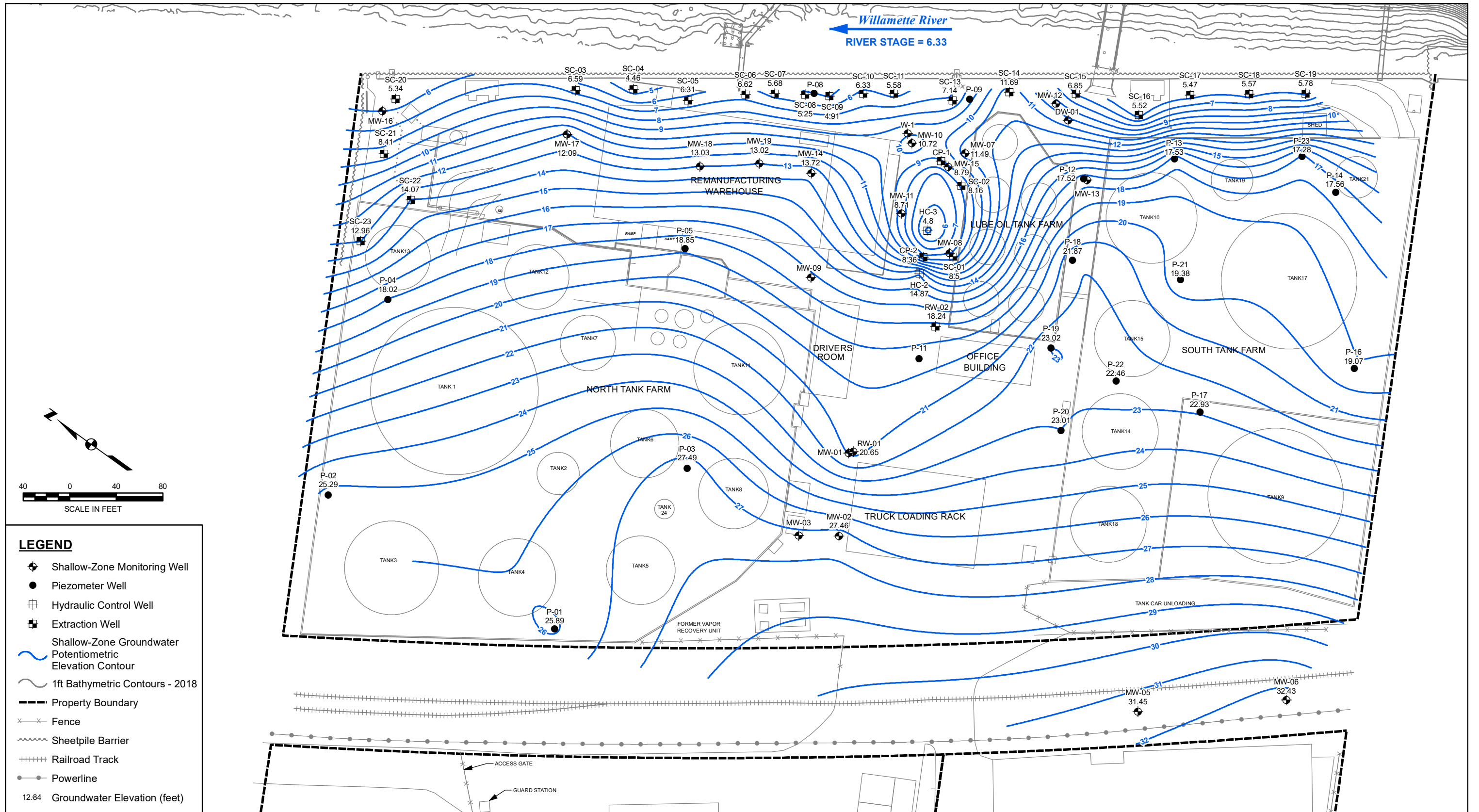
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PORTLAND TERMINAL
9930 NW ST HELENS
PORTLAND, OREGON

FIGURE 8

K:\BP\GW_Contours\2023\Annual_GW_Report_2023\Fig 9.4Q Shallow_2023.mxd



Note: River stage is the daily average measured at the Morrison Bridge gauge, US Geological Survey station 14211720
River stage elevation was converted from NGVD 29 (North American Vertical Datum of 1929) to City of Portland datum by adding 2.92 feet.

FOURTH QUARTER 2023 SHALLOW ZONE GROUNDWATER ELEVATIONS (NOVEMBER 28, 2023)

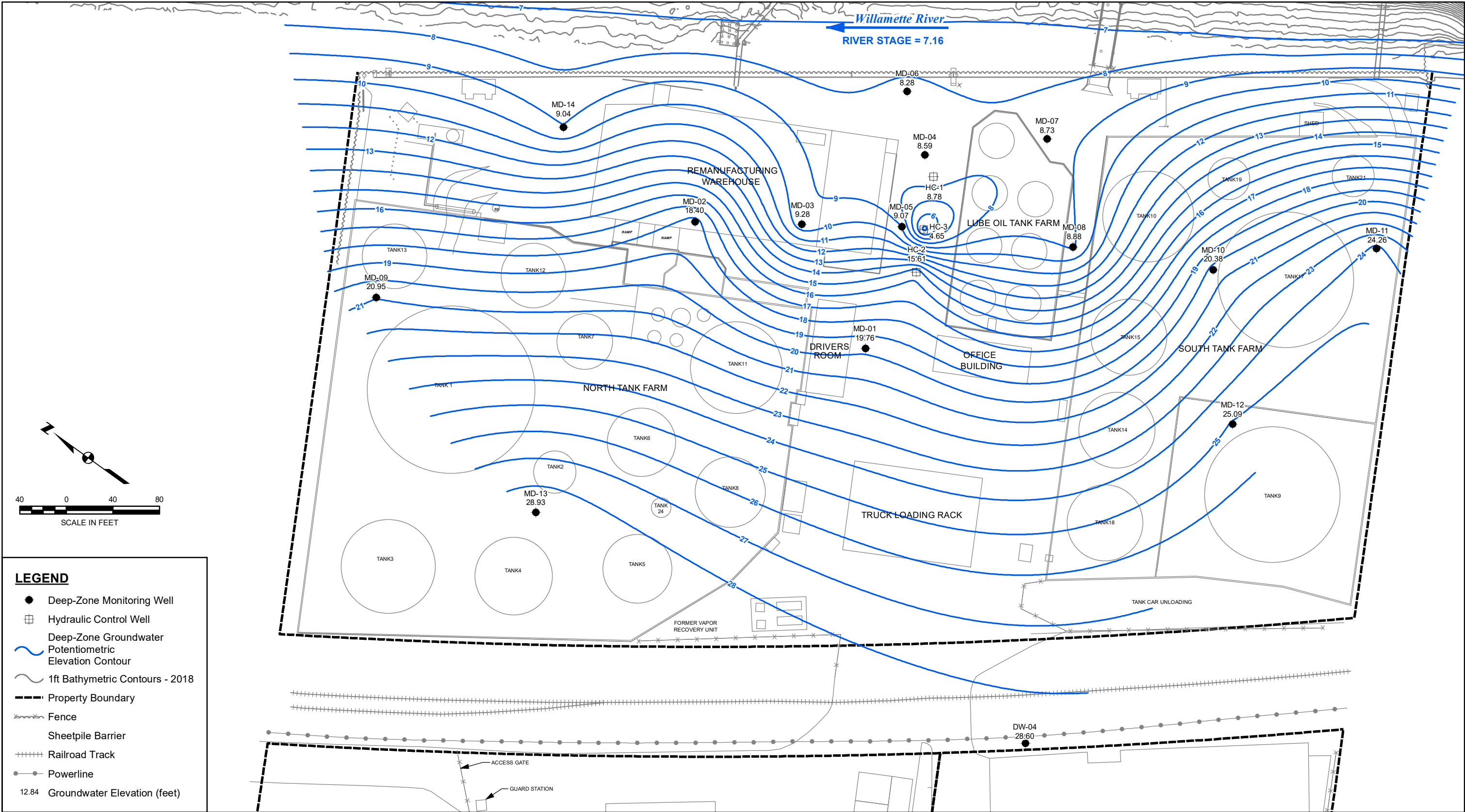
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PORTLAND TERMINAL
9930 NW ST HELENS
PORTLAND, OREGON

AECOM

FIGURE 9

K:\BP\GW_Contours\2023\Fig 10 1Q Deep_2023.mxd



Note: River stage is the daily average measured at the Morrison Bridge gauge, US Geological Survey station 14211720
River stage elevation was converted from NGVD 29 (North American Vertical Datum of 1929) to City of Portland datum by adding 2.92 feet.

FIRST QUARTER 2023 DEEP ZONE GROUNDWATER ELEVATIONS (FEBRUARY 14, 2023)

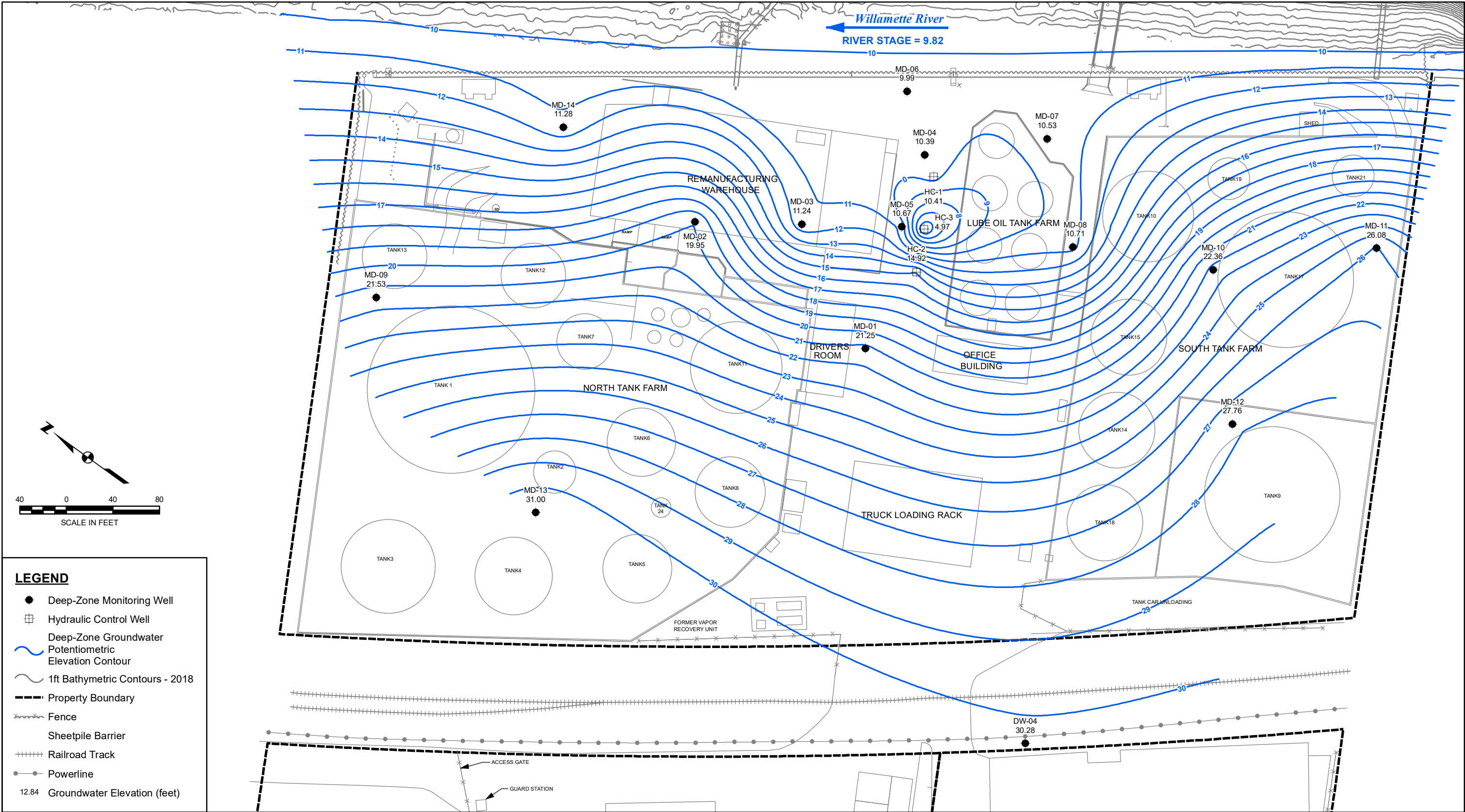


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PORTLAND TERMINAL
9930 NW ST HELENS
PORTLAND, OREGON

FIGURE 10

K:\BP\GW_Contours\2023\Fig 11 2Q Deep 2023.mxd



Note: River stage is the daily average measured at the Morrison Bridge gauge, US Geological Survey station 14211720
River stage elevation was converted from NGVD 29 (North American Vertical Datum of 1929) to City of Portland datum by adding 2.92 feet.

SECOND QUARTER 2023 DEEP ZONE GROUNDWATER ELEVATIONS (APRIL 11, 2023)

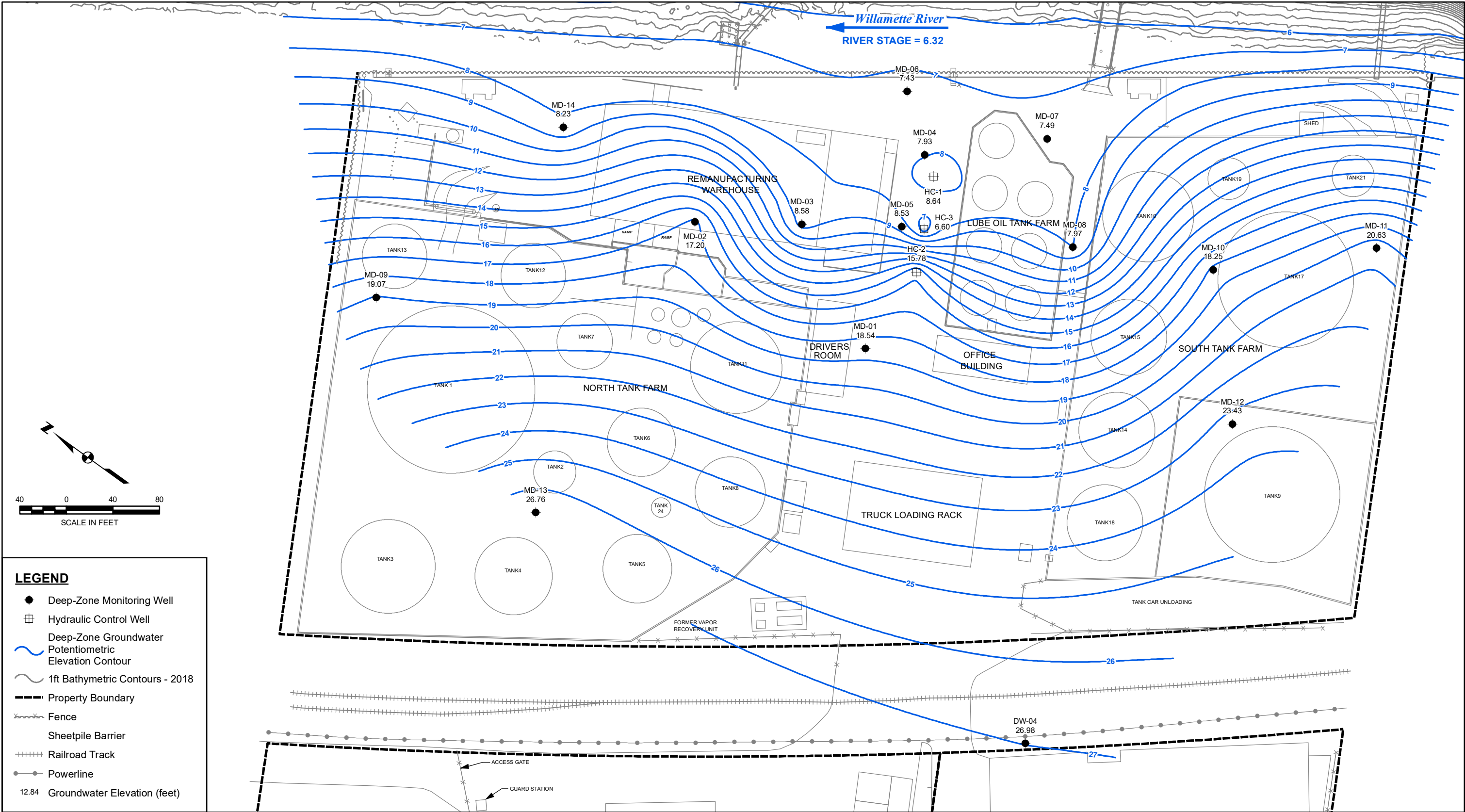


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PORTLAND TERMINAL
9930 NW ST HELENS
PORTLAND, OREGON

FIGURE 11

K:\BP\GW_Contours\2023\Fig 12 3Q Deep_2023.mxd



Note: River stage is the daily average measured at the Morrison Bridge gauge, US Geological Survey station 14211720
River stage elevation was converted from NGVD 29 (North American Vertical Datum of 1929) to City of Portland datum by adding 2.92 feet.

THIRD QUARTER 2023 DEEP ZONE GROUNDWATER ELEVATIONS (AUGUST 29, 2023)

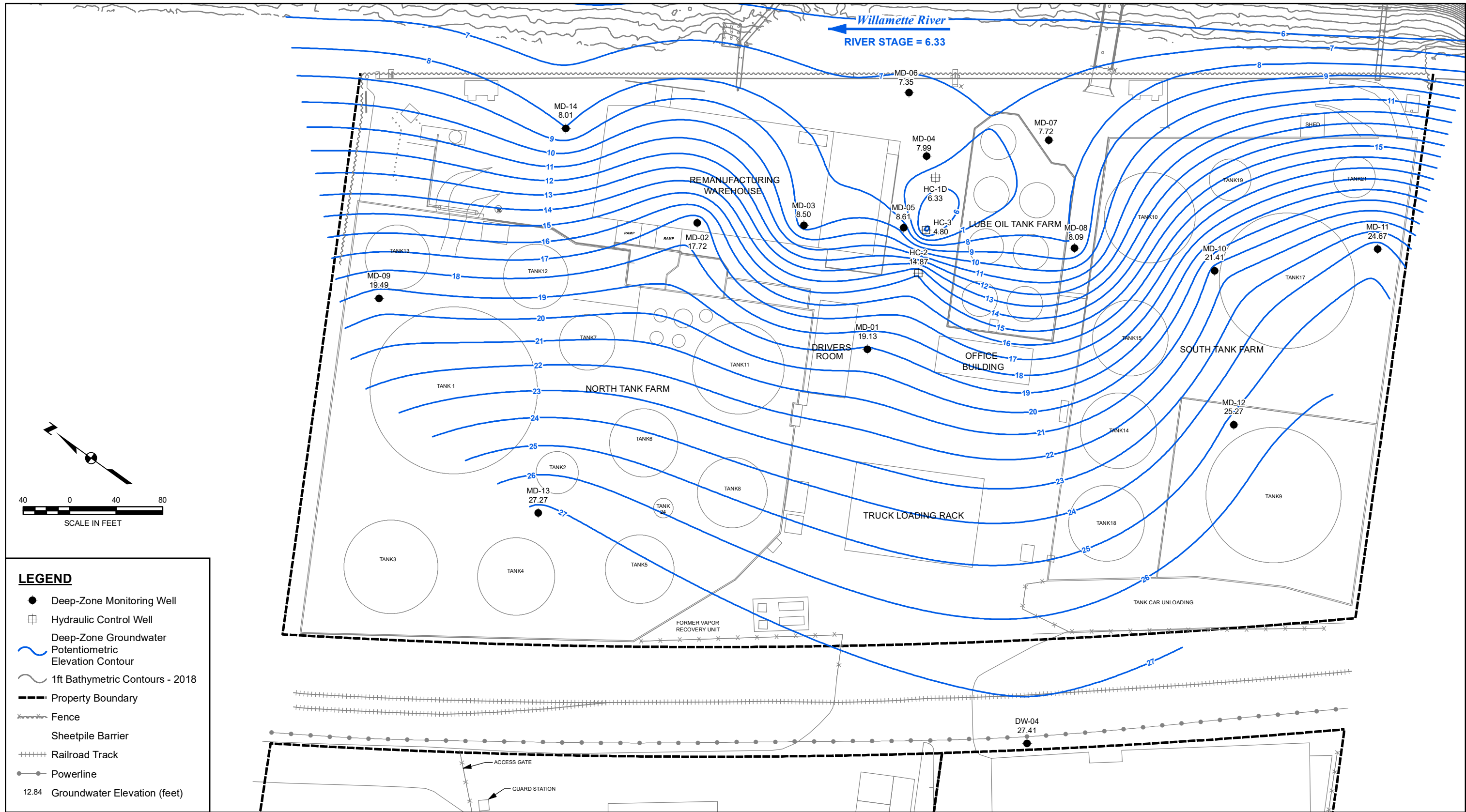


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PORTLAND TERMINAL
9930 NW ST HELENS
PORTLAND, OREGON

FIGURE 12

K:\BP\GW_Contours\2023\Annual_GW_Report_2023\Fig 13 4Q Deep_2023.mxd



Note: River stage is the daily average measured at the Morrison Bridge gauge, US Geological Survey station 14211720
River stage elevation was converted from NGVD 29 (North American Vertical Datum of 1929) to City of Portland datum by adding 2.92 feet.

FOURTH QUARTER 2023 DEEP ZONE GROUNDWATER ELEVATIONS (NOVEMBER 28, 2023)



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PORTLAND TERMINAL
9930 NW ST HELENS
PORTLAND, OREGON

FIGURE 13

K:\BP\GW_Contours\2023\Annual GW Report 2023\Fig 14 1Q23 LPH Thickness.mxd



FIRST QUARTER 2023 SHALLOW ZONE LPH THICKNESS (FEBRUARY 14, 2023)

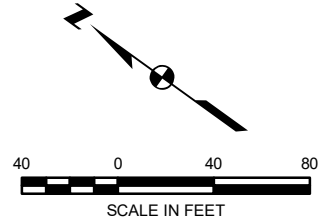


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PORTLAND TERMINAL
9930 NW ST HELENS
PORTLAND, OREGON

FIGURE 14

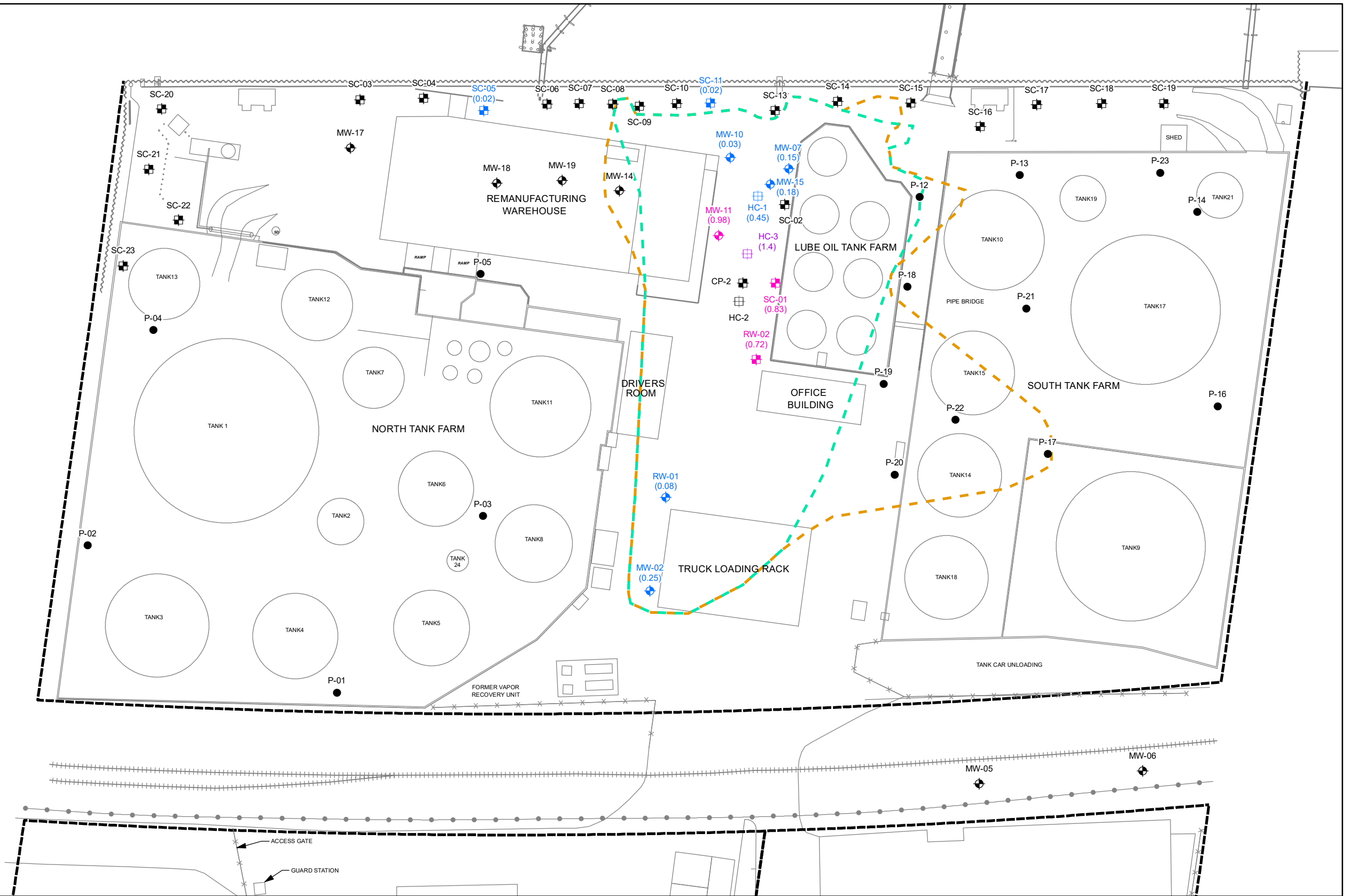
K:\BP\GW_Contours\2023\Annual GW Report 2023\Fig 15 2Q23 LPH Thickness.mxd



LEGEND

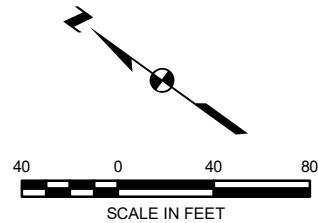
- Shallow-Zone Monitoring Well
- Piezometer Well
- Hydraulic Control Well
- Extraction Well
- Approximate Extent of LPH - Wet Season
- Approximate Extent of LPH - Dry Season
- (0.12) LPH Thickness (feet)
- (0.25) LPH=0-0.5 ft Thick
- (0.75) LPH=0.51-1.0 ft Thick
- (1.50) LPH>1.0 ft Thick
- Property Boundary
- Fence
- Sheetpile Barrier
- Railroad Track
- Powerline

LPH = Liquid phase hydrocarbon



SECOND QUARTER 2023 SHALLOW ZONE LPH THICKNESS (APRIL 11, 2023)

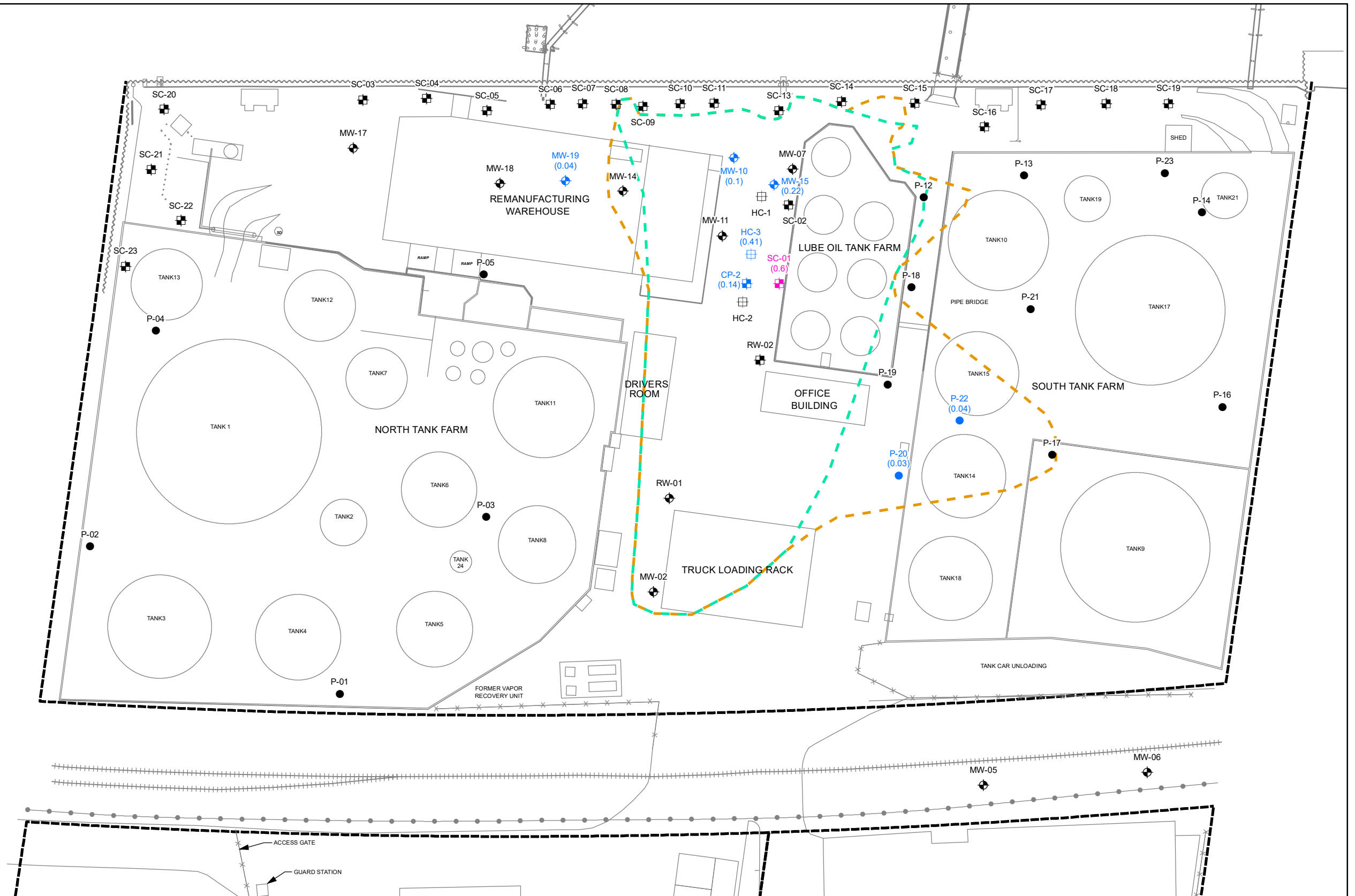
K:\BP\GW_Contours\2023\Annual GW Report 2023\Fig 16 3Q23 LPH Thickness.mxd



LEGEND

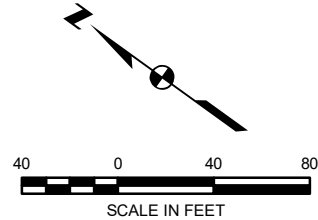
- Shallow-Zone Monitoring Well
- Piezometer Well
- Hydraulic Control Well
- Extraction Well
- Approximate Extent of LPH - Wet Season
- Approximate Extent of LPH - Dry Season
- (0.12) LPH Thickness (feet)
- (0.25) LPH=0-0.5 ft Thick
- (0.75) LPH=0.51-1.0 ft Thick
- (1.50) LPH>1.0 ft Thick
- Property Boundary
- Fence
- Sheetpile Barrier
- Railroad Track
- Powerline

LPH = Liquid phase hydrocarbon



THIRD QUARTER 2023 SHALLOW ZONE LPH THICKNESS (AUGUST 29, 2023)

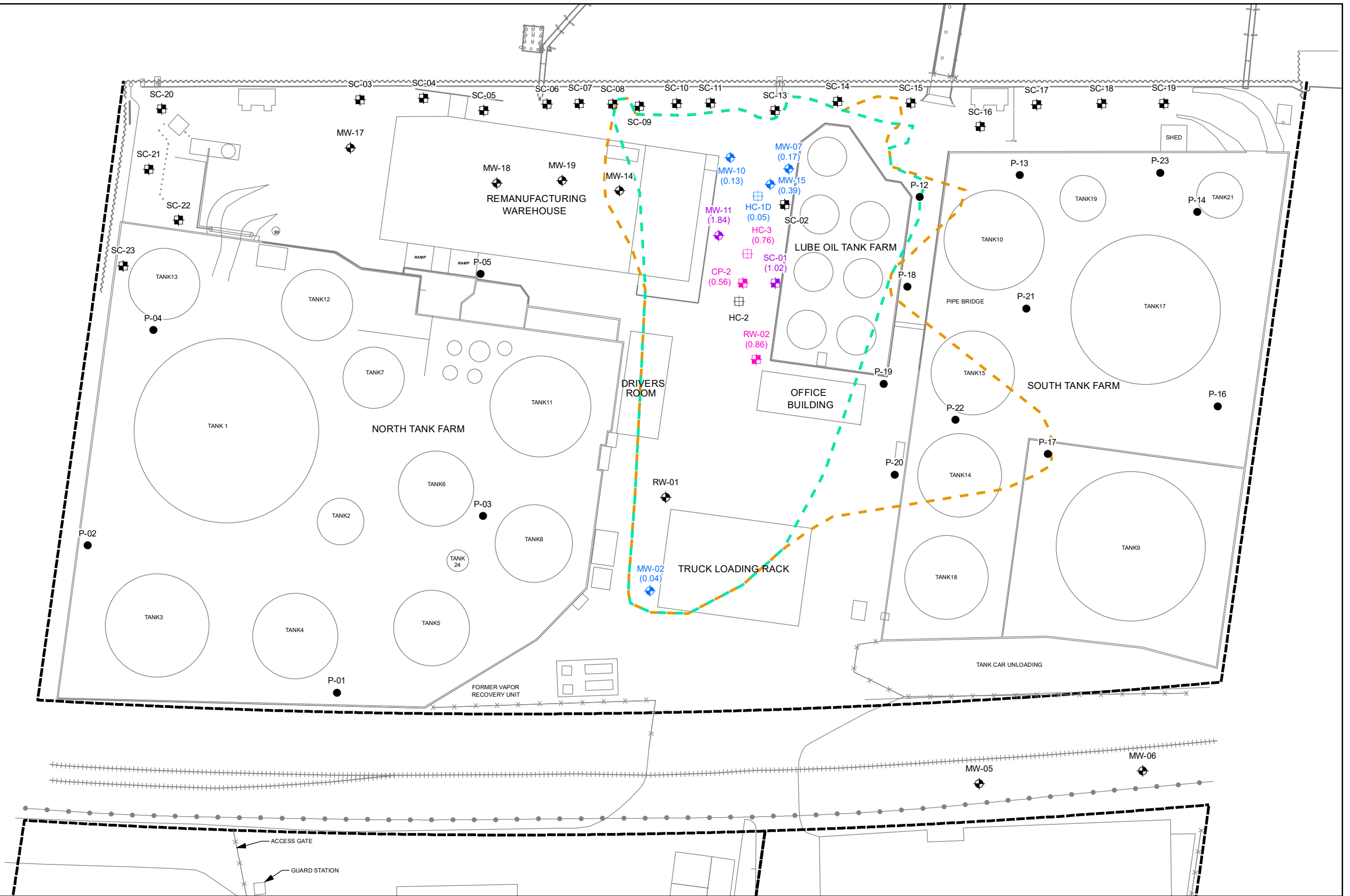
K:\BP\GW_Contours\2023\Annual GW Report 2023\Fig 17 4Q23 LPH Thickness.mxd



LEGEND

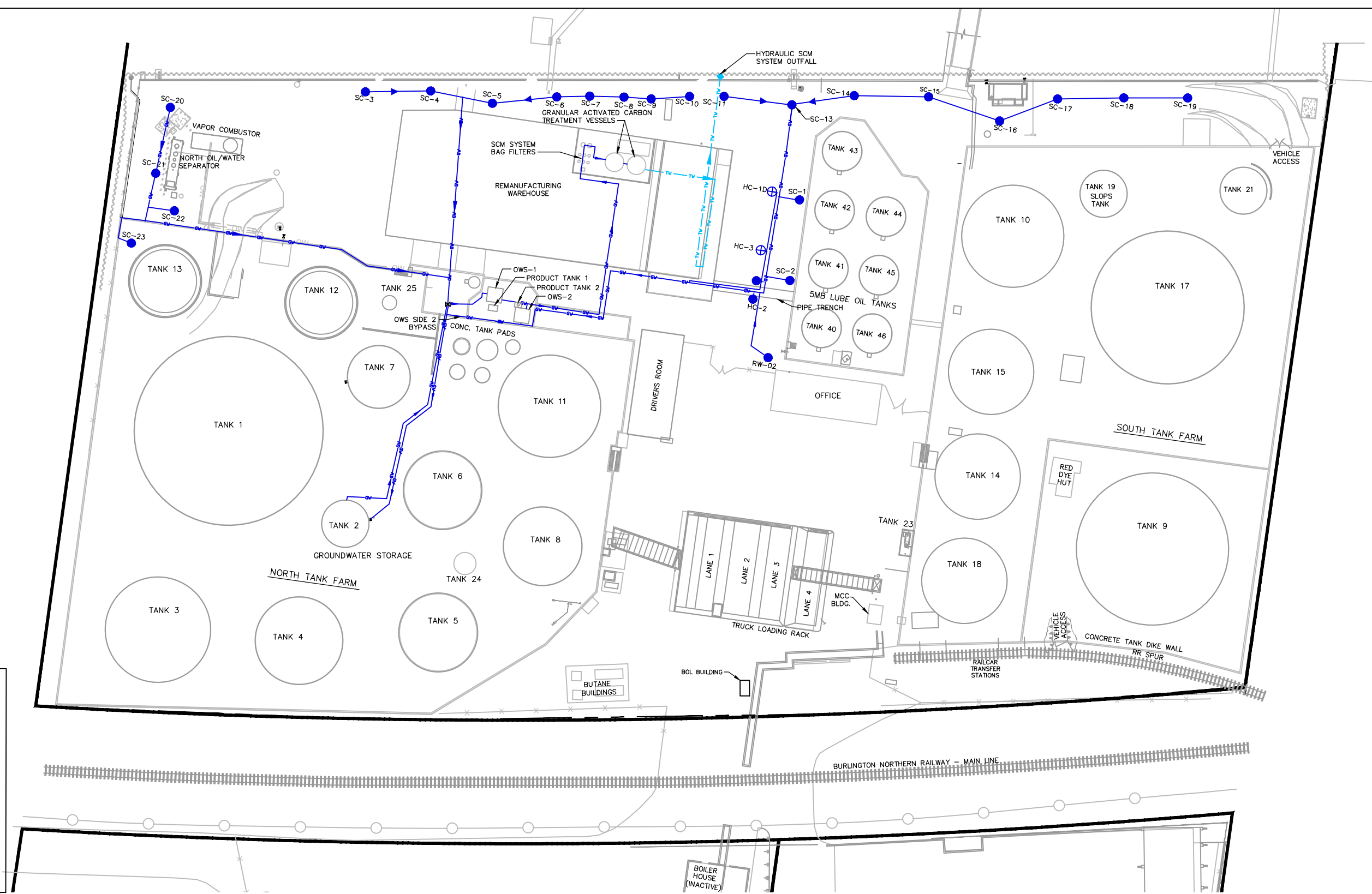
- Shallow-Zone Monitoring Well
- Piezometer Well
- Hydraulic Control Well
- Extraction Well
- Approximate Extent of LPH - Wet Season
- Approximate Extent of LPH - Dry Season
- (0.12) LPH Thickness (feet)
- (0.25) LPH=0-0.5 ft Thick
- (0.75) LPH=0.51-1.0 ft Thick
- (1.50) LPH>1.0 ft Thick
- Property Boundary
- Fence
- Sheetpile Barrier
- Railroad Track
- Powerline

LPH = Liquid phase hydrocarbon



FOURTH QUARTER 2023 SHALLOW ZONE LPH THICKNESS (NOVEMBER 28, 2023)

K:\BP\GW_Contours\2023\Annual_GW_Report_2023\Fig 18 Hydraulic SCM System.dwg Jun 17, 2024 - 2:02pm



LEGEND

 Outfall

 HC-1 Hydraulic Control (HC) Well

 SC-3 Source Control (SC) Well

 Treated Water Line

 Groundwater Line

 Property Boundary

 Railroad Tracks

 Sheetpile Barrier

Notes:

HC-1 was over-drilled, removed, and replaced with a deep well identified as HC-1D in September 2023. A shallow well identified as HC-1S was installed directly adjacent to HC-1D in January 2024. Wells HC-1S and HC-1D functionally replace HC-1. Well HC-1S is not portrayed in this figure because it was not yet operational in 2023.

SCM = Source Control Measure

BOL = Bill of Lading

OWS = Oil Water Separator



HYDRAULIC SOURCE CONTROL MEASURE SYSTEM

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PORTLAND TERMINAL
9930 NW ST HELENS
PORTLAND, OREGON

FIGURE 18

Figure 19. Liquid Phase Hydrocarbon Recovery by Area

Annual Groundwater Monitoring

SMP Portland Terminal

Portland, Oregon

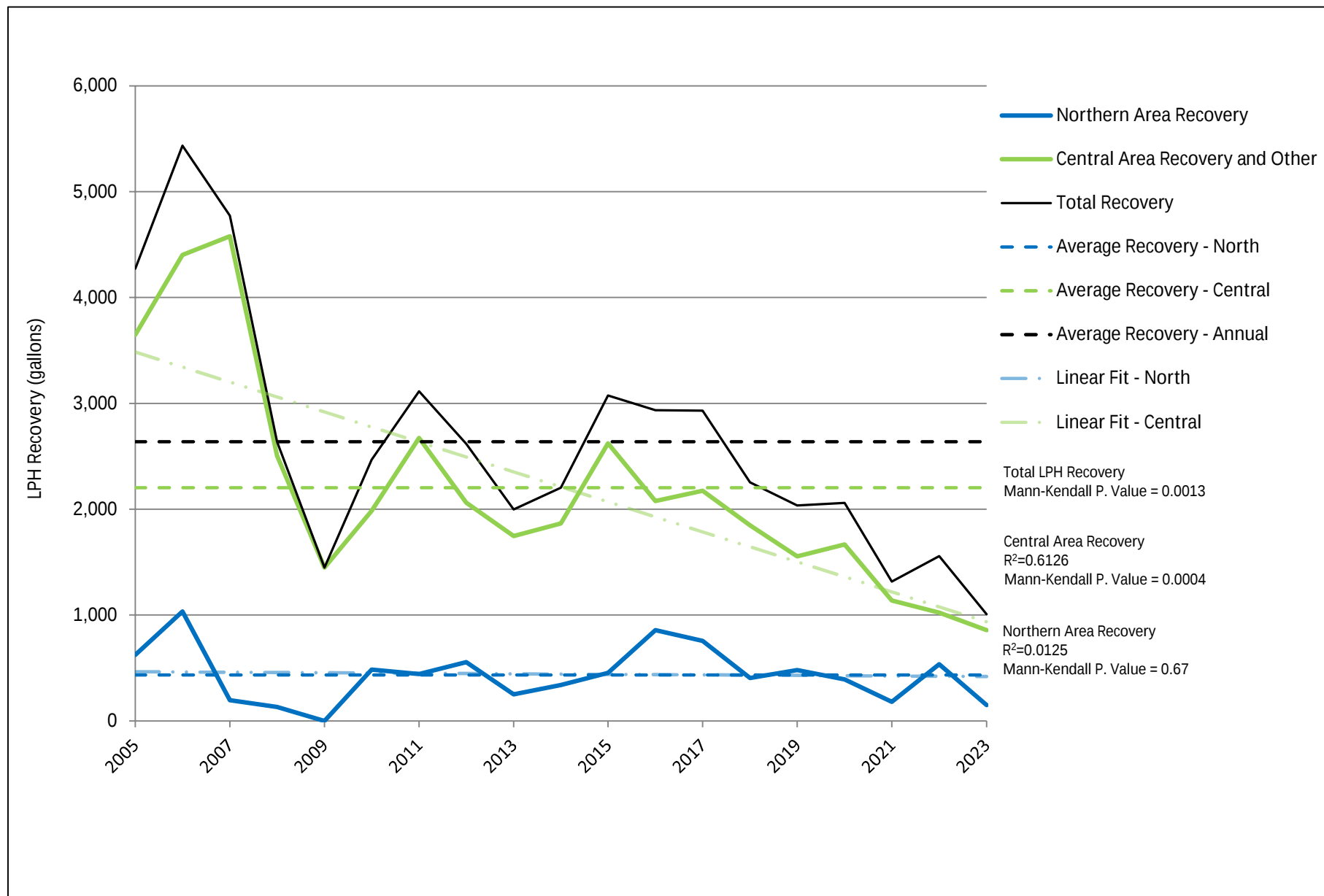


Figure 20. Dissolved-Phase Gasoline Range Hydrocarbons in Shallow Groundwater
Annual Groundwater Monitoring
SMP Portland Terminal
Portland, Oregon

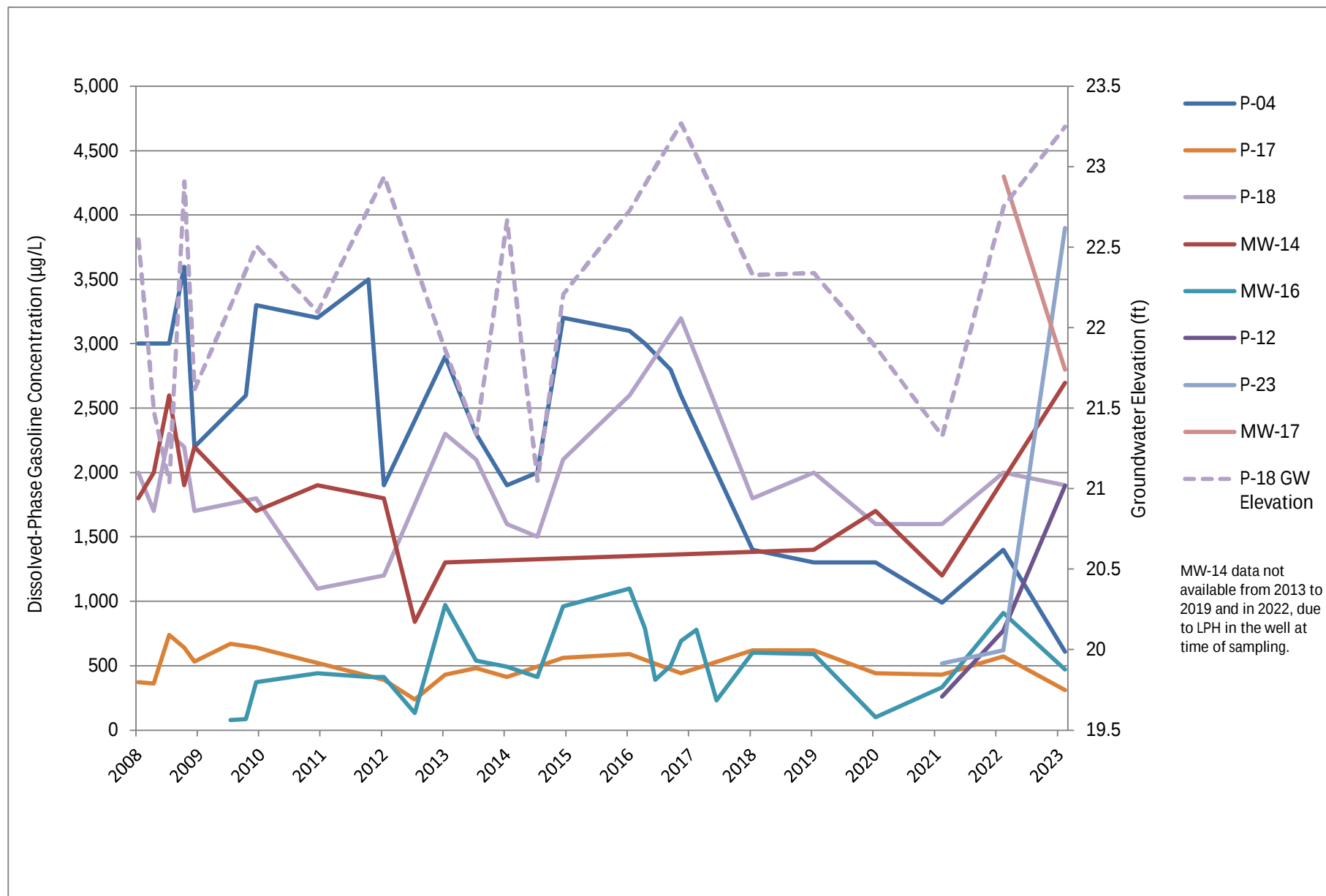


Figure 21. Dissolved-Phase Diesel Range Hydrocarbons in Shallow Groundwater
Annual Groundwater Monitoring
SMP Portland Terminal
Portland, Oregon

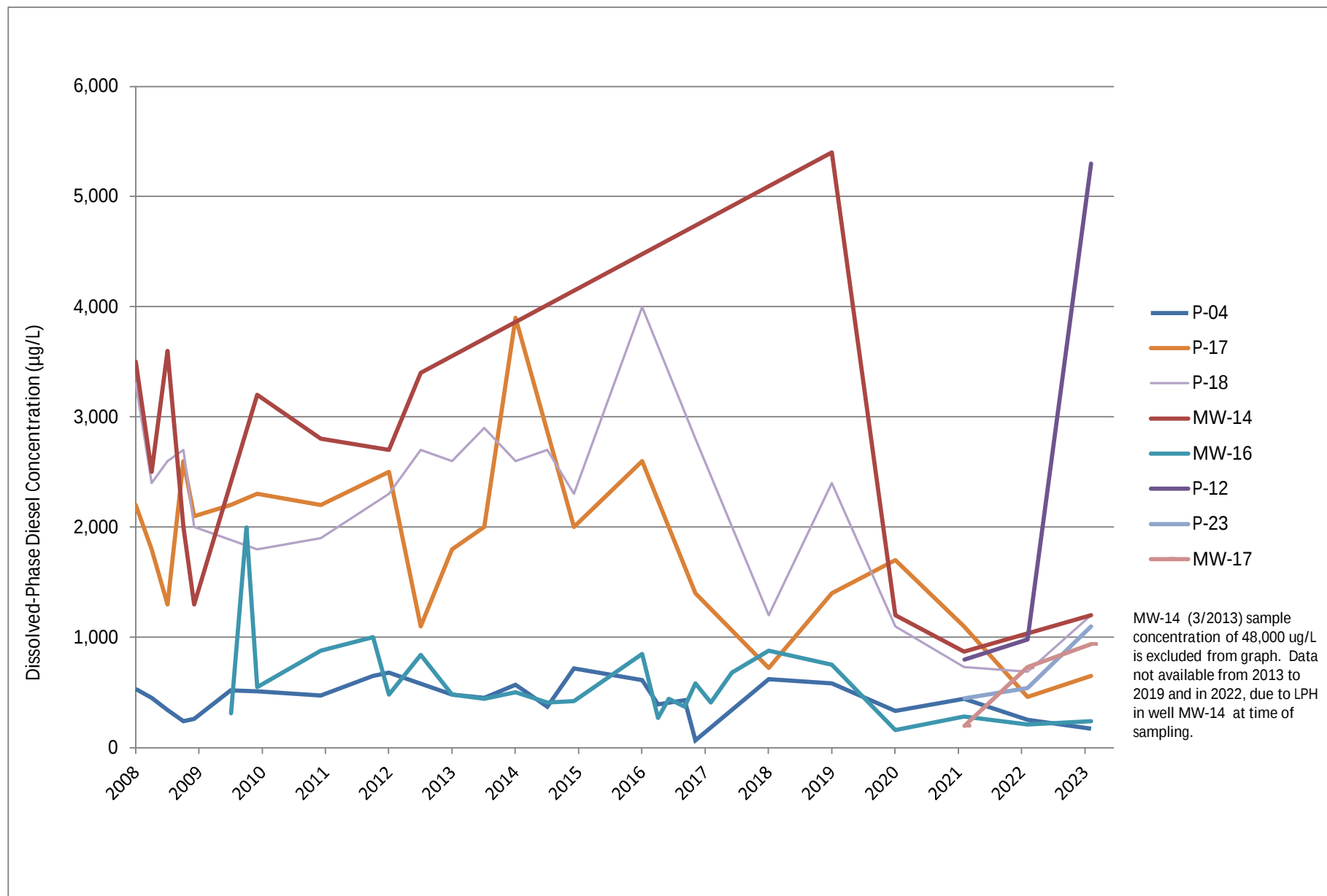
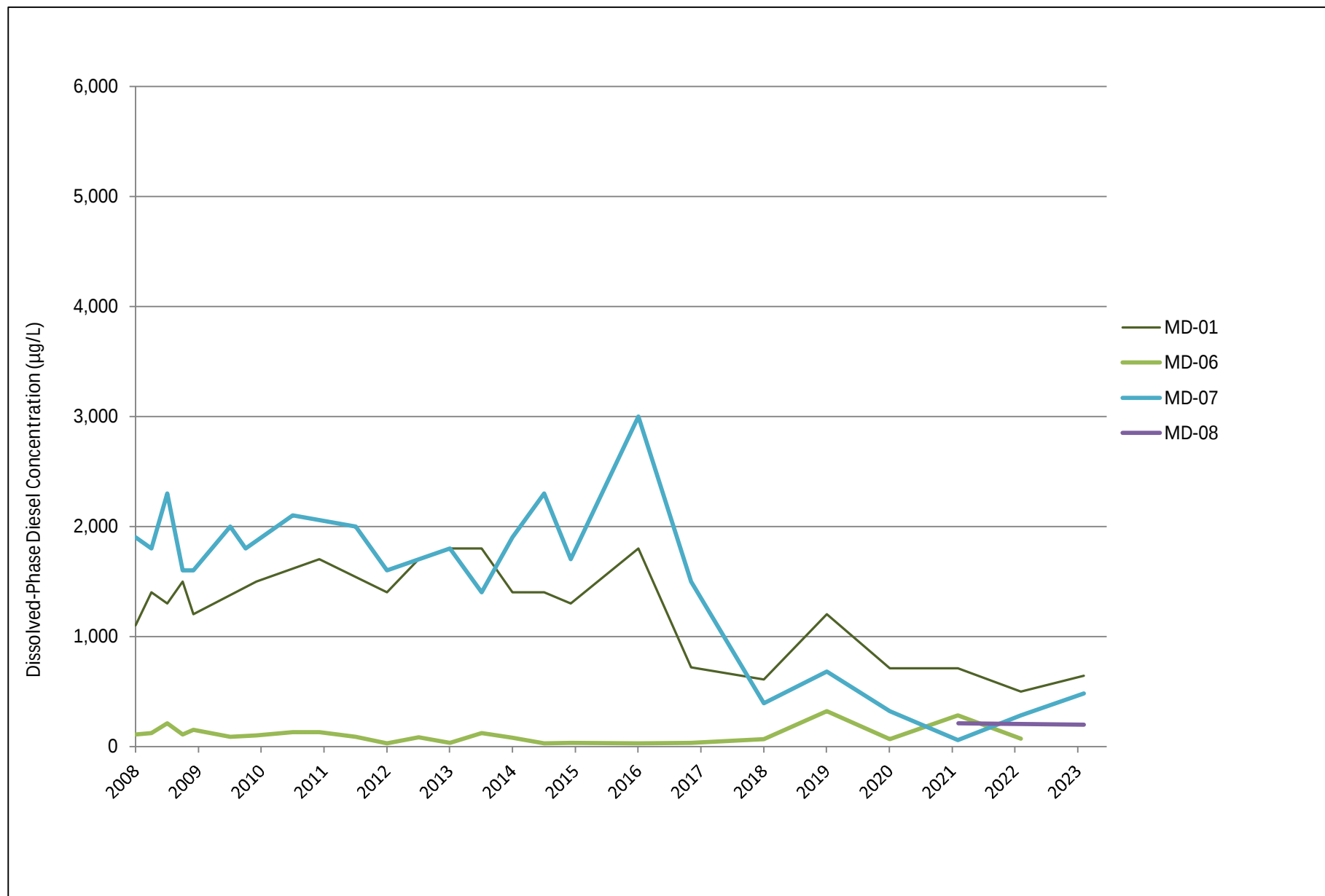


Figure 22. Dissolved-Phase Diesel Range Hydrocarbons in Deep Groundwater
Annual Groundwater Monitoring
SMP Portland Terminal
Portland, Oregon



Appendix A

Field Data Summary Table and Field Forms



GROUNDWATER SAMPLING LOG

Client: SEAPORT MIDSTREAM PARTNERS, LLC

Project #: 60700373

Site: SEAPORT MIDSTREAM PARTNERS, LLC

Event: 2023-Q2-GW

Sample Information

Sample ID:	20230413-MD-01-35-GW	Date:	4/13/2023 12:03:00 PM
Well ID:	MD-01	Location Type:	Not In Database
Duplicate ID:	Not Applicable	Sampler:	Edward Lecocq
Equipment:	Field param meter: In-Situ AquaTroll 600 # 588683 WL/int meter: Solinst 122 # 483966		
Comments:	Not Recorded		

Water Level

Date:	4/13/2023 9:32:00 AM	Measured Depth of Well:	Not Measured
Is Well Dry?	No	Depth to DNAPL:	Not Encountered
Depth to Water:	12.24 ft btoc	Depth to LNAPL:	Not Encountered
Notes:	Not Recorded		

Purge Information

Begin Date and Time:	4/13/2023 9:34:00 AM	End Date and Time:	4/13/2023 12:00:00 PM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	Low flow
Notes:	Not Recorded		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
9:55 AM	160	3360	3360	12.22	15.17	6.73	311	0.62	-97.2	3.62		
10:00 AM	160	800	4160	12.23	15.28	6.71	298	0.39	-100.5	3.02		
10:05 AM	160	800	4960	12.27	15.34	6.68	282	0.28	-104.7	4.41		
10:10 AM	160	800	5760	12.33	15.41	6.7	263	0.23	-111.7	8		
10:15 AM	160	800	6560	12.34	15.43	6.69	289	0.21	-116.8	26.09		
10:20 AM	160	800	7360	12.35	15.35	6.65	302	0.18	-118.1	68.29		
10:25 AM	155	775	8135	12.37	15.33	6.67	285	0.18	-119.7	85.59		
10:30 AM	160	800	8935	12.39	15.45	6.66	273	0.18	-120.5	50.3		
10:35 AM	160	800	9735	12.4	15.51	6.67	304	0.18	-120.9	97.51		
10:40 AM	160	800	10535	12.41	15.59	6.66	313	0.16	-122.4	123.94		
10:45 AM	160	800	11335	12.41	15.41	6.69	223	0.15	-128.8	184.13		
10:50 AM	160	800	12135	12.41	15.47	6.67	330	0.14	-125.2	19.93		
10:55 AM	160	800	12935	12.38	15.43	6.65	345	0.12	-122.2	22.13		
11:00 AM	160	800	13735	12.36	15.51	6.67	337	0.12	-120.8	18.81		
11:05 AM	160	800	14535	12.39	15.54	6.69	336	0.12	-121.1	21.19		

GROUNDWATER SAMPLING LOG

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
11:10 AM	160	800	15335	12.41	15.6	6.7	336	0.11	-123.5	31.65		
11:15 AM	160	800	16135	12.42	15.54	6.7	333	0.11	-126.1	10.84		
11:20 AM	160	800	16935	12.43	15.53	6.71	338	0.1	-131	16.23		
11:25 AM	160	800	17735	12.43	15.6	6.68	332	0.1	-131.6	26.67		
11:30 AM	160	800	18535	12.43	15.68	6.69	324	0.1	-132.2	39.66		
11:35 AM	160	800	19335	12.43	15.67	6.7	331	0.1	-130.3	6.95		
11:40 AM	160	800	20135	12.43	15.68	6.72	325	0.1	-132.7	8.2		
11:45 AM	160	800	20935	12.43	15.65	6.73	323	0.09	-133.3	5.4		
11:50 AM	160	800	21735	12.43	15.66	6.68	291	0.1	-132.7	4.46		
11:55 AM	160	800	22535	12.42	15.73	6.71	280	0.1	-135.8	5.41		
12:00 PM	160	800	23335	12.41	15.65	6.72	295	0.09	-137.8	8.74		

Reviewer Comments



GROUNDWATER SAMPLING LOG

Client: SEAPORT MIDSTREAM PARTNERS, LLC

Project #: 60700373

Site: SEAPORT MIDSTREAM PARTNERS, LLC

Event: 2023-Q2-GW

Sample Information			
Sample ID:	20230410-MD-02-35-GW	Date:	4/10/2023 5:20:00 PM
Well ID:	MD-02	Location Type:	Not In Database
Duplicate ID:	Not Applicable	Sampler:	Nick Makiney
Equipment:	Field param meter: In-Situ AquaTroll 600 # 607401 WL/int meter: Heron H. Oil Interface # U102728X		
Comments:	Not Recorded		

Water Level			
Date:	4/10/2023 3:40:00 PM	Measured Depth of Well:	Not Measured
Is Well Dry?	No	Depth to DNAPL:	Not Encountered
Depth to Water:	14.89 ft btoc	Depth to LNAPL:	Not Encountered
Notes:	Not Recorded		

Purge Information			
Begin Date and Time:	4/10/2023 4:09:00 PM	End Date and Time:	4/10/2023 5:19:00 PM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	Low flow
Notes:	Not Recorded		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
4:14 PM	125	625	625	14.89	13.26	6.64	0	3.85	81	0		
4:19 PM	125	625	1250	14.93	13.38	6.53	0	2.79	114.5	0		
4:24 PM	125	625	1875	14.95	13.46	6.51	0	2.76	123.2	0		
4:29 PM	115	575	2450	14.93	13.33	6.49	0	2.91	129.7	0		
4:34 PM	120	600	3050	14.98	13.5	6.46	0	2.82	131.2	0		
4:39 PM	115	575	3625	14.92	13.4	6.45	0	2.9	133.2	0		
4:44 PM	120	600	4225	14.91	13.42	6.48	0	2.78	138.9	0.14		
4:49 PM	120	600	4825	14.9	13.41	6.44	0	2.8	143.3	0		
4:54 PM	120	600	5425	14.91	13.39	6.47	0	2.83	140.2	0		
4:59 PM	120	600	6025	14.93	13.47	6.48	0	2.92	145.1	0		
5:04 PM	120	600	6625	14.93	13.44	6.43	0	2.85	148.6	0		
5:09 PM	120	600	7225	14.91	13.44	6.41	0	2.87	153.1	0		
5:14 PM	120	600	7825	14.91	13.41	6.46	0	2.91	159	0		
5:19 PM	120	600	8425	14.92	13.45	6.46	0	3.03	173.6	0		



GROUNDWATER SAMPLING LOG

Reviewer Comments



GROUNDWATER SAMPLING LOG

Client: SEAPORT MIDSTREAM PARTNERS, LLC

Project #: 60700373

Site: SEAPORT MIDSTREAM PARTNERS, LLC

Event: 2023-Q2-GW

Sample Information			
Sample ID:	20230412-MD06-45-GW	Date:	4/12/2023 5:40:00 PM
Well ID:	MD-06	Location Type:	Not In Database
Duplicate ID:	Not Applicable	Sampler:	Edward Lecocq
Equipment:	Field param meter: In-Situ AquaTroll 600 # 697401 WL/int meter: Heron H. Oil Interface # U102726X		
Comments:	Not Recorded		

Water Level			
Date:	4/12/2023 3:16:00 PM	Measured Depth of Well:	Not Measured
Is Well Dry?	No	Depth to DNAPL:	Not Encountered
Depth to Water:	21.23 ft btoc	Depth to LNAPL:	Not Encountered
Notes:	50 lpm minimum purge rate		

Purge Information			
Begin Date and Time:	4/12/2023 3:33:00 PM	End Date and Time:	4/12/2023 5:32:00 PM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	Low flow
Notes:	Not Recorded		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
4:12 PM	50	1950	1950	22.65	13.66	7.1	60.399	7.12	-6.8	4.2		
4:17 PM	50	250	2200	22.78	13.96	7.11	60.073	6.96	-7.1	2.21		
4:22 PM	50	250	2450	23	14.03	7.13	60.047	7.05	-4.6	3.45		
4:27 PM	50	250	2700	23.16	14.17	7.11	60.179	6.96	-1.3	2.94		
4:32 PM	50	250	2950	23.31	14.24	6.94	61.724	6.87	9.8	4.6		
4:37 PM	50	250	3200	23.41	14.37	7.05	79.965	6.33	7.5	2.59		
4:42 PM	50	250	3450	23.5	14.38	7.14	91.327	6.01	0.4	1.56		
4:47 PM	50	250	3700	23.59	14.14	7.12	103.051	5.5	-3.2	1.52		
4:52 PM	50	250	3950	23.67	14.29	7.27	120.027	4.98	-2.9	0.95		
4:57 PM	50	250	4200	23.71	14.29	7.26	142.84	4.16	-13.4	1.57		
5:02 PM	50	250	4450	23.75	14.09	7.46	172.881	3.27	-10.2	0.31		
5:07 PM	50	250	4700	23.78	13.83	7.47	203.313	2.65	-13.8	0.16		
5:12 PM	50	250	4950	23.81	13.8	7.35	241.054	2.03	-11.1	0.16		



GROUNDWATER SAMPLING LOG

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
5:17 PM	50	250	5200	23.81	13.81	7.05	275.989	1.53	-1.8	3.93		
5:22 PM	50	250	5450	23.84	14.04	7.22	309.792	1.1	-15.2	0.15		
5:27 PM	50	250	5700	23.88	13.9	7.11	311.029	1.21	-10.6	0		
5:32 PM	50	250	5950	23.91	13.73	7.09	335.976	1.18	-10	0.23		

Reviewer Comments



GROUNDWATER SAMPLING LOG

Client: SEAPORT MIDSTREAM PARTNERS, LLC

Project #: 60700373

Site: SEAPORT MIDSTREAM PARTNERS, LLC

Event: 2023-Q2-GW

Sample Information

Sample ID:	20230413-MD07-39-GW	Date:	4/13/2023 8:50:00 AM
Well ID:	MD-07	Location Type:	Not In Database
Duplicate ID:	Not Applicable	Sampler:	Nick Makiney
Equipment:	Field param meter: In-Situ AquaTroll 600 # 588628 WL/int meter: Heron H. Oil Interface # U102726X		
Comments:	Not Recorded		

Water Level

Date:	4/13/2023 7:50:00 PM	Measured Depth of Well:	Not Measured
Is Well Dry?	No	Depth to DNAPL:	Not Encountered
Depth to Water:	22.80 ft btoc	Depth to LNAPL:	Not Encountered
Notes:	Not Recorded		

Purge Information

Begin Date and Time:	4/13/2023 7:39:00 AM	End Date and Time:	4/13/2023 8:45:00 AM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	Low flow
Notes:	Not Recorded		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
8:10 AM	150	4650	4650	23	12.88	6.79	574	0.66	-111.6	1.33		
8:15 AM	150	750	5400	23.01	13.3	6.78	576	0.48	-121.6	0.18		
8:20 AM	150	750	6150	23.01	13.47	6.78	576	0.29	-125.1	2.02		
8:25 AM	150	750	6900	23.05	13.53	6.78	580	0.21	-127.4	0		
8:30 AM	150	750	7650	23.05	13.72	6.78	576	0.15	-129.3	3.2		
8:35 AM	150	750	8400	23.04	13.8	6.77	571	0.15	-130	0.48		
8:40 AM	150	750	9150	23.04	13.79	6.77	571	0.15	-131.5	0		
8:45 AM	150	750	9900	23.04	13.79	6.77	565	0.18	-132.9	1.04		

Reviewer Comments

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GROUNDWATER SAMPLING LOG

Client: SEAPORT MIDSTREAM PARTNERS, LLC

Project #: 60700373

Site: SEAPORT MIDSTREAM PARTNERS, LLC

Event: 2023-Q2-GW

Sample Information			
Sample ID:	20230412-MD08-41-GW	Date:	4/12/2023 5:15:00 PM
Well ID:	MD-08	Location Type:	Not In Database
Duplicate ID:	Not Applicable	Sampler:	Christopher Schmidt2
Equipment:	Field param meter: In-Situ AquaTroll 600 # 588280 WL/int meter: Solinst 122 # 483966		
Comments:	Not Recorded		

Water Level			
Date:	4/12/2023 3:59:00 PM	Measured Depth of Well:	Not Measured
Is Well Dry?	No	Depth to DNAPL:	Not Encountered
Depth to Water:	24.79 ft btoc	Depth to LNAPL:	Not Encountered
Notes:	Not Recorded		

Purge Information			
Begin Date and Time:	4/12/2023 4:01:00 PM	End Date and Time:	4/12/2023 5:12:00 PM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	Low flow
Notes:	Not Recorded		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
4:06 PM	125	625	625	25.28	13.83	5.82	99	3.33	173.3	30.19	Clear	None
4:12 PM	100	600	1225	25.19	13.88	5.76	98	2.88	198.4	9.25	Clear	None
4:17 PM	100	500	1725	25.23	13.92	5.76	98	2.97	207.9	10.84	Clear	None
4:22 PM	100	500	2225	25.33	14.32	5.76	97	2.7	215.3	9.76	Clear	None
4:27 PM	100	500	2725	25.37	14.43	5.77	98	2.68	213.5	11.46	Clear	None
4:32 PM	100	500	3225	25.39	14.5	5.68	107	0.62	109.5	11.64	Clear	None
4:37 PM	100	500	3725	25.41	14.66	5.71	113	0.34	88	5.59	Clear	None
4:42 PM	100	500	4225	25.42	14.57	5.73	118	0.27	62.4	4.26	Clear	None
4:47 PM	100	500	4725	25.43	14.41	5.81	129	0.21	7	3.86	Clear	None
4:52 PM	100	500	5225	25.45	14.42	5.9	144	0.16	-50.8	3.45	Clear	None
4:57 PM	100	500	5725	25.43	14.44	5.91	144	0.17	-64.9	0.62	Clear	None
5:02 PM	100	500	6225	25.47	14.39	5.91	145	0.12	-76.4	0.77	Clear	None
5:07 PM	100	500	6725	25.46	14.37	5.91	145	0.1	-82.8	0	Clear	None
5:12 PM	100	500	7225	25.49	14.27	5.9	144	0.06	-85	0	Clear	None



GROUNDWATER SAMPLING LOG

Reviewer Comments



GROUNDWATER SAMPLING LOG

Client: SEAPORT MIDSTREAM PARTNERS, LLC

Project #: 60700373

Site: SEAPORT MIDSTREAM PARTNERS, LLC

Event: 2023-Q2-GW

Sample Information

Sample ID:	20230413-MD10-41-GW	Date:	4/13/2023 2:36:00 PM
Well ID:	MD-10	Location Type:	Not In Database
Duplicate ID:	Not Applicable	Sampler:	Christopher Schmidt2
Equipment:	Field param meter: In-Situ AquaTroll 600 # 697401 WL/int meter: Solinst 122 # 483966		
Comments:	Not Recorded		

Water Level

Date:	4/13/2023 11:09:00 AM	Measured Depth of Well:	Not Measured
Is Well Dry?	No	Depth to DNAPL:	Not Encountered
Depth to Water:	10.62 ft btoc	Depth to LNAPL:	Not Encountered
Notes:	Not Recorded		

Purge Information

Begin Date and Time:	4/13/2023 11:45:00 AM	End Date and Time:	4/13/2023 2:33:00 PM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	Low flow
Notes:	Not Recorded		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
12:23 PM	75	2850	2850	11.58	12.3	7.05	358	0.76	-190.3	129.42	Clear	None
12:28 PM	75	375	3225	11.73	12.38	7.03	357	0.5	-191.2	120.3	Clear	None
12:33 PM	75	375	3600	11.82	12.5	7.02	357	0.42	-191.4	98.67	Clear	None
12:38 PM	75	375	3975	11.97	12.58	7.01	357	0.4	-191	87.88	Clear	None
12:43 PM	75	375	4350	12.12	12.68	7	357	0.39	-190.3	79.49	Clear	None
12:48 PM	75	375	4725	12.21	12.75	6.99	356	0.37	-190.2	60.24	Clear	None
12:53 PM	75	375	5100	12.33	12.82	6.99	355	0.36	-189.3	58.05	Clear	None
12:58 PM	75	375	5475	12.44	12.85	6.99	355	0.32	-188.9	47.41	Clear	None
1:03 PM	75	375	5850	12.52	12.88	6.98	354	0.33	-189	44.42	Clear	None
1:08 PM	75	375	6225	12.6	12.94	6.99	355	0.33	-188.2	39.84	Clear	None
1:13 PM	75	375	6600	12.68	12.91	6.99	354	0.32	-188.5	37.25	Clear	None
1:18 PM	75	375	6975	12.73	12.9	6.99	354	0.34	-188.3	24.32	Clear	None
1:23 PM	75	375	7350	12.8	12.9	6.98	354	0.33	-188.7	26.8	Clear	None
1:28 PM	75	375	7725	12.86	12.97	6.99	354	0.3	-188.2	23.64	Clear	None
1:33 PM	75	375	8100	12.92	13	6.99	354	0.3	-188.3	23.9	Clear	None

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
1:38 PM	75	375	8475	12.97	13.03	6.99	354	0.3	-188.4	19.64	Clear	None
1:43 PM	75	375	8850	13.02	13.06	6.99	353	0.31	-188.7	15.93	Clear	None
1:48 PM	75	375	9225	13.07	13.14	7	353	0.31	-188.8	19.5	Clear	None
1:53 PM	75	375	9600	13.11	13.16	7	352	0.34	-188.6	13.62	Clear	None
1:58 PM	75	375	9975	13.15	13.13	7	352	0.31	-188.4	13.75	Clear	None
2:03 PM	75	375	10350	13.18	13.11	7	351	0.31	-188.9	11.63	Clear	None
2:08 PM	75	375	10725	13.21	13.15	7.01	351	0.31	-188.9	12.45	Clear	None
2:13 PM	75	375	11100	13.24	13.18	7.02	351	0.31	-189.4	14.24	Clear	None
2:18 PM	75	375	11475	13.27	13.26	7.02	351	0.33	-189.7	17.31	Clear	None
2:23 PM	75	375	11850	13.31	13.22	7.03	350	0.31	-189.8	10.89	Clear	None
2:28 PM	75	375	12225	13.34	13.21	7.04	350	0.34	-189.8	7.88	Clear	None
2:33 PM	75	375	12600	13.35	13.25	7.05	350	0.32	-189.8	6.27	Clear	None

Reviewer Comments



GROUNDWATER SAMPLING LOG

Client: SEAPORT MIDSTREAM PARTNERS, LLC

Project #: 60700373

Site: SEAPORT MIDSTREAM PARTNERS, LLC

Event: 2023-Q2-GW

Sample Information

Sample ID:	20230412-MD-13-35-GW	Date:	4/12/2023 10:05:00 AM
Well ID:	MD-13	Location Type:	Monitoring Well
Duplicate ID:	Not Applicable	Sampler:	Nick Makiney
Equipment:	Field param meter: Other # 588683 WL/int meter: Heron H. Oil Interface # 01-8116		
Comments:	Not Recorded		

Water Level

Date:	4/12/2023 8:31:00 AM	Measured Depth of Well:	Not Measured
Is Well Dry?	No	Depth to DNAPL:	Not Encountered
Depth to Water:	1.55 ft btoc	Depth to LNAPL:	Not Encountered
Notes:	Not Recorded		

Purge Information

Begin Date and Time:	4/12/2023 9:14:00 AM	End Date and Time:	4/12/2023 10:03:00 AM
Initial Pump Depth:	35 ft btoc	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	Low flow
Notes:	Not Recorded		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
9:28 AM	80	1120	1120	2.19	9.67	6.4	0	2.45	201.1	0.77		
9:33 AM	80	400	1520	2.36	10.31	6.35	0	0.85	180.6	0.86		
9:38 AM	80	400	1920	2.46	10.41	6.34	0	0.55	175.6	0.43		
9:43 AM	80	400	2320	2.52	10.49	6.34	0	0.48	166.7	4.1		
9:48 AM	80	400	2720	2.59	10.74	6.34	0	0.38	161.3	0.24		
9:53 AM	80	400	3120	2.68	11.24	6.32	0	0.32	154.2	0.37		
9:58 AM	80	400	3520	2.75	11.26	6.32	0	0.26	147.1	0.49		
10:03 AM	80	400	3920	2.81	11.23	6.25	0	0.22	147	0.28		

Reviewer Comments

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GROUNDWATER SAMPLING LOG

Client: SEAPORT MIDSTREAM PARTNERS, LLC

Project #: 60700373

Site: SEAPORT MIDSTREAM PARTNERS, LLC

Event: 2023-Q2-GW

Sample Information

Sample ID:	20230411-MD14-46-GW	Date:	4/11/2023 4:39:00 PM
Well ID:	MD-14	Location Type:	Not In Database
Duplicate ID:	Not Applicable	Sampler:	Christopher Schmidt2
Equipment:	Field param meter: Other # 588683 WL/int meter: Heron H. Oil Interface # 01-8116		
Comments:	Not Recorded		

Water Level

Date:	4/11/2023 3:07:00 PM	Measured Depth of Well:	Not Measured
Is Well Dry?	No	Depth to DNAPL:	Not Encountered
Depth to Water:	21.23 ft btoc	Depth to LNAPL:	Not Encountered
Notes:	Not Recorded		

Purge Information

Begin Date and Time:	4/11/2023 3:30:00 PM	End Date and Time:	4/11/2023 4:35:00 PM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	Low flow
Notes:	Not Recorded		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
3:52 PM	150	3300	3300	21.49								
4:00 PM	150	1200	4500	21.49	14.68	6.34	0	0.3	92.6	12.2		
4:05 PM	150	750	5250	21.49	14.34	6.28	0	0.27	86.4	1.05	Clear	No
4:10 PM	150	750	6000	22.46	14.35	6.25	0	0.51	83.6	2.94	Clear	No
4:15 PM	150	750	6750	22.41	14.48	6.24	0	0.79	84.8	1.36	Clear	None
4:20 PM	150	750	7500	21.42	14.34	6.24	0	0.79	86.8	2.53	Clear	None
4:25 PM	150	750	8250	21.46	14.36	6.25	0	0.39	86.7	3.98	Clear	None
4:30 PM	150	750	9000	21.48	14.62	6.25	0	0.25	80.1	0.56	Clear	None
4:35 PM	150	750	9750	21.49	14.47	6.27	0	0.25	74.5	0.11	Clear	None

Reviewer Comments

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GROUNDWATER SAMPLING LOG

Client: SEAPORT MIDSTREAM PARTNERS, LLC

Project #: 60700373

Site: SEAPORT MIDSTREAM PARTNERS, LLC

Event: 2023-Q2-GW

Sample Information			
Sample ID:	20230411-MW05-11-GW	Date:	4/11/2023 6:00:00 PM
Well ID:	MW-05	Location Type:	Monitoring Well
Duplicate ID:	Not Applicable	Sampler:	Edward Lecocq
Equipment:	Field param meter: In-Situ AquaTroll 600 # 679401 WL/int meter: Heron H. Oil Interface # U102728X		
Comments:	Not Recorded		

Water Level			
Date:	4/11/2023 4:32:00 PM	Measured Depth of Well:	Not Measured
Is Well Dry?	No	Depth to DNAPL:	Not Encountered
Depth to Water:	1.39 ft btoc	Depth to LNAPL:	Not Encountered
Notes:	Not Recorded		

Purge Information			
Begin Date and Time:	4/11/2023 4:36:00 PM	End Date and Time:	4/11/2023 5:56:00 PM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	Low flow
Notes:	Not Recorded		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
4:44 PM	250	2000	2000	1.43	11.58	6.28	147.889	5.58	69.2	77.6		
4:49 PM	250	1250	3250	1.42	11.53	6.1	147.752	5.54	93.5	34.51		
4:55 PM	250	1500	4750	1.43	11.66	5.99	147.863	5.65	109.6	20.99		
5:00 PM	250	1250	6000	1.43	11.58	5.9	147.712	5.68	120.6	75.19		
5:06 PM	250	1500	7500	1.43	11.63	5.85	147.725	5.61	127.8	31.33		
5:10 PM	250	1000	8500	1.43	11.66	5.82	148.075	5.71	132.2	38.27		
5:16 PM	250	1500	10000	1.43	11.57	5.8	148.32	5.62	136.9	25.38		
5:21 PM	250	1250	11250	1.43	11.51	5.79	147.733	5.68	140.2	27.19		
5:25 PM	250	1000	12250	1.43	11.44	5.8	147.766	5.64	143.6	24.17		
5:30 PM	250	1250	13500	1.44	11.32	5.76	147.045	5.62	146.2	20.33		
5:35 PM	250	1250	14750	1.44	11.33	5.78	147.801	5.61	147.4	19		



GROUNDWATER SAMPLING LOG

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
5:40 PM	250	1250	16000	1.44	11.3	5.77	147.818	5.63	150	14.73		
5:46 PM	250	1500	17500	1.44	11.27	5.77	147.449	5.6	151.5	23.08		
5:51 PM	250	1250	18750	1.44	11.33	5.74	148.23	5.65	152.9	16.09		
5:56 PM	250	1250	20000	1.44	11.26	5.75	147.781	5.68	154.6	15.84		

Reviewer Comments



GROUNDWATER SAMPLING LOG

Client: SEAPORT MIDSTREAM PARTNERS, LLC
Site: SEAPORT MIDSTREAM PARTNERS, LLC

Project #: 60700373
Event: 2023-Q2-GW

Sample Information

Sample ID:	20230411-MW-10-NST	Date:	4/11/2023 11:37:00 AM
Well ID:	MW-10	Location Type:	Monitoring Well
Duplicate ID:	Not Applicable	Sampler:	Edward Lecocq
Equipment:	Not Recorded		
Comments:	No sample taken. Product encountered.		

Water Level

Date:	4/11/2023 11:36:00 AM	Measured Depth of Well:	Not Measured
Is Well Dry?	No	Depth to DNAPL:	Not Encountered
Depth to Water:	20.06 ft btoc	Depth to LNAPL:	20.03 ft btoc
Notes:	Not Recorded		

Purge Information

Begin Date and Time:	Not Recorded	End Date and Time:	Not Recorded
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Not Recorded	Sample Method:	Not Recorded
Notes:	Not Recorded		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
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Reviewer Comments

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GROUNDWATER SAMPLING LOG

Client: SEAPORT MIDSTREAM PARTNERS, LLC

Project #: 60700373

Site: SEAPORT MIDSTREAM PARTNERS, LLC

Event: 2023-Q2-GW

Sample Information

Sample ID:	20230410-MW-14-23-GW	Date:	4/10/2023 3:42:00 PM
Well ID:	MW-14	Location Type:	Monitoring Well
Duplicate ID:	Not Applicable	Sampler:	Edward Lecocq
Equipment:	Field param meter: In-Situ AquaTroll 600 # 607401 WL/int meter: Heron H. Oil Interface # U102728X		
Comments:	Not Recorded		

Water Level

Date:	4/10/2023 2:22:00 PM	Measured Depth of Well:	Not Measured
Is Well Dry?	No	Depth to DNAPL:	Not Encountered
Depth to Water:	18.87 ft btoc	Depth to LNAPL:	Not Encountered
Notes:	Not Recorded		

Purge Information

Begin Date and Time:	4/10/2023 2:34:00 PM	End Date and Time:	4/10/2023 3:32:00 PM
Initial Pump Depth:	23 ft btoc	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	Low flow
Notes:	Not Recorded		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
2:41 PM	150	1050	1050	18.89	14.56	6.5	586.687	0.26	-161.8	0		
2:46 PM	150	750	1800	18.89	14.64	6.5	589.323	0.14	-166.4	0.02		
2:51 PM	150	750	2550	18.89	14.68	6.49	591.152	0.09	-170	0		
2:56 PM	150	750	3300	18.89	14.69	6.53	592.233	0.13	-172.3	0		
3:01 PM	150	750	4050	18.89	14.7	6.54	592.007	0.04	-174.1	0		
3:06 PM	150	750	4800	18.89	14.7	6.55	592.55	0.05	-175.3	0		
3:11 PM	150	750	5550	18.89	14.71	6.56	592.753	0.02	-176.8	0		
3:16 PM	150	750	6300		14.74	6.57	593	0.03	-178	0		
3:21 PM	150	750	7050	18.89	14.73	6.57	593.983	0.03	-178.9	0		
3:27 PM	150	900	7950	18.89	14.72	6.58	594.915	0.01	-179.6	0		
3:32 PM	150	750	8700	18.89	14.71	6.56	595.66	0.01	-179.8	0		

Reviewer Comments

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GROUNDWATER SAMPLING LOG

Client: SEAPORT MIDSTREAM PARTNERS, LLC

Project #: 60700373

Site: SEAPORT MIDSTREAM PARTNERS, LLC

Event: 2023-Q2-GW

Sample Information

Sample ID:	20230412-MW16-19-GW	Date:	4/12/2023 2:21:00 PM
Well ID:	MW-16	Location Type:	Monitoring Well
Duplicate ID:	Not Applicable	Sampler:	Christopher Schmidt2
Equipment:	Field param meter: In-Situ AquaTroll 600 # 588280 WL/int meter: Solinst 122 # 483966		
Comments:	Not Recorded		

Water Level

Date:	4/12/2023 1:32:00 PM	Measured Depth of Well:	Not Measured
Is Well Dry?	No	Depth to DNAPL:	Not Encountered
Depth to Water:	14.29 ft btoc	Depth to LNAPL:	Not Encountered
Notes:	Not Recorded		

Purge Information

Begin Date and Time:	4/12/2023 1:35:00 PM	End Date and Time:	4/12/2023 2:18:00 PM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	Low flow
Notes:	Not Recorded		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
1:43 PM	100	800	800	14.8	13.15	6.15	598	0.4	-152.2	1.51	Clear	None
1:49 PM	100	600	1400	14.93	13.23	6.15	599	0.24	-164.3	1.98	Clear	None
1:53 PM	100	400	1800	15.02	13.24	6.14	598	0.13	-168.2	0.95	Clear	None
2:00 PM	100	700	2500	15.02	13.26	6.13	597	0.13	-192.5	2.65	Clear	None
2:04 PM	100	400	2900	15.11	13.53	6.13	597	0.11	-169	0.85	Clear	None
2:08 PM	100	400	3300	15.14	13.82	6.13	597	0.1	-165.9	4	Clear	None
2:13 PM	100	500	3800	15.19	13.53	6.13	596	0.1	-166.9	2.52	Clear	None
2:18 PM	100	500	4300	15.23	13.33	6.12	595	0.1	-165.2	1.34	Clear	None

Reviewer Comments

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GROUNDWATER SAMPLING LOG

Client: SEAPORT MIDSTREAM PARTNERS, LLC
Site: SEAPORT MIDSTREAM PARTNERS, LLC

Project #: 60700373
Event: 2023-Q2-GW

Sample Information			
Sample ID:	20230411-MW17-22-GW	Date:	4/11/2023 3:01:00 PM
Well ID:	MW-17	Location Type:	Monitoring Well
Duplicate ID:	20230411-MW117-22-GW	Sampler:	Edward Lecocq
Equipment:	Field param meter: In-Situ AquaTroll 600 # 697401 WL/int meter: Heron H. Oil Interface # U102728X		
Comments:	Not Recorded		

Water Level			
Date:	4/11/2023 1:42:00 PM	Measured Depth of Well:	Not Measured
Is Well Dry?	No	Depth to DNAPL:	Not Encountered
Depth to Water:	19.04 ft btoc	Depth to LNAPL:	Not Encountered
Notes:	Not Recorded		

Purge Information			
Begin Date and Time:	4/11/2023 1:50:00 PM	End Date and Time:	4/11/2023 2:55:00 PM
Initial Pump Depth:	22 ft btoc	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	Low flow
Notes:	Not Recorded		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
1:55 PM	150	750	750	19.04	13.43	6.65	503.224	0.11	-151.1	0		
2:00 PM	150	750	1500	19.04	13.4	6.63	504.42	0.14	-152.9	0.02		
2:05 PM	150	750	2250	19.04	13.42	6.62	504.424	0.09	-153.1	0		
2:10 PM	150	750	3000	19.04	13.67	6.59	504.615	0.09	-152.2	0		
2:15 PM	150	750	3750	19.04	13.53	6.58	504.498	0.09	-152.6	0.17		
2:20 PM	150	750	4500	19.04	13.74	6.57	505.511	0.08	-152.4	0.3		
2:25 PM	150	750	5250	19.4	13.87	6.56	505.806	0.08	-152.6	0.3		
2:30 PM	150	750	6000	19.04	13.86	6.56	504.73	0.05	-152.7	0.84		
2:35 PM	150	750	6750	19.04	13.93	6.55	504.928	0.06	-152.2	0		
2:40 PM	150	750	7500	19.04	13.95	6.56	505.276	0.07	-153.3	0.19		
2:45 PM	150	750	8250	19.04	13.92	6.56	505.811	0.05	-154.2	0.17		
2:50 PM	150	750	9000	19.04	13.62	6.55	503.869	0.04	-152.9	0		
2:55 PM	150	750	9750	19.04	13.74	6.58	505.091	0.05	-155	0.26		



GROUNDWATER SAMPLING LOG

Reviewer Comments



GROUNDWATER SAMPLING LOG

Client: SEAPORT MIDSTREAM PARTNERS, LLC

Project #: 60700373

Site: SEAPORT MIDSTREAM PARTNERS, LLC

Event: 2023-Q2-GW

Sample Information

Sample ID:	20230412-P01-8-GW	Date:	4/12/2023 11:53:00 AM
Well ID:	P-01	Location Type:	Not In Database
Duplicate ID:	Not Applicable	Sampler:	Christopher Schmidt2
Equipment:	Field param meter: In-Situ AquaTroll 600 # 588280 WL/int meter: Solinst 122 # 483966		
Comments:	Not Recorded		

Water Level

Date:	4/12/2023 11:06:00 AM	Measured Depth of Well:	Not Measured
Is Well Dry?	No	Depth to DNAPL:	Not Encountered
Depth to Water:	1.11 ft btoc	Depth to LNAPL:	Not Encountered
Notes:	Not Recorded		

Purge Information

Begin Date and Time:	4/12/2023 11:09:00 AM	End Date and Time:	4/12/2023 11:49:00 AM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	Low flow
Notes:	Not Recorded		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
11:15 AM	225	1350	1350	1.4	10.08	6.47	161	8.79	218	8.66	Clear	None
11:19 AM	150	600	1950	1.34	10.04	6.47	161	8.63	221.8	10.98	Clear	None
11:24 AM	150	750	2700	1.34	9.88	6.49	162	8.33	229.5	5.28	Clear	None
11:29 AM	150	750	3450	1.36	9.96	6.47	161	7.99	235.5	4.62	Clear	None
11:34 AM	150	750	4200	1.37	10.03	6.45	159	8.02	239.2	7.36	Clear	None
11:39 AM	150	750	4950	1.38	10.35	6.45	158	7.87	241	3.9	Clear	None
11:44 AM	150	750	5700	1.39	10.38	6.45	157	7.72	242	4.87	Clear	None
11:49 AM	150	750	6450	1.4	10.65	6.43	155	7.96	245.3	0.34	Clear	None

Reviewer Comments

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GROUNDWATER SAMPLING LOG

Client: SEAPORT MIDSTREAM PARTNERS, LLC

Project #: 60700373

Site: SEAPORT MIDSTREAM PARTNERS, LLC

Event: 2023-Q2-GW

Sample Information

Sample ID:	20230412-P02-12-GW	Date:	4/12/2023 1:10:00 PM
Well ID:	P-02	Location Type:	Not In Database
Duplicate ID:	Not Applicable	Sampler:	Edward Lecocq
Equipment:	Field param meter: In-Situ AquaTroll 600 # 697401 WL/int meter: Heron H. Oil Interface # U102726X		
Comments:	Not Recorded		

Water Level

Date:	4/12/2023 11:28:00 AM	Measured Depth of Well:	Not Measured
Is Well Dry?	No	Depth to DNAPL:	Not Encountered
Depth to Water:	3.74 ft btoc	Depth to LNAPL:	Not Encountered
Notes:	50 lpm minimum purge rate		

Purge Information

Begin Date and Time:	4/12/2023 11:31:00 AM	End Date and Time:	4/12/2023 1:05:00 PM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	Low flow
Notes:	Not Recorded		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
11:50 AM	125	2375	2375	4.44	10.21	6.49	560.478	0.03	-154.6	6.44		
12:25 PM	50	1750	4125	4.36	11.12	6.47	567.602	0.01	-164.3	3.57		
12:30 PM	50	250	4375	4.43	10.81	6.48	567.72	0	-165.8	3.07		
12:35 PM	50	250	4625	4.46	10.79	6.49	568.995	0.01	-167.1	4.05		
12:40 PM	50	250	4875	4.5	11.03	6.49	570.287	0.01	-168.4	2.05		
12:45 PM	50	250	5125	4.53	10.48	6.5	570.557	0.01	-169.2	1.36		
12:50 PM	50	250	5375	4.55	10.39	6.5	568.215	0	-169.6	1.68		
12:55 PM	50	250	5625	4.59	10.15	6.5	562.751	0	-169.6	1.92		
1:00 PM	50	250	5875	4.63	9.95	6.5	563.397	0	-169.6	1.7		
1:05 PM	50	250	6125	4.64	9.97	6.49	558.349	0	-169.9	1.95		

Reviewer Comments

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GROUNDWATER SAMPLING LOG

Client: SEAPORT MIDSTREAM PARTNERS, LLC

Project #: 60700373

Site: SEAPORT MIDSTREAM PARTNERS, LLC

Event: 2023-Q2-GW

Sample Information			
Sample ID:	20230412-P04-13-GW	Date:	4/12/2023 10:06:00 AM
Well ID:	P-04	Location Type:	Not In Database
Duplicate ID:	20230412-P104-13-GW	Sampler:	Edward Lecocq
Equipment:	Field param meter: Other # 697401 WL/int meter: Heron H. Oil Interface # U102726X		
Comments:	Not Recorded		

Water Level			
Date:	4/12/2023 8:33:00 AM	Measured Depth of Well:	Not Measured
Is Well Dry?	No	Depth to DNAPL:	Not Encountered
Depth to Water:	10.55 ft btoc	Depth to LNAPL:	Not Encountered
Notes:	Not Recorded		

Purge Information			
Begin Date and Time:	4/12/2023 8:35:00 AM	End Date and Time:	4/12/2023 9:55:00 AM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	Low flow
Notes:	Not Recorded		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
8:50 AM	150	2250	2250	10.79	9.36	5.4	33.392	0.15	38.8	20.52		
8:55 AM	150	750	3000	10.79	9.48	5.53	51.744	0.04	1.1	9.75		
9:00 AM	150	750	3750	10.79	9.5	5.78	96.051	0.01	-27.4	5.63		
9:05 AM	150	750	4500	10.79	9.6	5.93	167.076	0.01	-55.2	3.57		
9:10 AM	150	750	5250	10.79	9.6	6.09	229.577	0	-80.4	3.01		
9:15 AM	150	750	6000	10.8	9.75	6.19	278.02	0	-98.4	2.38		
9:20 AM	150	750	6750	10.81	9.8	6.26	313.724	0	-111.8	1.41		
9:25 AM	150	750	7500	10.8	9.75	6.33	343.153	0	-120.5	0.97		
9:30 AM	150	750	8250	10.8	9.77	6.35	359.865	0	-126.5	2.21		
9:35 AM	150	750	9000	10.81	9.84	6.39	373.696	0	-132.9	0.79		
9:40 AM	150	750	9750	10.8	9.84	6.41	388.307	0	-137.4	1.35		
9:45 AM	150	750	10500	10.81	9.96	6.51	407.68	0	-146.9	1.09		
9:50 AM	150	750	11250	10.8	9.91	6.57	416.519	0	-153.5	0.37		
9:55 AM	150	750	12000	10.79	10	6.58	419.664	0	-155.9	0.41		



GROUNDWATER SAMPLING LOG

Reviewer Comments



GROUNDWATER SAMPLING LOG

Client: SEAPORT MIDSTREAM PARTNERS, LLC
Site: SEAPORT MIDSTREAM PARTNERS, LLC

Project #: 60700373
Event: 2023-Q2-GW

Sample Information

Sample ID:	20230411-P-08-NST	Date:	4/11/2023 10:48:00 AM
Well ID:	P-08	Location Type:	Not In Database
Duplicate ID:	Not Applicable	Sampler:	Edward Lecocq
Equipment:	Not Recorded		
Comments:	No sample taken. Product encountered.		

Water Level

Date:	4/11/2023 10:47:00 AM	Measured Depth of Well:	Not Measured
Is Well Dry?	No	Depth to DNAPL:	Not Encountered
Depth to Water:	22.93 ft btoc	Depth to LNAPL:	22.66 ft btoc
Notes:	Not Recorded		

Purge Information

Begin Date and Time:	Not Recorded	End Date and Time:	Not Recorded
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Not Recorded	Sample Method:	Not Recorded
Notes:	Not Recorded		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
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Reviewer Comments

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GROUNDWATER SAMPLING LOG

Client: SEAPORT MIDSTREAM PARTNERS, LLC

Project #: 60700373

Site: SEAPORT MIDSTREAM PARTNERS, LLC

Event: 2023-Q2-GW

Sample Information			
Sample ID:	20230413-P12-18-GW	Date:	4/13/2023 9:54:00 AM
Well ID:	P-12	Location Type:	Not In Database
Duplicate ID:	Not Applicable	Sampler:	Christopher Schmidt2
Equipment:	Field param meter: In-Situ AquaTroll 600 # 697401 WL/int meter: Solinst 122 # 483966		
Comments:	Not Recorded		

Water Level			
Date:	4/13/2023 8:03:00 AM	Measured Depth of Well:	Not Measured
Is Well Dry?	No	Depth to DNAPL:	Not Encountered
Depth to Water:	15.72 ft btoc	Depth to LNAPL:	Not Encountered
Notes:	Not Recorded		

Purge Information			
Begin Date and Time:	4/13/2023 8:50:00 AM	End Date and Time:	4/13/2023 9:51:00 AM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	Low flow
Notes:	Not Recorded		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
8:55 AM	150	750	750									
8:56 AM	150	150	900	15.72	12.95	6.58	1064	0.04	-150.9	23.77	Clear	
9:16 AM	100	2000	2900	15.73	12.98	6.56	1025	0	-171.4	23.15	Clear	Trace odor
9:21 AM	100	500	3400	15.73	12.93	6.56	997	0	-175	21.61	Clear	Trace odor
9:26 AM	100	500	3900	15.73	12.96	6.56	977	0	-178.6	18.66	Clear	Trace odor
9:31 AM	100	500	4400	15.73	13.04	6.55	965	0	-180.5	19.93	Clear	Trace odor
9:36 AM	100	500	4900	15.73	13.03	6.55	948	0	-183	19.62	Clear	Trace odor
9:41 AM	100	500	5400	15.73	13.08	6.55	937	0	-185.9	16.54	Clear	Trace odor
9:46 AM	100	500	5900	15.73	13.09	6.55	922	0	-190.9	17.23	Clear	Trace odor
9:51 AM	100	500	6400	15.73	13.1	6.56	915	0	-195.5	15.75	Clear	Trace odor



GROUNDWATER SAMPLING LOG

Reviewer Comments



GROUNDWATER SAMPLING LOG

Client: SEAPORT MIDSTREAM PARTNERS, LLC

Project #: 60700373

Site: SEAPORT MIDSTREAM PARTNERS, LLC

Event: 2023-Q2-GW

Sample Information			
Sample ID:	20230413-P13-20-GW	Date:	4/13/2023 2:35:00 PM
Well ID:	P-13	Location Type:	Not In Database
Duplicate ID:	Not Applicable	Sampler:	Chris Selders
Equipment:	Field param meter: In-Situ AquaTroll 600 # 588628 WL/int meter: Solinst 122 # U102726X		
Comments:	Not Recorded		

Water Level			
Date:	4/13/2023 12:55:00 PM	Measured Depth of Well:	Not Measured
Is Well Dry?	No	Depth to DNAPL:	Not Encountered
Depth to Water:	14.43 ft btoc	Depth to LNAPL:	Not Encountered
Notes:	Not Recorded		

Purge Information			
Begin Date and Time:	4/13/2023 1:20:00 PM	End Date and Time:	4/13/2023 2:30:00 PM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	Low flow
Notes:	Not Recorded		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
1:25 PM	150	750	750	14.45	13.07	6.25	568	0.2	-87	20.22		
1:30 PM	150	750	1500	14.45	13.07	6.25	568	0.11	-88.8	29.52		
1:35 PM	150	750	2250	14.45	12.97	6.28	546	0.08	-91.8	48.86		
1:40 PM	150	750	3000	14.45	12.84	6.26	473	0.06	-89.6	71.32		
1:45 PM	150	750	3750	14.45	12.73	6.23	402	0.05	-84.9	55.61		
1:50 PM	150	750	4500	14.45	12.69	6.19	338	0.05	-80.2	42.3		
1:55 PM	150	750	5250	14.45	12.68	6.17	304	0.04	-78.8	36.14		
2:00 PM	150	750	6000	14.45	12.7	6.15	283	0.04	-78.2	29.41		
2:05 PM	150	750	6750	14.45	12.66	6.15	270	0.04	-79.4	25.82		
2:10 PM	150	750	7500	14.45	12.66	6.14	262	0.04	-79.8	27.15		
2:15 PM	150	750	8250	14.45	12.66	6.13	253	0.03	-79.7	25.72		
2:20 PM	150	750	9000	14.45	12.66	6.13	248	0.04	-80.8	19.1		
2:25 PM	150	750	9750	14.45	12.65	6.12	242	0.02	-77.2	17.28		
2:30 PM	150	750	10500	14.45	12.62	6.12	240	0.02	-78.2	18		



GROUNDWATER SAMPLING LOG

Reviewer Comments



GROUNDWATER SAMPLING LOG

Client: SEAPORT MIDSTREAM PARTNERS, LLC

Project #: 60700373

Site: SEAPORT MIDSTREAM PARTNERS, LLC

Event: 2023-Q2-GW

Sample Information

Sample ID:	20230413-P17-14-GW	Date:	4/13/2023 11:20:00 AM
Well ID:	P-17	Location Type:	Not In Database
Duplicate ID:	Not Applicable	Sampler:	Chris Selders
Equipment:	Field param meter: In-Situ AquaTroll 600 # 588683 WL/int meter: Solinst 122 # U102726X		
Comments:	Not Recorded		

Water Level

Date:	4/13/2023 9:57:00 AM	Measured Depth of Well:	Not Measured
Is Well Dry?	No	Depth to DNAPL:	Not Encountered
Depth to Water:	9.60 ft btoc	Depth to LNAPL:	Not Encountered
Notes:	Not Recorded		

Purge Information

Begin Date and Time:	4/13/2023 10:35:00 AM	End Date and Time:	4/13/2023 11:15:00 AM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	Low flow
Notes:	Not Recorded		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
10:40 AM	100	500	500	9.64	11.64	6.64	350	1.45	-100.5	2.19		
10:45 AM	100	500	1000	9.64	11.5	6.64	349	1.35	-103.7	0.32		
10:50 AM	100	500	1500	9.64	11.28	6.64	346	1.37	-104.6	0		
10:55 AM	100	500	2000	9.64	11.1	6.64	344	1.33	-105.4	0		
11:00 AM	100	500	2500	9.64	11.14	6.65	344	1.39	-106.2	0		
11:05 AM	100	500	3000	9.64	11.25	6.65	344	1.38	-107.1	0		
11:10 AM	100	500	3500	9.64	11.38	6.65	343	1.34	-107.7	0		
11:15 AM	100	500	4000	9.64	11.3	6.66	343	1.41	-108.3	0		

Reviewer Comments

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GROUNDWATER SAMPLING LOG

Client: SEAPORT MIDSTREAM PARTNERS, LLC

Project #: 60700373

Site: SEAPORT MIDSTREAM PARTNERS, LLC

Event: 2023-Q2-GW

Sample Information

Sample ID:	20234013-P-18-18-GW	Date:	4/13/2023 8:31:00 AM
Well ID:	P-18	Location Type:	Not In Database
Duplicate ID:	Not Applicable	Sampler:	Edward Lecocq
Equipment:	Field param meter: In-Situ AquaTroll 600 # 588683 WL/int meter: Solinst 122 # 483966		
Comments:	Not Recorded		

Water Level

Date:	4/13/2023 7:50:00 AM	Measured Depth of Well:	Not Measured
Is Well Dry?	No	Depth to DNAPL:	Not Encountered
Depth to Water:	12.33 ft btoc	Depth to LNAPL:	Not Encountered
Notes:	Not Recorded		

Purge Information

Begin Date and Time:	4/13/2023 7:54:00 AM	End Date and Time:	4/13/2023 8:30:00 AM
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	Low flow
Notes:	Not Recorded		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
7:55 AM	230	230	230	12.36	11.8	6.74	524	2	-7.4	1.13		
8:00 AM	155	775	1005	12.35	12.41	6.72	562	0.44	-62.5	0		
8:05 AM	155	775	1780	12.35	12.39	6.71	534	0.37	-80.2	0		
8:10 AM	155	775	2555	12.36	12.5	6.71	523	0.26	-92.2	0		
8:15 AM	155	775	3330	12.35	12.41	6.72	527	0.23	-102.4	0		
8:20 AM	155	775	4105	12.35	12.46	6.72	514	0.19	-111.1	0		
8:25 AM	155	775	4880	12.36	12.42	6.66	524	0.16	-117	0.08		
8:30 AM	155	775	5655	12.36	12.38	6.67	528	0.14	-123.6	0.18		

Reviewer Comments

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GROUNDWATER SAMPLING LOG

Client: SEAPORT MIDSTREAM PARTNERS, LLC

Project #: 60700373

Site: SEAPORT MIDSTREAM PARTNERS, LLC

Event: 2023-Q2-GW

Sample Information

Sample ID:	20230413-P-23-18-GW	Date:	4/13/2023 2:00:00 PM
Well ID:	P-23	Location Type:	Not In Database
Duplicate ID:	Not Applicable	Sampler:	Chris Selders
Equipment:	Field param meter: In-Situ AquaTroll 600 # 588683 WL/int meter: Solinst 122 # U102726X		
Comments:	Not Recorded		

Water Level

Date:	4/13/2023 1:16:00 PM	Measured Depth of Well:	Not Measured
Is Well Dry?	No	Depth to DNAPL:	Not Encountered
Depth to Water:	13.49 ft btoc	Depth to LNAPL:	Not Encountered
Notes:	Not Recorded		

Purge Information

Begin Date and Time:	Not Recorded	End Date and Time:	Not Recorded
Initial Pump Depth:	Not Recorded	Final Pump Depth:	Not Recorded
Purge Method:	Not Recorded	Sample Method:	Low flow
Notes:	Not Recorded		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
1:20 PM	180	900	900	13.51	13.75	6.38	603	0.71	-63.8	0.85		
1:25 PM	140	700	1600	13.51	13.89	6.43	577	0.4	-96.8	0.2		
1:30 PM	140	700	2300	13.51	13.83	6.45	570	0.3	-103.6	0.06		
1:35 PM	140	700	3000	13.51	13.84	6.49	584	0.28	-112.4	0		
1:40 PM	140	700	3700	13.51	13.88	6.51	589	0.24	-116.8	0		
1:45 PM	140	700	4400	13.51	13.92	6.53	592	0.22	-120	0		
1:50 PM	140	700	5100	13.49	13.88	6.52	596	0.19	-121.7	0		
1:55 PM	140	700	5800	13.51	13.81	6.53	591	0.17	-125.8	0		

Reviewer Comments

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GROUNDWATER SAMPLING LOG

Client: SEAPORT MIDSTREAM PARTNERS, LLC

Project #: 60700373

Site: SEAPORT MIDSTREAM PARTNERS, LLC

Event: 2023-Q2-GW

Sample Information			
Sample ID:	20230410-MW-18-19-RA	Date:	4/10/2023 1:45:00 PM
Well ID:	MW-18	Location Type:	Monitoring Well
Duplicate ID:	Not Applicable	Sampler:	Nick Makiney
Equipment:	Field param meter: In-Situ AquaTroll 600 # 588683 WL/int meter: Heron H. Oil Interface # U102726X		
Comments:	Not Recorded		

Water Level			
Date:	4/10/2023 8:48:00 AM	Measured Depth of Well:	Not Measured
Is Well Dry?	No	Depth to DNAPL:	Not Encountered
Depth to Water:	18.40 ft btoc	Depth to LNAPL:	Not Encountered
Notes:	Not Recorded		

Purge Information			
Begin Date and Time:	4/10/2023 8:56:00 AM	End Date and Time:	4/10/2023 1:42:00 PM
Initial Pump Depth:	19 ft btoc	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	Low flow
Notes:	Not Recorded		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
9:28 AM	170	5440	5440	18.45	13.93	6.76	1	0.44	-109.3	0.46		
9:33 AM	170	850	6290	18.45	14.03	6.71	1	0.19	-122.3	1.57		
9:38 AM	170	850	7140	18.46	14.05	6.71	1	0.1	-137.4	8.3		
9:43 AM	170	850	7990	18.46	14.05	6.71	1	0.08	-142	22.85		
9:48 AM	170	850	8840	18.46	14.06	6.64	1	0.09	-140.1	23.31		
9:53 AM	170	850	9690	18.46	14.11	6.67	1	0.09	-146.4	16.49		
9:58 AM	170	850	10540	18.46	14.08	6.66	1	0.17	-149.1	13.2		
10:03 AM	170	850	11390	18.45	14.11	6.65	1	0.1	-152.1	15.43		
10:08 AM	170	850	12240	18.46	14.11	6.66	1	0.14	-154.2	24.83		
10:13 AM	170	850	13090	18.46	14.07	6.66	1	0.14	-153.9	28.69		
10:18 AM	170	850	13940	18.46	14.1	6.65	1	0.13	-156.4	27.27		
10:23 AM	170	850	14790	18.46	14.11	6.65	1	0.12	-157.6	27.49		
10:28 AM	170	850	15640	18.45	14.09	6.66	1	0.07	-157.5	30.37		
10:33 AM	170	850	16490	18.46	14.12	6.65	1	0.11	-162.2	24.83		
10:38 AM	170	850	17340	18.45	14.11	6.66	1	0.08	-161.1	38.14		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
10:43 AM	170	850	18190	18.45	14.12	6.66	1	0.08	-162.7	50.69		
10:48 AM	170	850	19040	18.45	14.12	6.66	1	0.07	-163.3	46.31		
10:53 AM	170	850	19890	18.45	14.1	6.65	1	0.09	-162	47.29		
10:58 AM	170	850	20740	18.45	14.12	6.66	1	0.08	-163	49.69		
11:03 AM	170	850	21590	18.45	14.14	6.66	1	0.08	-166.3	45		
11:08 AM	170	850	22440	18.45	14.12	6.64	1	0.09	-161.4	47.13		
11:13 AM	170	850	23290	18.45	14.12	6.64	1	0.08	-157.8	53.56		
11:18 AM	170	850	24140	18.45	14.15	6.64	1	0.08	-162.9	46.4		
11:23 AM	170	850	24990	18.45	14.14	6.64	1	0.08	-162.8	47.55		
11:28 AM	170	850	25840	18.45	14.13	6.65	1	0.08	-169.2	37.21		
11:33 AM	170	850	26690	18.45	14.15	6.66	1	0.09	-171.9	41.24		
11:38 AM	170	850	27540	18.45	14.16	6.66	1	0.11	-170.5	53.41		
11:43 AM	170	850	28390	18.45	14.14	6.65	1	0.11	-172.3	52.26		
11:48 AM	170	850	29240	18.45	14.16	6.65	1	0.09	-173.1	53.11		
11:53 AM	170	850	30090	18.45	14.16	6.66	1	0.09	-176.4	60.07		
12:02 PM	170	1530	31620	18.45	14.17	6.63	1	0.09	-171.6	71.38		
12:08 PM	160	960	32580	18.45	14.13	6.65	1	0.08	-167.7	69.91		
12:12 PM	140	560	33140	18.43	14.06	6.66	1	0.08	-167.4	66.73		
12:17 PM	140	700	33840	18.43	14.02	6.63	1	0.07	-166.7	78		
12:22 PM	140	700	34540	18.43	14.03	6.63	1	0.07	-168.1	99.21		
12:27 PM	140	700	35240	18.43	14.01	6.66	1	0.07	-174.2	124.41		
12:32 PM	140	700	35940	18.43	14.02	6.67	1	0.07	-176.5	119.53		
12:37 PM	140	700	36640	18.43	14.01	6.66	1	0.07	-178.9	129.46		
12:42 PM	140	700	37340	18.43	14.04	6.63	1	0.07	-178.3	144.5		
12:47 PM	140	700	38040	18.43	14.04	6.64	1	0.07	-178.7	151.23		
12:52 PM	140	700	38740	18.43	14.01	6.65	1	0.07	-177.7	162.36		
12:57 PM	140	700	39440	18.42	14	6.65	1	0.07	-176.3	172.58		
1:02 PM	140	700	40140	18.41	14.01	6.65	1	0.06	-175.8	161.64		
1:07 PM	140	700	40840	18.41	13.96	6.63	1	0.06	-168.5	107.94		
1:12 PM	100	500	41340	18.4	13.88	6.64	1	0.06	-168.9	100.76		
1:17 PM	100	500	41840	18.4	13.78	6.66	1	0.06	-166	98.18		
1:22 PM	100	500	42340	18.4	13.76	6.64	1	0.06	-165	118.61		
1:27 PM	100	500	42840	18.39	13.74	6.65	1	0.06	-165	123.82		
1:32 PM	100	500	43340	18.39	13.72	6.64	1	0.06	-166.9	123.47		
1:37 PM	100	500	43840	18.39	13.73	6.64	1	0.06	-169	122.97		
1:42 PM	100	500	44340	18.39	13.73	6.65	1	0.06	-165.8	122.11		

Reviewer Comments



GROUNDWATER SAMPLING LOG

Client: SEAPORT MIDSTREAM PARTNERS, LLC

Project #: 60700373

Site: SEAPORT MIDSTREAM PARTNERS, LLC

Event: 2023-Q2-GW

Sample Information			
Sample ID:	20230410-MW-19-22-RA	Date:	4/10/2023 1:00:00 PM
Well ID:	MW-19	Location Type:	Monitoring Well
Duplicate ID:	Not Applicable	Sampler:	Edward Lecocq
Equipment:	Field param meter: In-Situ AquaTroll 600 # 607401 WL/int meter: Heron H. Oil Interface # U102728X		
Comments:	Not Recorded		

Water Level			
Date:	4/10/2023 8:54:00 AM	Measured Depth of Well:	Not Measured
Is Well Dry?	No	Depth to DNAPL:	Not Encountered
Depth to Water:	18.78 ft btoc	Depth to LNAPL:	Not Encountered
Notes:	Not Recorded		

Purge Information			
Begin Date and Time:	4/10/2023 9:25:00 AM	End Date and Time:	4/10/2023 12:50:00 PM
Initial Pump Depth:	22 ft btoc	Final Pump Depth:	Not Recorded
Purge Method:	Low flow	Sample Method:	Low flow
Notes:	Not Recorded		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
10:48 AM	150	12450	12450	18.78	11.99	0	0	10.12	98.5	1.28		
11:01 AM	150	1950	14400	18.78								
11:06 AM	150	750	15150	18.78	14.4	6.56	738	0.2	-175.8	0.84		
11:12 AM	150	900	16050	18.78	14.39	6.33	697	0.42	-149.7	3.4		
11:17 AM	150	750	16800		14.43	6.42	692	0.23	-161.7	0.68		
11:22 AM	150	750	17550		14.34	6.35	690	0.49	-146.2	4.26		
11:27 AM	150	750	18300		14.44	6.36	695	0.29	-155.3	1.58		
11:32 AM	150	750	19050		14.49	6.58	708	0.24	-181	0.08		
11:37 AM	150	750	19800		14.5	6.58	708	0.23	-181.5	0		
11:45 AM	150	1200	21000		14.54	6.59	707	0.12	-191.5	0.07		
11:51 AM	150	900	21900		13.88	6.47	689	2.24	-141.3	5.46		
11:56 AM	150	750	22650		14.52	6.58	706	0.01	-194.1	0.19		
12:01 PM	150	750	23400		14.52	6.58	707	0.02	-198	0		
12:06 PM	150	750	24150	18.78	14.52	6.58	708	0.03	-199.7	0		
12:11 PM	150	750	24900	18.78	14.53	6.6	707	0.03	-201.7	0		

Time	Purge Rate (ml/min)	Purge Volume (ml)	Cumulative Purge Volume (ml)	Purge Depth to Water (ft)	Temperature (deg C)	pH (su)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Color (none)	Odor (none)
12:25 PM	150	2100	27000	18.78	14.58	6.59	705	0	-196.1	0		
12:30 PM	150	750	27750	18.78	14.53	6.59	705	0.01	-201	0		
12:35 PM	150	750	28500	18.78	14.56	6.6	706	0	-204.6	0		
12:40 PM	150	750	29250	18.78	14.57	6.59	706	0	-205.6	0		
12:45 PM	150	750	30000	18.78	14.57	6.6	707	0.01	-206.9	0		
12:50 PM	150	750	30750	18.78	14.55	6.6	705	0	-207.4	0		

Reviewer Comments

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Appendix B

Mann-Kendall Calculation Sheets

Central Area Recovery

Summary Statistics	
n	19
alpha	0.05
MK-stat	-103
s.e.	28.58321186
z-stat	-3.568528286
p-value	0.000358992
trend	yes

LPH Recovery (Gallons)	Central Area Recovery	3648	4402	4579	2506	1450	1985	2673	2062	1747	1865	2622	2078	2175	1848	1555	1668	1137	1022	858
3648	3648																			
4402	4402	1																		
4579	4579	1	1																	
2506	2506	-1	-1	-1																
1450	1450	-1	-1	-1	-1															
1985	1985	-1	-1	-1	-1	1														
2673	2673	-1	-1	-1	1	1	1													
2062	2062	-1	-1	-1	-1	1	1	-1												
1747	1747	-1	-1	-1	-1	1	-1	-1	-1											
1865	1865	-1	-1	-1	-1	1	-1	-1	-1	1										
2622	2622	-1	-1	-1	1	1	1	-1	1	1	1									
2078	2078	-1	-1	-1	-1	1	1	-1	1	1	1	-1								
2175	2175	-1	-1	-1	-1	1	1	-1	1	1	1	-1	1							
1848	1848	-1	-1	-1	-1	1	-1	-1	-1	1	-1	-1	-1	-1						
1555	1555	-1	-1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1					
1668	1668	-1	-1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1				
1137	1137	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1			
1022	1022	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		
858	858	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	

prel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ties	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
freq	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Frequency
summary

0

In the Central and South area, the linear regression trendline has an R^2 value of 0.6126 and the Mann-Kendall probability was 0.0004, which indicates the decrease in LPH recovery volume over time is statistically significant (less than 5% probability that results are random).

Northern Area Recovery

Summary Statistics	
n	19
alpha	0.05
MK-stat	-13
s.e.	28.58321186
z-stat	-0.419826857
p-value	0.674611944
trend	no

LPH
Recovery
(Gallons)

Northern
Area
Recovery

	624	1035	194	131	0	484	442	556	250	339	453	857	756	405	479	391	180	535	150
624																			
1035	1																		
194	-1	-1																	
131	-1	-1	-1																
0	-1	-1	-1	-1															
484	-1	-1	1	1	1														
442	-1	-1	1	1	1	-1													
556	-1	-1	1	1	1	1	1												
250	-1	-1	1	1	1	-1	-1	-1											
339	-1	-1	1	1	1	-1	-1	-1	1										
453	-1	-1	1	1	1	-1	1	-1	1	1									
857	1	-1	1	1	1	1	1	1	1	1	1								
756	1	-1	1	1	1	1	1	1	1	1	1	-1							
405	-1	-1	1	1	1	-1	-1	-1	1	1	-1	-1	-1						
479	-1	-1	1	1	1	-1	1	-1	1	1	1	-1	-1	1					
391	-1	-1	1	1	1	-1	-1	-1	1	1	-1	-1	-1	-1	-1				
180	-1	-1	-1	1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1			
535	-1	-1	1	1	1	1	1	-1	1	1	1	-1	-1	1	1	1	1		
150	-1	-1	-1	1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	

prel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ties	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
freq	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Frequency
summary

0

In the Northern Area, the linear regression trendline had an R^2 value of 0.0125 and the Mann-Kendall probability was 0.67, which indicates changes in the LPH recovery volume have not significantly decreased over time.

Total LPH Recovery

Summary Statistics	
n	19
alpha	0.05
MK-stat	-93
s.e.	28.58321186
z-stat	-3.218672571
p-value	0.001287855
trend	yes

LPH
Recovery
(Gallons)

Total
Recovery 4272 5436 4774 2637 1450 2469 3115 2618 1997 2204 3075 2935 2931 2253 2035 2059 1317 1557 1008

4272	4272																	
5436	1																	
4774	1	-1																
2637	-1	-1	-1															
1450	-1	-1	-1	-1														
2469	-1	-1	-1	-1	1													
3115	-1	-1	-1	1	1	1												
2618	-1	-1	-1	-1	1	1	-1											
1997	-1	-1	-1	-1	1	-1	-1	-1										
2204	-1	-1	-1	-1	1	-1	-1	-1	1									
3075	-1	-1	-1	1	1	1	-1	1	1	1								
2935	-1	-1	-1	1	1	1	-1	1	1	1	-1							
2931	-1	-1	-1	1	1	1	-1	1	1	1	-1	-1						
2253	-1	-1	-1	-1	1	-1	-1	-1	1	1	-1	-1	-1					
2035	-1	-1	-1	-1	1	-1	-1	-1	1	-1	-1	-1	-1	-1				
2059	-1	-1	-1	-1	1	-1	-1	-1	1	-1	-1	-1	-1	-1	1			
1317	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		
1557	-1	-1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	
1008	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

prel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ties	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
freq	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Frequency
summary

0

A Mann-Kendall probability of 0.0013 indicates that volume of LPH recovery decreases over time is statistically significant (less than 5% probability that results are random). Volume decrease is mainly due to statistical significance of Central Area.

Project: Seaport Midstream Partners / Portland Terminal OM
 Project Location: 9930 NW Saint Helens Road, Portland, OR
 Project Number: 60556219

Log of Boring MW-18

Sheet 1 of 1

Date(s) Drilled	12/13/2022	Logged By	A. McLean	Checked By	T. Lydick
Drilling Method	Air Knife/Sonic	Drilling Contractor	Anderson Environmental Contracting, LLC	Total Depth of Borehole	25 feet bgs
Drill Rig Type	Vac Truck/Truck Mounted Sonic	Drill Bit Size/Type	6 inch	Surface Elevation (feet MSL)	32.96 City of Portland Datum
Groundwater Level	N/A	Sampling Method	Continuous Core	Hammer Data	N/A
Borehole Backfill	Monitoring Well Installed 12/13/2022	Location	See Site Map		

Elevation, feet	Downhole Depth, feet	SAMPLES			USCS	MATERIAL DESCRIPTION	Well Graphic	REMARKS AND WELL DETAILS
		Type	Recovery (%)	PID (ppm)				
0						Concrete		Locking flush monument
						Air Knife		Cement collar 0 to 2 ft bgs
30			0					2" Diameter PVC Riser from 0.5 to 14.5 ft bgs
								Bentonite seal from 2 to 11 ft bgs
5					SP	Brown, fine to coarse, poorly graded SAND with GRAVEL , angular gravel, loose, dry, no odor, no sheen		
25			80	0				
10						No Recovery. Red brick, approximately 8-inch diameter, present in shoe.		
20			0					2/12 Monterey Sand from 11 to 24.5 ft bgs
15			0					2" Diameter PVC 0.010-inch slot Well Screen from 14.5 to 24.5 ft bgs
20					SM	Brown-grey, fine to coarse, poorly graded, SILTY SAND with trace subangular gravel, medium plasticity, loose, wet, moderate odor, no sheen		
10			100	112		Grading 6 inch lens of iron staining		
25					CL	Brown, lean CLAY , low plasticity, moderately stiff, wet, moderate odor, no sheen, with iron staining		Bentonite from 24.5 to 25 ft bgs
						Boring terminated at 25.0 ft bgs		OWRD Well Tag ID: L139435
5								
30								

ENV3 PID WITH WELL_SMP_R1 L:\DCS\PROJECTS\LEGACY\GINT\PROJECTS\SEAPORT MIDSTREAM_60556219.GPJ AECOM-PDX.GLB URSSEA3.GDT 5/23/23 LA 70809

Project: Seaport Midstream Partners / Portland Terminal OM
Project Location: 9930 NW Saint Helens Road, Portland, OR
Project Number: 60556219

Log of Boring MW-19

Sheet 1 of 1

Date(s) Drilled	12/13/2022	Logged By	A. McLean	Checked By	T. Lydick
Drilling Method	Air Knife/Sonic	Drilling Contractor	Anderson Environmental Contracting, LLC	Total Depth of Borehole	25 feet bgs
Drill Rig Type	Vac Truck/Truck Mounted Sonic	Drill Bit Size/Type	6 inch	Surface Elevation (feet MSL)	32.96 City of Portland Datum
Groundwater Level	N/A	Sampling Method	Continuous Core	Hammer Data	N/A
Borehole Backfill	Monitoring Well Installed 12/13/2022		Location	See Site Map	

Elevation, feet	Downhole Depth, feet	SAMPLES			USCS	MATERIAL DESCRIPTION	Well Graphic	REMARKS AND WELL DETAILS
		Type	Recovery (%)	PID (ppm)				
0						Concrete		Locking flush monument
						Air Knife		Cement collar 0 to 2 ft bgs
30			0					2" Diameter PVC Riser from 0.5 to 14 ft bgs
								Bentonite seal from 2 to 11 ft bgs
5					SP	Brown, fine to coarse, poorly graded, brown SAND with GRAVEL , angular gravel, loose, no odor, no sheen		
25			85	0		Grading 6 inch iron staining		
10						No Recovery		
20			55		SM	Brown, fine to coarse, SILTY SAND , medium plasticity, some subrounded to subangular gravel, loose, moist, no odor, no sheen		2/12 Monterey Sand from 11 to 24 ft bgs
15				14				2" Diameter PVC 0.010-inch slot Well Screen from 14 to 24 ft bgs
			90		SM	Brown, fine to coarse, SILTY SAND , medium plasticity, some subrounded to subangular gravel, loose, moist, no odor, no sheen		
20				98		Grading brown to grey (moderate odor)		
10			100			Grading subangular to subrounded		
25					CL	Brown, lean CLAY , low plasticity, moderately stiff, moist, moderate odor, no sheen		Bentonite from 24 to 25 ft bgs
						Boring terminated at 25.0 ft bgs		OWRD Well Tag ID: L139436
5								
30								

ENV3 PID WITH WELL_SMP_R1 L:\DCS\PROJECTS\LEGACY\GINT\PROJECTS\SEAPORT MIDSTREAM_60556219.GPJ AECOM-PDX.GLB URSSEA3.GDT 5/23/23 LA 70809

Seaport Midstream - Monitor Well Data - March 2023

POINT NO.	NORTHING SP (North Zone)	EASTING SP (North Zone)	LATITUDE (North)	LONGITUDE (West)	ELEV @ GND	ELEV @ RIVER SIDE			DESC
						TOP OF WELL LID	TOP CASING STEEL @ NOTCH	TOP CASING PVC @ MARK	
10002	711193.78	7618660.89	N45°35'41.37995"	W122°46'46.55085"	32.96	32.98	N/A	32.75	MW18
10003	711153.84	7618692.39	N45°35'40.99457"	W122°46'46.09232"	32.98	32.99	N/A	32.59	MW19

EXPLANATION OF COORDINATE LOCATION: MONITORING WELLS

NORTHINGS, EASTINGS, AND TOP OF CASING ELEVATIONS ARE BASED ON
OBSERVATIONS TAKEN ATOP THE PVC PIPE WITHIN THE WELL,
THESE OBSERVATIONS WERE TAKEN AT THE NORTH EDGE OF THE PVC PIPE.

GROUND ELEVATIONS ARE BASED ON OBSERVATIONS
TAKEN ON THE GROUND ADJACENT TO THE WELL.

TOP OF LID ELEVATIONS ARE BASED ON SHOTS TAKEN ATOP THE
MONITORING WELL LID

VERTICAL DATUM

ELEVATIONS ARE BASED ON CITY OF PORTLAND BENCHMARK 1478
WITH A PUBLISHED ELEVATION OF 129.159 (CITY OF PORTLAND DATUM)

BASIS OF BEARING

STATE PLANE GRID BEARING

HORIZONTAL DATUM

THE HORIZONTAL DATUM IS BASED ON (OREGON NORTH ZONE)
STATE PLANE COORDINATES (INTERNATIONAL FEET). A COMBINED SCALE FACTOR OF 1.0000759212
WAS APPLIED AT NORTHING:711156.95 EASTING:7618596.529
IN ORDER TO CONVERT FROM GRID COORDINATES
TO GROUND COORDINATES.
LATITUDES AND LONGITUDES ARE DERIVED FROM NAD83(2011)
EPOCH:2010.0000 OBSERVATIONS WERE TAKEN USING THE
TRIMBLE VRS NETWORK

Appendix C

Borehole Logs for MW-18, MW-19, HC-1D, and HC-1S

Project: Seaport Midstream Partners / Portland Terminal OM
 Project Location: 9930 NW Saint Helens Road, Portland, OR
 Project Number: 60700373

Log of Boring HC-1D

Sheet 1 of 2

Date(s) Drilled	9/25/2023	Logged By	J. Wright	Checked By	J. Dabkowski
Drilling Method	Resonate Sonic	Drilling Contractor	Cascade Environmental	Total Depth of Borehole	63.5 feet below-ground-surface (bgs)
Drill Rig Type	TSi 150CC	Drill Bit Size/Type	10.25-inch I.D.	Ground Surface Elevation (feet NAVD 88)	N/A
Groundwater Level and Date Measured	N/A	Sampling Method	SPT	Hammer Data	104 lb Downhole Hammer
Borehole Backfill	N/A	Location	Between warehouse and lube farm		

Elevation, feet	Downhole Depth, feet	SAMPLES				Graphic Log	USCS	MATERIAL DESCRIPTION	Well Graphic	REMARKS AND WELL DETAILS
		Type	Number	Blows/ 6in.	Recovery (%)	PID/OVM (ppm)				
0							GP	3" ASPHALTIC CONCRETE POORLY GRADED GRAVEL, loose [Fill]		Pre-existing vault space from 0 to 3.5 feet bgs Top of casing at 2.6 feet bgs Concrete Collar
5		1	6	6	24		SP	POORLY GRADED SAND, gray, moist, loose, medium grained, has odor, has sheen		
		2	6	6	140					
		3	5	13	136		ML	SILT, gray, medium stiff, fill debris, has odor, no sheen		
10		4	10	15	175		GM	SILTY GRAVEL, gray, moist, loose, coarse grained sand with silt, has odor, has sheen		Bentonite-cement grout from 4 to 16 feet bgs
		5	15	6	127			Grades to medium dense		
		6	16	3	84.8					
15		7	11	8	93.8		SM	SILTY SAND, gray, moist, medium dense, has odor, has sheen		
		8	12	18	418		GM	SILTY GRAVEL, gray, medium dense, fill debris, has odor, no sheen		Medium chips from 16 to 18 feet bgs
		9	18	4	82.9		ML	SILT, grayish green, moist, stiff, has odor, has sheen		
20		10	12	14	128			Becomes very stiff		
		11	18	12	309					
		12	27	15	51.7		SP	POORLY GRADED SAND, gray, wet, medium dense, fine grained, has odor, has sheen		
		13	30	18	39		ML	SILT, gray, wet, very stiff to hard, has odor, has sheen		16/30 sand from 18 to 43.5 feet bgs
25		14	29	18	96.8		SP	POORLY GRADED SAND, gray, wet, medium dense, medium to fine grained, has odor, no sheen		
		15	25	18	16.1			Becomes brown, no odor		
		16	16	18	9.9					
30		17	14	18	10.5		SM	SILTY SAND, brown, wet, loose, fine grained, no odor, no sheen		
		18	6	18			SP	POORLY GRADED SAND, brown, wet, medium dense, no odor, no sheen		6-inch, 20-slot stainless steel screen from 30 to 40 feet bgs
		19	21	18						
35		20	28	18						

PORTLAND_60700373_HC-1D C:\USERS\PUBLIC\DOCUMENTS\BENTLEY\GINTCL\PROJECTS\SEAPORT MIDSTREAM_60700373.GPJ AECOM-PDX.GLB URSSEA3.GDT 3/13/24 LA 70809

Project: Seaport Midstream Partners / Portland Terminal OM
 Project Location: 9930 NW Saint Helens Road, Portland, OR
 Project Number: 60700373

Log of Boring HC-1D

Sheet 2 of 2

Elevation, feet	Downhole Depth, feet	SAMPLES				Graphic Log	USCS	MATERIAL DESCRIPTION		REMARKS AND WELL DETAILS
		Type	Number	Blows/ 6in.	Recovery (%)	PID/OVM (ppm)				
	35		21	20	18					
			22	18	18					
			23	21	18					
	40		24	20	18					
			25	23	18					
			26	40	6					
	45		27	35	6			Grades to dense		
	50									
	55									
	60									
	65							Terminate boring at 63.5 feet bgs on 11/15/2004. Well installed upon completion. Well installed in place of abandoned former well on 9/25/2023. Borehole backfilled with bentonite-cement grout to 43 feet bgs. Soil log from initial installation on 11/15/2004.		
	70									
	75									

PORTLAND_60700373_HC-1D C:\USERS\PUBLIC\DOCUMENTS\BENTLEY\GINTCL\PROJECTS\SEAPORT MIDSTREAM_60700373.GPJ AECOM-PDX.GLB URSSEA3.GDT 3/13/24 LA 70809

Project: Seaport Midstream Partners / Portland Terminal OM
 Project Location: 9930 NW Saint Helens Road, Portland, OR
 Project Number: 60700373

Log of Boring HC-1S

Sheet 1 of 1

Date(s) Drilled	1/4/2024	Logged By	B. Webb	Checked By	
Drilling Method	Resonate Sonic	Drilling Contractor	Cascade Environmental	Total Depth of Borehole	30 feet below-ground-surface (bgs)
Drill Rig Type	TSi 150CC	Drill Bit Size/Type	10-inch bit / 12-inch casing	Ground Surface Elevation (feet NAVD 88)	18
Groundwater Level	N/A	Sampling Method		Hammer Data	
Borehole Backfill		Location	Latitude: 45.594367 / Longitude: -122.779185		

Elevation, feet	Downhole Depth, feet	SAMPLES			USCS	MATERIAL DESCRIPTION	Well Graphic	REMARKS AND WELL DETAILS
		Type	Recovery (%)	PID (ppm)				
	0					Pre-existing vault space from 0 to 3.9 feet bgs.		Vault
								Top of casing at 2.5 feet bgs
								Concrete Collar
	5		100		GP	FILL, uniform, well-rounded pebbles from vault installation.		Medium chips from 4 to 8 feet bgs
					SP	GRAVELLY SAND, dark brown, rounded to well-rounded gravels less than 1.2 inches in diameter.		6-inch, Schedule 10S stainless steel well casing from 2.5 to 10 feet bgs
-10	10				GM	---same as above, except gray. GRAVELLY SILT, gray, soft to medium, wet, contains broken glass, orange brick fragments, and concrete fragments.		16/30 sand from 8 to 20 feet bgs
	15		100		SM/GP	SILTY SANDY GRAVEL, gray, contains angular gravels up to 1.2 inches in diameter, slight petroleum odor.		6-inch, 20-slot stainless steel screen from 10 to 20 feet bgs
0	20				ML	---same as above. SILT, gray, moist, soft to medium stiff. [Confining Unit]		2-foot sump from 20 to 22 feet bgs Medium chips from 20 to 22 feet bgs
	25		100					Backfilled from 22 to 27 feet bgs with 3/8-inch medium bentonite chips
-10	30					End of boring at 30 feet bgs.		Backfilled from 27 to 30 feet bgs with native fill (cave-in)
	35							Start Card # 1072184 OWRD Well # L152402

PORTLAND_60700373_HC-1S C:\USERS\PUBLIC\DOCUMENTS\BENTLEY\INTCL\PROJECTS\SEAPORT MIDSTREAM_60700373.GPJ AECOM-PDX.GLB URSSEA3.GDT 3/4/24 LA 70809

Memorandum

To	Shira DeGrood, Project Manager	Info	FINAL
Subject	Summary Data Quality Review Seaport Midstream Partners - Portland Terminal 2023 2 nd Quarter Response Action Groundwater Sampling		
From	Christina Wheeler, Chemist Jennifer B. Garner, Chemist		
Date	June 8, 2023		

The summary data quality review of 4 groundwater samples and one trip blank collected on April 10 and April 12, 2023, has been completed. The samples were analyzed at Eurofins Seattle located in Tacoma, Washington for selected volatile organic compounds (VOCs) by EPA Method 8260D; total petroleum hydrocarbons (TPHs) by Washington State Department of Ecology Methods NWTPH-Gx (gasoline-range TPH) and NWTPH-Dx (diesel-range TPH and motor oil-range TPH); polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270E modified by selected ion monitoring (SIM); and total recoverable metals by EPA Methods 6010D (arsenic, barium, cadmium, chromium, lead, selenium, and silver) and EPA Method 7470A (mercury). The laboratory provided a summary report containing sample results and associated quality assurance (QA) and quality control (QC) data for all samples. For this report, the sample identifications (IDs) do not include the sampling date prefixes (20230410- and 20230412-) and the suffix -RA, unless required for clarity. The following samples are associated with Eurofins laboratory group 580-126014-1:

Sample ID	Laboratory ID	Requested Analyses
20230410-MW-18-19-RA	580-126014-1	TPH-Gx, TPH-Dx, VOCs, PAHs, Metals
20230410-MW-19-22-RA	580-126014-2	TPH-Gx, TPH-Dx, VOCs, PAHs, Metals
20230412-P-03-11-RA	580-126014-3	TPH-Gx, TPH-Dx, VOCs, PAHs, Metals
20230412-P-05-15-RA	580-126014-4	TPH-Gx, TPH-Dx, VOCs, PAHs, Metals
TRIP BLANKS_20230410B	580-126014-5	TPH-Gx and VOCs

Data were evaluated based on validation criteria established in the *National Functional Guidelines for Organic Superfund Methods Data Review*, November 2020, and the *National Functional Guidelines for Inorganic Superfund Methods Data Review*, November 2020, as applied to the reported methodology.

The following data components were reviewed during the limited data validation procedure for compliance with method-specific or laboratory control charted criteria where appropriate: chain of custody forms, holding times, method/trip/instrument blanks, surrogate recoveries, matrix spike/matrix spike duplicate recoveries, laboratory and field duplicate results, laboratory control sample/laboratory control sample duplicate recoveries, reporting limits, and electronic data deliverables.

A summary of qualifiers that may be assigned to results in these laboratory groups are included in Table 1. Qualifiers that may be assigned to results include:

- U - The analyte was analyzed for but was not detected above the reported sample quantitation limit.
- J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

Summary Data Quality Review
Seaport Midstream Partners - Portland Terminal
2023 2nd Quarter Response Action Groundwater Sampling
Laboratory Group: 580-126014-1

- UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
- DNR - Do Not Report. Another result is available that is more reliable or appropriate.

Sample Receipt

Upon receipt by the laboratory, the sample jar information was compared to the chain-of-custody (COC) and the cooler temperature was recorded. No discrepancies related to sample identification were noted by the laboratory and the cooler was received at a temperature within the EPA-recommended limits of greater than 0°C and less than or equal to 6°C.

Organic Analyses

Samples were analyzed for VOCs, TPHs, and PAHs by the methods identified in the introduction of this report.

1. Holding Times – Acceptable
2. Blanks – Acceptable except as noted below:

PAHs by EPA 8270E-SIM – Dibenz(a,h)anthracene (0.0185 ug/L) and indeno(1,2,3-cd)pyrene (0.0160 ug/L) were detected at concentrations between the method detection limits (MDLs) and the laboratory reporting limits in the method blank associated with analytical preparation batch 580-423440. The result for dibenz(a,h)anthracene in sample MW-18-19 was reported at a concentration between the MDL and the laboratory reporting limit; therefore, the result for dibenz(a,h)anthracene in MW-18 was qualified as not detected and flagged 'U' at the laboratory reporting limit. The result for indeno(1,2,3-cd)pyrene was reported at a concentration between one and two times the laboratory reporting limit in sample MW-18-19; therefore, the result for indeno(1,2,3-cd)pyrene in this sample was qualified as estimated and flagged 'J.' Dibenz(a,h)anthracene and indeno(1,2,3-cd)pyrene were not detected in the other sample reported from this preparation batch (MW-19-22); therefore, no other qualifications based on these method blank results were required.

NWPTH-Dx – Motor oil-range TPH was detected in the method blanks associated with preparation batches 580-423635 (376 ug/L) and 580-423997 (137 ug/L). The concentration for motor oil-range TPH in the method blank associated with preparation batch 580-423997 was reported at a concentration between the MDL and the laboratory reporting limit. The concentrations for motor oil-range TPH in samples P-05-15 and P-03-11 were between the MDLs and the laboratory reporting limits; therefore, the results for motor oil-range TPH in these samples were qualified as not detected and flagged 'U' at the laboratory reporting limits.

3. Surrogates – Acceptable

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4. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) – Acceptable
5. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

General – MS/MSDs were not performed in association with these analyses. Precision and accuracy were assessed using the associated LCS/LCSD results.

6. Reporting Limits – Acceptable

General – One or more results were flagged 'J' by the laboratory to indicate the reported concentrations were above the MDLs but below the reporting limits. Laboratory 'J'-flagged results are considered estimated. As the results are between the MDLs and the reporting limits, there are greater levels of uncertainty associated with the numerical results.

Metals Analyses

Samples were analyzed for total recoverable metals by the methods identified in the introduction of this report.

1. Holding Times – Acceptable
2. Blanks – Acceptable
3. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) – Acceptable
4. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

General - MS/MSDs were not performed in association with these analyses. Precision and accuracy were assessed using the associated LCS/LCSD results.

5. Laboratory Duplicates

General – Laboratory duplicates were not performed in association with these analyses. Accuracy was assessed using the LCS/LCSD relative percent differences (RPDs).

6. Reporting Limits – Acceptable

Total Recoverable Metals by EPA 6020B – One or more results in multiple samples were flagged 'J' by the laboratory, indicating reported concentrations between the laboratory reporting limits and the MDLs. As described above, laboratory 'J'-flagged results are considered estimated.

Overall Assessment of Data

The data reported in this laboratory group, as qualified, are usable for meeting project objectives. The completeness for Eurofins Seattle laboratory group 580-126014-1 is 100%.

Summary Data Quality Review
Seaport Midstream Partners - Portland Terminal
2023 2nd Quarter Response Action Groundwater Sampling
Laboratory Group: 580-126014-1

Table 1 - Summary of Qualified Data

Sample ID	Laboratory ID	Method	Test Type	Analyte	Laboratory Result	Units	Final Result	Reason Code
20230410-MW-18-19-RA	580-126014-1	SW8270E-SIM	INITIAL	Dibenz (a,h) anthracene	0.045 JB	ug/l	0.11 U	bl
20230410-MW-18-19-RA	580-126014-1	SW8270E-SIM	INITIAL	Indeno[1,2,3-cd]pyrene	0.056 B	ug/l	0.056 J	bl
20230412-P03-11-RA	580-126014-3	NWTPH-DX	INITIAL	TPH Motor Oil (C24 - C36)	260 JB	ug/l	360 U	bl
20230412-P-05-15-RA	580-126014-4	NWTPH-DX	INITIAL	TPH Motor Oil (C24 - C36)	150 JB	ug/l	370 U	bl

Notes:

B - compound was found in the blank and the sample

bl - laboratory blank contamination

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

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

ug/L - microgram per liter

Appendix D

Summary Data Quality Reports and Laboratory Analytical Reports

Memorandum

To	Thomas Bialobok, Project Manager	Info	FINAL
Subject	Summary Data Quality Review SeaPort Midstream Portland Terminal 2023 Annual Groundwater Sampling – Group 1		
From	Christina Wheeler, Chemist Jennifer B. Garner, Chemist		
Date	January 19, 2024		

The summary data quality review of 18 groundwater samples and 2 trip blanks has been completed. The samples were collected between April 10 and April 13, 2023, and were analyzed at Eurofins Seattle located in Tacoma, Washington, for selected volatile organic compounds (VOCs) by EPA Method 8260D; total petroleum hydrocarbons (TPHs) by Washington State Department of Ecology Methods NWTPH-Gx (gasoline-range TPH) and NWTPH-Dx (diesel-range TPH and motor oil-range TPH); polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270E modified by selected ion monitoring (SIM); and total recoverable metals by EPA Methods 6010D (arsenic, barium, cadmium, chromium, lead, selenium, and silver) and EPA Method 7470A (mercury). The laboratory provided summary reports containing sample results and associated quality assurance (QA) and quality control (QC) data for all samples. For this report, the sample identifications (IDs) do not include the sampling date prefixes (e.g. 20230410-) or suffixes (e.g. -GW), unless required for clarity. The following samples are associated with Eurofins laboratory groups 580-126017-1 and 580-126032-1:

Sample ID	Laboratory ID	Requested Analyses
20230413-MD-01-35-GW	580-126017-1	TPH-Gx, TPH-Dx, VOCs, PAHs, Metals
20230410-MD-02-35-GW	580-126017-2	TPH-Gx, TPH-Dx, VOCs, PAHs, Metals
20230412-MD-06-45-GW	580-126017-3	TPH-Gx, TPH-Dx, VOCs, PAHs, Metals
20230413-MD-07-39-GW	580-126017-4	TPH-Gx, TPH-Dx, VOCs, PAHs, Metals
20230412-MD-08-41-GW	580-126017-5	TPH-Gx, TPH-Dx, VOCs, PAHs, Metals
20230411-MD14-46-GW	580-126017-7	TPH-Gx, VOCs
20230411-MW-05-11-GW	580-126017-8	TPH-Gx, TPH-Dx, VOCs, PAHs, Metals
20230412-P104-13-GW (field duplicate of 20230412-P04-13-GW)	580-126017-9	TPH-Gx, TPH-Dx, VOCs, PAHs, Metals
20230412-MW-16-19-GW	580-126017-10	TPH-Gx, TPH-Dx, VOCs, PAHs, Metals
20230412-P01-8-GW	580-126017-11	TPH-Gx, TPH-Dx, VOCs, PAHs, Metals
20230412-P02-12-GW	580-126017-12	TPH-Gx, TPH-Dx, VOCs, PAHs, Metals
20230412-P-04-13-GW	580-126017-13	TPH-Gx, TPH-Dx, VOCs, PAHs, Metals
20230413-P-12-18-GW	580-126017-14	TPH-Gx, TPH-Dx, VOCs, PAHs, Metals
20230413-P-23-18-GW	580-126017-15	TPH-Gx, TPH-Dx, VOCs, PAHs, Metals
20230413-P-17-14-GW	580-126017-16	TPH-Gx, TPH-Dx, VOCs, PAHs, Metals
20234013-P-18-18-GW	580-126017-17	TPH-Gx, TPH-Dx, VOCs, PAHs, Metals
Trip Blanks	580-126017-18	TPH-Gx, VOCs
20230413-MD-10-41-GW	580-126032-1	TPH-Gx, TPH-Dx, VOCs, PAHs, Metals
20230413-P-13-20-GW	580-126032-2	TPH-Gx, TPH-Dx, VOCs, PAHs, Metals
Trip Blanks	580-126032-3	TPH-Gx, VOCs

**Summary Data Quality Review
Seaport Midstream Portland Terminal
2023 Annual Groundwater Sampling – Group 1
Laboratory Group: 580-126017-1 and 580-126032-1**

Data were evaluated based on validation criteria established in the *National Functional Guidelines for Organic Superfund Methods Data Review*, November 2020, and the *National Functional Guidelines for Inorganic Superfund Methods Data Review*, November 2020, as applied to the reported methodology.

The following data components were reviewed during the limited data validation procedure for compliance with method-specific or laboratory control charted criteria where appropriate: chain of custody forms, holding times, method/trip/instrument blanks, surrogate recoveries, matrix spike/matrix spike duplicate recoveries, laboratory and field duplicate results, laboratory control sample/laboratory control sample duplicate recoveries, reporting limits, and electronic data deliverables.

A summary of qualifiers that may be assigned to results in these laboratory groups are included in Table 1. Qualifiers that may be assigned to results include:

- U - The analyte was analyzed for but was not detected above the reported sample quantitation limit.
- J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
- DNR - Do Not Report. Another result is available that is more reliable or appropriate.

Sample Receipt

Upon receipt by the laboratory, the cooler temperatures were recorded and the sample jar information was compared to the associated chain-of-custody (COC). The coolers were received at temperatures within the EPA-recommended limits of greater than 0°C and less than or equal to 6°C. Sample 20230413-P12-18-GW was duplicated on the COC; the duplicate was removed during sample log-in (laboratory ID 580-126017-6). Additionally, following sample submission, the laboratory was instructed to remove “MS/MSD” from the sample suffix for 20230411-MW05-11-GW.

Organic Analyses

Samples were analyzed for VOCs, TPHs, and PAHs by the methods identified in the introduction of this report.

1. Holding Times – Acceptable except as noted below:

PAHs by Method 8270E SIM – Sample MD-02-35 was reextracted outside the method-recommended holding time of 7 days due to an error in the laboratory. The results for PAHs

Summary Data Quality Review
Seaport Midstream Portland Terminal
2023 Annual Groundwater Sampling – Group 1
Laboratory Group: 580-126017-1 and 580-126032-1

in sample MD-02-35 were qualified as estimated and flagged 'J/UJ' due to holding time exceedance (See Table 1).

2. Blanks – Acceptable except as noted below:

VOCs by Method 8260D – Benzene (0.273 ug/L) was detected in the method blank associated with analytical batch 580-423563 at a concentration between the method detection limit (MDL) and the laboratory reporting limit. Associated sample results were reported as not detected; therefore, data were not qualified based on this method blank detection.

NWPTH-Dx – Motor-oil range TPH was detected in the method blank associated with preparation batch 580-423635 at a concentration above the reporting limit and in the preparation batch 580-423872 at a concentration between MDL and the laboratory reporting limit:

Preparation Batch	Motor Oil Concentration (ug/L)	Associated Sample Results Flagged 'U' at the Reporting Limit	Associated Sample Results Flagged 'J' at the Reported Result
580-423635	376	MD-02-35	None
580-423872	101 J	P-23-18	P-12-18

J – detected between the MDL and the laboratory reporting limit

The results for motor oil-range TPH in MD-02-35 and P-23-18 were reported at concentrations between the MDLs and the laboratory reporting limits; therefore, these results were qualified as not detected and flagged 'U' at the reporting limits. The result for motor oil-range TPH in P-12-18 was reported at a concentration above the laboratory reporting limit but less than two times the laboratory reporting limit; therefore, this result was qualified as estimated and flagged 'J' based on the associated method blank result. Associated sample results reported as not detected or at concentrations more than two times the laboratory reporting limits did not require qualification based on the associated method blank results.

NWPTH-Gx – Gasoline range TPH (54 ug/L) was detected at a concentration above the laboratory reporting limit in the trip blank associated with laboratory group 580-126032-1. The associated samples were either reported as not detected or at a concentration greater than two times the trip blank concentration; therefore, results did not require qualification based on this trip blank detection.

3. Surrogates – Acceptable
4. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) – Acceptable
5. Matrix Spike/Matrix Spike Duplicate (MS/MSD) – Acceptable except as noted below:

VOCs by Method 8260D – An MS/MSD was performed using MW-05-11. The percent recovery for o-xylene (121%) exceeded the upper control limit of 120%. The percent recovery in the MS and the relative percent difference (RPD) were acceptable for o-xylene; therefore, data were not qualified based on the MSD result.

Summary Data Quality Review
Seaport Midstream Portland Terminal
2023 Annual Groundwater Sampling – Group 1
Laboratory Group: 580-126017-1 and 580-126032-1

NWTPH-Gx – An MS/MSD was performed using MW-05-11. Results were acceptable.

NWTPH-Dx – An MS/MSD was performed using MW-05-11. Results were acceptable.

PAHs by Method 8270E-SIM – An MS/MSD was performed using MW-05-11. Results were acceptable.

6. Field Duplicate – Acceptable

General – A field duplicate was submitted for P-04-13 and identified as P-104-13. An RPD limit of 30% was used to evaluate the data. Results reported at concentrations greater than five times the laboratory reporting limits were comparable.

7. Reporting Limits – Acceptable

General – One or more results were flagged 'J' by the laboratory to indicate the reported concentrations were above the MDLs but below the reporting limits. Laboratory 'J'-flagged results are considered estimated. As the results are between the MDLs and the reporting limits, there are greater levels of uncertainty associated with the numerical results.

PAHs by Method 8270E-SIM – The reporting limits for PAHs reported as not detected in P-12-18 and P-13-20 were elevated due to dilutions required because of matrix interferences. One or more laboratory reporting limits may exceed regulatory criteria.

8. Other Items of Note:

NWTPH-Gx – The percent difference (%D) for gasoline-range TPH in the continuing calibration verification (CCV) associated with analytical batch 580-423553 was outside the method limit (high). Gasoline-range TPH was not detected in the associated sample; therefore, data were not qualified based on the elevated CCV %D.

Metals Analyses

Samples were analyzed for total recoverable metals by the methods identified in the introduction of this report.

1. Holding Times – Acceptable

2. Blanks – Acceptable

3. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) – Acceptable

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) - Acceptable

Total Recoverable Metals by EPA 6010D – An MS/MSD was performed using sample MW-05-11. Results were acceptable.

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Seaport Midstream Portland Terminal
2023 Annual Groundwater Sampling – Group 1
Laboratory Group: 580-126017-1 and 580-126032-1

Mercury by EPA 7470A – An MS/MSD was performed using sample MW-05-11. Results were acceptable.

5. Laboratory Duplicates

Total Recoverable Metals by EPA 6020B – A laboratory duplicate was performed using sample MW-05-11. Results were comparable.

Mercury by EPA 7470A – Laboratory duplicates were not performed in association with the total mercury. Accuracy was assessed using the LCS/LCSD and/or MS/MSD RPDs.

6. Field Duplicate – Acceptable

A field duplicate was submitted for P-04-13 and identified as P-104-13. An RPD limit of 30% was used to evaluate the data. Results reported at concentrations greater than five times the laboratory reporting limits were comparable.

7. Reporting Limits – Acceptable

Total Recoverable Metals by EPA 6020B – One or more results in multiple samples were flagged 'J' by the laboratory, indicating reported concentrations between the laboratory reporting limits and the MDLs. As described above, laboratory 'J'-flagged results are considered estimated.

Overall Assessment of Data

The data reported in this laboratory group, as qualified, are usable for meeting project objectives. The completeness for Eurofins Seattle laboratory groups 580-126017-1 and 580-126032-1 is 100%.

Summary Data Quality Review
SeaPort-Midstream Portland Terminal
2023 Annual Groundwater
Laboratory Group: 580-126017-1 and 580-126032-1

Table 1 - Summary of Qualified Data

Sample ID	Laboratory ID	Method	Test Type	Analyte	Laboratory Result	Units	Final Result	Reason Code
20230410-MD-02-35-GW	580-126017-2	SW8270E-SIM	REEXTRACT	1-Methylnaphthalene	0.033 U	ug/l	0.033 UJ	h
20230410-MD-02-35-GW	580-126017-2	SW8270E-SIM	REEXTRACT	2-Methylnaphthalene	0.039 U	ug/l	0.039 UJ	h
20230410-MD-02-35-GW	580-126017-2	SW8270E-SIM	REEXTRACT	Acenaphthene	0.014 J	ug/l	0.014 J	h
20230410-MD-02-35-GW	580-126017-2	SW8270E-SIM	REEXTRACT	Acenaphthylene	0.014 J	ug/l	0.014 J	h
20230410-MD-02-35-GW	580-126017-2	SW8270E-SIM	REEXTRACT	Anthracene	0.022 U	ug/l	0.022 UJ	h
20230410-MD-02-35-GW	580-126017-2	SW8270E-SIM	REEXTRACT	Benzo (a) anthracene	0.014 U	ug/l	0.014 UJ	h
20230410-MD-02-35-GW	580-126017-2	SW8270E-SIM	REEXTRACT	Benzo (a) pyrene	0.022 U	ug/l	0.022 UJ	h
20230410-MD-02-35-GW	580-126017-2	SW8270E-SIM	REEXTRACT	Benzo (b) fluoranthene	0.022 U	ug/l	0.022 UJ	h
20230410-MD-02-35-GW	580-126017-2	SW8270E-SIM	REEXTRACT	Benzo (ghi) perylene	0.013 J	ug/l	0.013 J	h
20230410-MD-02-35-GW	580-126017-2	SW8270E-SIM	REEXTRACT	Benzo (k) fluoranthene	0.012 U	ug/l	0.012 UJ	h
20230410-MD-02-35-GW	580-126017-2	SW8270E-SIM	REEXTRACT	Chrysene	0.037 U	ug/l	0.037 UJ	h
20230410-MD-02-35-GW	580-126017-2	SW8270E-SIM	REEXTRACT	Dibenz (a,h) anthracene	0.015 U	ug/l	0.015 UJ	h
20230410-MD-02-35-GW	580-126017-2	SW8270E-SIM	REEXTRACT	Fluoranthene	0.055 U	ug/l	0.055 UJ	h

Memorandum

To	Thomas Bialobok, Project Manager	Info	FINAL
Subject	Summary Data Quality Review SeaPort Midstream Portland Terminal 2023 Annual Groundwater and 2Q Response Action Sampling		
From	Christina Wheeler, Chemist Jennifer B. Garner, Chemist		
Date	June 8, 2023		

The summary data quality review of 4 groundwater samples has been completed. The samples were collected between April 10 and April 12, 2023, and were analyzed at Eurofins Seattle located in Tacoma, Washington, for selected volatile organic compounds (VOCs) by EPA Method 8260D; total petroleum hydrocarbons (TPHs) by Washington State Department of Ecology Methods NWTPH-Gx (gasoline-range TPH) and NWTPH-Dx (diesel-range TPH and motor oil-range TPH); polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270E modified by selected ion monitoring (SIM); and total recoverable metals by EPA Methods 6010D (arsenic, barium, cadmium, chromium, lead, selenium, and silver) and EPA Method 7470A (mercury). The laboratory provided a summary report containing sample results and associated quality assurance (QA) and quality control (QC) data for all samples. For this report, the sample identifications (IDs) do not include the sampling date prefixes (e.g. 20230410-) and the suffix -GW, unless required for clarity. The following samples are associated with Eurofins laboratory groups 580-126016-1:

Sample ID	Laboratory ID	Requested Analyses
20230412-MD-13-35-GW	580-126016-1	TPH-Gx, TPH-Dx, VOCs, PAHs, Metals
20230410-MW-14-23-GW	580-126016-2	TPH-Gx, TPH-Dx, VOCs, PAHs, Metals
20230411-MW-17-22-GW	580-126016-3	TPH-Gx, TPH-Dx, VOCs, PAHs, Metals
20230411-MW-117-22-GW	580-126016-4	TPH-Gx, TPH-Dx, VOCs, PAHs, Metals

Data were evaluated based on validation criteria established in the *National Functional Guidelines for Organic Superfund Methods Data Review*, November 2020, and the *National Functional Guidelines for Inorganic Superfund Methods Data Review*, November 2020, as applied to the reported methodology.

The following data components were reviewed during the limited data validation procedure for compliance with method-specific or laboratory control charted criteria where appropriate: chain of custody forms, holding times, method/trip/instrument blanks, surrogate recoveries, matrix spike/matrix spike duplicate recoveries, laboratory and field duplicate results, laboratory control sample/laboratory control sample duplicate recoveries, reporting limits, and electronic data deliverables.

A summary of qualifiers that may be assigned to results in these laboratory groups are included in Table 1. Qualifiers that may be assigned to results include:

- U - The analyte was analyzed for but was not detected above the reported sample quantitation limit.
- J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

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Laboratory Group: 580-126016-1

- UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
- DNR - Do Not Report. Another result is available that is more reliable or appropriate.

Sample Receipt

Upon receipt by the laboratory, the sample jar information was compared to the chain-of-custody (COC), and the cooler temperature was recorded. No discrepancies related to sample identification were noted by the laboratory and the cooler was received at a temperature within the EPA-recommended limits of greater than 0°C and less than or equal to 6°C. Following sample submission, the lab was instructed to remove "MS/MSD" from the sample suffix for 20230412-MD-13-35-GW.

Organic Analyses

Samples were analyzed for VOCs, TPHs, and PAHs by the methods identified in the introduction of this report.

1. Holding Times – Acceptable
2. Blanks – Acceptable except as noted below:

PAHs by EPA 8270E-SIM – Dibenzo(a,h)anthracene (0.0185 ug/L) and indeno(1,2,3-cd)pyrene (0.0160 ug/L) were detected at concentrations between the method detection limits (MDLs) and the laboratory reporting limits in the method blank associated with preparation batch 580-423440. Dibenzo(a,h)anthracene and indeno(1,2,3-cd)pyrene were reported as not detected in the samples associated with this method blank; therefore, no data were qualified for these analytes based on the method blank results.

NWPTH-Dx – Motor oil range TPH was detected in the method blank associated with preparation batches 580-423635 (376 ug/L) and 580-423997 (137 ug/L). The concentration for motor oil-range TPH in the method blank associated with preparation batch 580-423997 was reported at a concentration between the MDL (MDL) and the laboratory reporting limit. The results for motor oil-range TPH in MD-13-35, MW-14-23, and MW-17-22 were reported at concentrations between the MDLs and the laboratory reporting limits; therefore, the results for motor oil-range TPH in these samples were qualified as not detected and flagged 'U' at the laboratory reporting limits.

3. Surrogates – Acceptable

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Seaport Midstream Portland Terminal
2023 Annual Groundwater and 2nd Quarter Response Action Sampling
Laboratory Group: 580-126016-1

4. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) – Acceptable
5. Matrix Spike/Matrix Spike Duplicate (MS/MSD) – Acceptable

VOCs by Method 8260D – An MS/MSD was performed using MW-13-35. Results were acceptable.

NWTPH-Gx – An MS/MSD was performed using MW-13-35. Results were acceptable.

PAHs by Method 8270E-SIM – An MS/MSD was performed using MW-13-35. Results were acceptable.

NWTPH-Dx – An MS/MSD was performed using MW-13-35. Results were acceptable.

6. Field Duplicate – Acceptable

General – A field duplicate was submitted for MW-17-22 and identified as MW-117-22. RPDs were calculated and compared to control criteria only when reported concentrations were greater than five times the reporting limits. Results were comparable.

7. Reporting Limits – Acceptable

PAHs by EPA Method 8270E-SIM – One or more results were flagged 'J' by the laboratory to indicate the reported concentrations were above the MDLs but below the reporting limits. Laboratory 'J'-flagged results are considered estimated. As the results are between the MDLs and the reporting limits, there are greater levels of uncertainty associated with the numerical results.

Metals Analyses

Samples were analyzed for total recoverable metals by the methods identified in the introduction of this report.

1. Holding Times – Acceptable
2. Blanks – Acceptable
3. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) – Acceptable
4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) - Acceptable

Total Recoverable Metals by EPA 6020B – An MS/MSD was performed using sample MW-13-35. Results were acceptable.

Mercury by EPA 7470A – An MS/MSD was performed using sample MW-13-35. Results were acceptable.



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Laboratory Group: 580-126016-1**

5. Laboratory Duplicates

Total Recoverable Metals by EPA 6020B – A laboratory duplicate was not performed in association with the total recoverable metals analysis. Accuracy was assessed using the LCS/LCSD and MS/MSD relative percent differences (RPDs).

Mercury by EPA 7470A – A laboratory duplicate was performed using sample MW-13-35. Results were comparable.

6. Field Duplicate – Acceptable

General – A field duplicate was submitted for MW-17-22 and identified as MW-117-22. RPDs were calculated and compared to control criteria only when reported concentrations were greater than five times the reporting limits. Results were comparable.

7. Reporting Limits – Acceptable

Total Recoverable Metals by EPA 6020B – The results for lead in multiple samples were flagged 'J' by the laboratory, indicating reported concentrations between the laboratory reporting limits and the MDLs. As described above, laboratory 'J'-flagged results are considered estimated.

Overall Assessment of Data

The data reported in this laboratory group, as qualified, are usable for meeting project objectives. The completeness for Eurofins Seattle laboratory groups 580-126016-1 is 100%.

Summary Data Quality Review
SeaPort-Midstream Portland Terminal
2023 Annual Groundwater and 2nd Quarter Response Action Sampling
Laboratory Group: 580-126016-1

Table 1 - Summary of Qualified Data

Sample ID	Laboratory ID	Method	Test Type	Analyte	Laboratory Result	Units	Final Result	Reason Code
20230412-MD-13-35-GW	580-126016-1	NWTPH-DX	INITIAL	TPH Motor Oil (C24 - C36)	100 JB	ug/l	370 U	bl
20230410-MW-14-23-GW	580-126016-2	NWTPH-DX	INITIAL	TPH Motor Oil (C24 - C36)	180 JB	ug/l	360 U	bl
20230411-MW17-22-GW	580-126016-3	NWTPH-DX	INITIAL	TPH Motor Oil (C24 - C36)	130 JB	ug/l	350 U	bl

Notes:

B - compound was found in the blank and the sample

bl - laboratory blank contamination

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

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

ug/L - microgram per liter

ANALYTICAL REPORT

PREPARED FOR

Attn: Christina Wheeler
AECOM
1111 Third Ave
Suite 1600
Seattle, Washington 98101

Generated 4/27/2023 5:05:30 PM

JOB DESCRIPTION

SMP Portland Terminal Response Action GWM

JOB NUMBER

580-126016-1

Eurofins Seattle

Job Notes

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The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northwest, LLC Project Manager.

Authorization



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Case Narrative

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126016-1

Job ID: 580-126016-1

Laboratory: Eurofins Seattle

Narrative

Job Narrative 580-126016-1

Receipt

Four samples were received on 4/13/2023 4:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.2° C.

GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC/MS Semi VOA

Method 8270E SIM: The method blank for preparation batch 580-423440 and analytical batch 580-424033 contained Dibenz(a,h)anthracene and Indeno[1,2,3-cd]pyrene above the method detection limit. This target analyte concentration was less than half the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method NWTPH-Dx: The method blank for preparation batch 580-423635 and analytical batch 580-423886 contained Motor Oil (>C24-C36) above the reporting limit (RL). None of the samples associated with this method blank contained the target compound above the RL; therefore, re-extraction of samples were not performed.

Method NWTPH-Dx: The method blank for preparation batch 580-423997 and analytical batch 580-424056 contained Motor Oil (>C24-C36) above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page..

Definitions/Glossary

Client: AECOM

Job ID: 580-126016-1

Project/Site: SMP Portland Terminal Response Action GWM

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client Sample Results

Client: AECOM

Job ID: 580-126016-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230412-MD-13-35-GW

Lab Sample ID: 580-126016-1

Date Collected: 04/12/23 10:05

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/21/23 20:31	1
Toluene	ND		1.0	0.39	ug/L			04/21/23 20:31	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/21/23 20:31	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/21/23 20:31	1
o-Xylene	ND		1.0	0.39	ug/L			04/21/23 20:31	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/21/23 20:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		80 - 120		04/21/23 20:31	1
4-Bromofluorobenzene (Surr)	98		80 - 120		04/21/23 20:31	1
Toluene-d8 (Surr)	96		80 - 120		04/21/23 20:31	1
Dibromofluoromethane (Surr)	102		80 - 120		04/21/23 20:31	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	ND		50	14	ug/L			04/19/23 09:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		77 - 123		04/19/23 09:15	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.11	0.035	ug/L		04/17/23 13:25	04/24/23 16:31	1
2-Methylnaphthalene	ND		0.21	0.042	ug/L		04/17/23 13:25	04/24/23 16:31	1
Acenaphthene	ND		0.11	0.015	ug/L		04/17/23 13:25	04/24/23 16:31	1
Acenaphthylene	ND		0.054	0.0097	ug/L		04/17/23 13:25	04/24/23 16:31	1
Anthracene	ND		0.11	0.024	ug/L		04/17/23 13:25	04/24/23 16:31	1
Benzo[a]anthracene	ND		0.054	0.015	ug/L		04/17/23 13:25	04/24/23 16:31	1
Benzo[a]pyrene	ND		0.11	0.024	ug/L		04/17/23 13:25	04/24/23 16:31	1
Benzo[b]fluoranthene	ND		0.11	0.024	ug/L		04/17/23 13:25	04/24/23 16:31	1
Benzo[g,h,i]perylene	ND		0.054	0.013	ug/L		04/17/23 13:25	04/24/23 16:31	1
Benzo[k]fluoranthene	ND		0.054	0.013	ug/L		04/17/23 13:25	04/24/23 16:31	1
Chrysene	ND		0.11	0.040	ug/L		04/17/23 13:25	04/24/23 16:31	1
Dibenz(a,h)anthracene	ND		0.11	0.016	ug/L		04/17/23 13:25	04/24/23 16:31	1
Fluoranthene	ND		0.21	0.058	ug/L		04/17/23 13:25	04/24/23 16:31	1
Fluorene	ND		0.11	0.018	ug/L		04/17/23 13:25	04/24/23 16:31	1
Indeno[1,2,3-cd]pyrene	ND		0.054	0.015	ug/L		04/17/23 13:25	04/24/23 16:31	1
Naphthalene	ND		0.54	0.17	ug/L		04/17/23 13:25	04/24/23 16:31	1
Phenanthrene	ND		0.11	0.033	ug/L		04/17/23 13:25	04/24/23 16:31	1
Pyrene	ND		0.11	0.035	ug/L		04/17/23 13:25	04/24/23 16:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	104		29 - 150	04/17/23 13:25	04/24/23 16:31	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		120	69	ug/L		04/19/23 09:43	04/21/23 19:57	1
Motor Oil (>C24-C36)	100	J B	370	100	ug/L		04/19/23 09:43	04/21/23 19:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	69		50 - 150	04/19/23 09:43	04/21/23 19:57	1

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Client Sample Results

Client: AECOM

Job ID: 580-126016-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230412-MD-13-35-GW

Lab Sample ID: 580-126016-1

Date Collected: 04/12/23 10:05

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/20/23 16:19	04/21/23 17:29	1
Barium	0.028		0.020	0.0010	mg/L		04/20/23 16:19	04/21/23 17:29	1
Cadmium	ND		0.020	0.00090	mg/L		04/20/23 16:19	04/21/23 17:29	1
Chromium	ND		0.025	0.0027	mg/L		04/20/23 16:19	04/21/23 17:29	1
Lead	0.017	J	0.030	0.0027	mg/L		04/20/23 16:19	04/21/23 17:29	1
Selenium	ND		0.10	0.0087	mg/L		04/20/23 16:19	04/21/23 17:29	1
Silver	ND		0.050	0.0085	mg/L		04/20/23 16:19	04/21/23 17:29	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/18/23 09:49	04/18/23 15:26	1

Client Sample Results

Client: AECOM

Job ID: 580-126016-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230410-MW-14-23-GW

Lab Sample ID: 580-126016-2

Date Collected: 04/10/23 15:42

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/18/23 09:22	1
Toluene	ND		1.0	0.39	ug/L			04/18/23 09:22	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/18/23 09:22	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/18/23 09:22	1
o-Xylene	ND		1.0	0.39	ug/L			04/18/23 09:22	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/18/23 09:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		80 - 120		04/18/23 09:22	1
4-Bromofluorobenzene (Surr)	115		80 - 120		04/18/23 09:22	1
Toluene-d8 (Surr)	93		80 - 120		04/18/23 09:22	1
Dibromofluoromethane (Surr)	108		80 - 120		04/18/23 09:22	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	2700		50	14	ug/L			04/18/23 09:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		77 - 123		04/18/23 09:22	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	0.11		0.10	0.034	ug/L		04/17/23 13:25	04/24/23 17:45	1
2-Methylnaphthalene	ND		0.20	0.040	ug/L		04/17/23 13:25	04/24/23 17:45	1
Acenaphthene	1.1		0.10	0.014	ug/L		04/17/23 13:25	04/24/23 17:45	1
Acenaphthylene	0.33		0.051	0.0092	ug/L		04/17/23 13:25	04/24/23 17:45	1
Anthracene	0.066	J	0.10	0.022	ug/L		04/17/23 13:25	04/24/23 17:45	1
Benzo[a]anthracene	ND		0.051	0.014	ug/L		04/17/23 13:25	04/24/23 17:45	1
Benzo[a]pyrene	ND		0.10	0.022	ug/L		04/17/23 13:25	04/24/23 17:45	1
Benzo[b]fluoranthene	ND		0.10	0.022	ug/L		04/17/23 13:25	04/24/23 17:45	1
Benzo[g,h,i]perylene	ND		0.051	0.012	ug/L		04/17/23 13:25	04/24/23 17:45	1
Benzo[k]fluoranthene	ND		0.051	0.012	ug/L		04/17/23 13:25	04/24/23 17:45	1
Chrysene	ND		0.10	0.038	ug/L		04/17/23 13:25	04/24/23 17:45	1
Dibenz(a,h)anthracene	ND		0.10	0.015	ug/L		04/17/23 13:25	04/24/23 17:45	1
Fluoranthene	ND		0.20	0.055	ug/L		04/17/23 13:25	04/24/23 17:45	1
Fluorene	2.8		0.10	0.017	ug/L		04/17/23 13:25	04/24/23 17:45	1
Indeno[1,2,3-cd]pyrene	ND		0.051	0.014	ug/L		04/17/23 13:25	04/24/23 17:45	1
Naphthalene	0.57		0.51	0.17	ug/L		04/17/23 13:25	04/24/23 17:45	1
Phenanthrene	2.4		0.10	0.032	ug/L		04/17/23 13:25	04/24/23 17:45	1
Pyrene	0.077	J	0.10	0.034	ug/L		04/17/23 13:25	04/24/23 17:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	97		29 - 150	04/17/23 13:25	04/24/23 17:45	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	1200		110	67	ug/L		04/19/23 09:43	04/21/23 20:57	1
Motor Oil (>C24-C36)	180	J B	360	99	ug/L		04/19/23 09:43	04/21/23 20:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	74		50 - 150	04/19/23 09:43	04/21/23 20:57	1

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Client Sample Results

Client: AECOM

Job ID: 580-126016-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230410-MW-14-23-GW

Lab Sample ID: 580-126016-2

Date Collected: 04/10/23 15:42

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/20/23 16:19	04/21/23 17:46	1
Barium	0.42		0.020	0.0010	mg/L		04/20/23 16:19	04/21/23 17:46	1
Cadmium	ND		0.020	0.00090	mg/L		04/20/23 16:19	04/21/23 17:46	1
Chromium	ND		0.025	0.0027	mg/L		04/20/23 16:19	04/21/23 17:46	1
Lead	0.0072	J	0.030	0.0027	mg/L		04/20/23 16:19	04/21/23 17:46	1
Selenium	ND		0.10	0.0087	mg/L		04/20/23 16:19	04/21/23 17:46	1
Silver	ND		0.050	0.0085	mg/L		04/20/23 16:19	04/21/23 17:46	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/18/23 09:49	04/18/23 15:40	1

Client Sample Results

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126016-1

Client Sample ID: 20230411-MW-17-22-GW

Lab Sample ID: 580-126016-3

Date Collected: 04/11/23 15:01

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	72		1.0	0.24	ug/L			04/17/23 18:04	1
Toluene	7.9		1.0	0.39	ug/L			04/17/23 18:04	1
Ethylbenzene	5.1		1.0	0.50	ug/L			04/17/23 18:04	1
m-Xylene & p-Xylene	30		2.0	0.53	ug/L			04/17/23 18:04	1
o-Xylene	1.5		1.0	0.39	ug/L			04/17/23 18:04	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/17/23 18:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		80 - 120		04/17/23 18:04	1
4-Bromofluorobenzene (Surr)	101		80 - 120		04/17/23 18:04	1
Toluene-d8 (Surr)	107		80 - 120		04/17/23 18:04	1
Dibromofluoromethane (Surr)	95		80 - 120		04/17/23 18:04	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	2800		50	14	ug/L			04/17/23 18:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		77 - 123		04/17/23 18:04	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	0.22		0.10	0.034	ug/L		04/17/23 13:25	04/24/23 18:09	1
2-Methylnaphthalene	ND		0.21	0.041	ug/L		04/17/23 13:25	04/24/23 18:09	1
Acenaphthene	6.0		0.10	0.015	ug/L		04/17/23 13:25	04/24/23 18:09	1
Acenaphthylene	0.27		0.052	0.0094	ug/L		04/17/23 13:25	04/24/23 18:09	1
Anthracene	0.80		0.10	0.023	ug/L		04/17/23 13:25	04/24/23 18:09	1
Benzo[a]anthracene	0.038 J		0.052	0.015	ug/L		04/17/23 13:25	04/24/23 18:09	1
Benzo[a]pyrene	ND		0.10	0.023	ug/L		04/17/23 13:25	04/24/23 18:09	1
Benzo[b]fluoranthene	ND		0.10	0.023	ug/L		04/17/23 13:25	04/24/23 18:09	1
Benzo[g,h,i]perylene	ND		0.052	0.012	ug/L		04/17/23 13:25	04/24/23 18:09	1
Benzo[k]fluoranthene	ND		0.052	0.012	ug/L		04/17/23 13:25	04/24/23 18:09	1
Chrysene	0.039 J		0.10	0.039	ug/L		04/17/23 13:25	04/24/23 18:09	1
Dibenz(a,h)anthracene	ND		0.10	0.016	ug/L		04/17/23 13:25	04/24/23 18:09	1
Fluoranthene	0.89		0.21	0.056	ug/L		04/17/23 13:25	04/24/23 18:09	1
Fluorene	4.4		0.10	0.018	ug/L		04/17/23 13:25	04/24/23 18:09	1
Indeno[1,2,3-cd]pyrene	ND		0.052	0.015	ug/L		04/17/23 13:25	04/24/23 18:09	1
Naphthalene	2.7		0.52	0.17	ug/L		04/17/23 13:25	04/24/23 18:09	1
Phenanthrene	5.1		0.10	0.032	ug/L		04/17/23 13:25	04/24/23 18:09	1
Pyrene	0.58		0.10	0.034	ug/L		04/17/23 13:25	04/24/23 18:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	112		29 - 150	04/17/23 13:25	04/24/23 18:09	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	700		110	65	ug/L		04/24/23 10:03	04/25/23 02:52	1
Motor Oil (>C24-C36)	130 J B		350	97	ug/L		04/24/23 10:03	04/25/23 02:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	57		50 - 150	04/24/23 10:03	04/25/23 02:52	1

Eurofins Seattle

Client Sample Results

Client: AECOM

Job ID: 580-126016-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230411-MW-17-22-GW

Lab Sample ID: 580-126016-3

Date Collected: 04/11/23 15:01

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/20/23 16:19	04/21/23 17:50	1
Barium	0.56		0.020	0.0010	mg/L		04/20/23 16:19	04/21/23 17:50	1
Cadmium	ND		0.020	0.00090	mg/L		04/20/23 16:19	04/21/23 17:50	1
Chromium	ND		0.025	0.0027	mg/L		04/20/23 16:19	04/21/23 17:50	1
Lead	0.0041	J	0.030	0.0027	mg/L		04/20/23 16:19	04/21/23 17:50	1
Selenium	ND		0.10	0.0087	mg/L		04/20/23 16:19	04/21/23 17:50	1
Silver	ND		0.050	0.0085	mg/L		04/20/23 16:19	04/21/23 17:50	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/18/23 09:49	04/18/23 15:42	1

Client Sample Results

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126016-1

Client Sample ID: 20230411-MW-117-22-GW

Lab Sample ID: 580-126016-4

Date Collected: 04/11/23 14:42

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	73		1.0	0.24	ug/L			04/17/23 18:28	1
Toluene	7.9		1.0	0.39	ug/L			04/17/23 18:28	1
Ethylbenzene	5.0		1.0	0.50	ug/L			04/17/23 18:28	1
m-Xylene & p-Xylene	30		2.0	0.53	ug/L			04/17/23 18:28	1
o-Xylene	1.5		1.0	0.39	ug/L			04/17/23 18:28	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/17/23 18:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		80 - 120		04/17/23 18:28	1
4-Bromofluorobenzene (Surr)	99		80 - 120		04/17/23 18:28	1
Toluene-d8 (Surr)	104		80 - 120		04/17/23 18:28	1
Dibromofluoromethane (Surr)	96		80 - 120		04/17/23 18:28	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	2600		50	14	ug/L			04/17/23 18:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		77 - 123		04/17/23 18:28	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	0.19		0.10	0.034	ug/L		04/17/23 13:25	04/24/23 18:34	1
2-Methylnaphthalene	0.049	J	0.21	0.041	ug/L		04/17/23 13:25	04/24/23 18:34	1
Acenaphthene	5.5		0.10	0.015	ug/L		04/17/23 13:25	04/24/23 18:34	1
Acenaphthylene	0.24		0.052	0.0094	ug/L		04/17/23 13:25	04/24/23 18:34	1
Anthracene	0.74		0.10	0.023	ug/L		04/17/23 13:25	04/24/23 18:34	1
Benzo[a]anthracene	0.035	J	0.052	0.015	ug/L		04/17/23 13:25	04/24/23 18:34	1
Benzo[a]pyrene	ND		0.10	0.023	ug/L		04/17/23 13:25	04/24/23 18:34	1
Benzo[b]fluoranthene	ND		0.10	0.023	ug/L		04/17/23 13:25	04/24/23 18:34	1
Benzo[g,h,i]perylene	ND		0.052	0.013	ug/L		04/17/23 13:25	04/24/23 18:34	1
Benzo[k]fluoranthene	ND		0.052	0.013	ug/L		04/17/23 13:25	04/24/23 18:34	1
Chrysene	ND		0.10	0.039	ug/L		04/17/23 13:25	04/24/23 18:34	1
Dibenz(a,h)anthracene	ND		0.10	0.016	ug/L		04/17/23 13:25	04/24/23 18:34	1
Fluoranthene	0.78		0.21	0.056	ug/L		04/17/23 13:25	04/24/23 18:34	1
Fluorene	4.0		0.10	0.018	ug/L		04/17/23 13:25	04/24/23 18:34	1
Indeno[1,2,3-cd]pyrene	ND		0.052	0.015	ug/L		04/17/23 13:25	04/24/23 18:34	1
Naphthalene	2.5		0.52	0.17	ug/L		04/17/23 13:25	04/24/23 18:34	1
Phenanthrene	4.8		0.10	0.032	ug/L		04/17/23 13:25	04/24/23 18:34	1
Pyrene	0.50		0.10	0.034	ug/L		04/17/23 13:25	04/24/23 18:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	96		29 - 150	04/17/23 13:25	04/24/23 18:34	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	940		120	69	ug/L		04/19/23 09:43	04/21/23 21:17	1
Motor Oil (>C24-C36)	ND		370	100	ug/L		04/19/23 09:43	04/21/23 21:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	76		50 - 150	04/19/23 09:43	04/21/23 21:17	1

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Client Sample Results

Client: AECOM

Job ID: 580-126016-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230411-MW-117-22-GW

Lab Sample ID: 580-126016-4

Date Collected: 04/11/23 14:42

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/20/23 16:19	04/21/23 17:53	1
Barium	0.57		0.020	0.0010	mg/L		04/20/23 16:19	04/21/23 17:53	1
Cadmium	ND		0.020	0.00090	mg/L		04/20/23 16:19	04/21/23 17:53	1
Chromium	ND		0.025	0.0027	mg/L		04/20/23 16:19	04/21/23 17:53	1
Lead	0.0041	J	0.030	0.0027	mg/L		04/20/23 16:19	04/21/23 17:53	1
Selenium	ND		0.10	0.0087	mg/L		04/20/23 16:19	04/21/23 17:53	1
Silver	ND		0.050	0.0085	mg/L		04/20/23 16:19	04/21/23 17:53	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/18/23 09:49	04/18/23 15:44	1

QC Sample Results

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126016-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-423415/6

Matrix: Water

Analysis Batch: 423415

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/18/23 02:51	1
Toluene	ND		1.0	0.39	ug/L			04/18/23 02:51	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/18/23 02:51	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/18/23 02:51	1
o-Xylene	ND		1.0	0.39	ug/L			04/18/23 02:51	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/18/23 02:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		80 - 120		04/18/23 02:51	1
4-Bromofluorobenzene (Surr)	90		80 - 120		04/18/23 02:51	1
Toluene-d8 (Surr)	99		80 - 120		04/18/23 02:51	1
Dibromofluoromethane (Surr)	98		80 - 120		04/18/23 02:51	1

Lab Sample ID: LCS 580-423415/7

Matrix: Water

Analysis Batch: 423415

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	10.0	10.5		ug/L		105	80 - 122
Toluene	10.0	9.64		ug/L		96	80 - 120
Ethylbenzene	10.0	10.7		ug/L		107	80 - 120
m-Xylene & p-Xylene	10.0	10.8		ug/L		108	80 - 120
o-Xylene	10.0	11.3		ug/L		113	80 - 120
Methyl tert-butyl ether	10.0	11.3		ug/L		113	72 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		80 - 120
4-Bromofluorobenzene (Surr)	110		80 - 120
Toluene-d8 (Surr)	95		80 - 120
Dibromofluoromethane (Surr)	107		80 - 120

Lab Sample ID: LCSD 580-423415/8

Matrix: Water

Analysis Batch: 423415

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	10.0	10.4		ug/L		104	80 - 122	1	14
Toluene	10.0	9.46		ug/L		95	80 - 120	2	13
Ethylbenzene	10.0	10.7		ug/L		107	80 - 120	1	14
m-Xylene & p-Xylene	10.0	10.7		ug/L		107	80 - 120	1	14
o-Xylene	10.0	11.3		ug/L		113	80 - 120	0	16
Methyl tert-butyl ether	10.0	11.6		ug/L		116	72 - 120	3	18

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		80 - 120
4-Bromofluorobenzene (Surr)	113		80 - 120
Toluene-d8 (Surr)	93		80 - 120

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QC Sample Results

Client: AECOM

Job ID: 580-126016-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-423415/8

Matrix: Water

Analysis Batch: 423415

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	108		80 - 120

Lab Sample ID: MB 580-423429/15

Matrix: Water

Analysis Batch: 423429

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND				1.0	0.24	ug/L			04/17/23 14:51	1
Toluene	ND				1.0	0.39	ug/L			04/17/23 14:51	1
Ethylbenzene	ND				1.0	0.50	ug/L			04/17/23 14:51	1
m-Xylene & p-Xylene	ND				2.0	0.53	ug/L			04/17/23 14:51	1
o-Xylene	ND				1.0	0.39	ug/L			04/17/23 14:51	1
Methyl tert-butyl ether	ND				1.0	0.44	ug/L			04/17/23 14:51	1

Surrogate	MB	MB	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101				80 - 120		04/17/23 14:51	1
4-Bromofluorobenzene (Surr)	93				80 - 120		04/17/23 14:51	1
Toluene-d8 (Surr)	94				80 - 120		04/17/23 14:51	1
Dibromofluoromethane (Surr)	102				80 - 120		04/17/23 14:51	1

Lab Sample ID: LCS 580-423429/16

Matrix: Water

Analysis Batch: 423429

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike	LCS	LCS	Result	Qualifier	Unit	D	%Rec	%Rec	Limits
Benzene	Added	Result	Qualifier			ug/L		108		80 - 122
Toluene	10.0	10.7				ug/L		107		80 - 120
Ethylbenzene	10.0	10.7				ug/L		107		80 - 120
m-Xylene & p-Xylene	10.0	10.7				ug/L		107		80 - 120
o-Xylene	10.0	10.8				ug/L		108		80 - 120
Methyl tert-butyl ether	10.0	10.9				ug/L		109		72 - 120

Surrogate	LCS	LCS	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99				80 - 120
4-Bromofluorobenzene (Surr)	99				80 - 120
Toluene-d8 (Surr)	100				80 - 120
Dibromofluoromethane (Surr)	94				80 - 120

Lab Sample ID: LCSD 580-423429/17

Matrix: Water

Analysis Batch: 423429

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike	LCSD	LCSD	Result	Qualifier	Unit	D	%Rec	%Rec	Limits	RPD	RPD	Limit
Benzene	Added	Result	Qualifier			ug/L		105		80 - 122	3		14
Toluene	10.0	10.4				ug/L		104		80 - 120	3		13
Ethylbenzene	10.0	10.4				ug/L		104		80 - 120	3		14
m-Xylene & p-Xylene	10.0	10.4				ug/L		104		80 - 120	2		14
o-Xylene	10.0	10.4				ug/L		104		80 - 120	4		16

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QC Sample Results

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126016-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-423429/17

Matrix: Water

Analysis Batch: 423429

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methyl tert-butyl ether	10.0	10.8		ug/L		108	72 - 120	1	18
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	95		80 - 120						
4-Bromofluorobenzene (Surr)	104		80 - 120						
Toluene-d8 (Surr)	99		80 - 120						
Dibromofluoromethane (Surr)	98		80 - 120						

Lab Sample ID: MB 580-423907/6

Matrix: Water

Analysis Batch: 423907

Client Sample ID: Method Blank

Prep Type: Total/NA

Analysis Data: 42000

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	ND		1.0	0.24	ug/L			04/21/23 14:40	1
Toluene	ND		1.0	0.39	ug/L			04/21/23 14:40	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/21/23 14:40	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/21/23 14:40	1
o-Xylene	ND		1.0	0.39	ug/L			04/21/23 14:40	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/21/23 14:40	1
Surrogate	MB	MB	Limits				Prepared	Analyzed	Dil Fac
%Recovery	Qualifier								
1,2-Dichloroethane-d4 (Surr)	100		80 - 120					04/21/23 14:40	1
4-Bromofluorobenzene (Surr)	95		80 - 120					04/21/23 14:40	1
Toluene-d8 (Surr)	93		80 - 120					04/21/23 14:40	1
Dibromofluoromethane (Surr)	103		80 - 120					04/21/23 14:40	1

Lab Sample ID: LCS 580-423907/7

Matrix: Water

Analysis Batch: 423907

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	10.0	9.30		ug/L		93	80 - 122
Toluene	10.0	9.52		ug/L		95	80 - 120
Ethylbenzene	10.0	9.59		ug/L		96	80 - 120
m-Xylene & p-Xylene	10.0	9.84		ug/L		98	80 - 120
o-Xylene	10.0	9.61		ug/L		96	80 - 120
Methyl tert-butyl ether	10.0	9.23		ug/L		92	72 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	95		80 - 120				
4-Bromofluorobenzene (Surr)	107		80 - 120				
Toluene-d8 (Surr)	99		80 - 120				
Dibromofluoromethane (Surr)	98		80 - 120				

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QC Sample Results

Client: AECOM

Job ID: 580-126016-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-423907/8

Matrix: Water

Analysis Batch: 423907

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	10.0	9.89		ug/L		99	80 - 122	6	14
Toluene	10.0	9.95		ug/L		100	80 - 120	4	13
Ethylbenzene	10.0	9.89		ug/L		99	80 - 120	3	14
m-Xylene & p-Xylene	10.0	10.2		ug/L		102	80 - 120	4	14
o-Xylene	10.0	10.2		ug/L		102	80 - 120	6	16
Methyl tert-butyl ether	10.0	10.1		ug/L		101	72 - 120	9	18

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		80 - 120
4-Bromofluorobenzene (Surr)	101		80 - 120
Toluene-d8 (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	97		80 - 120

Lab Sample ID: 580-126016-1 MS

Matrix: Water

Analysis Batch: 423907

Client Sample ID: 20230412-MD-13-35-GW

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	ND		10.0	10.5		ug/L		105	80 - 122		
Toluene	ND		10.0	10.8		ug/L		108	80 - 120		
Ethylbenzene	ND		10.0	10.9		ug/L		109	80 - 120		
m-Xylene & p-Xylene	ND		10.0	11.1		ug/L		111	80 - 120		
o-Xylene	ND		10.0	11.3		ug/L		113	80 - 120		
Methyl tert-butyl ether	ND		10.0	10.1		ug/L		101	72 - 120		

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		80 - 120
4-Bromofluorobenzene (Surr)	101		80 - 120
Toluene-d8 (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	98		80 - 120

Lab Sample ID: 580-126016-1 MSD

Matrix: Water

Analysis Batch: 423907

Client Sample ID: 20230412-MD-13-35-GW

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	ND		10.0	10.9		ug/L		109	80 - 122	4	14
Toluene	ND		10.0	10.6		ug/L		106	80 - 120	2	13
Ethylbenzene	ND		10.0	10.7		ug/L		107	80 - 120	2	14
m-Xylene & p-Xylene	ND		10.0	10.9		ug/L		109	80 - 120	1	14
o-Xylene	ND		10.0	11.1		ug/L		111	80 - 120	2	16
Methyl tert-butyl ether	ND		10.0	10.2		ug/L		102	72 - 120	1	18

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		80 - 120
4-Bromofluorobenzene (Surr)	101		80 - 120
Toluene-d8 (Surr)	96		80 - 120

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QC Sample Results

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126016-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 580-126016-1 MSD

Matrix: Water

Analysis Batch: 423907

Client Sample ID: 20230412-MD-13-35-GW

Prep Type: Total/NA

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	98		80 - 120

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Lab Sample ID: MB 580-423412/6

Matrix: Water

Analysis Batch: 423412

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Result	Qualifier								
Gasoline Range Organics C7-C12	ND		50	14	ug/L			04/18/23 02:51	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
%Recovery	Qualifier					
4-Bromofluorobenzene (Surr)	90		77 - 123		04/18/23 02:51	1

Lab Sample ID: LCS 580-423412/9

Matrix: Water

Analysis Batch: 423412

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec
Added	Result	Qualifier				Limits	
Gasoline Range Organics C7-C12	1000	1030		ug/L		103	55 - 148

Surrogate	LCS	LCS	Limits
%Recovery	Qualifier		
4-Bromofluorobenzene (Surr)	95		77 - 123

Lab Sample ID: LCSD 580-423412/10

Matrix: Water

Analysis Batch: 423412

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec	%Rec	RPD	RPD
Added	Result	Qualifier				Limits		Limit	
Gasoline Range Organics C7-C12	1000	1050		ug/L		105	55 - 148	3	10

Surrogate	LCSD	LCSD	Limits
%Recovery	Qualifier		
4-Bromofluorobenzene (Surr)	104		77 - 123

Lab Sample ID: MB 580-423425/15

Matrix: Water

Analysis Batch: 423425

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Result	Qualifier								
Gasoline Range Organics C7-C12	ND		50	14	ug/L			04/17/23 14:51	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
%Recovery	Qualifier					
4-Bromofluorobenzene (Surr)	98		77 - 123		04/17/23 14:51	1

Eurofins Seattle

QC Sample Results

Client: AECOM

Job ID: 580-126016-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS) (Continued)

Lab Sample ID: LCS 580-423425/18

Matrix: Water

Analysis Batch: 423425

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

			Spike	LCS	LCS				%Rec		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics C7-C12			1000	997		ug/L		100	55 - 148		
			LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	104		77 - 123								

Lab Sample ID: LCSD 580-423425/19

Matrix: Water

Analysis Batch: 423425

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analysis Data: 420-120											
Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics C7-C12			1000	996		ug/L	-	100	55 - 148	0	10
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	106		77 - 123								

Lab Sample ID: MB 580-423567/6

Matrix: Water

Analysis Batch: 423567

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	ND		50	14	ug/L	-		04/19/23 05:36	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		77 - 123					04/19/23 05:36	1

Lab Sample ID: LCS 580-423567/9

Matrix: Water

Analysis Batch: 423567

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics C7-C12	1000	1030		ug/L		103	55 - 148
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	104		77 - 123				

Lab Sample ID: LCSD 580-423567/10

Matrix: Water

Analysis Batch: 423567

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

			Spike	LCSD	LCSD				%Rec	RPD	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics C7-C12			1000	991		ug/L	-	99	55 - 148	3	10
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	102		77 - 123								

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QC Sample Results

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126016-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Lab Sample ID: 580-126016-1 MS

Matrix: Water

Analysis Batch: 423567

Client Sample ID: 20230412-MD-13-35-GW

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics C7-C12	ND		1000	1020		ug/L		102	55 - 148		
Surrogate	MS %Recovery	MS Qualifier	MS Limits								
4-Bromofluorobenzene (Surr)	104		77 - 123								

Lab Sample ID: 580-126016-1 MSD

Matrix: Water

Analysis Batch: 423567

Client Sample ID: 20230412-MD-13-35-GW

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		Limit
Gasoline Range Organics C7-C12	ND		1000	1060		ug/L		106	55 - 148	5	10
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	106		77 - 123								

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 580-423440/1-A

Matrix: Water

Analysis Batch: 424033

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 423440

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1-Methylnaphthalene	ND		0.10	0.033	ug/L		04/17/23 13:25	04/24/23 14:53	1
2-Methylnaphthalene	ND		0.20	0.039	ug/L		04/17/23 13:25	04/24/23 14:53	1
Acenaphthene	ND		0.10	0.014	ug/L		04/17/23 13:25	04/24/23 14:53	1
Acenaphthylene	ND		0.050	0.0090	ug/L		04/17/23 13:25	04/24/23 14:53	1
Anthracene	ND		0.10	0.022	ug/L		04/17/23 13:25	04/24/23 14:53	1
Benzo[a]anthracene	ND		0.050	0.014	ug/L		04/17/23 13:25	04/24/23 14:53	1
Benzo[a]pyrene	ND		0.10	0.022	ug/L		04/17/23 13:25	04/24/23 14:53	1
Benzo[b]fluoranthene	ND		0.10	0.022	ug/L		04/17/23 13:25	04/24/23 14:53	1
Benzo[g,h,i]perylene	ND		0.050	0.012	ug/L		04/17/23 13:25	04/24/23 14:53	1
Benzo[k]fluoranthene	ND		0.050	0.012	ug/L		04/17/23 13:25	04/24/23 14:53	1
Chrysene	ND		0.10	0.037	ug/L		04/17/23 13:25	04/24/23 14:53	1
Dibenz(a,h)anthracene	0.0185	J	0.10	0.015	ug/L		04/17/23 13:25	04/24/23 14:53	1
Fluoranthene	ND		0.20	0.054	ug/L		04/17/23 13:25	04/24/23 14:53	1
Fluorene	ND		0.10	0.017	ug/L		04/17/23 13:25	04/24/23 14:53	1
Indeno[1,2,3-cd]pyrene	0.0160	J	0.050	0.014	ug/L		04/17/23 13:25	04/24/23 14:53	1
Naphthalene	ND		0.50	0.16	ug/L		04/17/23 13:25	04/24/23 14:53	1
Phenanthrene	ND		0.10	0.031	ug/L		04/17/23 13:25	04/24/23 14:53	1
Pyrene	ND		0.10	0.033	ug/L		04/17/23 13:25	04/24/23 14:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	115		29 - 150				04/17/23 13:25	04/24/23 14:53	1

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QC Sample Results

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126016-1

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCS 580-423440/2-A

Matrix: Water

Analysis Batch: 424033

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 423440

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	8.00	6.07		ug/L		76	29 - 120
2-Methylnaphthalene	8.00	6.16		ug/L		77	33 - 120
Acenaphthene	8.00	6.26		ug/L		78	33 - 120
Acenaphthylene	8.00	6.73		ug/L		84	38 - 120
Anthracene	8.00	7.57		ug/L		95	41 - 120
Benzo[a]anthracene	8.00	7.22		ug/L		90	55 - 123
Benzo[a]pyrene	8.00	8.10		ug/L		101	51 - 120
Benzo[b]fluoranthene	8.00	7.34		ug/L		92	43 - 120
Benzo[g,h,i]perylene	8.00	8.64		ug/L		108	45 - 120
Benzo[k]fluoranthene	8.00	8.03		ug/L		100	41 - 121
Chrysene	8.00	7.72		ug/L		97	47 - 120
Dibenz(a,h)anthracene	8.00	8.50		ug/L		106	54 - 123
Fluoranthene	8.00	7.68		ug/L		96	51 - 125
Fluorene	8.00	6.72		ug/L		84	39 - 120
Indeno[1,2,3-cd]pyrene	8.00	8.22		ug/L		103	45 - 123
Naphthalene	8.00	5.66		ug/L		71	34 - 120
Phenanthrene	8.00	6.98		ug/L		87	46 - 120
Pyrene	8.00	7.73		ug/L		97	51 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	110		29 - 150

Lab Sample ID: LCSD 580-423440/3-A

Matrix: Water

Analysis Batch: 424033

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 423440

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
1-Methylnaphthalene	8.00	5.97		ug/L		75	29 - 120	2	35
2-Methylnaphthalene	8.00	6.11		ug/L		76	33 - 120	1	35
Acenaphthene	8.00	6.14		ug/L		77	33 - 120	2	35
Acenaphthylene	8.00	6.76		ug/L		84	38 - 120	0	35
Anthracene	8.00	7.53		ug/L		94	41 - 120	1	29
Benzo[a]anthracene	8.00	7.03		ug/L		88	55 - 123	3	31
Benzo[a]pyrene	8.00	7.80		ug/L		98	51 - 120	4	31
Benzo[b]fluoranthene	8.00	7.66		ug/L		96	43 - 120	4	35
Benzo[g,h,i]perylene	8.00	8.45		ug/L		106	45 - 120	2	35
Benzo[k]fluoranthene	8.00	7.43		ug/L		93	41 - 121	8	35
Chrysene	8.00	7.46		ug/L		93	47 - 120	3	30
Dibenz(a,h)anthracene	8.00	8.52		ug/L		107	54 - 123	0	35
Fluoranthene	8.00	7.52		ug/L		94	51 - 125	2	31
Fluorene	8.00	6.50		ug/L		81	39 - 120	3	35
Indeno[1,2,3-cd]pyrene	8.00	8.24		ug/L		103	45 - 123	0	35
Naphthalene	8.00	5.64		ug/L		70	34 - 120	0	35
Phenanthrene	8.00	7.10		ug/L		89	46 - 120	2	32
Pyrene	8.00	7.53		ug/L		94	51 - 125	3	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Terphenyl-d14	107		29 - 150

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QC Sample Results

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126016-1

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: 580-126016-1 MS

Matrix: Water

Analysis Batch: 424033

Client Sample ID: 20230412-MD-13-35-GW

Prep Type: Total/NA

Prep Batch: 423440

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	ND		8.66	4.60		ug/L		53	29 - 120
2-Methylnaphthalene	ND		8.66	4.59		ug/L		53	33 - 120
Acenaphthene	ND		8.66	5.15		ug/L		59	33 - 120
Acenaphthylene	ND		8.66	5.53		ug/L		64	38 - 120
Anthracene	ND		8.66	7.21		ug/L		83	41 - 120
Benzo[a]anthracene	ND		8.66	6.92		ug/L		80	55 - 123
Benzo[a]pyrene	ND		8.66	7.72		ug/L		89	51 - 120
Benzo[b]fluoranthene	ND		8.66	7.61		ug/L		88	43 - 120
Benzo[g,h,i]perylene	ND		8.66	8.40		ug/L		97	45 - 120
Benzo[k]fluoranthene	ND		8.66	7.35		ug/L		85	41 - 121
Chrysene	ND		8.66	7.34		ug/L		85	47 - 120
Dibenz(a,h)anthracene	ND		8.66	8.46		ug/L		98	54 - 123
Fluoranthene	ND		8.66	7.47		ug/L		86	51 - 125
Fluorene	ND		8.66	5.83		ug/L		67	39 - 120
Indeno[1,2,3-cd]pyrene	ND		8.66	8.24		ug/L		95	45 - 123
Naphthalene	ND		8.66	4.22		ug/L		49	34 - 120
Phenanthrene	ND		8.66	6.62		ug/L		76	46 - 120
Pyrene	ND		8.66	7.48		ug/L		86	51 - 125

Surrogate	MS %Recovery	MS Qualifier	Limits
Terphenyl-d14	92		29 - 150

Lab Sample ID: 580-126016-1 MSD

Matrix: Water

Analysis Batch: 424033

Client Sample ID: 20230412-MD-13-35-GW

Prep Type: Total/NA

Prep Batch: 423440

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	ND		8.51	4.33		ug/L		51	29 - 120	6	35
2-Methylnaphthalene	ND		8.51	4.31		ug/L		51	33 - 120	6	35
Acenaphthene	ND		8.51	4.68		ug/L		55	33 - 120	10	35
Acenaphthylene	ND		8.51	5.04		ug/L		59	38 - 120	9	35
Anthracene	ND		8.51	6.74		ug/L		79	41 - 120	7	29
Benzo[a]anthracene	ND		8.51	6.53		ug/L		77	55 - 123	6	31
Benzo[a]pyrene	ND		8.51	7.36		ug/L		87	51 - 120	5	31
Benzo[b]fluoranthene	ND		8.51	6.84		ug/L		80	43 - 120	11	35
Benzo[g,h,i]perylene	ND		8.51	7.87		ug/L		93	45 - 120	7	35
Benzo[k]fluoranthene	ND		8.51	7.27		ug/L		85	41 - 121	1	35
Chrysene	ND		8.51	6.96		ug/L		82	47 - 120	5	30
Dibenz(a,h)anthracene	ND		8.51	7.97		ug/L		94	54 - 123	6	35
Fluoranthene	ND		8.51	7.07		ug/L		83	51 - 125	5	31
Fluorene	ND		8.51	5.36		ug/L		63	39 - 120	8	35
Indeno[1,2,3-cd]pyrene	ND		8.51	7.57		ug/L		89	45 - 123	9	35
Naphthalene	ND		8.51	4.00		ug/L		47	34 - 120	5	35
Phenanthrene	ND		8.51	6.15		ug/L		72	46 - 120	7	32
Pyrene	ND		8.51	7.08		ug/L		83	51 - 125	6	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Terphenyl-d14	86		29 - 150

Eurofins Seattle

QC Sample Results

Client: AECOM

Job ID: 580-126016-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Lab Sample ID: MB 580-423635/1-B

Matrix: Water

Analysis Batch: 423886

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 423635

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		110	65	ug/L		04/19/23 09:43	04/21/23 18:56	1
Motor Oil (>C24-C36)	376		350	96	ug/L		04/19/23 09:43	04/21/23 18:56	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	67		50 - 150				04/19/23 09:43	04/21/23 18:56	1

Lab Sample ID: LCS 580-423635/2-B

Matrix: Water

Analysis Batch: 423886

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 423635

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
#2 Diesel (C10-C24)	4000	2980		ug/L		74	50 - 120	
Motor Oil (>C24-C36)	4000	3310		ug/L		83	64 - 120	
Surrogate	LCS %Recovery	LCS Qualifier	Limits					
o-Terphenyl	74		50 - 150					

Lab Sample ID: LCSD 580-423635/3-B

Matrix: Water

Analysis Batch: 423886

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 423635

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4000	3120		ug/L		78	50 - 120	5	26
Motor Oil (>C24-C36)	4000	3420		ug/L		85	64 - 120	3	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	80		50 - 150						

Lab Sample ID: 580-126016-1 MS

Matrix: Water

Analysis Batch: 423886

Client Sample ID: 20230412-MD-13-35-GW

Prep Type: Total/NA

Prep Batch: 423635

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	
#2 Diesel (C10-C24)	ND		4350	3140		ug/L		72	50 - 120	
Motor Oil (>C24-C36)	100	J B	4350	3660		ug/L		82	64 - 120	
Surrogate	MS %Recovery	MS Qualifier	Limits							
o-Terphenyl	76		50 - 150							

Lab Sample ID: 580-126016-1 MSD

Matrix: Water

Analysis Batch: 423886

Client Sample ID: 20230412-MD-13-35-GW

Prep Type: Total/NA

Prep Batch: 423635

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	ND		4270	3360		ug/L		79	50 - 120	7	26
Motor Oil (>C24-C36)	100	J B	4270	3800		ug/L		87	64 - 120	4	24

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QC Sample Results

Client: AECOM

Job ID: 580-126016-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup (Continued)

Lab Sample ID: 580-126016-1 MSD

Matrix: Water

Analysis Batch: 423886

Client Sample ID: 20230412-MD-13-35-GW

Prep Type: Total/NA

Prep Batch: 423635

Surrogate	MSD %Recovery	MSD Qualifier	Limits
o-Terphenyl	78		50 - 150

Lab Sample ID: MB 580-423997/1-B

Matrix: Water

Analysis Batch: 424056

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 423997

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		110	65	ug/L		04/24/23 10:03	04/25/23 01:37	1
Motor Oil (>C24-C36)	137	J	350	96	ug/L		04/24/23 10:03	04/25/23 01:37	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	56		50 - 150	04/24/23 10:03	04/25/23 01:37	1

Lab Sample ID: LCS 580-423997/2-B

Matrix: Water

Analysis Batch: 424056

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 423997

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
#2 Diesel (C10-C24)	4000	2980		ug/L		74	50 - 120
Motor Oil (>C24-C36)	4000	3130		ug/L		78	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	75		50 - 150

Lab Sample ID: LCSD 580-423997/3-B

Matrix: Water

Analysis Batch: 424056

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 423997

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4000	3070		ug/L		77	50 - 120	3	26
Motor Oil (>C24-C36)	4000	3370		ug/L		84	64 - 120	7	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
o-Terphenyl	84		50 - 150

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 580-423853/25-A

Matrix: Water

Analysis Batch: 424008

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 423853

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/20/23 16:19	04/21/23 16:27	1
Barium	ND		0.020	0.0010	mg/L		04/20/23 16:19	04/21/23 16:27	1
Cadmium	ND		0.020	0.00090	mg/L		04/20/23 16:19	04/21/23 16:27	1
Chromium	ND		0.025	0.0027	mg/L		04/20/23 16:19	04/21/23 16:27	1
Lead	ND		0.030	0.0027	mg/L		04/20/23 16:19	04/21/23 16:27	1

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QC Sample Results

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126016-1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: MB 580-423853/25-A

Matrix: Water

Analysis Batch: 424008

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 423853

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		0.10	0.0087	mg/L		04/20/23 16:19	04/21/23 16:27	1
Silver	ND		0.050	0.0085	mg/L		04/20/23 16:19	04/21/23 16:27	1

Lab Sample ID: LCS 580-423853/26-A

Matrix: Water

Analysis Batch: 424008

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 423853

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	1.00		mg/L		100	80 - 120
Barium	1.00	1.00		mg/L		100	80 - 120
Cadmium	1.00	0.982		mg/L		98	80 - 120
Chromium	1.00	0.991		mg/L		99	80 - 120
Lead	1.00	1.03		mg/L		103	80 - 120
Selenium	1.00	1.02		mg/L		102	80 - 120
Silver	1.00	1.01		mg/L		101	80 - 120

Lab Sample ID: LCSD 580-423853/27-A

Matrix: Water

Analysis Batch: 424008

Client Sample ID: Lab Control Sample Dup

Prep Type: Total Recoverable

Prep Batch: 423853

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Arsenic	1.00	1.02		mg/L		102	80 - 120	1	20
Barium	1.00	1.01		mg/L		101	80 - 120	1	20
Cadmium	1.00	0.995		mg/L		100	80 - 120	1	20
Chromium	1.00	1.00		mg/L		100	80 - 120	1	20
Lead	1.00	1.04		mg/L		104	80 - 120	1	20
Selenium	1.00	1.03		mg/L		103	80 - 120	2	20
Silver	1.00	1.01		mg/L		101	80 - 120	0	20

Lab Sample ID: 580-126016-1 MS

Matrix: Water

Analysis Batch: 424008

Client Sample ID: 20230412-MD-13-35-GW

Prep Type: Total Recoverable

Prep Batch: 423853

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	ND		1.00	0.976		mg/L		98	80 - 120
Barium	0.028		1.00	1.09		mg/L		106	80 - 120
Cadmium	ND		1.00	0.960		mg/L		96	80 - 120
Chromium	ND		1.00	0.965		mg/L		96	80 - 120
Lead	0.017	J	1.00	1.02		mg/L		101	80 - 120
Selenium	ND		1.00	0.985		mg/L		99	80 - 120
Silver	ND		1.00	1.05		mg/L		105	80 - 120

Lab Sample ID: 580-126016-1 MSD

Matrix: Water

Analysis Batch: 424008

Client Sample ID: 20230412-MD-13-35-GW

Prep Type: Total Recoverable

Prep Batch: 423853

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Arsenic	ND		1.00	0.988		mg/L		99	80 - 120	1	20
Barium	0.028		1.00	1.01		mg/L		98	80 - 120	7	20
Cadmium	ND		1.00	0.965		mg/L		96	80 - 120	1	20

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QC Sample Results

Client: AECOM

Job ID: 580-126016-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: 580-126016-1 MSD

Matrix: Water

Analysis Batch: 424008

Client Sample ID: 20230412-MD-13-35-GW

Prep Type: Total Recoverable

Prep Batch: 423853

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chromium	ND		1.00	0.969		mg/L		97	80 - 120	0	20
Lead	0.017	J	1.00	1.02		mg/L		100	80 - 120	0	20
Selenium	ND		1.00	0.999		mg/L		100	80 - 120	1	20
Silver	ND		1.00	0.979		mg/L		98	80 - 120	7	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 580-423499/26-A

Matrix: Water

Analysis Batch: 423591

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 423499

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/18/23 09:49	04/18/23 15:20	1

Lab Sample ID: LCS 580-423499/27-A

Matrix: Water

Analysis Batch: 423591

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 423499

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	2.00	2.11		ug/L		105	80 - 120

Lab Sample ID: LCSD 580-423499/28-A

Matrix: Water

Analysis Batch: 423591

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 423499

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	2.00	2.08		ug/L		104	80 - 120	1	20

Lab Sample ID: 580-126016-1 MS

Matrix: Water

Analysis Batch: 423591

Client Sample ID: 20230412-MD-13-35-GW

Prep Type: Total/NA

Prep Batch: 423499

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		2.00	2.03		ug/L		101	80 - 120

Lab Sample ID: 580-126016-1 MSD

Matrix: Water

Analysis Batch: 423591

Client Sample ID: 20230412-MD-13-35-GW

Prep Type: Total/NA

Prep Batch: 423499

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		2.00	1.99		ug/L		99	80 - 120	2	20

Lab Sample ID: 580-126016-1 DU

Matrix: Water

Analysis Batch: 423591

Client Sample ID: 20230412-MD-13-35-GW

Prep Type: Total/NA

Prep Batch: 423499

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Mercury	ND		ND		ug/L		NC	20

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Lab Chronicle

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126016-1

Client Sample ID: 20230412-MD-13-35-GW

Lab Sample ID: 580-126016-1

Date Collected: 04/12/23 10:05

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423907	ITR	EET SEA	04/21/23 20:31
Total/NA	Analysis	NWTPH-Gx		1	423567	ITR	EET SEA	04/19/23 09:15
Total/NA	Prep	3510C			423440	TGO	EET SEA	04/17/23 13:25
Total/NA	Analysis	8270E SIM		1	424033	K1K	EET SEA	04/24/23 16:31
Total/NA	Prep	3510C			423635	TGO	EET SEA	04/19/23 09:43
Total/NA	Cleanup	3630C			423636	TGO	EET SEA	04/19/23 09:52
Total/NA	Analysis	NWTPH-Dx		1	423886	KLW	EET SEA	04/21/23 19:57
Total Recoverable	Prep	3005A			423853	JLS	EET SEA	04/20/23 16:19
Total Recoverable	Analysis	6010D		1	424008	JLS	EET SEA	04/21/23 17:29
Total/NA	Prep	7470A			423499	TMH	EET SEA	04/18/23 09:49
Total/NA	Analysis	7470A		1	423591	JL	EET SEA	04/18/23 15:26

Client Sample ID: 20230410-MW-14-23-GW

Lab Sample ID: 580-126016-2

Date Collected: 04/10/23 15:42

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423415	ITR	EET SEA	04/18/23 09:22
Total/NA	Analysis	NWTPH-Gx		1	423412	ITR	EET SEA	04/18/23 09:22
Total/NA	Prep	3510C			423440	TGO	EET SEA	04/17/23 13:25
Total/NA	Analysis	8270E SIM		1	424033	K1K	EET SEA	04/24/23 17:45
Total/NA	Prep	3510C			423635	TGO	EET SEA	04/19/23 09:43
Total/NA	Cleanup	3630C			423636	TGO	EET SEA	04/19/23 09:52
Total/NA	Analysis	NWTPH-Dx		1	423886	KLW	EET SEA	04/21/23 20:57
Total Recoverable	Prep	3005A			423853	JLS	EET SEA	04/20/23 16:19
Total Recoverable	Analysis	6010D		1	424008	JLS	EET SEA	04/21/23 17:46
Total/NA	Prep	7470A			423499	TMH	EET SEA	04/18/23 09:49
Total/NA	Analysis	7470A		1	423591	JL	EET SEA	04/18/23 15:40

Client Sample ID: 20230411-MW-17-22-GW

Lab Sample ID: 580-126016-3

Date Collected: 04/11/23 15:01

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423429	JSM	EET SEA	04/17/23 18:04
Total/NA	Analysis	NWTPH-Gx		1	423425	JSM	EET SEA	04/17/23 18:04
Total/NA	Prep	3510C			423440	TGO	EET SEA	04/17/23 13:25
Total/NA	Analysis	8270E SIM		1	424033	K1K	EET SEA	04/24/23 18:09
Total/NA	Prep	3510C			423997	TGO	EET SEA	04/24/23 10:03
Total/NA	Cleanup	3630C			423999	TGO	EET SEA	04/24/23 10:12
Total/NA	Analysis	NWTPH-Dx		1	424056	KLW	EET SEA	04/25/23 02:52
Total Recoverable	Prep	3005A			423853	JLS	EET SEA	04/20/23 16:19
Total Recoverable	Analysis	6010D		1	424008	JLS	EET SEA	04/21/23 17:50
Total/NA	Prep	7470A			423499	TMH	EET SEA	04/18/23 09:49
Total/NA	Analysis	7470A		1	423591	JL	EET SEA	04/18/23 15:42

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Lab Chronicle

Client: AECOM

Job ID: 580-126016-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230411-MW-117-22-GW

Lab Sample ID: 580-126016-4

Date Collected: 04/11/23 14:42

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423429	JSM	EET SEA	04/17/23 18:28
Total/NA	Analysis	NWTPH-Gx		1	423425	JSM	EET SEA	04/17/23 18:28
Total/NA	Prep	3510C			423440	TGO	EET SEA	04/17/23 13:25
Total/NA	Analysis	8270E SIM		1	424033	K1K	EET SEA	04/24/23 18:34
Total/NA	Prep	3510C			423635	TGO	EET SEA	04/19/23 09:43
Total/NA	Cleanup	3630C			423636	TGO	EET SEA	04/19/23 09:52
Total/NA	Analysis	NWTPH-Dx		1	423886	KLW	EET SEA	04/21/23 21:17
Total Recoverable	Prep	3005A			423853	JLS	EET SEA	04/20/23 16:19
Total Recoverable	Analysis	6010D		1	424008	JLS	EET SEA	04/21/23 17:53
Total/NA	Prep	7470A			423499	TMH	EET SEA	04/18/23 09:49
Total/NA	Analysis	7470A		1	423591	JL	EET SEA	04/18/23 15:44

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126016-1

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4167	07-07-23

1
2
3
4
5
6
7
8
9
10
11
12

Sample Summary

Client: AECOM

Job ID: 580-126016-1

Project/Site: SMP Portland Terminal Response Action GWM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-126016-1	20230412-MD-13-35-GW	Water	04/12/23 10:05	04/13/23 16:00
580-126016-2	20230410-MW-14-23-GW	Water	04/10/23 15:42	04/13/23 16:00
580-126016-3	20230411-MW-17-22-GW	Water	04/11/23 15:01	04/13/23 16:00
580-126016-4	20230411-MW-117-22-GW	Water	04/11/23 14:42	04/13/23 16:00

Environment Testing
TestAmerica

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

580-126016 Chain of Custody

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-126016-1

Login Number: 126016

List Number: 1

Creator: O'Connell, Jason I

List Source: Eurofins Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Emily Wengrowski

From: Wheeler, Christina <Christina.Wheeler@aecom.com>
Sent: Monday, April 17, 2023 1:58 PM
To: Emily Wengrowski; Hoppe, Jackie; DeGrood, Shira; Bialobok, Thomas
Subject: RE: *Revision Included* Eurofins Environment Testing Northwest, LLC sample confirmation files from 580-126017-1 SMP Portland Terminal Response Action GWM
Attachments: COC 580-126032 (202304140950).pdf; COC 580-126016 (202304131749).pdf

EXTERNAL EMAIL*

Emily,

Sample analyses are correct for SDGs 580-126017 and 580-126016.

Can you please remove the MS/MSD suffix on the end of sample names associated with samples 580-126017-8 and 580-126016-1.

I don't need another revised sample login sent out.

Thank you.

Client Contact		Project Manager: Tom Bialobok		Site Contact: Edward Le Cocq								
AECOM		Email: Shira.Degroot@aecom.com		Lab Contact: Elaine Walker								
888 SW 5th Ave, Suite 600		971-323-6281										
Portland, Oregon 97204		Analysis Turnaround Time										
(971) 323-6262		☐ CALENDAR DAYS ☒ WORKING DAYS										
503-961-8862@ecw.com FAX		TAT if different from Below										
Project Name: SMP Portland Terminal		☒ 2 weeks										
Task: Response Action GWM		☐ 1 week										
Project # 60556219.6 PO#148419 (Line 2)		☐ 2 days										
		☐ 1 day										
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	NWTPH-Dx w/ silica gel clean up	NWTPH-Gx	BTEX + MTBE EPA 8260D	PAHs Low-Level, EPA 8270E(SIM), standard list	Total RCRA Metals EPA 801007470A
20230413-MD-01-35-GW	4/13/23	1203	Grab	Water	10	N	X	X	X	X	X	
20230410-MD-02-35-GW	4/10/23	1720	Grab	Water	10	N	X	X	X	X	X	
20230412-MD-06-45-GW	4/12/23	1740	Grab	Water	10	N	X	X	X	X	X	
20230413-MD-07-39-GW	4/13/23	0850	Grab	Water	10	N	X	X	X	X	X	
20230412-MD-08-41-GW	4/12/23	1715	Grab	Water	10	N	X	X	X	X	X	
20230413-P-12-18-GW	4/13/23	0954	Grab	Water	10	N	X	X	X	X	X	
20230411-MD-14-46-GW	4/11/23	1639	Grab	Water	10	N	X	X	X	X	X	
20230411-MW-05-11-GW-MS/MSD	4/11/23	1800	Grab	Water	10	N	X	X	X	X	X	
20230412-P-104-13-GW	4/12/23	0942	Grab	Water	10	N	X	X	X	X	X	
20230412-MW-16-19-GW	4/12/23	1421	Grab	Water	10	N	X	X	X	X	X	
20230412-P-01-8-GW	4/12/23	1153	Grab	Water	10	N	X	X	X	X	X	
20230412-P-02-12-GW	4/12/23	1310	Grab	Water	10	N	X	X	X	X	X	
20230412-P-04-13-GW	4/12/23	1006	Grab	Water	10	N	X	X	X	X	X	
Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other												

580-126017-8	20230411-MW-05-11-GW-MS/MSD	4/11/2023 6:00:00 PM	Water	
6010D	RCRA 8 Metals and Mercury / In-Lab		Total	Wet
			Recoverable	
7470A	Mercury (CVAA) / In-Lab		Total	Wet
8260D	BTEX + MTBE / In-Lab		Total	Wet
8270E_SIM	PAHs, standard list / In-Lab		Total	Wet
NWTPH_Dx	Northwest - DRO/RRO W/ silica gel / In-Lab		Total	Wet
NWTPH_Gx_MS	Northwest - GRO / In-Lab		Total	Wet

Sample ID 20230413-P-12-18-GW with sample date 04/13/2023, and sample time 0954 was duplicated on the chain-of-custody, while only one sample set with associated sample ID, date, and time was provided. Sample was logged as 580-126017-14, and sample 580-126017-06 (the duplicate) was removed. Thus, sample -6 will not be included in this job.

Please feel free to contact me or your PM Marie Walker if you have any questions.

Thank you.

Emily E Wengrowski
Project Manager Assistant

Eurofins Seattle

E-mail: emily.wengrowski@et.eurofinsus.com
www.eurofinsus.com/env



Reference: [580-478572]
Attachments: 2

> > Bank information has changed, please refer to remittance information on invoice. < <

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

ANALYTICAL REPORT

PREPARED FOR

Attn: Christina Wheeler
AECOM
1111 Third Ave
Suite 1600
Seattle, Washington 98101

Generated 5/5/2023 12:50:02 PM

JOB DESCRIPTION

SMP Portland Terminal Response Action GWM

JOB NUMBER

580-126017-1

Eurofins Seattle

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northwest, LLC Project Manager.

Authorization



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5/5/2023 12:50:02 PM

Authorized for release by
Marie Walker, Senior Project Manager
M.Elaine.Walker@et.eurofinsus.com
(253)248-4972

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Case Narrative

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126017-1

Laboratory: Eurofins Seattle

Narrative

Job Narrative 580-126017-1

Receipt

Seventeen samples were received on 4/13/2023 4:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 0.5° C, 1.3° C, 1.7° C and 2.2° C.

Receipt Exceptions

Sample ID 20230413-P-12-18-GW with sample date 04/13/2023, and sample time 0954 was duplicated on the chain-of-custody, while only one sample set with associated sample ID, date, and time was provided. Sample was logged as 580-126017-14, and sample 580-126017-06 (the duplicate) was removed. Thus, sample -6 will not be included in this job.

GC/MS VOA

Method 8260D: The matrix spike duplicate (MS/MSD) recoveries for analytical batch 580-423550 were outside control limits for o-Xylene. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 8260D: The method blank for analytical batch 580-423563 contained Benzene above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-analysis of samples was not performed.

Method NWTPH-Gx: The continuing calibration verification (CCV) associated with batch 580-423553 recovered above the upper control limit for Gasoline Range Organics C7-C12. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method NWTPH-Gx: The following sample was diluted to bring the concentration of target analytes within the calibration range: 20230413-P-23-18-GW (580-126017-15). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

Method 8270E SIM: The following sample was diluted due to the nature of the sample matrix: 20230413-P-12-18-GW (580-126017-14). Elevated reporting limits (RLs) are provided.

Method 8270E SIM: The following sample was prepared outside of preparation holding time due to loss of sample during initial extraction: 20230410-MD-02-35-GW (580-126017-2). There is no data available from sample prepared within preparation holding time. Data reported as primary is from out of hold sample (prep batch 580-423495). No charge will be applied to this analysis.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method NWTPH-Dx: The method blank for preparation batch 580-423635 and analytical batch 580-423866 contained Motor Oil (>C24-C36) above the reporting limit (RL). None of the samples associated with this method blank contained the target compound above the RL; therefore, re-extraction of samples were not performed.

Method NWTPH-Dx: The method blank for preparation batch 580-424072 and analytical batch 580-424142 contained Motor Oil (>C24-C36) above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230413-MD-01-35-GW

Lab Sample ID: 580-126017-1

Date Collected: 04/13/23 12:03

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/20/23 07:51	1
Toluene	ND		1.0	0.39	ug/L			04/20/23 07:51	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/20/23 07:51	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/20/23 07:51	1
o-Xylene	ND		1.0	0.39	ug/L			04/20/23 07:51	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/20/23 07:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		80 - 120		04/20/23 07:51	1
4-Bromofluorobenzene (Surr)	112		80 - 120		04/20/23 07:51	1
Toluene-d8 (Surr)	88		80 - 120		04/20/23 07:51	1
Dibromofluoromethane (Surr)	120		80 - 120		04/20/23 07:51	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	900		50	14	ug/L			04/20/23 07:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112		77 - 123		04/20/23 07:51	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	15		0.11	0.035	ug/L		04/19/23 10:14	04/26/23 01:05	1
2-Methylnaphthalene	ND		0.21	0.042	ug/L		04/19/23 10:14	04/26/23 01:05	1
Acenaphthene	0.86		0.11	0.015	ug/L		04/19/23 10:14	04/26/23 01:05	1
Acenaphthylene	ND		0.054	0.0097	ug/L		04/19/23 10:14	04/26/23 01:05	1
Anthracene	ND		0.11	0.024	ug/L		04/19/23 10:14	04/26/23 01:05	1
Benzo[a]anthracene	ND		0.054	0.015	ug/L		04/19/23 10:14	04/26/23 01:05	1
Benzo[a]pyrene	ND		0.11	0.024	ug/L		04/19/23 10:14	04/26/23 01:05	1
Benzo[b]fluoranthene	ND		0.11	0.024	ug/L		04/19/23 10:14	04/26/23 01:05	1
Benzo[g,h,i]perylene	ND		0.054	0.013	ug/L		04/19/23 10:14	04/26/23 01:05	1
Benzo[k]fluoranthene	ND		0.054	0.013	ug/L		04/19/23 10:14	04/26/23 01:05	1
Chrysene	ND		0.11	0.040	ug/L		04/19/23 10:14	04/26/23 01:05	1
Dibenz[a,h]anthracene	ND		0.11	0.016	ug/L		04/19/23 10:14	04/26/23 01:05	1
Fluoranthene	ND		0.21	0.058	ug/L		04/19/23 10:14	04/26/23 01:05	1
Fluorene	2.4		0.11	0.018	ug/L		04/19/23 10:14	04/26/23 01:05	1
Indeno[1,2,3-cd]pyrene	ND		0.054	0.015	ug/L		04/19/23 10:14	04/26/23 01:05	1
Naphthalene	0.33	J	0.54	0.17	ug/L		04/19/23 10:14	04/26/23 01:05	1
Phenanthrene	2.7		0.11	0.033	ug/L		04/19/23 10:14	04/26/23 01:05	1
Pyrene	0.065	J	0.11	0.035	ug/L		04/19/23 10:14	04/26/23 01:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	84		29 - 150	04/19/23 10:14	04/26/23 01:05	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	640		120	69	ug/L		04/21/23 09:31	04/21/23 20:35	1
Motor Oil (>C24-C36)	ND		370	100	ug/L		04/21/23 09:31	04/21/23 20:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	67		50 - 150	04/21/23 09:31	04/21/23 20:35	1

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Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230413-MD-01-35-GW

Lab Sample ID: 580-126017-1

Date Collected: 04/13/23 12:03

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.041	J	0.060	0.0072	mg/L		04/21/23 17:20	04/24/23 18:01	1
Barium	0.043		0.020	0.0010	mg/L		04/21/23 17:20	04/24/23 18:01	1
Cadmium	ND		0.020	0.00090	mg/L		04/21/23 17:20	04/24/23 18:01	1
Chromium	ND		0.025	0.0027	mg/L		04/21/23 17:20	04/24/23 18:01	1
Lead	0.016	J	0.030	0.0027	mg/L		04/21/23 17:20	04/24/23 18:01	1
Selenium	ND		0.10	0.0087	mg/L		04/21/23 17:20	04/24/23 18:01	1
Silver	ND		0.050	0.0085	mg/L		04/21/23 17:20	04/24/23 18:01	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/18/23 09:49	04/18/23 16:02	1

Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230410-MD-02-35-GW

Lab Sample ID: 580-126017-2

Date Collected: 04/10/23 17:20

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/18/23 19:38	1
Toluene	ND		1.0	0.39	ug/L			04/18/23 19:38	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/18/23 19:38	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/18/23 19:38	1
o-Xylene	ND		1.0	0.39	ug/L			04/18/23 19:38	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/18/23 19:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		80 - 120		04/18/23 19:38	1
4-Bromofluorobenzene (Surr)	98		80 - 120		04/18/23 19:38	1
Toluene-d8 (Surr)	87		80 - 120		04/18/23 19:38	1
Dibromofluoromethane (Surr)	118		80 - 120		04/18/23 19:38	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	ND		50	14	ug/L			04/18/23 19:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		77 - 123		04/18/23 19:38	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND	H	0.10	0.033	ug/L		04/18/23 09:28	04/25/23 23:48	1
2-Methylnaphthalene	ND	H	0.20	0.039	ug/L		04/18/23 09:28	04/25/23 23:48	1
Acenaphthene	0.014	J H	0.10	0.014	ug/L		04/18/23 09:28	04/25/23 23:48	1
Acenaphthylene	0.014	J H	0.051	0.0091	ug/L		04/18/23 09:28	04/25/23 23:48	1
Anthracene	ND	H	0.10	0.022	ug/L		04/18/23 09:28	04/25/23 23:48	1
Benzo[a]anthracene	ND	H	0.051	0.014	ug/L		04/18/23 09:28	04/25/23 23:48	1
Benzo[a]pyrene	ND	H	0.10	0.022	ug/L		04/18/23 09:28	04/25/23 23:48	1
Benzo[b]fluoranthene	ND	H	0.10	0.022	ug/L		04/18/23 09:28	04/25/23 23:48	1
Benzo[g,h,i]perylene	0.013	J H	0.051	0.012	ug/L		04/18/23 09:28	04/25/23 23:48	1
Benzo[k]fluoranthene	ND	H	0.051	0.012	ug/L		04/18/23 09:28	04/25/23 23:48	1
Chrysene	ND	H	0.10	0.037	ug/L		04/18/23 09:28	04/25/23 23:48	1
Dibenz[a,h]anthracene	ND	H	0.10	0.015	ug/L		04/18/23 09:28	04/25/23 23:48	1
Fluoranthene	ND	H	0.20	0.055	ug/L		04/18/23 09:28	04/25/23 23:48	1
Fluorene	0.020	J H	0.10	0.017	ug/L		04/18/23 09:28	04/25/23 23:48	1
Indeno[1,2,3-cd]pyrene	ND	H	0.051	0.014	ug/L		04/18/23 09:28	04/25/23 23:48	1
Naphthalene	ND	H	0.51	0.16	ug/L		04/18/23 09:28	04/25/23 23:48	1
Phenanthrene	ND	H	0.10	0.031	ug/L		04/18/23 09:28	04/25/23 23:48	1
Pyrene	ND	H	0.10	0.033	ug/L		04/18/23 09:28	04/25/23 23:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	90		29 - 150	04/18/23 09:28	04/25/23 23:48	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		110	67	ug/L		04/19/23 09:43	04/21/23 21:58	1
Motor Oil (>C24-C36)	200	J B	360	99	ug/L		04/19/23 09:43	04/21/23 21:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	67		50 - 150	04/19/23 09:43	04/21/23 21:58	1

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Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230410-MD-02-35-GW

Lab Sample ID: 580-126017-2

Date Collected: 04/10/23 17:20

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/21/23 17:20	04/24/23 18:04	1
Barium	0.011	J	0.020	0.0010	mg/L		04/21/23 17:20	04/24/23 18:04	1
Cadmium	ND		0.020	0.00090	mg/L		04/21/23 17:20	04/24/23 18:04	1
Chromium	ND		0.025	0.0027	mg/L		04/21/23 17:20	04/24/23 18:04	1
Lead	0.013	J	0.030	0.0027	mg/L		04/21/23 17:20	04/24/23 18:04	1
Selenium	ND		0.10	0.0087	mg/L		04/21/23 17:20	04/24/23 18:04	1
Silver	ND		0.050	0.0085	mg/L		04/21/23 17:20	04/24/23 18:04	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/18/23 09:49	04/18/23 16:04	1

Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230412-MD-06-45-GW

Lab Sample ID: 580-126017-3

Date Collected: 04/12/23 17:40

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/19/23 11:41	1
Toluene	ND		1.0	0.39	ug/L			04/19/23 11:41	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/19/23 11:41	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/19/23 11:41	1
o-Xylene	ND		1.0	0.39	ug/L			04/19/23 11:41	1
Methyl tert-butyl ether	3.3		1.0	0.44	ug/L			04/19/23 11:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		80 - 120		04/19/23 11:41	1
4-Bromofluorobenzene (Surr)	92		80 - 120		04/19/23 11:41	1
Toluene-d8 (Surr)	95		80 - 120		04/19/23 11:41	1
Dibromofluoromethane (Surr)	101		80 - 120		04/19/23 11:41	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	ND		50	14	ug/L			04/19/23 11:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		77 - 123					04/19/23 11:41	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.11	0.035	ug/L		04/18/23 09:28	04/26/23 00:07	1
2-Methylnaphthalene	ND		0.21	0.041	ug/L		04/18/23 09:28	04/26/23 00:07	1
Acenaphthene	ND		0.11	0.015	ug/L		04/18/23 09:28	04/26/23 00:07	1
Acenaphthylene	ND		0.053	0.0095	ug/L		04/18/23 09:28	04/26/23 00:07	1
Anthracene	ND		0.11	0.023	ug/L		04/18/23 09:28	04/26/23 00:07	1
Benzo[a]anthracene	ND		0.053	0.015	ug/L		04/18/23 09:28	04/26/23 00:07	1
Benzo[a]pyrene	ND		0.11	0.023	ug/L		04/18/23 09:28	04/26/23 00:07	1
Benzo[b]fluoranthene	ND		0.11	0.023	ug/L		04/18/23 09:28	04/26/23 00:07	1
Benzo[g,h,i]perylene	ND		0.053	0.013	ug/L		04/18/23 09:28	04/26/23 00:07	1
Benzo[k]fluoranthene	ND		0.053	0.013	ug/L		04/18/23 09:28	04/26/23 00:07	1
Chrysene	ND		0.11	0.039	ug/L		04/18/23 09:28	04/26/23 00:07	1
Dibenz(a,h)anthracene	ND		0.11	0.016	ug/L		04/18/23 09:28	04/26/23 00:07	1
Fluoranthene	ND		0.21	0.057	ug/L		04/18/23 09:28	04/26/23 00:07	1
Fluorene	ND		0.11	0.018	ug/L		04/18/23 09:28	04/26/23 00:07	1
Indeno[1,2,3-cd]pyrene	ND		0.053	0.015	ug/L		04/18/23 09:28	04/26/23 00:07	1
Naphthalene	ND		0.53	0.17	ug/L		04/18/23 09:28	04/26/23 00:07	1
Phenanthrene	ND		0.11	0.033	ug/L		04/18/23 09:28	04/26/23 00:07	1
Pyrene	ND		0.11	0.035	ug/L		04/18/23 09:28	04/26/23 00:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	94		29 - 150				04/18/23 09:28	04/26/23 00:07	

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		120	69	ug/L		04/21/23 09:31	04/21/23 20:54	1
Motor Oil (>C24-C36)	160	J	370	100	ug/L		04/21/23 09:31	04/21/23 20:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	67		50 - 150				04/21/23 09:31	04/21/23 20:54	1

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Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230412-MD-06-45-GW

Lab Sample ID: 580-126017-3

Date Collected: 04/12/23 17:40

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/21/23 17:20	04/24/23 18:08	1
Barium	0.051		0.020	0.0010	mg/L		04/21/23 17:20	04/24/23 18:08	1
Cadmium	ND		0.020	0.00090	mg/L		04/21/23 17:20	04/24/23 18:08	1
Chromium	ND		0.025	0.0027	mg/L		04/21/23 17:20	04/24/23 18:08	1
Lead	0.0069	J	0.030	0.0027	mg/L		04/21/23 17:20	04/24/23 18:08	1
Selenium	ND		0.10	0.0087	mg/L		04/21/23 17:20	04/24/23 18:08	1
Silver	ND		0.050	0.0085	mg/L		04/21/23 17:20	04/24/23 18:08	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/18/23 09:49	04/18/23 16:06	1

Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230413-MD-07-39-GW

Lab Sample ID: 580-126017-4

Date Collected: 04/13/23 08:50

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/20/23 08:16	1
Toluene	ND		1.0	0.39	ug/L			04/20/23 08:16	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/20/23 08:16	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/20/23 08:16	1
o-Xylene	ND		1.0	0.39	ug/L			04/20/23 08:16	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/20/23 08:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		80 - 120		04/20/23 08:16	1
4-Bromofluorobenzene (Surr)	93		80 - 120		04/20/23 08:16	1
Toluene-d8 (Surr)	91		80 - 120		04/20/23 08:16	1
Dibromofluoromethane (Surr)	102		80 - 120		04/20/23 08:16	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	1300		50	14	ug/L			04/20/23 08:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		77 - 123		04/20/23 08:16	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.11	0.035	ug/L		04/19/23 10:14	04/26/23 01:29	1
2-Methylnaphthalene	ND		0.21	0.041	ug/L		04/19/23 10:14	04/26/23 01:29	1
Acenaphthene	0.78		0.11	0.015	ug/L		04/19/23 10:14	04/26/23 01:29	1
Acenaphthylene	ND		0.053	0.0095	ug/L		04/19/23 10:14	04/26/23 01:29	1
Anthracene	ND		0.11	0.023	ug/L		04/19/23 10:14	04/26/23 01:29	1
Benzo[a]anthracene	ND		0.053	0.015	ug/L		04/19/23 10:14	04/26/23 01:29	1
Benzo[a]pyrene	ND		0.11	0.023	ug/L		04/19/23 10:14	04/26/23 01:29	1
Benzo[b]fluoranthene	ND		0.11	0.023	ug/L		04/19/23 10:14	04/26/23 01:29	1
Benzo[g,h,i]perylene	ND		0.053	0.013	ug/L		04/19/23 10:14	04/26/23 01:29	1
Benzo[k]fluoranthene	ND		0.053	0.013	ug/L		04/19/23 10:14	04/26/23 01:29	1
Chrysene	ND		0.11	0.039	ug/L		04/19/23 10:14	04/26/23 01:29	1
Dibenz[a,h]anthracene	ND		0.11	0.016	ug/L		04/19/23 10:14	04/26/23 01:29	1
Fluoranthene	ND		0.21	0.057	ug/L		04/19/23 10:14	04/26/23 01:29	1
Fluorene	1.5		0.11	0.018	ug/L		04/19/23 10:14	04/26/23 01:29	1
Indeno[1,2,3-cd]pyrene	ND		0.053	0.015	ug/L		04/19/23 10:14	04/26/23 01:29	1
Naphthalene	0.86		0.53	0.17	ug/L		04/19/23 10:14	04/26/23 01:29	1
Phenanthrene	0.46		0.11	0.033	ug/L		04/19/23 10:14	04/26/23 01:29	1
Pyrene	ND		0.11	0.035	ug/L		04/19/23 10:14	04/26/23 01:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	86		29 - 150	04/19/23 10:14	04/26/23 01:29	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	480		120	69	ug/L		04/21/23 09:31	04/21/23 22:09	1
Motor Oil (>C24-C36)	140	J	370	100	ug/L		04/21/23 09:31	04/21/23 22:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	72		50 - 150	04/21/23 09:31	04/21/23 22:09	1

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Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230413-MD-07-39-GW

Lab Sample ID: 580-126017-4

Date Collected: 04/13/23 08:50

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.093		0.060	0.0072	mg/L		04/21/23 17:20	04/24/23 18:12	1
Barium	0.098		0.020	0.0010	mg/L		04/21/23 17:20	04/24/23 18:12	1
Cadmium	ND		0.020	0.00090	mg/L		04/21/23 17:20	04/24/23 18:12	1
Chromium	ND		0.025	0.0027	mg/L		04/21/23 17:20	04/24/23 18:12	1
Lead	0.016	J	0.030	0.0027	mg/L		04/21/23 17:20	04/24/23 18:12	1
Selenium	ND		0.10	0.0087	mg/L		04/21/23 17:20	04/24/23 18:12	1
Silver	ND		0.050	0.0085	mg/L		04/21/23 17:20	04/24/23 18:12	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/18/23 09:49	04/18/23 16:09	1

Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230412-MD-08-41-GW

Lab Sample ID: 580-126017-5

Date Collected: 04/12/23 17:15

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/19/23 12:05	1
Toluene	ND		1.0	0.39	ug/L			04/19/23 12:05	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/19/23 12:05	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/19/23 12:05	1
o-Xylene	ND		1.0	0.39	ug/L			04/19/23 12:05	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/19/23 12:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		80 - 120		04/19/23 12:05	1
4-Bromofluorobenzene (Surr)	98		80 - 120		04/19/23 12:05	1
Toluene-d8 (Surr)	98		80 - 120		04/19/23 12:05	1
Dibromofluoromethane (Surr)	101		80 - 120		04/19/23 12:05	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	230		50	14	ug/L			04/19/23 12:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		77 - 123		04/19/23 12:05	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	1.7		0.10	0.034	ug/L		04/18/23 09:28	04/26/23 00:27	1
2-Methylnaphthalene	0.33		0.21	0.040	ug/L		04/18/23 09:28	04/26/23 00:27	1
Acenaphthene	0.29		0.10	0.014	ug/L		04/18/23 09:28	04/26/23 00:27	1
Acenaphthylene	0.084		0.052	0.0093	ug/L		04/18/23 09:28	04/26/23 00:27	1
Anthracene	0.068	J	0.10	0.023	ug/L		04/18/23 09:28	04/26/23 00:27	1
Benzo[a]anthracene	ND		0.052	0.014	ug/L		04/18/23 09:28	04/26/23 00:27	1
Benzo[a]pyrene	ND		0.10	0.023	ug/L		04/18/23 09:28	04/26/23 00:27	1
Benzo[b]fluoranthene	ND		0.10	0.023	ug/L		04/18/23 09:28	04/26/23 00:27	1
Benzo[g,h,i]perylene	ND		0.052	0.012	ug/L		04/18/23 09:28	04/26/23 00:27	1
Benzo[k]fluoranthene	ND		0.052	0.012	ug/L		04/18/23 09:28	04/26/23 00:27	1
Chrysene	ND		0.10	0.038	ug/L		04/18/23 09:28	04/26/23 00:27	1
Dibenz[a,h]anthracene	ND		0.10	0.015	ug/L		04/18/23 09:28	04/26/23 00:27	1
Fluoranthene	ND		0.21	0.056	ug/L		04/18/23 09:28	04/26/23 00:27	1
Fluorene	0.47		0.10	0.018	ug/L		04/18/23 09:28	04/26/23 00:27	1
Indeno[1,2,3-cd]pyrene	ND		0.052	0.014	ug/L		04/18/23 09:28	04/26/23 00:27	1
Naphthalene	0.29	J	0.52	0.17	ug/L		04/18/23 09:28	04/26/23 00:27	1
Phenanthrene	0.17		0.10	0.032	ug/L		04/18/23 09:28	04/26/23 00:27	1
Pyrene	0.046	J	0.10	0.034	ug/L		04/18/23 09:28	04/26/23 00:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	84		29 - 150	04/18/23 09:28	04/26/23 00:27	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	200		120	69	ug/L		04/21/23 09:31	04/21/23 22:28	1
Motor Oil (>C24-C36)	ND		370	100	ug/L		04/21/23 09:31	04/21/23 22:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	67		50 - 150	04/21/23 09:31	04/21/23 22:28	1

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Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230412-MD-08-41-GW

Lab Sample ID: 580-126017-5

Date Collected: 04/12/23 17:15

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/21/23 17:20	04/24/23 18:15	1
Barium	0.022		0.020	0.0010	mg/L		04/21/23 17:20	04/24/23 18:15	1
Cadmium	ND		0.020	0.00090	mg/L		04/21/23 17:20	04/24/23 18:15	1
Chromium	ND		0.025	0.0027	mg/L		04/21/23 17:20	04/24/23 18:15	1
Lead	0.015	J	0.030	0.0027	mg/L		04/21/23 17:20	04/24/23 18:15	1
Selenium	ND		0.10	0.0087	mg/L		04/21/23 17:20	04/24/23 18:15	1
Silver	ND		0.050	0.0085	mg/L		04/21/23 17:20	04/24/23 18:15	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/18/23 09:49	04/18/23 16:11	1

Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230411-MD-14-46-GW

Lab Sample ID: 580-126017-7

Date Collected: 04/11/23 16:39

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.26	J	1.0	0.24	ug/L			04/20/23 03:52	1
Toluene	5.7		1.0	0.39	ug/L			04/20/23 03:52	1
Ethylbenzene	1.1		1.0	0.50	ug/L			04/20/23 03:52	1
m-Xylene & p-Xylene	3.6		2.0	0.53	ug/L			04/20/23 03:52	1
o-Xylene	1.2		1.0	0.39	ug/L			04/20/23 03:52	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/20/23 03:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		80 - 120		04/20/23 03:52	1
4-Bromofluorobenzene (Surr)	93		80 - 120		04/20/23 03:52	1
Toluene-d8 (Surr)	94		80 - 120		04/20/23 03:52	1
Dibromofluoromethane (Surr)	102		80 - 120		04/20/23 03:52	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	ND		50	14	ug/L			04/20/23 03:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		77 - 123		04/20/23 03:52	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.10	0.034	ug/L		04/18/23 09:28	04/26/23 00:46	1
2-Methylnaphthalene	ND		0.20	0.040	ug/L		04/18/23 09:28	04/26/23 00:46	1
Acenaphthene	ND		0.10	0.014	ug/L		04/18/23 09:28	04/26/23 00:46	1
Acenaphthylene	ND		0.051	0.0092	ug/L		04/18/23 09:28	04/26/23 00:46	1
Anthracene	ND		0.10	0.023	ug/L		04/18/23 09:28	04/26/23 00:46	1
Benzo[a]anthracene	0.017	J	0.051	0.014	ug/L		04/18/23 09:28	04/26/23 00:46	1
Benzo[a]pyrene	ND		0.10	0.023	ug/L		04/18/23 09:28	04/26/23 00:46	1
Benzo[b]fluoranthene	ND		0.10	0.023	ug/L		04/18/23 09:28	04/26/23 00:46	1
Benzo[g,h,i]perylene	0.031	J	0.051	0.012	ug/L		04/18/23 09:28	04/26/23 00:46	1
Benzo[k]fluoranthene	0.019	J	0.051	0.012	ug/L		04/18/23 09:28	04/26/23 00:46	1
Chrysene	ND		0.10	0.038	ug/L		04/18/23 09:28	04/26/23 00:46	1
Dibenz(a,h)anthracene	0.022	J	0.10	0.015	ug/L		04/18/23 09:28	04/26/23 00:46	1
Fluoranthene	ND		0.20	0.055	ug/L		04/18/23 09:28	04/26/23 00:46	1
Fluorene	ND		0.10	0.017	ug/L		04/18/23 09:28	04/26/23 00:46	1
Indeno[1,2,3-cd]pyrene	0.026	J	0.051	0.014	ug/L		04/18/23 09:28	04/26/23 00:46	1
Naphthalene	ND		0.51	0.17	ug/L		04/18/23 09:28	04/26/23 00:46	1
Phenanthrene	ND		0.10	0.032	ug/L		04/18/23 09:28	04/26/23 00:46	1
Pyrene	ND		0.10	0.034	ug/L		04/18/23 09:28	04/26/23 00:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	80		29 - 150	04/18/23 09:28	04/26/23 00:46	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		110	66	ug/L		04/21/23 09:31	04/21/23 23:05	1
Motor Oil (>C24-C36)	ND		360	98	ug/L		04/21/23 09:31	04/21/23 23:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	52		50 - 150	04/21/23 09:31	04/21/23 23:05	1

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Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230411-MD-14-46-GW

Lab Sample ID: 580-126017-7

Date Collected: 04/11/23 16:39

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/21/23 17:20	04/24/23 18:19	1
Barium	0.020		0.020	0.0010	mg/L		04/21/23 17:20	04/24/23 18:19	1
Cadmium	ND		0.020	0.00090	mg/L		04/21/23 17:20	04/24/23 18:19	1
Chromium	ND		0.025	0.0027	mg/L		04/21/23 17:20	04/24/23 18:19	1
Lead	0.010	J	0.030	0.0027	mg/L		04/21/23 17:20	04/24/23 18:19	1
Selenium	ND		0.10	0.0087	mg/L		04/21/23 17:20	04/24/23 18:19	1
Silver	ND		0.050	0.0085	mg/L		04/21/23 17:20	04/24/23 18:19	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/18/23 09:49	04/18/23 16:13	1

Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230411-MW-05-11-GW

Lab Sample ID: 580-126017-8

Date Collected: 04/11/23 18:00

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/18/23 20:53	1
Toluene	ND		1.0	0.39	ug/L			04/18/23 20:53	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/18/23 20:53	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/18/23 20:53	1
o-Xylene	ND	F1	1.0	0.39	ug/L			04/18/23 20:53	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/18/23 20:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		80 - 120		04/18/23 20:53	1
4-Bromofluorobenzene (Surr)	89		80 - 120		04/18/23 20:53	1
Toluene-d8 (Surr)	93		80 - 120		04/18/23 20:53	1
Dibromofluoromethane (Surr)	110		80 - 120		04/18/23 20:53	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	ND		50	14	ug/L			04/18/23 20:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		77 - 123		04/18/23 20:53	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.11	0.036	ug/L		04/18/23 09:28	04/25/23 22:50	1
2-Methylnaphthalene	ND		0.22	0.042	ug/L		04/18/23 09:28	04/25/23 22:50	1
Acenaphthene	0.022	J	0.11	0.015	ug/L		04/18/23 09:28	04/25/23 22:50	1
Acenaphthylene	0.012	J	0.054	0.0098	ug/L		04/18/23 09:28	04/25/23 22:50	1
Anthracene	ND		0.11	0.024	ug/L		04/18/23 09:28	04/25/23 22:50	1
Benzo[a]anthracene	0.026	J	0.054	0.015	ug/L		04/18/23 09:28	04/25/23 22:50	1
Benzo[a]pyrene	0.028	J	0.11	0.024	ug/L		04/18/23 09:28	04/25/23 22:50	1
Benzo[b]fluoranthene	0.031	J	0.11	0.024	ug/L		04/18/23 09:28	04/25/23 22:50	1
Benzo[g,h,i]perylene	0.039	J	0.054	0.013	ug/L		04/18/23 09:28	04/25/23 22:50	1
Benzo[k]fluoranthene	0.022	J	0.054	0.013	ug/L		04/18/23 09:28	04/25/23 22:50	1
Chrysene	ND		0.11	0.040	ug/L		04/18/23 09:28	04/25/23 22:50	1
Dibenz(a,h)anthracene	0.017	J	0.11	0.016	ug/L		04/18/23 09:28	04/25/23 22:50	1
Fluoranthene	ND		0.22	0.059	ug/L		04/18/23 09:28	04/25/23 22:50	1
Fluorene	0.027	J	0.11	0.018	ug/L		04/18/23 09:28	04/25/23 22:50	1
Indeno[1,2,3-cd]pyrene	0.029	J	0.054	0.015	ug/L		04/18/23 09:28	04/25/23 22:50	1
Naphthalene	ND		0.54	0.18	ug/L		04/18/23 09:28	04/25/23 22:50	1
Phenanthrene	ND		0.11	0.034	ug/L		04/18/23 09:28	04/25/23 22:50	1
Pyrene	ND		0.11	0.036	ug/L		04/18/23 09:28	04/25/23 22:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	92		29 - 150	04/18/23 09:28	04/25/23 22:50	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		120	70	ug/L		04/21/23 09:31	04/21/23 21:13	1
Motor Oil (>C24-C36)	320	J	380	100	ug/L		04/21/23 09:31	04/21/23 21:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	67		50 - 150	04/21/23 09:31	04/21/23 21:13	1

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Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230411-MW-05-11-GW

Lab Sample ID: 580-126017-8

Date Collected: 04/11/23 18:00

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/21/23 17:20	04/24/23 17:34	1
Barium	0.035		0.020	0.0010	mg/L		04/21/23 17:20	04/24/23 17:34	1
Cadmium	ND		0.020	0.00090	mg/L		04/21/23 17:20	04/24/23 17:34	1
Chromium	ND		0.025	0.0027	mg/L		04/21/23 17:20	04/24/23 17:34	1
Lead	0.0049	J	0.030	0.0027	mg/L		04/21/23 17:20	04/24/23 17:34	1
Selenium	ND		0.10	0.0087	mg/L		04/21/23 17:20	04/24/23 17:34	1
Silver	ND		0.050	0.0085	mg/L		04/21/23 17:20	04/24/23 17:34	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/18/23 09:49	04/18/23 16:15	1

Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230412-P-104-13-GW

Lab Sample ID: 580-126017-9

Date Collected: 04/12/23 09:42

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.41	J	1.0	0.24	ug/L			04/19/23 07:05	1
Toluene	0.44	J	1.0	0.39	ug/L			04/19/23 07:05	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/19/23 07:05	1
m-Xylene & p-Xylene	3.0		2.0	0.53	ug/L			04/19/23 07:05	1
o-Xylene	0.57	J	1.0	0.39	ug/L			04/19/23 07:05	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/19/23 07:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		80 - 120		04/19/23 07:05	1
4-Bromofluorobenzene (Surr)	105		80 - 120		04/19/23 07:05	1
Toluene-d8 (Surr)	94		80 - 120		04/19/23 07:05	1
Dibromofluoromethane (Surr)	105		80 - 120		04/19/23 07:05	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	650		50	14	ug/L			04/21/23 03:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		77 - 123		04/21/23 03:16	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	0.086	J	0.11	0.036	ug/L		04/18/23 09:28	04/26/23 01:05	1
2-Methylnaphthalene	0.072	J	0.22	0.042	ug/L		04/18/23 09:28	04/26/23 01:05	1
Acenaphthene	0.063	J	0.11	0.015	ug/L		04/18/23 09:28	04/26/23 01:05	1
Acenaphthylene	ND		0.054	0.0097	ug/L		04/18/23 09:28	04/26/23 01:05	1
Anthracene	ND		0.11	0.024	ug/L		04/18/23 09:28	04/26/23 01:05	1
Benzo[a]anthracene	ND		0.054	0.015	ug/L		04/18/23 09:28	04/26/23 01:05	1
Benzo[a]pyrene	ND		0.11	0.024	ug/L		04/18/23 09:28	04/26/23 01:05	1
Benzo[b]fluoranthene	ND		0.11	0.024	ug/L		04/18/23 09:28	04/26/23 01:05	1
Benzo[g,h,i]perylene	ND		0.054	0.013	ug/L		04/18/23 09:28	04/26/23 01:05	1
Benzo[k]fluoranthene	ND		0.054	0.013	ug/L		04/18/23 09:28	04/26/23 01:05	1
Chrysene	ND		0.11	0.040	ug/L		04/18/23 09:28	04/26/23 01:05	1
Dibenz[a,h]anthracene	ND		0.11	0.016	ug/L		04/18/23 09:28	04/26/23 01:05	1
Fluoranthene	ND		0.22	0.058	ug/L		04/18/23 09:28	04/26/23 01:05	1
Fluorene	0.047	J	0.11	0.018	ug/L		04/18/23 09:28	04/26/23 01:05	1
Indeno[1,2,3-cd]pyrene	ND		0.054	0.015	ug/L		04/18/23 09:28	04/26/23 01:05	1
Naphthalene	ND		0.54	0.18	ug/L		04/18/23 09:28	04/26/23 01:05	1
Phenanthrene	0.042	J	0.11	0.033	ug/L		04/18/23 09:28	04/26/23 01:05	1
Pyrene	ND		0.11	0.036	ug/L		04/18/23 09:28	04/26/23 01:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	93		29 - 150	04/18/23 09:28	04/26/23 01:05	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	170		120	70	ug/L		04/21/23 09:31	04/21/23 23:24	1
Motor Oil (>C24-C36)	100	J	380	100	ug/L		04/21/23 09:31	04/21/23 23:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	60		50 - 150	04/21/23 09:31	04/21/23 23:24	1

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Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230412-P-104-13-GW

Lab Sample ID: 580-126017-9

Date Collected: 04/12/23 09:42

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/21/23 17:20	04/24/23 18:22	1
Barium	0.33		0.020	0.0010	mg/L		04/21/23 17:20	04/24/23 18:22	1
Cadmium	ND		0.020	0.00090	mg/L		04/21/23 17:20	04/24/23 18:22	1
Chromium	ND		0.025	0.0027	mg/L		04/21/23 17:20	04/24/23 18:22	1
Lead	0.0046	J	0.030	0.0027	mg/L		04/21/23 17:20	04/24/23 18:22	1
Selenium	ND		0.10	0.0087	mg/L		04/21/23 17:20	04/24/23 18:22	1
Silver	ND		0.050	0.0085	mg/L		04/21/23 17:20	04/24/23 18:22	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/18/23 09:49	04/18/23 16:22	1

Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230412-MW-16-19-GW

Lab Sample ID: 580-126017-10

Date Collected: 04/12/23 14:21

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/19/23 07:29	1
Toluene	ND		1.0	0.39	ug/L			04/19/23 07:29	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/19/23 07:29	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/19/23 07:29	1
o-Xylene	ND		1.0	0.39	ug/L			04/19/23 07:29	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/19/23 07:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		80 - 120		04/19/23 07:29	1
4-Bromofluorobenzene (Surr)	95		80 - 120		04/19/23 07:29	1
Toluene-d8 (Surr)	93		80 - 120		04/19/23 07:29	1
Dibromofluoromethane (Surr)	109		80 - 120		04/19/23 07:29	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	470		50	14	ug/L			04/21/23 03:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		77 - 123		04/21/23 03:41	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	0.13		0.10	0.034	ug/L		04/18/23 09:28	04/26/23 01:24	1
2-Methylnaphthalene	ND		0.21	0.040	ug/L		04/18/23 09:28	04/26/23 01:24	1
Acenaphthene	0.16		0.10	0.014	ug/L		04/18/23 09:28	04/26/23 01:24	1
Acenaphthylene	0.028	J	0.052	0.0093	ug/L		04/18/23 09:28	04/26/23 01:24	1
Anthracene	0.023	J	0.10	0.023	ug/L		04/18/23 09:28	04/26/23 01:24	1
Benzo[a]anthracene	ND		0.052	0.014	ug/L		04/18/23 09:28	04/26/23 01:24	1
Benzo[a]pyrene	ND		0.10	0.023	ug/L		04/18/23 09:28	04/26/23 01:24	1
Benzo[b]fluoranthene	ND		0.10	0.023	ug/L		04/18/23 09:28	04/26/23 01:24	1
Benzo[g,h,i]perylene	ND		0.052	0.012	ug/L		04/18/23 09:28	04/26/23 01:24	1
Benzo[k]fluoranthene	ND		0.052	0.012	ug/L		04/18/23 09:28	04/26/23 01:24	1
Chrysene	ND		0.10	0.038	ug/L		04/18/23 09:28	04/26/23 01:24	1
Dibenz[a,h]anthracene	ND		0.10	0.015	ug/L		04/18/23 09:28	04/26/23 01:24	1
Fluoranthene	ND		0.21	0.056	ug/L		04/18/23 09:28	04/26/23 01:24	1
Fluorene	0.17		0.10	0.018	ug/L		04/18/23 09:28	04/26/23 01:24	1
Indeno[1,2,3-cd]pyrene	ND		0.052	0.014	ug/L		04/18/23 09:28	04/26/23 01:24	1
Naphthalene	ND		0.52	0.17	ug/L		04/18/23 09:28	04/26/23 01:24	1
Phenanthrene	ND		0.10	0.032	ug/L		04/18/23 09:28	04/26/23 01:24	1
Pyrene	0.043	J	0.10	0.034	ug/L		04/18/23 09:28	04/26/23 01:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	86		29 - 150	04/18/23 09:28	04/26/23 01:24	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	240		110	66	ug/L		04/21/23 09:31	04/21/23 23:43	1
Motor Oil (>C24-C36)	150	J	360	98	ug/L		04/21/23 09:31	04/21/23 23:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	62		50 - 150	04/21/23 09:31	04/21/23 23:43	1

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Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230412-MW-16-19-GW

Lab Sample ID: 580-126017-10

Date Collected: 04/12/23 14:21

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/21/23 17:20	04/24/23 18:33	1
Barium	0.20		0.020	0.0010	mg/L		04/21/23 17:20	04/24/23 18:33	1
Cadmium	ND		0.020	0.00090	mg/L		04/21/23 17:20	04/24/23 18:33	1
Chromium	ND		0.025	0.0027	mg/L		04/21/23 17:20	04/24/23 18:33	1
Lead	0.010	J	0.030	0.0027	mg/L		04/21/23 17:20	04/24/23 18:33	1
Selenium	ND		0.10	0.0087	mg/L		04/21/23 17:20	04/24/23 18:33	1
Silver	ND		0.050	0.0085	mg/L		04/21/23 17:20	04/24/23 18:33	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/18/23 09:49	04/18/23 16:29	1

Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230412-P-01-8-GW

Lab Sample ID: 580-126017-11

Date Collected: 04/12/23 11:53

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/19/23 07:54	1
Toluene	ND		1.0	0.39	ug/L			04/19/23 07:54	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/19/23 07:54	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/19/23 07:54	1
o-Xylene	ND		1.0	0.39	ug/L			04/19/23 07:54	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/19/23 07:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		80 - 120		04/19/23 07:54	1
4-Bromofluorobenzene (Surr)	94		80 - 120		04/19/23 07:54	1
Toluene-d8 (Surr)	93		80 - 120		04/19/23 07:54	1
Dibromofluoromethane (Surr)	106		80 - 120		04/19/23 07:54	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	ND		50	14	ug/L			04/19/23 07:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		77 - 123		04/19/23 07:54	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.10	0.034	ug/L		04/18/23 09:28	04/26/23 01:43	1
2-Methylnaphthalene	ND		0.20	0.040	ug/L		04/18/23 09:28	04/26/23 01:43	1
Acenaphthene	0.022	J	0.10	0.014	ug/L		04/18/23 09:28	04/26/23 01:43	1
Acenaphthylene	ND		0.051	0.0092	ug/L		04/18/23 09:28	04/26/23 01:43	1
Anthracene	ND		0.10	0.022	ug/L		04/18/23 09:28	04/26/23 01:43	1
Benzo[a]anthracene	ND		0.051	0.014	ug/L		04/18/23 09:28	04/26/23 01:43	1
Benzo[a]pyrene	ND		0.10	0.022	ug/L		04/18/23 09:28	04/26/23 01:43	1
Benzo[b]fluoranthene	ND		0.10	0.022	ug/L		04/18/23 09:28	04/26/23 01:43	1
Benzo[g,h,i]perylene	ND		0.051	0.012	ug/L		04/18/23 09:28	04/26/23 01:43	1
Benzo[k]fluoranthene	ND		0.051	0.012	ug/L		04/18/23 09:28	04/26/23 01:43	1
Chrysene	ND		0.10	0.038	ug/L		04/18/23 09:28	04/26/23 01:43	1
Dibenz[a,h]anthracene	ND		0.10	0.015	ug/L		04/18/23 09:28	04/26/23 01:43	1
Fluoranthene	ND		0.20	0.055	ug/L		04/18/23 09:28	04/26/23 01:43	1
Fluorene	0.020	J	0.10	0.017	ug/L		04/18/23 09:28	04/26/23 01:43	1
Indeno[1,2,3-cd]pyrene	ND		0.051	0.014	ug/L		04/18/23 09:28	04/26/23 01:43	1
Naphthalene	ND		0.51	0.17	ug/L		04/18/23 09:28	04/26/23 01:43	1
Phenanthrene	ND		0.10	0.032	ug/L		04/18/23 09:28	04/26/23 01:43	1
Pyrene	ND		0.10	0.034	ug/L		04/18/23 09:28	04/26/23 01:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	80		29 - 150	04/18/23 09:28	04/26/23 01:43	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		120	69	ug/L		04/21/23 09:31	04/22/23 00:01	1
Motor Oil (>C24-C36)	ND		370	100	ug/L		04/21/23 09:31	04/22/23 00:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	60		50 - 150	04/21/23 09:31	04/22/23 00:01	1

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Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230412-P-01-8-GW

Lab Sample ID: 580-126017-11

Date Collected: 04/12/23 11:53

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/21/23 17:20	04/24/23 18:36	1
Barium	0.0093	J	0.020	0.0010	mg/L		04/21/23 17:20	04/24/23 18:36	1
Cadmium	ND		0.020	0.00090	mg/L		04/21/23 17:20	04/24/23 18:36	1
Chromium	ND		0.025	0.0027	mg/L		04/21/23 17:20	04/24/23 18:36	1
Lead	0.0094	J	0.030	0.0027	mg/L		04/21/23 17:20	04/24/23 18:36	1
Selenium	ND		0.10	0.0087	mg/L		04/21/23 17:20	04/24/23 18:36	1
Silver	ND		0.050	0.0085	mg/L		04/21/23 17:20	04/24/23 18:36	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/18/23 09:49	04/18/23 16:31	1

Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230412-P-02-12-GW

Lab Sample ID: 580-126017-12

Date Collected: 04/12/23 13:10

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/19/23 08:19	1
Toluene	ND		1.0	0.39	ug/L			04/19/23 08:19	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/19/23 08:19	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/19/23 08:19	1
o-Xylene	ND		1.0	0.39	ug/L			04/19/23 08:19	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/19/23 08:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		80 - 120		04/19/23 08:19	1
4-Bromofluorobenzene (Surr)	101		80 - 120		04/19/23 08:19	1
Toluene-d8 (Surr)	98		80 - 120		04/19/23 08:19	1
Dibromofluoromethane (Surr)	95		80 - 120		04/19/23 08:19	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	480		50	14	ug/L			04/21/23 04:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		77 - 123		04/21/23 04:05	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.11	0.035	ug/L		04/18/23 09:28	04/26/23 02:02	1
2-Methylnaphthalene	ND		0.21	0.042	ug/L		04/18/23 09:28	04/26/23 02:02	1
Acenaphthene	0.31		0.11	0.015	ug/L		04/18/23 09:28	04/26/23 02:02	1
Acenaphthylene	0.020	J	0.053	0.0096	ug/L		04/18/23 09:28	04/26/23 02:02	1
Anthracene	0.042	J	0.11	0.023	ug/L		04/18/23 09:28	04/26/23 02:02	1
Benzo[a]anthracene	ND		0.053	0.015	ug/L		04/18/23 09:28	04/26/23 02:02	1
Benzo[a]pyrene	ND		0.11	0.023	ug/L		04/18/23 09:28	04/26/23 02:02	1
Benzo[b]fluoranthene	ND		0.11	0.023	ug/L		04/18/23 09:28	04/26/23 02:02	1
Benzo[g,h,i]perylene	ND		0.053	0.013	ug/L		04/18/23 09:28	04/26/23 02:02	1
Benzo[k]fluoranthene	ND		0.053	0.013	ug/L		04/18/23 09:28	04/26/23 02:02	1
Chrysene	ND		0.11	0.040	ug/L		04/18/23 09:28	04/26/23 02:02	1
Dibenz[a,h]anthracene	ND		0.11	0.016	ug/L		04/18/23 09:28	04/26/23 02:02	1
Fluoranthene	0.095	J	0.21	0.058	ug/L		04/18/23 09:28	04/26/23 02:02	1
Fluorene	0.36		0.11	0.018	ug/L		04/18/23 09:28	04/26/23 02:02	1
Indeno[1,2,3-cd]pyrene	ND		0.053	0.015	ug/L		04/18/23 09:28	04/26/23 02:02	1
Naphthalene	0.25	J	0.53	0.17	ug/L		04/18/23 09:28	04/26/23 02:02	1
Phenanthrene	ND		0.11	0.033	ug/L		04/18/23 09:28	04/26/23 02:02	1
Pyrene	0.059	J	0.11	0.035	ug/L		04/18/23 09:28	04/26/23 02:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	86		29 - 150	04/18/23 09:28	04/26/23 02:02	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	230		110	66	ug/L		04/25/23 09:50	04/25/23 20:36	1
Motor Oil (>C24-C36)	ND		350	97	ug/L		04/25/23 09:50	04/25/23 20:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	66		50 - 150	04/25/23 09:50	04/25/23 20:36	1

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Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230412-P-02-12-GW

Lab Sample ID: 580-126017-12

Date Collected: 04/12/23 13:10

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/21/23 17:20	04/24/23 18:40	1
Barium	0.17		0.020	0.0010	mg/L		04/21/23 17:20	04/24/23 18:40	1
Cadmium	ND		0.020	0.00090	mg/L		04/21/23 17:20	04/24/23 18:40	1
Chromium	ND		0.025	0.0027	mg/L		04/21/23 17:20	04/24/23 18:40	1
Lead	ND		0.030	0.0027	mg/L		04/21/23 17:20	04/24/23 18:40	1
Selenium	ND		0.10	0.0087	mg/L		04/21/23 17:20	04/24/23 18:40	1
Silver	ND		0.050	0.0085	mg/L		04/21/23 17:20	04/24/23 18:40	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/18/23 09:49	04/18/23 16:33	1

Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230412-P-04-13-GW

Lab Sample ID: 580-126017-13

Date Collected: 04/12/23 10:06

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.30	J	1.0	0.24	ug/L			04/19/23 08:43	1
Toluene	ND		1.0	0.39	ug/L			04/19/23 08:43	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/19/23 08:43	1
m-Xylene & p-Xylene	2.5		2.0	0.53	ug/L			04/19/23 08:43	1
o-Xylene	0.49	J	1.0	0.39	ug/L			04/19/23 08:43	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/19/23 08:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		80 - 120		04/19/23 08:43	1
4-Bromofluorobenzene (Surr)	97		80 - 120		04/19/23 08:43	1
Toluene-d8 (Surr)	94		80 - 120		04/19/23 08:43	1
Dibromofluoromethane (Surr)	98		80 - 120		04/19/23 08:43	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	610		50	14	ug/L			04/21/23 04:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		77 - 123		04/21/23 04:29	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.10	0.034	ug/L		04/18/23 09:28	04/26/23 02:22	1
2-Methylnaphthalene	ND		0.21	0.041	ug/L		04/18/23 09:28	04/26/23 02:22	1
Acenaphthene	0.017	J	0.10	0.015	ug/L		04/18/23 09:28	04/26/23 02:22	1
Acenaphthylene	ND		0.052	0.0094	ug/L		04/18/23 09:28	04/26/23 02:22	1
Anthracene	ND		0.10	0.023	ug/L		04/18/23 09:28	04/26/23 02:22	1
Benzo[a]anthracene	ND		0.052	0.015	ug/L		04/18/23 09:28	04/26/23 02:22	1
Benzo[a]pyrene	ND		0.10	0.023	ug/L		04/18/23 09:28	04/26/23 02:22	1
Benzo[b]fluoranthene	ND		0.10	0.023	ug/L		04/18/23 09:28	04/26/23 02:22	1
Benzo[g,h,i]perylene	ND		0.052	0.012	ug/L		04/18/23 09:28	04/26/23 02:22	1
Benzo[k]fluoranthene	ND		0.052	0.012	ug/L		04/18/23 09:28	04/26/23 02:22	1
Chrysene	ND		0.10	0.039	ug/L		04/18/23 09:28	04/26/23 02:22	1
Dibenz[a,h]anthracene	ND		0.10	0.016	ug/L		04/18/23 09:28	04/26/23 02:22	1
Fluoranthene	ND		0.21	0.056	ug/L		04/18/23 09:28	04/26/23 02:22	1
Fluorene	ND		0.10	0.018	ug/L		04/18/23 09:28	04/26/23 02:22	1
Indeno[1,2,3-cd]pyrene	ND		0.052	0.015	ug/L		04/18/23 09:28	04/26/23 02:22	1
Naphthalene	ND		0.52	0.17	ug/L		04/18/23 09:28	04/26/23 02:22	1
Phenanthrene	ND		0.10	0.032	ug/L		04/18/23 09:28	04/26/23 02:22	1
Pyrene	ND		0.10	0.034	ug/L		04/18/23 09:28	04/26/23 02:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	92		29 - 150	04/18/23 09:28	04/26/23 02:22	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	190		120	69	ug/L		04/25/23 09:50	04/25/23 20:55	1
Motor Oil (>C24-C36)	ND		370	100	ug/L		04/25/23 09:50	04/25/23 20:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	69		50 - 150	04/25/23 09:50	04/25/23 20:55	1

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Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230412-P-04-13-GW

Lab Sample ID: 580-126017-13

Date Collected: 04/12/23 10:06

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/21/23 17:20	04/24/23 18:43	1
Barium	0.32		0.020	0.0010	mg/L		04/21/23 17:20	04/24/23 18:43	1
Cadmium	ND		0.020	0.00090	mg/L		04/21/23 17:20	04/24/23 18:43	1
Chromium	ND		0.025	0.0027	mg/L		04/21/23 17:20	04/24/23 18:43	1
Lead	0.0054	J	0.030	0.0027	mg/L		04/21/23 17:20	04/24/23 18:43	1
Selenium	ND		0.10	0.0087	mg/L		04/21/23 17:20	04/24/23 18:43	1
Silver	ND		0.050	0.0085	mg/L		04/21/23 17:20	04/24/23 18:43	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/21/23 11:37	04/21/23 18:10	1

Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230413-P-12-18-GW

Lab Sample ID: 580-126017-14

Date Collected: 04/13/23 09:54

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/20/23 08:40	1
Toluene	ND		1.0	0.39	ug/L			04/20/23 08:40	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/20/23 08:40	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/20/23 08:40	1
o-Xylene	ND		1.0	0.39	ug/L			04/20/23 08:40	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/20/23 08:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		80 - 120		04/20/23 08:40	1
4-Bromofluorobenzene (Surr)	92		80 - 120		04/20/23 08:40	1
Toluene-d8 (Surr)	83		80 - 120		04/20/23 08:40	1
Dibromofluoromethane (Surr)	115		80 - 120		04/20/23 08:40	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	1900		50	14	ug/L			04/20/23 08:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		77 - 123		04/20/23 08:40	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		1.0	0.34	ug/L		04/19/23 10:14	04/26/23 01:53	10
2-Methylnaphthalene	ND		2.0	0.40	ug/L		04/19/23 10:14	04/26/23 01:53	10
Acenaphthene	ND		1.0	0.14	ug/L		04/19/23 10:14	04/26/23 01:53	10
Acenaphthylene	ND		0.51	0.092	ug/L		04/19/23 10:14	04/26/23 01:53	10
Anthracene	ND		1.0	0.22	ug/L		04/19/23 10:14	04/26/23 01:53	10
Benzo[a]anthracene	ND		0.51	0.14	ug/L		04/19/23 10:14	04/26/23 01:53	10
Benzo[a]pyrene	ND		1.0	0.22	ug/L		04/19/23 10:14	04/26/23 01:53	10
Benzo[b]fluoranthene	ND		1.0	0.22	ug/L		04/19/23 10:14	04/26/23 01:53	10
Benzo[g,h,i]perylene	ND		0.51	0.12	ug/L		04/19/23 10:14	04/26/23 01:53	10
Benzo[k]fluoranthene	ND		0.51	0.12	ug/L		04/19/23 10:14	04/26/23 01:53	10
Chrysene	ND		1.0	0.38	ug/L		04/19/23 10:14	04/26/23 01:53	10
Dibenz[a,h]anthracene	ND		1.0	0.15	ug/L		04/19/23 10:14	04/26/23 01:53	10
Fluoranthene	ND		2.0	0.55	ug/L		04/19/23 10:14	04/26/23 01:53	10
Fluorene	ND		1.0	0.17	ug/L		04/19/23 10:14	04/26/23 01:53	10
Indeno[1,2,3-cd]pyrene	ND		0.51	0.14	ug/L		04/19/23 10:14	04/26/23 01:53	10
Naphthalene	ND		5.1	1.7	ug/L		04/19/23 10:14	04/26/23 01:53	10
Phenanthrene	ND		1.0	0.32	ug/L		04/19/23 10:14	04/26/23 01:53	10
Pyrene	ND		1.0	0.34	ug/L		04/19/23 10:14	04/26/23 01:53	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	92		29 - 150	04/19/23 10:14	04/26/23 01:53	10

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	5300		110	66	ug/L		04/25/23 09:50	04/25/23 21:14	1
Motor Oil (>C24-C36)	580	B	360	98	ug/L		04/25/23 09:50	04/25/23 21:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	65		50 - 150	04/25/23 09:50	04/25/23 21:14	1

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Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230413-P-12-18-GW

Lab Sample ID: 580-126017-14

Date Collected: 04/13/23 09:54

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/21/23 17:20	04/24/23 18:47	1
Barium	0.24		0.020	0.0010	mg/L		04/21/23 17:20	04/24/23 18:47	1
Cadmium	ND		0.020	0.00090	mg/L		04/21/23 17:20	04/24/23 18:47	1
Chromium	ND		0.025	0.0027	mg/L		04/21/23 17:20	04/24/23 18:47	1
Lead	0.0073	J	0.030	0.0027	mg/L		04/21/23 17:20	04/24/23 18:47	1
Selenium	ND		0.10	0.0087	mg/L		04/21/23 17:20	04/24/23 18:47	1
Silver	ND		0.050	0.0085	mg/L		04/21/23 17:20	04/24/23 18:47	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/21/23 11:37	04/21/23 18:12	1

Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230413-P-23-18-GW

Lab Sample ID: 580-126017-15

Date Collected: 04/13/23 14:00

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/21/23 21:44	1
Toluene	ND		1.0	0.39	ug/L			04/21/23 21:44	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/21/23 21:44	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/21/23 21:44	1
o-Xylene	ND		1.0	0.39	ug/L			04/21/23 21:44	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/21/23 21:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		80 - 120		04/21/23 21:44	1
4-Bromofluorobenzene (Surr)	101		80 - 120		04/21/23 21:44	1
Toluene-d8 (Surr)	94		80 - 120		04/21/23 21:44	1
Dibromofluoromethane (Surr)	107		80 - 120		04/21/23 21:44	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	3900		500	140	ug/L			04/20/23 09:05	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		77 - 123		04/20/23 09:05	10

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.10	0.034	ug/L		04/19/23 10:14	04/26/23 02:17	1
2-Methylnaphthalene	ND		0.21	0.041	ug/L		04/19/23 10:14	04/26/23 02:17	1
Acenaphthene	0.97		0.10	0.015	ug/L		04/19/23 10:14	04/26/23 02:17	1
Acenaphthylene	ND		0.052	0.0094	ug/L		04/19/23 10:14	04/26/23 02:17	1
Anthracene	ND		0.10	0.023	ug/L		04/19/23 10:14	04/26/23 02:17	1
Benzo[a]anthracene	ND		0.052	0.015	ug/L		04/19/23 10:14	04/26/23 02:17	1
Benzo[a]pyrene	ND		0.10	0.023	ug/L		04/19/23 10:14	04/26/23 02:17	1
Benzo[b]fluoranthene	ND		0.10	0.023	ug/L		04/19/23 10:14	04/26/23 02:17	1
Benzo[g,h,i]perylene	ND		0.052	0.013	ug/L		04/19/23 10:14	04/26/23 02:17	1
Benzo[k]fluoranthene	ND		0.052	0.013	ug/L		04/19/23 10:14	04/26/23 02:17	1
Chrysene	ND		0.10	0.039	ug/L		04/19/23 10:14	04/26/23 02:17	1
Dibenz[a,h]anthracene	ND		0.10	0.016	ug/L		04/19/23 10:14	04/26/23 02:17	1
Fluoranthene	ND		0.21	0.056	ug/L		04/19/23 10:14	04/26/23 02:17	1
Fluorene	2.6		0.10	0.018	ug/L		04/19/23 10:14	04/26/23 02:17	1
Indeno[1,2,3-cd]pyrene	ND		0.052	0.015	ug/L		04/19/23 10:14	04/26/23 02:17	1
Naphthalene	0.36	J	0.52	0.17	ug/L		04/19/23 10:14	04/26/23 02:17	1
Phenanthrene	ND		0.10	0.032	ug/L		04/19/23 10:14	04/26/23 02:17	1
Pyrene	ND		0.10	0.034	ug/L		04/19/23 10:14	04/26/23 02:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	68		29 - 150	04/19/23 10:14	04/26/23 02:17	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	1100		120	68	ug/L		04/25/23 09:50	04/25/23 21:32	1
Motor Oil (>C24-C36)	110	J B	370	100	ug/L		04/25/23 09:50	04/25/23 21:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	76		50 - 150	04/25/23 09:50	04/25/23 21:32	1

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Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230413-P-23-18-GW

Lab Sample ID: 580-126017-15

Date Collected: 04/13/23 14:00

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/21/23 17:20	04/24/23 18:50	1
Barium	0.22		0.020	0.0010	mg/L		04/21/23 17:20	04/24/23 18:50	1
Cadmium	ND		0.020	0.00090	mg/L		04/21/23 17:20	04/24/23 18:50	1
Chromium	ND		0.025	0.0027	mg/L		04/21/23 17:20	04/24/23 18:50	1
Lead	0.0061	J	0.030	0.0027	mg/L		04/21/23 17:20	04/24/23 18:50	1
Selenium	ND		0.10	0.0087	mg/L		04/21/23 17:20	04/24/23 18:50	1
Silver	ND		0.050	0.0085	mg/L		04/21/23 17:20	04/24/23 18:50	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/21/23 11:37	04/21/23 18:15	1

Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230413-P-17-14-GW

Lab Sample ID: 580-126017-16

Date Collected: 04/13/23 11:20

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/20/23 12:42	1
Toluene	ND		1.0	0.39	ug/L			04/20/23 12:42	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/20/23 12:42	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/20/23 12:42	1
o-Xylene	ND		1.0	0.39	ug/L			04/20/23 12:42	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/20/23 12:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		80 - 120		04/20/23 12:42	1
4-Bromofluorobenzene (Surr)	93		80 - 120		04/20/23 12:42	1
Toluene-d8 (Surr)	94		80 - 120		04/20/23 12:42	1
Dibromofluoromethane (Surr)	104		80 - 120		04/20/23 12:42	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	310		50	14	ug/L			04/20/23 12:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		77 - 123		04/20/23 12:42	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.11	0.037	ug/L		04/19/23 10:14	04/26/23 02:40	1
2-Methylnaphthalene	ND		0.22	0.044	ug/L		04/19/23 10:14	04/26/23 02:40	1
Acenaphthene	0.76		0.11	0.016	ug/L		04/19/23 10:14	04/26/23 02:40	1
Acenaphthylene	ND		0.056	0.010	ug/L		04/19/23 10:14	04/26/23 02:40	1
Anthracene	ND		0.11	0.025	ug/L		04/19/23 10:14	04/26/23 02:40	1
Benzo[a]anthracene	ND		0.056	0.016	ug/L		04/19/23 10:14	04/26/23 02:40	1
Benzo[a]pyrene	ND		0.11	0.025	ug/L		04/19/23 10:14	04/26/23 02:40	1
Benzo[b]fluoranthene	ND		0.11	0.025	ug/L		04/19/23 10:14	04/26/23 02:40	1
Benzo[g,h,i]perylene	ND		0.056	0.013	ug/L		04/19/23 10:14	04/26/23 02:40	1
Benzo[k]fluoranthene	ND		0.056	0.013	ug/L		04/19/23 10:14	04/26/23 02:40	1
Chrysene	ND		0.11	0.042	ug/L		04/19/23 10:14	04/26/23 02:40	1
Dibenz[a,h]anthracene	ND		0.11	0.017	ug/L		04/19/23 10:14	04/26/23 02:40	1
Fluoranthene	ND		0.22	0.061	ug/L		04/19/23 10:14	04/26/23 02:40	1
Fluorene	1.7		0.11	0.019	ug/L		04/19/23 10:14	04/26/23 02:40	1
Indeno[1,2,3-cd]pyrene	ND		0.056	0.016	ug/L		04/19/23 10:14	04/26/23 02:40	1
Naphthalene	0.23 J		0.56	0.18	ug/L		04/19/23 10:14	04/26/23 02:40	1
Phenanthrene	ND		0.11	0.035	ug/L		04/19/23 10:14	04/26/23 02:40	1
Pyrene	ND		0.11	0.037	ug/L		04/19/23 10:14	04/26/23 02:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	76		29 - 150	04/19/23 10:14	04/26/23 02:40	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	650		120	70	ug/L		04/25/23 09:50	04/25/23 21:51	1
Motor Oil (>C24-C36)	ND		380	100	ug/L		04/25/23 09:50	04/25/23 21:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	66		50 - 150	04/25/23 09:50	04/25/23 21:51	1

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Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230413-P-17-14-GW

Lab Sample ID: 580-126017-16

Date Collected: 04/13/23 11:20

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/21/23 17:20	04/24/23 18:54	1
Barium	0.075		0.020	0.0010	mg/L		04/21/23 17:20	04/24/23 18:54	1
Cadmium	ND		0.020	0.00090	mg/L		04/21/23 17:20	04/24/23 18:54	1
Chromium	ND		0.025	0.0027	mg/L		04/21/23 17:20	04/24/23 18:54	1
Lead	0.0063	J	0.030	0.0027	mg/L		04/21/23 17:20	04/24/23 18:54	1
Selenium	ND		0.10	0.0087	mg/L		04/21/23 17:20	04/24/23 18:54	1
Silver	ND		0.050	0.0085	mg/L		04/21/23 17:20	04/24/23 18:54	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/21/23 11:37	04/21/23 18:21	1

Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230413-P-18-18-GW

Lab Sample ID: 580-126017-17

Date Collected: 04/13/23 08:31

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/20/23 13:07	1
Toluene	ND		1.0	0.39	ug/L			04/20/23 13:07	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/20/23 13:07	1
m-Xylene & p-Xylene	0.68	J	2.0	0.53	ug/L			04/20/23 13:07	1
o-Xylene	0.44	J	1.0	0.39	ug/L			04/20/23 13:07	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/20/23 13:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		80 - 120		04/20/23 13:07	1
4-Bromofluorobenzene (Surr)	101		80 - 120		04/20/23 13:07	1
Toluene-d8 (Surr)	97		80 - 120		04/20/23 13:07	1
Dibromofluoromethane (Surr)	96		80 - 120		04/20/23 13:07	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	1900		50	14	ug/L			04/20/23 13:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		77 - 123		04/20/23 13:07	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.10	0.034	ug/L		04/19/23 10:14	04/26/23 03:04	1
2-Methylnaphthalene	ND		0.21	0.041	ug/L		04/19/23 10:14	04/26/23 03:04	1
Acenaphthene	0.97		0.10	0.015	ug/L		04/19/23 10:14	04/26/23 03:04	1
Acenaphthylene	ND		0.052	0.0094	ug/L		04/19/23 10:14	04/26/23 03:04	1
Anthracene	ND		0.10	0.023	ug/L		04/19/23 10:14	04/26/23 03:04	1
Benzo[a]anthracene	ND		0.052	0.015	ug/L		04/19/23 10:14	04/26/23 03:04	1
Benzo[a]pyrene	ND		0.10	0.023	ug/L		04/19/23 10:14	04/26/23 03:04	1
Benzo[b]fluoranthene	ND		0.10	0.023	ug/L		04/19/23 10:14	04/26/23 03:04	1
Benzo[g,h,i]perylene	ND		0.052	0.012	ug/L		04/19/23 10:14	04/26/23 03:04	1
Benzo[k]fluoranthene	ND		0.052	0.012	ug/L		04/19/23 10:14	04/26/23 03:04	1
Chrysene	ND		0.10	0.038	ug/L		04/19/23 10:14	04/26/23 03:04	1
Dibenz[a,h]anthracene	ND		0.10	0.016	ug/L		04/19/23 10:14	04/26/23 03:04	1
Fluoranthene	ND		0.21	0.056	ug/L		04/19/23 10:14	04/26/23 03:04	1
Fluorene	2.1		0.10	0.018	ug/L		04/19/23 10:14	04/26/23 03:04	1
Indeno[1,2,3-cd]pyrene	ND		0.052	0.015	ug/L		04/19/23 10:14	04/26/23 03:04	1
Naphthalene	1.1		0.52	0.17	ug/L		04/19/23 10:14	04/26/23 03:04	1
Phenanthrene	0.70		0.10	0.032	ug/L		04/19/23 10:14	04/26/23 03:04	1
Pyrene	ND		0.10	0.034	ug/L		04/19/23 10:14	04/26/23 03:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	70		29 - 150	04/19/23 10:14	04/26/23 03:04	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	1200		120	68	ug/L		04/25/23 09:50	04/25/23 22:10	1
Motor Oil (>C24-C36)	ND		370	100	ug/L		04/25/23 09:50	04/25/23 22:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	65		50 - 150	04/25/23 09:50	04/25/23 22:10	1

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Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230413-P-18-18-GW

Lab Sample ID: 580-126017-17

Date Collected: 04/13/23 08:31

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/21/23 17:20	04/24/23 18:57	1
Barium	0.28		0.020	0.0010	mg/L		04/21/23 17:20	04/24/23 18:57	1
Cadmium	ND		0.020	0.00090	mg/L		04/21/23 17:20	04/24/23 18:57	1
Chromium	ND		0.025	0.0027	mg/L		04/21/23 17:20	04/24/23 18:57	1
Lead	0.0050	J	0.030	0.0027	mg/L		04/21/23 17:20	04/24/23 18:57	1
Selenium	ND		0.10	0.0087	mg/L		04/21/23 17:20	04/24/23 18:57	1
Silver	ND		0.050	0.0085	mg/L		04/21/23 17:20	04/24/23 18:57	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/21/23 11:39	04/21/23 18:23	1

Client Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: Trip Blanks

Lab Sample ID: 580-126017-18

Date Collected: 04/10/23 00:01

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/19/23 00:45	1
Toluene	ND		1.0	0.39	ug/L			04/19/23 00:45	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/19/23 00:45	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/19/23 00:45	1
o-Xylene	ND		1.0	0.39	ug/L			04/19/23 00:45	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/19/23 00:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		80 - 120		04/19/23 00:45	1
4-Bromofluorobenzene (Surr)	93		80 - 120		04/19/23 00:45	1
Toluene-d8 (Surr)	95		80 - 120		04/19/23 00:45	1
Dibromofluoromethane (Surr)	102		80 - 120		04/19/23 00:45	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	ND		50	14	ug/L			04/19/23 00:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		77 - 123		04/19/23 00:45	1

QC Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-423550/6

Matrix: Water

Analysis Batch: 423550

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/18/23 14:15	1
Toluene	ND		1.0	0.39	ug/L			04/18/23 14:15	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/18/23 14:15	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/18/23 14:15	1
o-Xylene	ND		1.0	0.39	ug/L			04/18/23 14:15	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/18/23 14:15	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		80 - 120		04/18/23 14:15	1
4-Bromofluorobenzene (Surr)	92		80 - 120		04/18/23 14:15	1
Toluene-d8 (Surr)	92		80 - 120		04/18/23 14:15	1
Dibromofluoromethane (Surr)	113		80 - 120		04/18/23 14:15	1

Lab Sample ID: LCS 580-423550/7

Matrix: Water

Analysis Batch: 423550

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	10.0	10.1		ug/L		101	80 - 122
Toluene	10.0	10.4		ug/L		104	80 - 120
Ethylbenzene	10.0	10.9		ug/L		109	80 - 120
m-Xylene & p-Xylene	10.0	10.6		ug/L		106	80 - 120
o-Xylene	10.0	10.7		ug/L		107	80 - 120
Methyl tert-butyl ether	10.0	10.1		ug/L		101	72 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	93		80 - 120
4-Bromofluorobenzene (Surr)	101		80 - 120
Toluene-d8 (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	100		80 - 120

Lab Sample ID: LCSD 580-423550/8

Matrix: Water

Analysis Batch: 423550

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	10.0	9.97		ug/L		100	80 - 122	2	14
Toluene	10.0	10.0		ug/L		100	80 - 120	4	13
Ethylbenzene	10.0	10.6		ug/L		106	80 - 120	3	14
m-Xylene & p-Xylene	10.0	10.5		ug/L		105	80 - 120	1	14
o-Xylene	10.0	10.5		ug/L		105	80 - 120	2	16
Methyl tert-butyl ether	10.0	10.2		ug/L		102	72 - 120	1	18

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		80 - 120
4-Bromofluorobenzene (Surr)	99		80 - 120
Toluene-d8 (Surr)	97		80 - 120

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QC Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-423550/8

Matrix: Water

Analysis Batch: 423550

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	102		80 - 120

Lab Sample ID: 580-126017-8 MS

Matrix: Water

Analysis Batch: 423550

Client Sample ID: 20230411-MW-05-11-GW

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	ND		10.0	10.9		ug/L		109	80 - 122
Toluene	ND		10.0	10.9		ug/L		109	80 - 120
Ethylbenzene	ND		10.0	11.5		ug/L		115	80 - 120
m-Xylene & p-Xylene	ND		10.0	11.3		ug/L		113	80 - 120
o-Xylene	ND	F1	10.0	11.2		ug/L		112	80 - 120
Methyl tert-butyl ether	ND		10.0	10.3		ug/L		103	72 - 120

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		80 - 120
4-Bromofluorobenzene (Surr)	98		80 - 120
Toluene-d8 (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	100		80 - 120

Lab Sample ID: 580-126017-8 MSD

Matrix: Water

Analysis Batch: 423550

Client Sample ID: 20230411-MW-05-11-GW

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	ND		10.0	11.6		ug/L		116	80 - 122	6	14
Toluene	ND		10.0	10.8		ug/L		108	80 - 120	1	13
Ethylbenzene	ND		10.0	11.9		ug/L		119	80 - 120	3	14
m-Xylene & p-Xylene	ND		10.0	12.0		ug/L		120	80 - 120	6	14
o-Xylene	ND	F1	10.0	12.1	F1	ug/L		121	80 - 120	8	16
Methyl tert-butyl ether	ND		10.0	11.4		ug/L		114	72 - 120	11	18

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		80 - 120
4-Bromofluorobenzene (Surr)	109		80 - 120
Toluene-d8 (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	109		80 - 120

Lab Sample ID: MB 580-423556/6

Matrix: Water

Analysis Batch: 423556

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/19/23 01:48	1
Toluene	ND		1.0	0.39	ug/L			04/19/23 01:48	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/19/23 01:48	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/19/23 01:48	1
o-Xylene	ND		1.0	0.39	ug/L			04/19/23 01:48	1

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QC Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 580-423556/6

Matrix: Water

Analysis Batch: 423556

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/19/23 01:48	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		80 - 120		04/19/23 01:48	1
4-Bromofluorobenzene (Surr)	103		80 - 120		04/19/23 01:48	1
Toluene-d8 (Surr)	89		80 - 120		04/19/23 01:48	1
Dibromofluoromethane (Surr)	116		80 - 120		04/19/23 01:48	1

Lab Sample ID: LCS 580-423556/7

Matrix: Water

Analysis Batch: 423556

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	10.0	9.70		ug/L		97	80 - 122
Toluene	10.0	9.76		ug/L		98	80 - 120
Ethylbenzene	10.0	10.4		ug/L		104	80 - 120
m-Xylene & p-Xylene	10.0	10.3		ug/L		103	80 - 120
o-Xylene	10.0	10.3		ug/L		103	80 - 120
Methyl tert-butyl ether	10.0	9.72		ug/L		97	72 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		80 - 120
4-Bromofluorobenzene (Surr)	102		80 - 120
Toluene-d8 (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	102		80 - 120

Lab Sample ID: LCSD 580-423556/8

Matrix: Water

Analysis Batch: 423556

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	10.0	9.65		ug/L		96	80 - 122	1	14
Toluene	10.0	9.46		ug/L		95	80 - 120	3	13
Ethylbenzene	10.0	10.3		ug/L		103	80 - 120	1	14
m-Xylene & p-Xylene	10.0	10.1		ug/L		101	80 - 120	1	14
o-Xylene	10.0	10.0		ug/L		100	80 - 120	3	16
Methyl tert-butyl ether	10.0	10.3		ug/L		103	72 - 120	6	18

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		80 - 120
4-Bromofluorobenzene (Surr)	99		80 - 120
Toluene-d8 (Surr)	94		80 - 120
Dibromofluoromethane (Surr)	104		80 - 120

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QC Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 580-423563/6

Matrix: Water

Analysis Batch: 423563

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.273	J	1.0	0.24	ug/L			04/18/23 16:39	1
Toluene	ND		1.0	0.39	ug/L			04/18/23 16:39	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/18/23 16:39	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/18/23 16:39	1
o-Xylene	ND		1.0	0.39	ug/L			04/18/23 16:39	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/18/23 16:39	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		80 - 120		04/18/23 16:39	1
4-Bromofluorobenzene (Surr)	92		80 - 120		04/18/23 16:39	1
Toluene-d8 (Surr)	95		80 - 120		04/18/23 16:39	1
Dibromofluoromethane (Surr)	100		80 - 120		04/18/23 16:39	1

Lab Sample ID: LCS 580-423563/7

Matrix: Water

Analysis Batch: 423563

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	10.0	10.7		ug/L		107	80 - 122
Toluene	10.0	10.4		ug/L		104	80 - 120
Ethylbenzene	10.0	10.4		ug/L		104	80 - 120
m-Xylene & p-Xylene	10.0	10.6		ug/L		106	80 - 120
o-Xylene	10.0	10.6		ug/L		106	80 - 120
Methyl tert-butyl ether	10.0	9.89		ug/L		99	72 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		80 - 120
4-Bromofluorobenzene (Surr)	96		80 - 120
Toluene-d8 (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	96		80 - 120

Lab Sample ID: LCSD 580-423563/8

Matrix: Water

Analysis Batch: 423563

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	10.0	10.6		ug/L		106	80 - 122	1	14
Toluene	10.0	10.2		ug/L		102	80 - 120	2	13
Ethylbenzene	10.0	10.3		ug/L		103	80 - 120	1	14
m-Xylene & p-Xylene	10.0	10.4		ug/L		104	80 - 120	2	14
o-Xylene	10.0	10.4		ug/L		104	80 - 120	2	16
Methyl tert-butyl ether	10.0	10.3		ug/L		103	72 - 120	4	18

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		80 - 120
4-Bromofluorobenzene (Surr)	98		80 - 120
Toluene-d8 (Surr)	98		80 - 120

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QC Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-423563/8

Matrix: Water

Analysis Batch: 423563

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	96		80 - 120

Lab Sample ID: MB 580-423571/6

Matrix: Water

Analysis Batch: 423571

Client Sample ID: Method Blank

Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/19/23 05:36	1
Toluene	ND		1.0	0.39	ug/L			04/19/23 05:36	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/19/23 05:36	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/19/23 05:36	1
o-Xylene	ND		1.0	0.39	ug/L			04/19/23 05:36	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/19/23 05:36	1

	MB	MB							
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
1,2-Dichloroethane-d4 (Surr)	99		80 - 120		04/19/23 05:36	1			
4-Bromofluorobenzene (Surr)	96		80 - 120		04/19/23 05:36	1			
Toluene-d8 (Surr)	94		80 - 120		04/19/23 05:36	1			
Dibromofluoromethane (Surr)	98		80 - 120		04/19/23 05:36	1			

Lab Sample ID: LCS 580-423571/7

Matrix: Water

Analysis Batch: 423571

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike	LCS	LCS					%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Benzene	10.0	9.89		ug/L		99	80 - 122		
Toluene	10.0	9.79		ug/L		98	80 - 120		
Ethylbenzene	10.0	9.91		ug/L		99	80 - 120		
m-Xylene & p-Xylene	10.0	9.76		ug/L		98	80 - 120		
o-Xylene	10.0	9.94		ug/L		99	80 - 120		
Methyl tert-butyl ether	10.0	9.31		ug/L		93	72 - 120		

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		80 - 120
4-Bromofluorobenzene (Surr)	99		80 - 120
Toluene-d8 (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	95		80 - 120

Lab Sample ID: LCSD 580-423571/8

Matrix: Water

Analysis Batch: 423571

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	Spike	LCSD	LCSD				%Rec	RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	10.0	10.4		ug/L		104	80 - 122	5	14
Toluene	10.0	10.0		ug/L		100	80 - 120	2	13
Ethylbenzene	10.0	9.98		ug/L		100	80 - 120	1	14
m-Xylene & p-Xylene	10.0	10.2		ug/L		102	80 - 120	4	14
o-Xylene	10.0	10.2		ug/L		102	80 - 120	3	16

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QC Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-423571/8

Matrix: Water

Analysis Batch: 423571

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methyl tert-butyl ether	10.0	9.56		ug/L		96	72 - 120	3	18

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		80 - 120
4-Bromofluorobenzene (Surr)	97		80 - 120
Toluene-d8 (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	96		80 - 120

Lab Sample ID: MB 580-423662/6

Matrix: Water

Analysis Batch: 423662

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/19/23 18:34	1
Toluene	ND		1.0	0.39	ug/L			04/19/23 18:34	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/19/23 18:34	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/19/23 18:34	1
o-Xylene	ND		1.0	0.39	ug/L			04/19/23 18:34	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/19/23 18:34	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		80 - 120		04/19/23 18:34	1
4-Bromofluorobenzene (Surr)	94		80 - 120		04/19/23 18:34	1
Toluene-d8 (Surr)	94		80 - 120		04/19/23 18:34	1
Dibromofluoromethane (Surr)	104		80 - 120		04/19/23 18:34	1

Lab Sample ID: LCS 580-423662/7

Matrix: Water

Analysis Batch: 423662

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	10.0	9.98		ug/L		100	80 - 122
Toluene	10.0	10.1		ug/L		101	80 - 120
Ethylbenzene	10.0	10.3		ug/L		103	80 - 120
m-Xylene & p-Xylene	10.0	10.3		ug/L		103	80 - 120
o-Xylene	10.0	10.3		ug/L		103	80 - 120
Methyl tert-butyl ether	10.0	9.99		ug/L		100	72 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		80 - 120
4-Bromofluorobenzene (Surr)	100		80 - 120
Toluene-d8 (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	96		80 - 120

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QC Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-423662/8

Matrix: Water

Analysis Batch: 423662

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	10.0	9.77		ug/L		98	80 - 122	2	14
Toluene	10.0	9.91		ug/L		99	80 - 120	2	13
Ethylbenzene	10.0	9.65		ug/L		96	80 - 120	6	14
m-Xylene & p-Xylene	10.0	9.76		ug/L		98	80 - 120	5	14
o-Xylene	10.0	10.1		ug/L		101	80 - 120	2	16
Methyl tert-butyl ether	10.0	9.38		ug/L		94	72 - 120	6	18

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		80 - 120
4-Bromofluorobenzene (Surr)	104		80 - 120
Toluene-d8 (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	96		80 - 120

Lab Sample ID: MB 580-423670/6

Matrix: Water

Analysis Batch: 423670

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/20/23 07:29	1
Toluene	ND		1.0	0.39	ug/L			04/20/23 07:29	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/20/23 07:29	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/20/23 07:29	1
o-Xylene	ND		1.0	0.39	ug/L			04/20/23 07:29	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/20/23 07:29	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		80 - 120		04/20/23 07:29	1
4-Bromofluorobenzene (Surr)	88		80 - 120		04/20/23 07:29	1
Toluene-d8 (Surr)	96		80 - 120		04/20/23 07:29	1
Dibromofluoromethane (Surr)	102		80 - 120		04/20/23 07:29	1

Lab Sample ID: LCS 580-423670/7

Matrix: Water

Analysis Batch: 423670

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	10.0	9.89		ug/L		99	80 - 122
Toluene	10.0	10.2		ug/L		102	80 - 120
Ethylbenzene	10.0	10.1		ug/L		101	80 - 120
m-Xylene & p-Xylene	10.0	9.93		ug/L		99	80 - 120
o-Xylene	10.0	10.0		ug/L		100	80 - 120
Methyl tert-butyl ether	10.0	8.85		ug/L		89	72 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	90		80 - 120
4-Bromofluorobenzene (Surr)	103		80 - 120
Toluene-d8 (Surr)	98		80 - 120

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QC Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 580-423670/7

Matrix: Water

Analysis Batch: 423670

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	99		80 - 120

Lab Sample ID: LCSD 580-423670/8

Matrix: Water

Analysis Batch: 423670

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	10.0	9.86		ug/L		99	80 - 122	0	14
Toluene	10.0	9.94		ug/L		99	80 - 120	2	13
Ethylbenzene	10.0	9.76		ug/L		98	80 - 120	4	14
m-Xylene & p-Xylene	10.0	9.92		ug/L		99	80 - 120	0	14
o-Xylene	10.0	10.1		ug/L		101	80 - 120	1	16
Methyl tert-butyl ether	10.0	8.89		ug/L		89	72 - 120	0	18

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		80 - 120
4-Bromofluorobenzene (Surr)	99		80 - 120
Toluene-d8 (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	98		80 - 120

Lab Sample ID: MB 580-423688/6

Matrix: Water

Analysis Batch: 423688

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/20/23 00:56	1
Toluene	ND		1.0	0.39	ug/L			04/20/23 00:56	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/20/23 00:56	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/20/23 00:56	1
o-Xylene	ND		1.0	0.39	ug/L			04/20/23 00:56	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/20/23 00:56	1

	MB	MB							
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
1,2-Dichloroethane-d4 (Surr)	112		80 - 120		04/20/23 00:56	1			
4-Bromofluorobenzene (Surr)	96		80 - 120		04/20/23 00:56	1			
Toluene-d8 (Surr)	87		80 - 120		04/20/23 00:56	1			
Dibromofluoromethane (Surr)	117		80 - 120		04/20/23 00:56	1			

Lab Sample ID: LCS 580-423688/7

Matrix: Water

Analysis Batch: 423688

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	10.0	9.67		ug/L		97	80 - 122		
Toluene	10.0	10.4		ug/L		104	80 - 120		
Ethylbenzene	10.0	10.3		ug/L		103	80 - 120		
m-Xylene & p-Xylene	10.0	10.1		ug/L		101	80 - 120		
o-Xylene	10.0	9.96		ug/L		100	80 - 120		

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QC Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 580-423688/7

Matrix: Water

Analysis Batch: 423688

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methyl tert-butyl ether	10.0	9.12		ug/L		91	72 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		80 - 120
4-Bromofluorobenzene (Surr)	97		80 - 120
Toluene-d8 (Surr)	105		80 - 120
Dibromofluoromethane (Surr)	93		80 - 120

Lab Sample ID: LCSD 580-423688/8

Matrix: Water

Analysis Batch: 423688

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	10.0	10.0		ug/L		100	80 - 122	3	14
Toluene	10.0	10.2		ug/L		102	80 - 120	2	13
Ethylbenzene	10.0	10.8		ug/L		108	80 - 120	4	14
m-Xylene & p-Xylene	10.0	10.7		ug/L		107	80 - 120	6	14
o-Xylene	10.0	10.5		ug/L		105	80 - 120	5	16
Methyl tert-butyl ether	10.0	9.94		ug/L		99	72 - 120	9	18

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		80 - 120
4-Bromofluorobenzene (Surr)	102		80 - 120
Toluene-d8 (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	99		80 - 120

Lab Sample ID: MB 580-423907/6

Matrix: Water

Analysis Batch: 423907

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/21/23 14:40	1
Toluene	ND		1.0	0.39	ug/L			04/21/23 14:40	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/21/23 14:40	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/21/23 14:40	1
o-Xylene	ND		1.0	0.39	ug/L			04/21/23 14:40	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/21/23 14:40	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		80 - 120		04/21/23 14:40	1
4-Bromofluorobenzene (Surr)	95		80 - 120		04/21/23 14:40	1
Toluene-d8 (Surr)	93		80 - 120		04/21/23 14:40	1
Dibromofluoromethane (Surr)	103		80 - 120		04/21/23 14:40	1

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QC Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 580-423907/7

Matrix: Water

Analysis Batch: 423907

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	10.0	9.30		ug/L		93	80 - 122
Toluene	10.0	9.52		ug/L		95	80 - 120
Ethylbenzene	10.0	9.59		ug/L		96	80 - 120
m-Xylene & p-Xylene	10.0	9.84		ug/L		98	80 - 120
o-Xylene	10.0	9.61		ug/L		96	80 - 120
Methyl tert-butyl ether	10.0	9.23		ug/L		92	72 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		80 - 120
4-Bromofluorobenzene (Surr)	107		80 - 120
Toluene-d8 (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	98		80 - 120

Lab Sample ID: LCSD 580-423907/8

Matrix: Water

Analysis Batch: 423907

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	10.0	9.89		ug/L		99	80 - 122	6	14
Toluene	10.0	9.95		ug/L		100	80 - 120	4	13
Ethylbenzene	10.0	9.89		ug/L		99	80 - 120	3	14
m-Xylene & p-Xylene	10.0	10.2		ug/L		102	80 - 120	4	14
o-Xylene	10.0	10.2		ug/L		102	80 - 120	6	16
Methyl tert-butyl ether	10.0	10.1		ug/L		101	72 - 120	9	18

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		80 - 120
4-Bromofluorobenzene (Surr)	101		80 - 120
Toluene-d8 (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	97		80 - 120

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Lab Sample ID: MB 580-423547/6

Matrix: Water

Analysis Batch: 423547

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	ND		50	14	ug/L			04/18/23 14:15	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		77 - 123		04/18/23 14:15	1

Eurofins Seattle

QC Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS) (Continued)

Lab Sample ID: LCS 580-423547/9

Matrix: Water

Analysis Batch: 423547

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

			Spike	LCS	LCS				%Rec		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics C7-C12			1000	1040		ug/L		104	55 - 148		
			LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	96		77 - 123								

Lab Sample ID: LCSD 580-423547/10

Matrix: Water

Analysis Batch: 423547

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

			Spike	LCSD	LCSD				%Rec	RPD	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics C7-C12			1000	1100		ug/L		110	55 - 148	5	10

Lab Sample ID: 580-126017-8 MS

Matrix: Water

Analysis Batch: 423547

Client Sample ID: 20230411-MW-05-11-GW

Prep Type: Total/NA

	Sample	Sample	Spike	MS	MS				%Rec		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics C7-C12	ND		1000	1190		ug/L		119	55 - 148		
Surrogate	MS %Recovery	MS Qualifier	Limits								
4-Bromofluorobenzene (Surr)	110		77 - 123								

Lab Sample ID: 580-126017-8 MSD

Matrix: Water

Analysis Batch: 423547

Client Sample ID: 20230411-MW-05-11-GW

Prep Type: Total/NA

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics C7-C12	ND		1000	1200		ug/L		120	55 - 148	1	10
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	104		77 - 123								

Lab Sample ID: MB 580-423553/6

Matrix: Water

Analysis Batch: 423553

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Gasoline Range Organics C7-C12	ND		50	14	ug/L			04/19/23 01:48	1
Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac			
	%Recovery	Qualifier							
4-Bromofluorobenzene (Surr)	103		77 - 123		04/19/23 01:48	1			

Eurofins Seattle

QC Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Lab Sample ID: LCS 580-423553/9

Matrix: Water

Analysis Batch: 423553

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

			Spike	LCS	LCS				%Rec		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics C7-C12			1000	1070		ug/L		107	55 - 148		
			LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	101		77 - 123								

Lab Sample ID: LCSD 580-423553/10

Matrix: Water

Analysis Batch: 423553

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte Data: 120000											
Analyte	Spike Added			LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics C7-C12	1000			1130		ug/L		113	55 - 148	6	10
Surrogate	%Recovery	LCSD Qualifier	LCSD Limits								
4-Bromofluorobenzene (Surr)	109		77 - 123								

Lab Sample ID: MB 580-423559/6

Matrix: Water

Analysis Batch: 423559

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Gasoline Range Organics C7-C12	ND		50	14	ug/L			04/18/23 16:39	1
Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac			
	%Recovery	Qualifier							
4-Bromofluorobenzene (Surr)	96		77 - 123		04/18/23 16:39	1			

Lab Sample ID: LCS 580-423559/9

Matrix: Water

Analysis Batch: 423559

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

			Spike	LCS	LCS				%Rec		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics C7-C12			1000	997		ug/L		100	55 - 148		
			LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	102		77 - 123								

Lab Sample ID: LCSD 580-423559/10

Matrix: Water

Analysis Batch: 423559

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

			Spike	LCSD	LCSD				%Rec	RPD	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics C7-C12			1000	1020		ug/L		102	55 - 148	2	10
			LCSD	LCSD							
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	102		77 - 123								

Eurofins Seattle

QC Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Lab Sample ID: MB 580-423567/6

Matrix: Water

Analysis Batch: 423567

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	ND		50	14	ug/L			04/19/23 05:36	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		77 - 123					04/19/23 05:36	1

Lab Sample ID: LCS 580-423567/9

Matrix: Water

Analysis Batch: 423567

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics C7-C12	1000	1030		ug/L		103	55 - 148		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	104		77 - 123						

Lab Sample ID: LCSD 580-423567/10

Matrix: Water

Analysis Batch: 423567

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics C7-C12	1000	991		ug/L		99	55 - 148	3	10
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	102		77 - 123						

Lab Sample ID: MB 580-423658/6

Matrix: Water

Analysis Batch: 423658

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	ND		50	14	ug/L			04/19/23 18:34	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		77 - 123					04/19/23 18:34	1

Lab Sample ID: LCS 580-423658/9

Matrix: Water

Analysis Batch: 423658

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics C7-C12	1000	985		ug/L		99	55 - 148		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	104		77 - 123						

Eurofins Seattle

QC Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS) (Continued)

Lab Sample ID: LCSD 580-423658/10

Matrix: Water

Analysis Batch: 423658

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics C7-C12	1000	997		ug/L		100	55 - 148	1	10
Surrogate	%Recovery	LCSD Qualifier	LCSD Limits						
4-Bromofluorobenzene (Surr)	104		77 - 123						

Lab Sample ID: MB 580-423666/6

Matrix: Water

Analysis Batch: 423666

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	ND		50	14	ug/L			04/20/23 07:29	1
Surrogate	%Recovery	MB Qualifier	MB Limits						
4-Bromofluorobenzene (Surr)	93		77 - 123						

Lab Sample ID: LCS 580-423666/9

Matrix: Water

Analysis Batch: 423666

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

			Spike	LCS	LCS				%Rec		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics C7-C12			1000	959		ug/L		96	55 - 148		
Surrogate	LCS	LCS									
	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	101		77 - 123								

Lab Sample ID: LCSD 580-423666/10

Matrix: Water

Analysis Batch: 423666

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics C7-C12	1000	908		ug/L		91	55 - 148	5	10
Surrogate	%Recovery	LCSD Qualifier	LCSD Limits						
4-Bromofluorobenzene (Surr)	105		77 - 123						

Lab Sample ID: MB 580-423685/6

Matrix: Water

Analysis Batch: 423685

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	ND		50	14	ug/L			04/20/23 00:56	1
Surrogate	%Recovery	MB Qualifier	MB Limits						
4-Bromofluorobenzene (Surr)	96		77 - 123						

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QC Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS) (Continued)

Lab Sample ID: LCS 580-423685/9

Matrix: Water

Analysis Batch: 423685

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

			Spike	LCS	LCS				%Rec		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics			1000	1090		ug/L		109	55 - 148		
C7-C12											
			LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	100		77 - 123								

Lab Sample ID: LCSD 580-423685/10

Matrix: Water

Analysis Batch: 423685

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

			Spike	LCSD	LCSD				%Rec	RPD	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics C7-C12			1000	1070		ug/L		107	55 - 148	1	10
			LCSD	LCSD							
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	100		77 - 123								

Lab Sample ID: MB 580-423790/6

Matrix: Water

Analysis Batch: 423790

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Gasoline Range Organics C7-C12	ND		50	14	ug/L			04/21/23 01:15	1
Surrogate	MB	MB							
	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		77 - 123					04/21/23 01:15	1

Lab Sample ID: LCS 580-423790/9

Matrix: Water

Analysis Batch: 423790

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

			Spike	LCS	LCS				%Rec		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics C7-C12			1000	999		ug/L		100	55 - 148		
			LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	104		77 - 123								

Lab Sample ID: LCSD 580-423790/10

Matrix: Water

Analysis Batch: 423790

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

			Spike	LCSD	LCSD				%Rec	RPD	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics C7-C12			1000	993		ug/L		99	55 - 148	1	10
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	110		77 - 123								

Eurofins Seattle

QC Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 580-423495/1-A

Matrix: Water

Analysis Batch: 424173

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 423495

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.10	0.033	ug/L		04/18/23 09:28	04/25/23 21:53	1
2-Methylnaphthalene	ND		0.20	0.039	ug/L		04/18/23 09:28	04/25/23 21:53	1
Acenaphthene	ND		0.10	0.014	ug/L		04/18/23 09:28	04/25/23 21:53	1
Acenaphthylene	ND		0.050	0.0090	ug/L		04/18/23 09:28	04/25/23 21:53	1
Anthracene	ND		0.10	0.022	ug/L		04/18/23 09:28	04/25/23 21:53	1
Benzo[a]anthracene	ND		0.050	0.014	ug/L		04/18/23 09:28	04/25/23 21:53	1
Benzo[a]pyrene	ND		0.10	0.022	ug/L		04/18/23 09:28	04/25/23 21:53	1
Benzo[b]fluoranthene	ND		0.10	0.022	ug/L		04/18/23 09:28	04/25/23 21:53	1
Benzo[g,h,i]perylene	ND		0.050	0.012	ug/L		04/18/23 09:28	04/25/23 21:53	1
Benzo[k]fluoranthene	ND		0.050	0.012	ug/L		04/18/23 09:28	04/25/23 21:53	1
Chrysene	ND		0.10	0.037	ug/L		04/18/23 09:28	04/25/23 21:53	1
Dibenz(a,h)anthracene	ND		0.10	0.015	ug/L		04/18/23 09:28	04/25/23 21:53	1
Fluoranthene	ND		0.20	0.054	ug/L		04/18/23 09:28	04/25/23 21:53	1
Fluorene	ND		0.10	0.017	ug/L		04/18/23 09:28	04/25/23 21:53	1
Indeno[1,2,3-cd]pyrene	ND		0.050	0.014	ug/L		04/18/23 09:28	04/25/23 21:53	1
Naphthalene	ND		0.50	0.16	ug/L		04/18/23 09:28	04/25/23 21:53	1
Phenanthrene	ND		0.10	0.031	ug/L		04/18/23 09:28	04/25/23 21:53	1
Pyrene	ND		0.10	0.033	ug/L		04/18/23 09:28	04/25/23 21:53	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	96		29 - 150	04/18/23 09:28	04/25/23 21:53	1

Lab Sample ID: LCS 580-423495/2-A

Matrix: Water

Analysis Batch: 424173

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 423495

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	8.00	5.28		ug/L		66	29 - 120
2-Methylnaphthalene	8.00	5.14		ug/L		64	33 - 120
Acenaphthene	8.00	5.66		ug/L		71	33 - 120
Acenaphthylene	8.00	5.68		ug/L		71	38 - 120
Anthracene	8.00	6.13		ug/L		77	41 - 120
Benzo[a]anthracene	8.00	6.14		ug/L		77	55 - 123
Benzo[a]pyrene	8.00	6.59		ug/L		82	51 - 120
Benzo[b]fluoranthene	8.00	6.36		ug/L		80	43 - 120
Benzo[g,h,i]perylene	8.00	7.03		ug/L		88	45 - 120
Benzo[k]fluoranthene	8.00	6.75		ug/L		84	41 - 121
Chrysene	8.00	6.46		ug/L		81	47 - 120
Dibenz(a,h)anthracene	8.00	7.21		ug/L		90	54 - 123
Fluoranthene	8.00	6.32		ug/L		79	51 - 125
Fluorene	8.00	6.16		ug/L		77	39 - 120
Indeno[1,2,3-cd]pyrene	8.00	6.84		ug/L		86	45 - 123
Naphthalene	8.00	5.26		ug/L		66	34 - 120
Phenanthrene	8.00	5.99		ug/L		75	46 - 120
Pyrene	8.00	6.37		ug/L		80	51 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	89		29 - 150

Eurofins Seattle

QC Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: LCSD 580-423495/3-A

Matrix: Water

Analysis Batch: 424173

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 423495

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	8.00	4.73		ug/L		59	29 - 120	11	35
2-Methylnaphthalene	8.00	4.59		ug/L		57	33 - 120	11	35
Acenaphthene	8.00	5.08		ug/L		63	33 - 120	11	35
Acenaphthylene	8.00	5.08		ug/L		64	38 - 120	11	35
Anthracene	8.00	5.55		ug/L		69	41 - 120	10	29
Benzo[a]anthracene	8.00	5.64		ug/L		71	55 - 123	8	31
Benzo[a]pyrene	8.00	6.06		ug/L		76	51 - 120	8	31
Benzo[b]fluoranthene	8.00	5.72		ug/L		72	43 - 120	11	35
Benzo[g,h,i]perylene	8.00	6.43		ug/L		80	45 - 120	9	35
Benzo[k]fluoranthene	8.00	6.34		ug/L		79	41 - 121	6	35
Chrysene	8.00	5.97		ug/L		75	47 - 120	8	30
Dibenz(a,h)anthracene	8.00	6.49		ug/L		81	54 - 123	11	35
Fluoranthene	8.00	5.78		ug/L		72	51 - 125	9	31
Fluorene	8.00	5.57		ug/L		70	39 - 120	10	35
Indeno[1,2,3-cd]pyrene	8.00	6.18		ug/L		77	45 - 123	10	35
Naphthalene	8.00	4.74		ug/L		59	34 - 120	10	35
Phenanthrene	8.00	5.42		ug/L		68	46 - 120	10	32
Pyrene	8.00	5.86		ug/L		73	51 - 125	8	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Terphenyl-d14	83		29 - 150

Lab Sample ID: 580-126017-8 MS

Matrix: Water

Analysis Batch: 424173

Client Sample ID: 20230411-MW-05-11-GW

Prep Type: Total/NA

Prep Batch: 423495

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	ND		8.62	4.97		ug/L		58	29 - 120
2-Methylnaphthalene	ND		8.62	4.81		ug/L		56	33 - 120
Acenaphthene	0.022	J	8.62	5.59		ug/L		65	33 - 120
Acenaphthylene	0.012	J	8.62	5.64		ug/L		65	38 - 120
Anthracene	ND		8.62	6.26		ug/L		73	41 - 120
Benzo[a]anthracene	0.026	J	8.62	6.40		ug/L		74	55 - 123
Benzo[a]pyrene	0.028	J	8.62	6.87		ug/L		79	51 - 120
Benzo[b]fluoranthene	0.031	J	8.62	6.58		ug/L		76	43 - 120
Benzo[g,h,i]perylene	0.039	J	8.62	7.33		ug/L		85	45 - 120
Benzo[k]fluoranthene	0.022	J	8.62	7.05		ug/L		81	41 - 121
Chrysene	ND		8.62	6.68		ug/L		77	47 - 120
Dibenz(a,h)anthracene	0.017	J	8.62	7.24		ug/L		84	54 - 123
Fluoranthene	ND		8.62	6.57		ug/L		76	51 - 125
Fluorene	0.027	J	8.62	6.26		ug/L		72	39 - 120
Indeno[1,2,3-cd]pyrene	0.029	J	8.62	7.19		ug/L		83	45 - 123
Naphthalene	ND		8.62	5.01		ug/L		58	34 - 120
Phenanthrene	ND		8.62	6.17		ug/L		72	46 - 120
Pyrene	ND		8.62	6.61		ug/L		77	51 - 125

Surrogate	MS %Recovery	MS Qualifier	Limits
Terphenyl-d14	88		29 - 150

Eurofins Seattle

QC Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: 580-126017-8 MSD

Matrix: Water

Analysis Batch: 424173

Client Sample ID: 20230411-MW-05-11-GW

Prep Type: Total/NA

Prep Batch: 423495

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	ND		8.76	4.58		ug/L		52	29 - 120	8	35
2-Methylnaphthalene	ND		8.76	4.36		ug/L		50	33 - 120	10	35
Acenaphthene	0.022	J	8.76	5.18		ug/L		59	33 - 120	8	35
Acenaphthylene	0.012	J	8.76	5.21		ug/L		59	38 - 120	8	35
Anthracene	ND		8.76	6.15		ug/L		70	41 - 120	2	29
Benzo[a]anthracene	0.026	J	8.76	6.37		ug/L		72	55 - 123	0	31
Benzo[a]pyrene	0.028	J	8.76	6.71		ug/L		76	51 - 120	2	31
Benzo[b]fluoranthene	0.031	J	8.76	6.37		ug/L		72	43 - 120	3	35
Benzo[g,h,i]perylene	0.039	J	8.76	7.32		ug/L		83	45 - 120	0	35
Benzo[k]fluoranthene	0.022	J	8.76	6.61		ug/L		75	41 - 121	6	35
Chrysene	ND		8.76	6.62		ug/L		76	47 - 120	1	30
Dibenz(a,h)anthracene	0.017	J	8.76	7.31		ug/L		83	54 - 123	1	35
Fluoranthene	ND		8.76	6.39		ug/L		73	51 - 125	3	31
Fluorene	0.027	J	8.76	5.80		ug/L		66	39 - 120	8	35
Indeno[1,2,3-cd]pyrene	0.029	J	8.76	6.96		ug/L		79	45 - 123	3	35
Naphthalene	ND		8.76	4.66		ug/L		53	34 - 120	7	35
Phenanthrene	ND		8.76	5.98		ug/L		68	46 - 120	3	32
Pyrene	ND		8.76	6.45		ug/L		74	51 - 125	3	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Terphenyl-d14	79		29 - 150

Lab Sample ID: MB 580-423640/1-A

Matrix: Water

Analysis Batch: 424176

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 423640

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.10	0.033	ug/L		04/19/23 10:14	04/25/23 22:41	1
2-Methylnaphthalene	ND		0.20	0.039	ug/L		04/19/23 10:14	04/25/23 22:41	1
Acenaphthene	ND		0.10	0.014	ug/L		04/19/23 10:14	04/25/23 22:41	1
Acenaphthylene	ND		0.050	0.0090	ug/L		04/19/23 10:14	04/25/23 22:41	1
Anthracene	ND		0.10	0.022	ug/L		04/19/23 10:14	04/25/23 22:41	1
Benzo[a]anthracene	ND		0.050	0.014	ug/L		04/19/23 10:14	04/25/23 22:41	1
Benzo[a]pyrene	ND		0.10	0.022	ug/L		04/19/23 10:14	04/25/23 22:41	1
Benzo[b]fluoranthene	ND		0.10	0.022	ug/L		04/19/23 10:14	04/25/23 22:41	1
Benzo[g,h,i]perylene	ND		0.050	0.012	ug/L		04/19/23 10:14	04/25/23 22:41	1
Benzo[k]fluoranthene	ND		0.050	0.012	ug/L		04/19/23 10:14	04/25/23 22:41	1
Chrysene	ND		0.10	0.037	ug/L		04/19/23 10:14	04/25/23 22:41	1
Dibenz(a,h)anthracene	ND		0.10	0.015	ug/L		04/19/23 10:14	04/25/23 22:41	1
Fluoranthene	ND		0.20	0.054	ug/L		04/19/23 10:14	04/25/23 22:41	1
Fluorene	ND		0.10	0.017	ug/L		04/19/23 10:14	04/25/23 22:41	1
Indeno[1,2,3-cd]pyrene	ND		0.050	0.014	ug/L		04/19/23 10:14	04/25/23 22:41	1
Naphthalene	ND		0.50	0.16	ug/L		04/19/23 10:14	04/25/23 22:41	1
Phenanthrene	ND		0.10	0.031	ug/L		04/19/23 10:14	04/25/23 22:41	1
Pyrene	ND		0.10	0.033	ug/L		04/19/23 10:14	04/25/23 22:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	105		29 - 150	04/19/23 10:14	04/25/23 22:41	1

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QC Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: LCS 580-423640/2-A

Matrix: Water

Analysis Batch: 424176

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 423640

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	8.00	6.25		ug/L		78	29 - 120
2-Methylnaphthalene	8.00	6.32		ug/L		79	33 - 120
Acenaphthene	8.00	6.26		ug/L		78	33 - 120
Acenaphthylene	8.00	6.81		ug/L		85	38 - 120
Anthracene	8.00	7.15		ug/L		89	41 - 120
Benzo[a]anthracene	8.00	6.66		ug/L		83	55 - 123
Benzo[a]pyrene	8.00	7.53		ug/L		94	51 - 120
Benzo[b]fluoranthene	8.00	6.80		ug/L		85	43 - 120
Benzo[g,h,i]perylene	8.00	8.52		ug/L		106	45 - 120
Benzo[k]fluoranthene	8.00	7.72		ug/L		96	41 - 121
Chrysene	8.00	7.19		ug/L		90	47 - 120
Dibenz(a,h)anthracene	8.00	8.41		ug/L		105	54 - 123
Fluoranthene	8.00	7.27		ug/L		91	51 - 125
Fluorene	8.00	6.37		ug/L		80	39 - 120
Indeno[1,2,3-cd]pyrene	8.00	8.00		ug/L		100	45 - 123
Naphthalene	8.00	5.72		ug/L		72	34 - 120
Phenanthrene	8.00	6.53		ug/L		82	46 - 120
Pyrene	8.00	7.19		ug/L		90	51 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	99		29 - 150

Lab Sample ID: LCSD 580-423640/3-A

Matrix: Water

Analysis Batch: 424176

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 423640

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	8.00	6.33		ug/L		79	29 - 120	1	35
2-Methylnaphthalene	8.00	6.40		ug/L		80	33 - 120	1	35
Acenaphthene	8.00	6.38		ug/L		80	33 - 120	2	35
Acenaphthylene	8.00	6.76		ug/L		85	38 - 120	1	35
Anthracene	8.00	7.26		ug/L		91	41 - 120	1	29
Benzo[a]anthracene	8.00	6.57		ug/L		82	55 - 123	1	31
Benzo[a]pyrene	8.00	7.38		ug/L		92	51 - 120	2	31
Benzo[b]fluoranthene	8.00	7.17		ug/L		90	43 - 120	5	35
Benzo[g,h,i]perylene	8.00	8.29		ug/L		104	45 - 120	3	35
Benzo[k]fluoranthene	8.00	6.97		ug/L		87	41 - 121	10	35
Chrysene	8.00	7.03		ug/L		88	47 - 120	2	30
Dibenz(a,h)anthracene	8.00	8.24		ug/L		103	54 - 123	2	35
Fluoranthene	8.00	7.21		ug/L		90	51 - 125	1	31
Fluorene	8.00	6.67		ug/L		83	39 - 120	5	35
Indeno[1,2,3-cd]pyrene	8.00	8.02		ug/L		100	45 - 123	0	35
Naphthalene	8.00	5.89		ug/L		74	34 - 120	3	35
Phenanthrene	8.00	6.62		ug/L		83	46 - 120	1	32
Pyrene	8.00	7.15		ug/L		89	51 - 125	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Terphenyl-d14	98		29 - 150

Eurofins Seattle

QC Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Lab Sample ID: MB 580-423635/1-B

Matrix: Water

Analysis Batch: 423886

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 423635

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		110	65	ug/L		04/19/23 09:43	04/21/23 18:56	1
Motor Oil (>C24-C36)	376		350	96	ug/L		04/19/23 09:43	04/21/23 18:56	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	67		50 - 150				04/19/23 09:43	04/21/23 18:56	1

Lab Sample ID: LCS 580-423635/2-B

Matrix: Water

Analysis Batch: 423886

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 423635

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
#2 Diesel (C10-C24)	4000	2980		ug/L		74	50 - 120		
Motor Oil (>C24-C36)	4000	3310		ug/L		83	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	74		50 - 150						

Lab Sample ID: LCSD 580-423635/3-B

Matrix: Water

Analysis Batch: 423886

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 423635

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4000	3120		ug/L		78	50 - 120	5	26
Motor Oil (>C24-C36)	4000	3420		ug/L		85	64 - 120	3	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	80		50 - 150						

Lab Sample ID: MB 580-423872/1-B

Matrix: Water

Analysis Batch: 423964

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 423872

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		110	65	ug/L		04/21/23 09:31	04/21/23 19:39	1
Motor Oil (>C24-C36)	ND		350	96	ug/L		04/21/23 09:31	04/21/23 19:39	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	59		50 - 150				04/21/23 09:31	04/21/23 19:39	1

Lab Sample ID: LCS 580-423872/2-B

Matrix: Water

Analysis Batch: 423964

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 423872

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
#2 Diesel (C10-C24)	4000	3030		ug/L		76	50 - 120		
Motor Oil (>C24-C36)	4000	3230		ug/L		81	64 - 120		

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QC Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

(Continued)

Lab Sample ID: LCS 580-423872/2-B

Matrix: Water

Analysis Batch: 423964

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 423872

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	83		50 - 150

Lab Sample ID: LCSD 580-423872/3-B

Matrix: Water

Analysis Batch: 423964

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 423872

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4000	2850		ug/L		71	50 - 120	6	26
Motor Oil (>C24-C36)	4000	3070		ug/L		77	64 - 120	5	24

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	83		50 - 150

Lab Sample ID: 580-126017-8 MS

Matrix: Water

Analysis Batch: 423964

Client Sample ID: 20230411-MW-05-11-GW

Prep Type: Total/NA

Prep Batch: 423872

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
#2 Diesel (C10-C24)	ND		4330	3360		ug/L		78	50 - 120
Motor Oil (>C24-C36)	320	J	4330	3590		ug/L		76	64 - 120

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	81		50 - 150

Lab Sample ID: 580-126017-8 MSD

Matrix: Water

Analysis Batch: 423964

Client Sample ID: 20230411-MW-05-11-GW

Prep Type: Total/NA

Prep Batch: 423872

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	ND		4270	3410		ug/L		80	50 - 120	2	26
Motor Oil (>C24-C36)	320	J	4270	3750		ug/L		80	64 - 120	4	24

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	93		50 - 150

Lab Sample ID: MB 580-424072/1-B

Matrix: Water

Analysis Batch: 424142

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 424072

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		110	65	ug/L		04/25/23 09:50	04/25/23 19:39	1
Motor Oil (>C24-C36)	101	J	350	96	ug/L		04/25/23 09:50	04/25/23 19:39	1

	MB	MB							
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
o-Terphenyl	64		50 - 150	04/25/23 09:50	04/25/23 19:39	1			

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QC Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

(Continued)

Lab Sample ID: LCS 580-424072/2-B

Matrix: Water

Analysis Batch: 424142

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 424072

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
#2 Diesel (C10-C24)	4000	3310		ug/L		83	50 - 120
Motor Oil (>C24-C36)	4000	3440		ug/L		86	64 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
o-Terphenyl	77		50 - 150				

Lab Sample ID: LCSD 580-424072/3-B

Matrix: Water

Analysis Batch: 424142

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 424072

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4000	3660		ug/L		91	50 - 120	10	26
Motor Oil (>C24-C36)	4000	3740		ug/L		93	64 - 120	8	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	96		50 - 150						

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 580-423960/23-A

Matrix: Water

Analysis Batch: 424070

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 423960

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/21/23 17:20	04/24/23 17:24	1
Barium	ND		0.020	0.0010	mg/L		04/21/23 17:20	04/24/23 17:24	1
Cadmium	ND		0.020	0.00090	mg/L		04/21/23 17:20	04/24/23 17:24	1
Chromium	ND		0.025	0.0027	mg/L		04/21/23 17:20	04/24/23 17:24	1
Lead	ND		0.030	0.0027	mg/L		04/21/23 17:20	04/24/23 17:24	1
Selenium	ND		0.10	0.0087	mg/L		04/21/23 17:20	04/24/23 17:24	1
Silver	ND		0.050	0.0085	mg/L		04/21/23 17:20	04/24/23 17:24	1

Lab Sample ID: LCS 580-423960/24-A

Matrix: Water

Analysis Batch: 424070

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 423960

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	0.977		mg/L		98	80 - 120
Barium	1.00	0.981		mg/L		98	80 - 120
Cadmium	1.00	0.991		mg/L		99	80 - 120
Chromium	1.00	1.01		mg/L		101	80 - 120
Lead	1.00	1.01		mg/L		101	80 - 120
Selenium	1.00	1.04		mg/L		104	80 - 120
Silver	1.00	0.994		mg/L		99	80 - 120

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QC Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: LCSD 580-423960/25-A

Matrix: Water

Analysis Batch: 424070

Client Sample ID: Lab Control Sample Dup

Prep Type: Total Recoverable

Prep Batch: 423960

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	1.00	0.981		mg/L		98	80 - 120	0	20
Barium	1.00	0.984		mg/L		98	80 - 120	0	20
Cadmium	1.00	0.996		mg/L		100	80 - 120	1	20
Chromium	1.00	1.02		mg/L		102	80 - 120	1	20
Lead	1.00	1.02		mg/L		102	80 - 120	0	20
Selenium	1.00	1.05		mg/L		105	80 - 120	1	20
Silver	1.00	0.993		mg/L		99	80 - 120	0	20

Lab Sample ID: 580-126017-8 MS

Matrix: Water

Analysis Batch: 424070

Client Sample ID: 20230411-MW-05-11-GW

Prep Type: Total Recoverable

Prep Batch: 423960

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	ND		1.00	0.979		mg/L		98	80 - 120		
Barium	0.035		1.00	1.02		mg/L		98	80 - 120		
Cadmium	ND		1.00	0.994		mg/L		99	80 - 120		
Chromium	ND		1.00	1.02		mg/L		102	80 - 120		
Lead	0.0049 J		1.00	1.02		mg/L		101	80 - 120		
Selenium	ND		1.00	1.05		mg/L		105	80 - 120		
Silver	ND		1.00	0.986		mg/L		99	80 - 120		

Lab Sample ID: 580-126017-8 MSD

Matrix: Water

Analysis Batch: 424070

Client Sample ID: 20230411-MW-05-11-GW

Prep Type: Total Recoverable

Prep Batch: 423960

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	ND		1.00	1.01		mg/L		101	80 - 120	3	20
Barium	0.035		1.00	1.03		mg/L		100	80 - 120	1	20
Cadmium	ND		1.00	1.01		mg/L		101	80 - 120	1	20
Chromium	ND		1.00	1.03		mg/L		103	80 - 120	1	20
Lead	0.0049 J		1.00	1.03		mg/L		103	80 - 120	2	20
Selenium	ND		1.00	1.06		mg/L		106	80 - 120	1	20
Silver	ND		1.00	0.999		mg/L		100	80 - 120	1	20

Lab Sample ID: 580-126017-8 DU

Matrix: Water

Analysis Batch: 424070

Client Sample ID: 20230411-MW-05-11-GW

Prep Type: Total Recoverable

Prep Batch: 423960

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	ND		ND		mg/L		NC	20
Barium	0.035		0.0351		mg/L		0	20
Cadmium	ND		ND		mg/L		NC	20
Chromium	ND		ND		mg/L		NC	20
Lead	0.0049 J		0.00570 J		mg/L		15	20
Selenium	ND		ND		mg/L		NC	20
Silver	ND		ND		mg/L		NC	20

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QC Sample Results

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 580-423499/26-A

Matrix: Water

Analysis Batch: 423591

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 423499

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/18/23 09:49	04/18/23 15:20	1

Lab Sample ID: LCS 580-423499/27-A

Matrix: Water

Analysis Batch: 423591

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 423499

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	2.00	2.11		ug/L		105	80 - 120

Lab Sample ID: LCSD 580-423499/28-A

Matrix: Water

Analysis Batch: 423591

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 423499

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	2.00	2.08		ug/L		104	80 - 120	1	20

Lab Sample ID: 580-126017-8 MS

Matrix: Water

Analysis Batch: 423591

Client Sample ID: 20230411-MW-05-11-GW

Prep Type: Total/NA

Prep Batch: 423499

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		2.00	1.94		ug/L		97	80 - 120

Lab Sample ID: 580-126017-8 MSD

Matrix: Water

Analysis Batch: 423591

Client Sample ID: 20230411-MW-05-11-GW

Prep Type: Total/NA

Prep Batch: 423499

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		2.00	1.98		ug/L		99	80 - 120	2	20

Lab Sample ID: MB 580-423910/22-A

Matrix: Water

Analysis Batch: 423966

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 423910

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/21/23 11:39	04/21/23 17:19	1

Lab Sample ID: LCS 580-423910/23-A

Matrix: Water

Analysis Batch: 423966

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 423910

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	2.00	2.06		ug/L		103	80 - 120

Lab Sample ID: LCSD 580-423910/24-A

Matrix: Water

Analysis Batch: 423966

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 423910

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	2.00	2.16		ug/L		108	80 - 120	5	20

Eurofins Seattle

Lab Chronicle

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230413-MD-01-35-GW

Lab Sample ID: 580-126017-1

Date Collected: 04/13/23 12:03

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423688	ITR	EET SEA	04/20/23 07:51
Total/NA	Analysis	NWTPH-Gx		1	423685	ITR	EET SEA	04/20/23 07:51
Total/NA	Prep	3510C			423640	TGO	EET SEA	04/19/23 10:14
Total/NA	Analysis	8270E SIM		1	424176	T1L	EET SEA	04/26/23 01:05
Total/NA	Prep	3510C			423872	TGO	EET SEA	04/21/23 09:31
Total/NA	Cleanup	3630C			423873	TGO	EET SEA	04/21/23 09:37
Total/NA	Analysis	NWTPH-Dx		1	423964	KLW	EET SEA	04/21/23 20:35
Total Recoverable	Prep	3005A			423960	JLS	EET SEA	04/21/23 17:20
Total Recoverable	Analysis	6010D		1	424070	JLS	EET SEA	04/24/23 18:01
Total/NA	Prep	7470A			423499	TMH	EET SEA	04/18/23 09:49
Total/NA	Analysis	7470A		1	423591	JL	EET SEA	04/18/23 16:02

Client Sample ID: 20230410-MD-02-35-GW

Lab Sample ID: 580-126017-2

Date Collected: 04/10/23 17:20

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423550	ITR	EET SEA	04/18/23 19:38
Total/NA	Analysis	NWTPH-Gx		1	423547	ITR	EET SEA	04/18/23 19:38
Total/NA	Prep	3510C	RE		423495	TGO	EET SEA	04/18/23 09:28
Total/NA	Analysis	8270E SIM	RE	1	424173	T1L	EET SEA	04/25/23 23:48
Total/NA	Prep	3510C			423635	TGO	EET SEA	04/19/23 09:43
Total/NA	Cleanup	3630C			423636	TGO	EET SEA	04/19/23 09:52
Total/NA	Analysis	NWTPH-Dx		1	423886	KLW	EET SEA	04/21/23 21:58
Total Recoverable	Prep	3005A			423960	JLS	EET SEA	04/21/23 17:20
Total Recoverable	Analysis	6010D		1	424070	JLS	EET SEA	04/24/23 18:04
Total/NA	Prep	7470A			423499	TMH	EET SEA	04/18/23 09:49
Total/NA	Analysis	7470A		1	423591	JL	EET SEA	04/18/23 16:04

Client Sample ID: 20230412-MD-06-45-GW

Lab Sample ID: 580-126017-3

Date Collected: 04/12/23 17:40

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423571	ITR	EET SEA	04/19/23 11:41
Total/NA	Analysis	NWTPH-Gx		1	423567	ITR	EET SEA	04/19/23 11:41
Total/NA	Prep	3510C			423495	TGO	EET SEA	04/18/23 09:28
Total/NA	Analysis	8270E SIM		1	424173	T1L	EET SEA	04/26/23 00:07
Total/NA	Prep	3510C			423872	TGO	EET SEA	04/21/23 09:31
Total/NA	Cleanup	3630C			423873	TGO	EET SEA	04/21/23 09:37
Total/NA	Analysis	NWTPH-Dx		1	423964	KLW	EET SEA	04/21/23 20:54
Total Recoverable	Prep	3005A			423960	JLS	EET SEA	04/21/23 17:20
Total Recoverable	Analysis	6010D		1	424070	JLS	EET SEA	04/24/23 18:08
Total/NA	Prep	7470A			423499	TMH	EET SEA	04/18/23 09:49
Total/NA	Analysis	7470A		1	423591	JL	EET SEA	04/18/23 16:06

Eurofins Seattle

Lab Chronicle

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230413-MD-07-39-GW

Lab Sample ID: 580-126017-4

Date Collected: 04/13/23 08:50

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423688	ITR	EET SEA	04/20/23 08:16
Total/NA	Analysis	NWTPH-Gx		1	423685	ITR	EET SEA	04/20/23 08:16
Total/NA	Prep	3510C			423640	TGO	EET SEA	04/19/23 10:14
Total/NA	Analysis	8270E SIM		1	424176	T1L	EET SEA	04/26/23 01:29
Total/NA	Prep	3510C			423872	TGO	EET SEA	04/21/23 09:31
Total/NA	Cleanup	3630C			423873	TGO	EET SEA	04/21/23 09:37
Total/NA	Analysis	NWTPH-Dx		1	423964	KLW	EET SEA	04/21/23 22:09
Total Recoverable	Prep	3005A			423960	JLS	EET SEA	04/21/23 17:20
Total Recoverable	Analysis	6010D		1	424070	JLS	EET SEA	04/24/23 18:12
Total/NA	Prep	7470A			423499	TMH	EET SEA	04/18/23 09:49
Total/NA	Analysis	7470A		1	423591	JL	EET SEA	04/18/23 16:09

Client Sample ID: 20230412-MD-08-41-GW

Lab Sample ID: 580-126017-5

Date Collected: 04/12/23 17:15

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423571	ITR	EET SEA	04/19/23 12:05
Total/NA	Analysis	NWTPH-Gx		1	423567	ITR	EET SEA	04/19/23 12:05
Total/NA	Prep	3510C			423495	TGO	EET SEA	04/18/23 09:28
Total/NA	Analysis	8270E SIM		1	424173	T1L	EET SEA	04/26/23 00:27
Total/NA	Prep	3510C			423872	TGO	EET SEA	04/21/23 09:31
Total/NA	Cleanup	3630C			423873	TGO	EET SEA	04/21/23 09:37
Total/NA	Analysis	NWTPH-Dx		1	423964	KLW	EET SEA	04/21/23 22:28
Total Recoverable	Prep	3005A			423960	JLS	EET SEA	04/21/23 17:20
Total Recoverable	Analysis	6010D		1	424070	JLS	EET SEA	04/24/23 18:15
Total/NA	Prep	7470A			423499	TMH	EET SEA	04/18/23 09:49
Total/NA	Analysis	7470A		1	423591	JL	EET SEA	04/18/23 16:11

Client Sample ID: 20230411-MD-14-46-GW

Lab Sample ID: 580-126017-7

Date Collected: 04/11/23 16:39

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423662	ITR	EET SEA	04/20/23 03:52
Total/NA	Analysis	NWTPH-Gx		1	423658	ITR	EET SEA	04/20/23 03:52
Total/NA	Prep	3510C			423495	TGO	EET SEA	04/18/23 09:28
Total/NA	Analysis	8270E SIM		1	424173	T1L	EET SEA	04/26/23 00:46
Total/NA	Prep	3510C			423872	TGO	EET SEA	04/21/23 09:31
Total/NA	Cleanup	3630C			423873	TGO	EET SEA	04/21/23 09:37
Total/NA	Analysis	NWTPH-Dx		1	423964	KLW	EET SEA	04/21/23 23:05
Total Recoverable	Prep	3005A			423960	JLS	EET SEA	04/21/23 17:20
Total Recoverable	Analysis	6010D		1	424070	JLS	EET SEA	04/24/23 18:19
Total/NA	Prep	7470A			423499	TMH	EET SEA	04/18/23 09:49
Total/NA	Analysis	7470A		1	423591	JL	EET SEA	04/18/23 16:13

Eurofins Seattle

Lab Chronicle

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230411-MW-05-11-GW

Lab Sample ID: 580-126017-8

Date Collected: 04/11/23 18:00

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423550	ITR	EET SEA	04/18/23 20:53
Total/NA	Analysis	NWTPH-Gx		1	423547	ITR	EET SEA	04/18/23 20:53
Total/NA	Prep	3510C			423495	TGO	EET SEA	04/18/23 09:28
Total/NA	Analysis	8270E SIM		1	424173	T1L	EET SEA	04/25/23 22:50
Total/NA	Prep	3510C			423872	TGO	EET SEA	04/21/23 09:31
Total/NA	Cleanup	3630C			423873	TGO	EET SEA	04/21/23 09:37
Total/NA	Analysis	NWTPH-Dx		1	423964	KLW	EET SEA	04/21/23 21:13
Total Recoverable	Prep	3005A			423960	JLS	EET SEA	04/21/23 17:20
Total Recoverable	Analysis	6010D		1	424070	JLS	EET SEA	04/24/23 17:34
Total/NA	Prep	7470A			423499	TMH	EET SEA	04/18/23 09:49
Total/NA	Analysis	7470A		1	423591	JL	EET SEA	04/18/23 16:15

Client Sample ID: 20230412-P-104-13-GW

Lab Sample ID: 580-126017-9

Date Collected: 04/12/23 09:42

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423556	ITR	EET SEA	04/19/23 07:05
Total/NA	Analysis	NWTPH-Gx		1	423790	ITR	EET SEA	04/21/23 03:16
Total/NA	Prep	3510C			423495	TGO	EET SEA	04/18/23 09:28
Total/NA	Analysis	8270E SIM		1	424173	T1L	EET SEA	04/26/23 01:05
Total/NA	Prep	3510C			423872	TGO	EET SEA	04/21/23 09:31
Total/NA	Cleanup	3630C			423873	TGO	EET SEA	04/21/23 09:37
Total/NA	Analysis	NWTPH-Dx		1	423964	KLW	EET SEA	04/21/23 23:24
Total Recoverable	Prep	3005A			423960	JLS	EET SEA	04/21/23 17:20
Total Recoverable	Analysis	6010D		1	424070	JLS	EET SEA	04/24/23 18:22
Total/NA	Prep	7470A			423499	TMH	EET SEA	04/18/23 09:49
Total/NA	Analysis	7470A		1	423591	JL	EET SEA	04/18/23 16:22

Client Sample ID: 20230412-MW-16-19-GW

Lab Sample ID: 580-126017-10

Date Collected: 04/12/23 14:21

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423556	ITR	EET SEA	04/19/23 07:29
Total/NA	Analysis	NWTPH-Gx		1	423790	ITR	EET SEA	04/21/23 03:41
Total/NA	Prep	3510C			423495	TGO	EET SEA	04/18/23 09:28
Total/NA	Analysis	8270E SIM		1	424173	T1L	EET SEA	04/26/23 01:24
Total/NA	Prep	3510C			423872	TGO	EET SEA	04/21/23 09:31
Total/NA	Cleanup	3630C			423873	TGO	EET SEA	04/21/23 09:37
Total/NA	Analysis	NWTPH-Dx		1	423964	KLW	EET SEA	04/21/23 23:43
Total Recoverable	Prep	3005A			423960	JLS	EET SEA	04/21/23 17:20
Total Recoverable	Analysis	6010D		1	424070	JLS	EET SEA	04/24/23 18:33
Total/NA	Prep	7470A			423499	TMH	EET SEA	04/18/23 09:49
Total/NA	Analysis	7470A		1	423591	JL	EET SEA	04/18/23 16:29

Eurofins Seattle

Lab Chronicle

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230412-P-01-8-GW

Lab Sample ID: 580-126017-11

Date Collected: 04/12/23 11:53

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423556	ITR	EET SEA	04/19/23 07:54
Total/NA	Analysis	NWTPH-Gx		1	423553	ITR	EET SEA	04/19/23 07:54
Total/NA	Prep	3510C			423495	TGO	EET SEA	04/18/23 09:28
Total/NA	Analysis	8270E SIM		1	424173	T1L	EET SEA	04/26/23 01:43
Total/NA	Prep	3510C			423872	TGO	EET SEA	04/21/23 09:31
Total/NA	Cleanup	3630C			423873	TGO	EET SEA	04/21/23 09:37
Total/NA	Analysis	NWTPH-Dx		1	423964	KLW	EET SEA	04/22/23 00:01
Total Recoverable	Prep	3005A			423960	JLS	EET SEA	04/21/23 17:20
Total Recoverable	Analysis	6010D		1	424070	JLS	EET SEA	04/24/23 18:36
Total/NA	Prep	7470A			423499	TMH	EET SEA	04/18/23 09:49
Total/NA	Analysis	7470A		1	423591	JL	EET SEA	04/18/23 16:31

Client Sample ID: 20230412-P-02-12-GW

Lab Sample ID: 580-126017-12

Date Collected: 04/12/23 13:10

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423556	ITR	EET SEA	04/19/23 08:19
Total/NA	Analysis	NWTPH-Gx		1	423790	ITR	EET SEA	04/21/23 04:05
Total/NA	Prep	3510C			423495	TGO	EET SEA	04/18/23 09:28
Total/NA	Analysis	8270E SIM		1	424173	T1L	EET SEA	04/26/23 02:02
Total/NA	Prep	3510C			424072	TGO	EET SEA	04/25/23 09:50
Total/NA	Cleanup	3630C			424074	TGO	EET SEA	04/25/23 09:56
Total/NA	Analysis	NWTPH-Dx		1	424142	KLW	EET SEA	04/25/23 20:36
Total Recoverable	Prep	3005A			423960	JLS	EET SEA	04/21/23 17:20
Total Recoverable	Analysis	6010D		1	424070	JLS	EET SEA	04/24/23 18:40
Total/NA	Prep	7470A			423499	TMH	EET SEA	04/18/23 09:49
Total/NA	Analysis	7470A		1	423591	JL	EET SEA	04/18/23 16:33

Client Sample ID: 20230412-P-04-13-GW

Lab Sample ID: 580-126017-13

Date Collected: 04/12/23 10:06

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423556	ITR	EET SEA	04/19/23 08:43
Total/NA	Analysis	NWTPH-Gx		1	423790	ITR	EET SEA	04/21/23 04:29
Total/NA	Prep	3510C			423495	TGO	EET SEA	04/18/23 09:28
Total/NA	Analysis	8270E SIM		1	424173	T1L	EET SEA	04/26/23 02:22
Total/NA	Prep	3510C			424072	TGO	EET SEA	04/25/23 09:50
Total/NA	Cleanup	3630C			424074	TGO	EET SEA	04/25/23 09:56
Total/NA	Analysis	NWTPH-Dx		1	424142	KLW	EET SEA	04/25/23 20:55
Total Recoverable	Prep	3005A			423960	JLS	EET SEA	04/21/23 17:20
Total Recoverable	Analysis	6010D		1	424070	JLS	EET SEA	04/24/23 18:43
Total/NA	Prep	7470A			423910	JL	EET SEA	04/21/23 11:37
Total/NA	Analysis	7470A		1	423966	JL	EET SEA	04/21/23 18:10

Eurofins Seattle

Lab Chronicle

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230413-P-12-18-GW

Lab Sample ID: 580-126017-14

Date Collected: 04/13/23 09:54

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423688	ITR	EET SEA	04/20/23 08:40
Total/NA	Analysis	NWTPH-Gx		1	423685	ITR	EET SEA	04/20/23 08:40
Total/NA	Prep	3510C			423640	TGO	EET SEA	04/19/23 10:14
Total/NA	Analysis	8270E SIM		10	424176	T1L	EET SEA	04/26/23 01:53
Total/NA	Prep	3510C			424072	TGO	EET SEA	04/25/23 09:50
Total/NA	Cleanup	3630C			424074	TGO	EET SEA	04/25/23 09:56
Total/NA	Analysis	NWTPH-Dx		1	424142	KLW	EET SEA	04/25/23 21:14
Total Recoverable	Prep	3005A			423960	JLS	EET SEA	04/21/23 17:20
Total Recoverable	Analysis	6010D		1	424070	JLS	EET SEA	04/24/23 18:47
Total/NA	Prep	7470A			423910	JL	EET SEA	04/21/23 11:37
Total/NA	Analysis	7470A		1	423966	JL	EET SEA	04/21/23 18:12

Client Sample ID: 20230413-P-23-18-GW

Lab Sample ID: 580-126017-15

Date Collected: 04/13/23 14:00

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423907	ITR	EET SEA	04/21/23 21:44
Total/NA	Analysis	NWTPH-Gx		10	423685	ITR	EET SEA	04/20/23 09:05
Total/NA	Prep	3510C			423640	TGO	EET SEA	04/19/23 10:14
Total/NA	Analysis	8270E SIM		1	424176	T1L	EET SEA	04/26/23 02:17
Total/NA	Prep	3510C			424072	TGO	EET SEA	04/25/23 09:50
Total/NA	Cleanup	3630C			424074	TGO	EET SEA	04/25/23 09:56
Total/NA	Analysis	NWTPH-Dx		1	424142	KLW	EET SEA	04/25/23 21:32
Total Recoverable	Prep	3005A			423960	JLS	EET SEA	04/21/23 17:20
Total Recoverable	Analysis	6010D		1	424070	JLS	EET SEA	04/24/23 18:50
Total/NA	Prep	7470A			423910	JL	EET SEA	04/21/23 11:37
Total/NA	Analysis	7470A		1	423966	JL	EET SEA	04/21/23 18:15

Client Sample ID: 20230413-P-17-14-GW

Lab Sample ID: 580-126017-16

Date Collected: 04/13/23 11:20

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423670	ITR	EET SEA	04/20/23 12:42
Total/NA	Analysis	NWTPH-Gx		1	423666	ITR	EET SEA	04/20/23 12:42
Total/NA	Prep	3510C			423640	TGO	EET SEA	04/19/23 10:14
Total/NA	Analysis	8270E SIM		1	424176	T1L	EET SEA	04/26/23 02:40
Total/NA	Prep	3510C			424072	TGO	EET SEA	04/25/23 09:50
Total/NA	Cleanup	3630C			424074	TGO	EET SEA	04/25/23 09:56
Total/NA	Analysis	NWTPH-Dx		1	424142	KLW	EET SEA	04/25/23 21:51
Total Recoverable	Prep	3005A			423960	JLS	EET SEA	04/21/23 17:20
Total Recoverable	Analysis	6010D		1	424070	JLS	EET SEA	04/24/23 18:54
Total/NA	Prep	7470A			423910	JL	EET SEA	04/21/23 11:37
Total/NA	Analysis	7470A		1	423966	JL	EET SEA	04/21/23 18:21

Eurofins Seattle

Lab Chronicle

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230413-P-18-18-GW

Lab Sample ID: 580-126017-17

Date Collected: 04/13/23 08:31

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423670	ITR	EET SEA	04/20/23 13:07
Total/NA	Analysis	NWTPH-Gx		1	423666	ITR	EET SEA	04/20/23 13:07
Total/NA	Prep	3510C			423640	TGO	EET SEA	04/19/23 10:14
Total/NA	Analysis	8270E SIM		1	424176	T1L	EET SEA	04/26/23 03:04
Total/NA	Prep	3510C			424072	TGO	EET SEA	04/25/23 09:50
Total/NA	Cleanup	3630C			424074	TGO	EET SEA	04/25/23 09:56
Total/NA	Analysis	NWTPH-Dx		1	424142	KLW	EET SEA	04/25/23 22:10
Total Recoverable	Prep	3005A			423960	JLS	EET SEA	04/21/23 17:20
Total Recoverable	Analysis	6010D		1	424070	JLS	EET SEA	04/24/23 18:57
Total/NA	Prep	7470A			423910	JL	EET SEA	04/21/23 11:39
Total/NA	Analysis	7470A		1	423966	JL	EET SEA	04/21/23 18:23

Client Sample ID: Trip Blanks

Lab Sample ID: 580-126017-18

Date Collected: 04/10/23 00:01

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423563	ITR	EET SEA	04/19/23 00:45
Total/NA	Analysis	NWTPH-Gx		1	423559	ITR	EET SEA	04/19/23 00:45

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126017-1

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4167	07-07-23

1
2
3
4
5
6
7
8
9
10
11
12

Sample Summary

Client: AECOM

Job ID: 580-126017-1

Project/Site: SMP Portland Terminal Response Action GWM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-126017-1	20230413-MD-01-35-GW	Water	04/13/23 12:03	04/13/23 16:00
580-126017-2	20230410-MD-02-35-GW	Water	04/10/23 17:20	04/13/23 16:00
580-126017-3	20230412-MD-06-45-GW	Water	04/12/23 17:40	04/13/23 16:00
580-126017-4	20230413-MD-07-39-GW	Water	04/13/23 08:50	04/13/23 16:00
580-126017-5	20230412-MD-08-41-GW	Water	04/12/23 17:15	04/13/23 16:00
580-126017-7	20230411-MD-14-46-GW	Water	04/11/23 16:39	04/13/23 16:00
580-126017-8	20230411-MW-05-11-GW	Water	04/11/23 18:00	04/13/23 16:00
580-126017-9	20230412-P-104-13-GW	Water	04/12/23 09:42	04/13/23 16:00
580-126017-10	20230412-MW-16-19-GW	Water	04/12/23 14:21	04/13/23 16:00
580-126017-11	20230412-P-01-8-GW	Water	04/12/23 11:53	04/13/23 16:00
580-126017-12	20230412-P-02-12-GW	Water	04/12/23 13:10	04/13/23 16:00
580-126017-13	20230412-P-04-13-GW	Water	04/12/23 10:06	04/13/23 16:00
580-126017-14	20230413-P-12-18-GW	Water	04/13/23 09:54	04/13/23 16:00
580-126017-15	20230413-P-23-18-GW	Water	04/13/23 14:00	04/13/23 16:00
580-126017-16	20230413-P-17-14-GW	Water	04/13/23 11:20	04/13/23 16:00
580-126017-17	20230413-P-18-18-GW	Water	04/13/23 08:31	04/13/23 16:00
580-126017-18	Trip Blanks	Water	04/10/23 00:01	04/13/23 16:00

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:						Project Manager: Tom Blalobok					
Client Contact						Email: Shira.Degroot@aecom.com					
AECOM						971-323-6281					
888 SW 5th Ave, Suite 600 Portland, Oregon 97204 (971) 323-6262											
503-561-6882 FAX											
Project Name: SMP Portland Terminal											
Task: Response Action GWM											
Project # 60556219.6 PO#148419 (Line 2)											

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	NWTPH-Dx w/ silica gel clean up	NWTPH-GX	BTEX + MTBE EPA 8260D	PAHs Low-Level, EPA 8270E(SIM), standard list	Total RCRAs Metals EPA 6010D/470A	Date:	COC No.
20230413-MD-01-35-GW	4/13/23	1203	Grab	Water	10	N		X	X	X	X		4/13/20023	1 of 2 COCs
20230410-MD-02-35-GW	4/10/23	1720	Grab	Water	10	N		X	X	X	X			
20230412-MD-06-45-GW	4/12/23	1740	Grab	Water	10	N		X	X	X	X			
20230413-MD-07-39-GW	4/13/23	0850	Grab	Water	10	N		X	X	X	X			
20230412-MD-08-41-GW	4/12/23	1715	Grab	Water	10	N		X	X	X	X			
20230413-P-12-18-GW	4/13/23	0854	Grab	Water	10	N		X	X	X	X			
20230411-MD-14-46-GW	4/11/23	1639	Grab	Water	10	N		X	X	X	X			
20230411-MW-05 -11-GW-MS/MSD	4/11/23	1800	Grab	Water	10	N		X	X	X	X			
20230412-P-104-13-GW	4/12/23	0942	Grab	Water	10	N		X	X	X	X			
20230412-MM-16-19-GW	4/12/23	1421	Grab	Water	10	N		X	X	X	X			
20230412-P-01-8 -GW	4/12/23	1153	Grab	Water	10	N		X	X	X	X			
20230412-P-02-12-GW	4/12/23	1310	Grab	Water	10	N		X	X	X	X			
20230412-P-04-13-GW	4/12/23	1006	Grab	Water	10	N		X	X	X	X			


 580-126017 Chain of Custody

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other	
Possible Hazard Identification:	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.	
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months	

Custody Seal Intact: ☐ Yes ☐ No	Custody Seal No.:
Relinquished by: [Signature]	Company: AECOM
Relinquished by:	Company:
Relinquished by:	Company:

1.7, 1.3, 0.5, 2.2

Received by: [Signature]	Company: ECTA	Con'd:	Therm ID No.:
Date/Time: 4/15/23	Date/Time: 4/13/23	Date/Time: 1600	Date/Time:
Date/Time:	Date/Time:	Date/Time:	Date/Time:

Eurofins TestAmerica, Portland

8920 SW Gemini Dr (Building 7)

Beaverton, OR 97008-7123

phone 503.906.9200

Chain of Custody Record

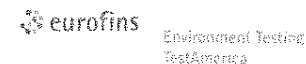
Environment Testing
TestAmericaRegulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact		Project Manager: Tom Bialobok		Site Contact: Edward Le Cocq		Date: 4/13/2023		COC No:						
AECOM		Email: Shira.Degroot@aecom.com		Lab Contact: Elaine Walker		Carrier:		1 of 2 COCs						
888 SW 5th Ave, Suite 600		Analysis Turnaround Time						Sampler:						
Portland, Oregon 97204		☐ CALENDAR DAYS ☒ WORKING DAYS						For Lab Use Only:						
(971) 323-6262		TAT if different from Below _____						Walk-in Client:						
503-961-8562@efaxds.com FAX		☒ 2 weeks						Lab Sampling:						
Project Name: SMP Portland Terminal		☐ 1 week						Job / SDG No.:						
Task: Response Action GWM		☐ 2 days												
Project # 60556219 6 PO#148419 (Line 2)		☐ 1 day												
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	NWTPH-Dx w/ silica gel clean up	NWTPH-Gx	BTEX + MTBE EPA 8260D	PAHs Low-Level, EPA 8270E(SIM), standard list	Total RCRA8 Metals EPA 8010D/7470A	Sample Specific Notes:	
20230413-MD-01-35-GW	4/13/23	1203	Grab	Water	10	N	X	X	X	X	X	X		
20230410-MD-02-35-GW	4/10/23	1720	Grab	Water	10	N	X	X	X	X	X	X		
20230412-MD-06-45-GW	4/12/23	1740	Grab	Water	10	N	X	X	X	X	X	X		
20230413-MD-07-39-GW	4/13/23	0850	Grab	Water	10	N	X	X	X	X	X	X		
20230412-MD-08-41-GW	4/12/23	1715	Grab	Water	10	N	X	X	X	X	X	X		
20230413-P-12-18-GW	4/13/23	0954	Grab	Water	10	N	X	X	X	X	X	X		
20230411-MD-14-46-GW	4/11/23	1639	Grab	Water	10	N	X	X	X	X	X	X		
20230411-MW-05-11-GW-MS/MSD	4/11/23	1800	Grab	Water	10	N	X	X	X	X	X	X		
20230412-P-104-13-GW	4/12/23	0942	Grab	Water	10	N	X	X	X	X	X	X		
20230412-MW-16-19-GW	4/12/23	1421	Grab	Water	10	N	X	X	X	X	X	X		
20230412-P-01-8-GW	4/12/23	1153	Grab	Water	10	N	X	X	X	X	X	X		
20230412-P-02-12-GW	4/12/23	1310	Grab	Water	10	N	X	X	X	X	X	X		
20230412-P-04-13-GW	4/12/23	1006	Grab	Water	10	N	X	X	X	X	X	X		
Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other														
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)								
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown						☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months								
#REF!														
1.7, 1.3, 0.5, 2.2														
Custody Seals Intact: ☐ Yes ☐ No		Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____		Cor'd: _____		Therm ID No.:						
Relinquished by:		Company: AECOM		Date/Time: 4/13/23		Received by:		Company: EETA		Date/Time: 4/13/23 1600				
Relinquished by:		Company: EETA		Date/Time: 4/14/23		Received by:		Company: EETA		Date/Time: 4/15/23 940				
Relinquished by:		Company: _____		Date/Time: _____		Received in Laboratory by: _____		Company: _____		Date/Time: _____				

Eurofins TestAmerica, Portland
8920 SW Gemini Dr (Building 7)
Beaverton, OR 97008-7123
phone 503.906.9200

Chain of Custody Record



Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact		Project Manager: Tom Blalobok		Site Contact: Edward Le Cocq		Date: 4/13/2023		COC No: 2 of 2 COCs											
AECOM		Email: Shira.Degroot@aecom.com		Lab Contact: Elaine Walker		Carrier:		Sampler:											
888 SW 5th Ave, Suite 600		971-323-6281						For Lab Use Only:											
Portland, Oregon 97204		☐ CALENDAR DAYS ☒ WORKING DAYS						Walk-in Client:											
(971) 323-6262		TAT if different from Below						Lab Sampling:											
503-961-8662@efaxds.com FAX		2 weeks						Job / SDG No.:											
Project Name: SMP Portland Terminal		☐ 1 week																	
Task: Response Action GWM		☐ 2 days																	
Project # 60556219 6 PO#148419 (Line 2)		☐ 1 day																	
Sample Identification	Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	NWTPH-Dx w/ silica gel clean up	NWTPH-Gx	BTX + MTBE EPA 8260D	PAHs Low-Level, EPA 8270E(SIM), standard list	Total RCRA8 Metals EPA 8010D/470A	Sample Specific Notes:						
20230413-P-12-18-GW	4/13/23	0954	Grab	Water	10	N	X	X	X	X	X	X							
20230413-P-23-18-GW	4/13/23	1400	Grab	Water	10	N	X	X	X	X	X	X							
20230413-P-17-14-GW	4/13/23	1120	Grab	Water	10	N	X	X	X	X	X	X							
20230413-P-18-18-GW	4/13/23	0831	Grab	Water	10	N	X	X	X	X	X	X							
Trip Blanks			Grab	Water	3	N		X	X										
Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other																			
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.													Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)						
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown													☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months						
Custody Seals Intact: ☐ Yes ☐ No													Custody Seal No.:						
Relinquished by: [Signature]													Company: AECOM						
Relinquished by: [Signature]													Date/Time: 4/13/23 1500						
Relinquished by: [Signature]													Received by: [Signature]						
Relinquished by: [Signature]													Date/Time: 4/13/23 1821						
Relinquished by: [Signature]													Received in Laboratory by: [Signature]						
Relinquished by: [Signature]													Company: EETW						
Relinquished by: [Signature]													Date/Time: 4/13/23 1600						
Relinquished by: [Signature]													Company: EETW						
Relinquished by: [Signature]													Date/Time: 4/13/23 940						

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-126017-1

SDG Number:

Login Number: 126017

List Number: 1

Creator: O'Connell, Jason I

List Source: Eurofins Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Emily Wengrowski

From: Wheeler, Christina <Christina.Wheeler@aecom.com>
Sent: Monday, April 17, 2023 1:58 PM
To: Emily Wengrowski; Hoppe, Jackie; DeGrood, Shira; Bialobok, Thomas
Subject: RE: *Revision Included* Eurofins Environment Testing Northwest, LLC sample confirmation files from 580-126017-1 SMP Portland Terminal Response Action GWM
Attachments: COC 580-126032 (202304140950).pdf; COC 580-126016 (202304131749).pdf

EXTERNAL EMAIL*

Emily,

Sample analyses are correct for SDGs 580-126017 and 580-126016.

Can you please remove the MS/MSD suffix on the end of sample names associated with samples 580-126017-8 and 580-126016-1.

I don't need another revised sample login sent out.

Thank you.

Client Contact		Project Manager: Tom Bialobok		Site Contact: Edward Le Cocq								
AECOM		Email: Shira.Degroot@aecom.com		Lab Contact: Elaine Walker								
888 SW 5th Ave, Suite 600		971-323-6281										
Portland, Oregon 97204		Analysis Turnaround Time										
(971) 323-6262		☐ CALENDAR DAYS ☒ WORKING DAYS										
503-961-8862 Shira.Degroot@aecom.com FAX		TAT if different from Below										
Project Name: SMP Portland Terminal		☒ 2 weeks										
Task: Response Action GWM		☐ 1 week										
Project # 60556219.6 PO#148419 (Line 2)		☐ 2 days										
		☐ 1 day										
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	NWTPH-Dx w/ silica gel clean up	NWTPH-Gx	BTEX + MTBE EPA 8260D	PAHs Low-Level, EPA 8270E(SIM), standard list	Total RCRA 8 Metals EPA 801007470A
20230413-MD-01-35-GW	4/13/23	1203	Grab	Water	10	N	X	X	X	X	X	
20230410-MD-02-35-GW	4/10/23	1720	Grab	Water	10	N	X	X	X	X	X	
20230412-MD-06-45-GW	4/12/23	1740	Grab	Water	10	N	X	X	X	X	X	
20230413-MD-07-39-GW	4/13/23	0850	Grab	Water	10	N	X	X	X	X	X	
20230412-MD-08-41-GW	4/12/23	1715	Grab	Water	10	N	X	X	X	X	X	
20230413-P-12-18-GW	4/13/23	0954	Grab	Water	10	N	X	X	X	X	X	
20230411-MD-14-46-GW	4/11/23	1639	Grab	Water	10	N	X	X	X	X	X	
20230411-MW-05-11-GW-MS/MSD	4/11/23	1800	Grab	Water	10	N	X	X	X	X	X	
20230412-P-104-13-GW	4/12/23	0942	Grab	Water	10	N	X	X	X	X	X	
20230412-MW-16-19-GW	4/12/23	1421	Grab	Water	10	N	X	X	X	X	X	
20230412-P-01-8-GW	4/12/23	1153	Grab	Water	10	N	X	X	X	X	X	
20230412-P-02-12-GW	4/12/23	1310	Grab	Water	10	N	X	X	X	X	X	
20230412-P-04-13-GW	4/12/23	1006	Grab	Water	10	N	X	X	X	X	X	
Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other												

580-126017-8	20230411-MW-05-11-GW-MS/MSD	4/11/2023 6:00:00 PM	Water		
6010D	RCRA 8 Metals and Mercury / In-Lab		Total	Wet	
			Recoverable		
7470A	Mercury (CVAA) / In-Lab		Total	Wet	
8260D	BTEX + MTBE / In-Lab		Total	Wet	
8270E_SIM	PAHs, standard list / In-Lab		Total	Wet	
NWTPH_Dx	Northwest - DRO/RRO W/ silica gel / In-Lab		Total	Wet	
NWTPH_Gx_MS	Northwest - GRO / In-Lab		Total	Wet	

Sample ID 20230413-P-12-18-GW with sample date 04/13/2023, and sample time 0954 was duplicated on the chain-of-custody, while only one sample set with associated sample ID, date, and time was provided. Sample was logged as 580-126017-14, and sample 580-126017-06 (the duplicate) was removed. Thus, sample -6 will not be included in this job.

Please feel free to contact me or your PM Marie Walker if you have any questions.

Thank you.

Emily E Wengrowski
Project Manager Assistant

Eurofins Seattle

E-mail: emily.wengrowski@et.eurofinsus.com
www.eurofinsus.com/env



Reference: [580-478572]
Attachments: 2

> > Bank information has changed, please refer to remittance information on invoice. < <

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

ANALYTICAL REPORT

PREPARED FOR

Attn: Christina Wheeler
AECOM
1111 Third Ave
Suite 1600
Seattle, Washington 98101

Generated 5/4/2023 3:43:49 PM

JOB DESCRIPTION

SMP Portland Terminal Response Action GWM

JOB NUMBER

580-126032-1

Eurofins Seattle

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northwest, LLC Project Manager.

Authorization



Generated
5/4/2023 3:43:49 PM

Authorized for release by
Marie Walker, Senior Project Manager
M.Elaine.Walker@et.eurofinsus.com
(253)248-4972

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QC Sample Results	11
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Case Narrative

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126032-1

Job ID: 580-126032-1

Laboratory: Eurofins Seattle

Narrative

Job Narrative 580-126032-1

Receipt

Three samples were received on 4/14/2023 9:21 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.4° C.

GC/MS VOA

Method 8260D: The method blank for analytical batch 580-423563 contained Benzene above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

Method 8270E SIM: The following sample was diluted due to the nature of the sample matrix: 20230413-P-13-20-GW (580-126032-2). Elevated reporting limits (RLs) are provided. The sample was initially analyzed at a 10x dilution and was ND for all analytes. After consultation with the client, the laboratory reanalyzed the sample at a lesser, 5x, dilution. Per client request, because the reanalysis at the 5x dilution was still within hold time, only this analysis is being reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: AECOM

Job ID: 580-126032-1

Project/Site: SMP Portland Terminal Response Action GWM

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client Sample Results

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126032-1

Client Sample ID: 20230413-MD-10-41-GW

Lab Sample ID: 580-126032-1

Date Collected: 04/13/23 14:36

Matrix: Water

Date Received: 04/14/23 09:21

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/18/23 22:43	1
Toluene	ND		1.0	0.39	ug/L			04/18/23 22:43	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/18/23 22:43	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/18/23 22:43	1
o-Xylene	ND		1.0	0.39	ug/L			04/18/23 22:43	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/18/23 22:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		80 - 120		04/18/23 22:43	1
4-Bromofluorobenzene (Surr)	96		80 - 120		04/18/23 22:43	1
Toluene-d8 (Surr)	95		80 - 120		04/18/23 22:43	1
Dibromofluoromethane (Surr)	99		80 - 120		04/18/23 22:43	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	ND		50	14	ug/L			04/18/23 22:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		77 - 123		04/18/23 22:43	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.10	0.034	ug/L		04/19/23 10:14	04/26/23 00:17	1
2-Methylnaphthalene	ND		0.21	0.040	ug/L		04/19/23 10:14	04/26/23 00:17	1
Acenaphthene	ND		0.10	0.014	ug/L		04/19/23 10:14	04/26/23 00:17	1
Acenaphthylene	ND		0.052	0.0093	ug/L		04/19/23 10:14	04/26/23 00:17	1
Anthracene	ND		0.10	0.023	ug/L		04/19/23 10:14	04/26/23 00:17	1
Benzo[a]anthracene	ND		0.052	0.014	ug/L		04/19/23 10:14	04/26/23 00:17	1
Benzo[a]pyrene	ND		0.10	0.023	ug/L		04/19/23 10:14	04/26/23 00:17	1
Benzo[b]fluoranthene	ND		0.10	0.023	ug/L		04/19/23 10:14	04/26/23 00:17	1
Benzo[g,h,i]perylene	ND		0.052	0.012	ug/L		04/19/23 10:14	04/26/23 00:17	1
Benzo[k]fluoranthene	ND		0.052	0.012	ug/L		04/19/23 10:14	04/26/23 00:17	1
Chrysene	ND		0.10	0.038	ug/L		04/19/23 10:14	04/26/23 00:17	1
Dibenz(a,h)anthracene	ND		0.10	0.015	ug/L		04/19/23 10:14	04/26/23 00:17	1
Fluoranthene	ND		0.21	0.056	ug/L		04/19/23 10:14	04/26/23 00:17	1
Fluorene	ND		0.10	0.018	ug/L		04/19/23 10:14	04/26/23 00:17	1
Indeno[1,2,3-cd]pyrene	ND		0.052	0.014	ug/L		04/19/23 10:14	04/26/23 00:17	1
Naphthalene	ND		0.52	0.17	ug/L		04/19/23 10:14	04/26/23 00:17	1
Phenanthrene	ND		0.10	0.032	ug/L		04/19/23 10:14	04/26/23 00:17	1
Pyrene	ND		0.10	0.034	ug/L		04/19/23 10:14	04/26/23 00:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	96		29 - 150	04/19/23 10:14	04/26/23 00:17	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		110	67	ug/L		04/20/23 09:16	04/21/23 17:56	1
Motor Oil (>C24-C36)	140	J	360	99	ug/L		04/20/23 09:16	04/21/23 17:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	73		50 - 150	04/20/23 09:16	04/21/23 17:56	1

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Client Sample Results

Client: AECOM

Job ID: 580-126032-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230413-MD-10-41-GW

Lab Sample ID: 580-126032-1

Date Collected: 04/13/23 14:36

Matrix: Water

Date Received: 04/14/23 09:21

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/24/23 16:52	04/25/23 13:57	1
Barium	0.073		0.020	0.0010	mg/L		04/24/23 16:52	04/25/23 13:57	1
Cadmium	ND		0.020	0.00090	mg/L		04/24/23 16:52	04/25/23 13:57	1
Chromium	ND		0.025	0.0027	mg/L		04/24/23 16:52	04/25/23 13:57	1
Lead	0.015	J	0.030	0.0027	mg/L		04/24/23 16:52	04/25/23 13:57	1
Selenium	ND		0.10	0.0087	mg/L		04/24/23 16:52	04/25/23 13:57	1
Silver	ND		0.050	0.0085	mg/L		04/24/23 16:52	04/25/23 13:57	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/25/23 11:19	04/25/23 16:08	1

Client Sample Results

Client: AECOM

Job ID: 580-126032-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230413-P-13-20-GW

Lab Sample ID: 580-126032-2

Date Collected: 04/13/23 14:35

Matrix: Water

Date Received: 04/14/23 09:21

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/18/23 23:08	1
Toluene	ND		1.0	0.39	ug/L			04/18/23 23:08	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/18/23 23:08	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/18/23 23:08	1
o-Xylene	ND		1.0	0.39	ug/L			04/18/23 23:08	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/18/23 23:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		80 - 120		04/18/23 23:08	1
4-Bromofluorobenzene (Surr)	102		80 - 120		04/18/23 23:08	1
Toluene-d8 (Surr)	93		80 - 120		04/18/23 23:08	1
Dibromofluoromethane (Surr)	100		80 - 120		04/18/23 23:08	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	610		50	14	ug/L			04/18/23 23:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		77 - 123		04/18/23 23:08	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.53	0.18	ug/L		04/19/23 10:14	05/02/23 20:58	5
2-Methylnaphthalene	ND		1.1	0.21	ug/L		04/19/23 10:14	05/02/23 20:58	5
Acenaphthene	ND		0.53	0.075	ug/L		04/19/23 10:14	05/02/23 20:58	5
Acenaphthylene	ND		0.27	0.048	ug/L		04/19/23 10:14	05/02/23 20:58	5
Anthracene	ND		0.53	0.12	ug/L		04/19/23 10:14	05/02/23 20:58	5
Benzo[a]anthracene	ND		0.27	0.075	ug/L		04/19/23 10:14	05/02/23 20:58	5
Benzo[a]pyrene	0.12	J	0.53	0.12	ug/L		04/19/23 10:14	05/02/23 20:58	5
Benzo[b]fluoranthene	ND		0.53	0.12	ug/L		04/19/23 10:14	05/02/23 20:58	5
Benzo[g,h,i]perylene	0.073	J	0.27	0.064	ug/L		04/19/23 10:14	05/02/23 20:58	5
Benzo[k]fluoranthene	ND		0.27	0.064	ug/L		04/19/23 10:14	05/02/23 20:58	5
Chrysene	ND		0.53	0.20	ug/L		04/19/23 10:14	05/02/23 20:58	5
Dibenz(a,h)anthracene	ND		0.53	0.080	ug/L		04/19/23 10:14	05/02/23 20:58	5
Fluoranthene	ND		1.1	0.29	ug/L		04/19/23 10:14	05/02/23 20:58	5
Fluorene	ND		0.53	0.091	ug/L		04/19/23 10:14	05/02/23 20:58	5
Indeno[1,2,3-cd]pyrene	ND		0.27	0.075	ug/L		04/19/23 10:14	05/02/23 20:58	5
Naphthalene	ND		2.7	0.87	ug/L		04/19/23 10:14	05/02/23 20:58	5
Phenanthrene	ND		0.53	0.17	ug/L		04/19/23 10:14	05/02/23 20:58	5
Pyrene	0.39	J	0.53	0.18	ug/L		04/19/23 10:14	05/02/23 20:58	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	91		29 - 150	04/19/23 10:14	05/02/23 20:58	5

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	1400		120	72	ug/L		04/20/23 09:16	04/21/23 18:16	1
Motor Oil (>C24-C36)	700		390	110	ug/L		04/20/23 09:16	04/21/23 18:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	59		50 - 150	04/20/23 09:16	04/21/23 18:16	1

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Client Sample Results

Client: AECOM

Job ID: 580-126032-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230413-P-13-20-GW

Lab Sample ID: 580-126032-2

Date Collected: 04/13/23 14:35

Matrix: Water

Date Received: 04/14/23 09:21

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.045	J	0.060	0.0072	mg/L		04/24/23 16:52	04/25/23 14:01	1
Barium	0.095		0.020	0.0010	mg/L		04/24/23 16:52	04/25/23 14:01	1
Cadmium	ND		0.020	0.00090	mg/L		04/24/23 16:52	04/25/23 14:01	1
Chromium	ND		0.025	0.0027	mg/L		04/24/23 16:52	04/25/23 14:01	1
Lead	0.0096	J	0.030	0.0027	mg/L		04/24/23 16:52	04/25/23 14:01	1
Selenium	ND		0.10	0.0087	mg/L		04/24/23 16:52	04/25/23 14:01	1
Silver	ND		0.050	0.0085	mg/L		04/24/23 16:52	04/25/23 14:01	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/25/23 11:19	04/25/23 16:15	1

Client Sample Results

Client: AECOM

Job ID: 580-126032-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: Trip Blanks

Lab Sample ID: 580-126032-3

Date Collected: 04/13/23 00:01

Matrix: Water

Date Received: 04/14/23 09:21

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/18/23 23:32	1
Toluene	ND		1.0	0.39	ug/L			04/18/23 23:32	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/18/23 23:32	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/18/23 23:32	1
o-Xylene	ND		1.0	0.39	ug/L			04/18/23 23:32	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/18/23 23:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		80 - 120		04/18/23 23:32	1
4-Bromofluorobenzene (Surr)	101		80 - 120		04/18/23 23:32	1
Toluene-d8 (Surr)	93		80 - 120		04/18/23 23:32	1
Dibromofluoromethane (Surr)	102		80 - 120		04/18/23 23:32	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	54		50	14	ug/L			04/18/23 23:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		77 - 123		04/18/23 23:32	1

QC Sample Results

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126032-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-423563/6

Matrix: Water

Analysis Batch: 423563

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.273	J	1.0	0.24	ug/L			04/18/23 16:39	1
Toluene	ND		1.0	0.39	ug/L			04/18/23 16:39	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/18/23 16:39	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/18/23 16:39	1
o-Xylene	ND		1.0	0.39	ug/L			04/18/23 16:39	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/18/23 16:39	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		80 - 120		04/18/23 16:39	1
4-Bromofluorobenzene (Surr)	92		80 - 120		04/18/23 16:39	1
Toluene-d8 (Surr)	95		80 - 120		04/18/23 16:39	1
Dibromofluoromethane (Surr)	100		80 - 120		04/18/23 16:39	1

Lab Sample ID: LCS 580-423563/7

Matrix: Water

Analysis Batch: 423563

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	10.0	10.7		ug/L		107	80 - 122
Toluene	10.0	10.4		ug/L		104	80 - 120
Ethylbenzene	10.0	10.4		ug/L		104	80 - 120
m-Xylene & p-Xylene	10.0	10.6		ug/L		106	80 - 120
o-Xylene	10.0	10.6		ug/L		106	80 - 120
Methyl tert-butyl ether	10.0	9.89		ug/L		99	72 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		80 - 120
4-Bromofluorobenzene (Surr)	96		80 - 120
Toluene-d8 (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	96		80 - 120

Lab Sample ID: LCSD 580-423563/8

Matrix: Water

Analysis Batch: 423563

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	10.0	10.6		ug/L		106	80 - 122	1	14
Toluene	10.0	10.2		ug/L		102	80 - 120	2	13
Ethylbenzene	10.0	10.3		ug/L		103	80 - 120	1	14
m-Xylene & p-Xylene	10.0	10.4		ug/L		104	80 - 120	2	14
o-Xylene	10.0	10.4		ug/L		104	80 - 120	2	16
Methyl tert-butyl ether	10.0	10.3		ug/L		103	72 - 120	4	18

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		80 - 120
4-Bromofluorobenzene (Surr)	98		80 - 120
Toluene-d8 (Surr)	98		80 - 120

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QC Sample Results

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126032-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-423563/8
Matrix: Water
Analysis Batch: 423563

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	96		80 - 120

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Lab Sample ID: MB 580-423559/6
Matrix: Water
Analysis Batch: 423559

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	ND		50	14	ug/L			04/18/23 16:39	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		77 - 123					04/18/23 16:39	1

Lab Sample ID: LCS 580-423559/9
Matrix: Water
Analysis Batch: 423559

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics C7-C12	1000	997		ug/L		100	55 - 148
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	102		77 - 123				

Lab Sample ID: LCSD 580-423559/10
Matrix: Water
Analysis Batch: 423559

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics C7-C12	1000	1020		ug/L		102	55 - 148	2	10
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	102		77 - 123						

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 580-423640/1-A
Matrix: Water
Analysis Batch: 424176

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 423640

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.10	0.033	ug/L		04/19/23 10:14	04/25/23 22:41	1
2-Methylnaphthalene	ND		0.20	0.039	ug/L		04/19/23 10:14	04/25/23 22:41	1
Acenaphthene	ND		0.10	0.014	ug/L		04/19/23 10:14	04/25/23 22:41	1
Acenaphthylene	ND		0.050	0.0090	ug/L		04/19/23 10:14	04/25/23 22:41	1
Anthracene	ND		0.10	0.022	ug/L		04/19/23 10:14	04/25/23 22:41	1
Benzo[a]anthracene	ND		0.050	0.014	ug/L		04/19/23 10:14	04/25/23 22:41	1

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QC Sample Results

Client: AECOM

Job ID: 580-126032-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: MB 580-423640/1-A

Matrix: Water

Analysis Batch: 424176

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 423640

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]pyrene	ND		0.10	0.022	ug/L		04/19/23 10:14	04/25/23 22:41	1
Benzo[b]fluoranthene	ND		0.10	0.022	ug/L		04/19/23 10:14	04/25/23 22:41	1
Benzo[g,h,i]perylene	ND		0.050	0.012	ug/L		04/19/23 10:14	04/25/23 22:41	1
Benzo[k]fluoranthene	ND		0.050	0.012	ug/L		04/19/23 10:14	04/25/23 22:41	1
Chrysene	ND		0.10	0.037	ug/L		04/19/23 10:14	04/25/23 22:41	1
Dibenz(a,h)anthracene	ND		0.10	0.015	ug/L		04/19/23 10:14	04/25/23 22:41	1
Fluoranthene	ND		0.20	0.054	ug/L		04/19/23 10:14	04/25/23 22:41	1
Fluorene	ND		0.10	0.017	ug/L		04/19/23 10:14	04/25/23 22:41	1
Indeno[1,2,3-cd]pyrene	ND		0.050	0.014	ug/L		04/19/23 10:14	04/25/23 22:41	1
Naphthalene	ND		0.50	0.16	ug/L		04/19/23 10:14	04/25/23 22:41	1
Phenanthrene	ND		0.10	0.031	ug/L		04/19/23 10:14	04/25/23 22:41	1
Pyrene	ND		0.10	0.033	ug/L		04/19/23 10:14	04/25/23 22:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	105		29 - 150	04/19/23 10:14	04/25/23 22:41	1

Lab Sample ID: LCS 580-423640/2-A

Matrix: Water

Analysis Batch: 424176

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 423640

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	8.00	6.25		ug/L		78	29 - 120
2-Methylnaphthalene	8.00	6.32		ug/L		79	33 - 120
Acenaphthene	8.00	6.26		ug/L		78	33 - 120
Acenaphthylene	8.00	6.81		ug/L		85	38 - 120
Anthracene	8.00	7.15		ug/L		89	41 - 120
Benzo[a]anthracene	8.00	6.66		ug/L		83	55 - 123
Benzo[a]pyrene	8.00	7.53		ug/L		94	51 - 120
Benzo[b]fluoranthene	8.00	6.80		ug/L		85	43 - 120
Benzo[g,h,i]perylene	8.00	8.52		ug/L		106	45 - 120
Benzo[k]fluoranthene	8.00	7.72		ug/L		96	41 - 121
Chrysene	8.00	7.19		ug/L		90	47 - 120
Dibenz(a,h)anthracene	8.00	8.41		ug/L		105	54 - 123
Fluoranthene	8.00	7.27		ug/L		91	51 - 125
Fluorene	8.00	6.37		ug/L		80	39 - 120
Indeno[1,2,3-cd]pyrene	8.00	8.00		ug/L		100	45 - 123
Naphthalene	8.00	5.72		ug/L		72	34 - 120
Phenanthrene	8.00	6.53		ug/L		82	46 - 120
Pyrene	8.00	7.19		ug/L		90	51 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	99		29 - 150

Eurofins Seattle

QC Sample Results

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126032-1

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCSD 580-423640/3-A

Matrix: Water

Analysis Batch: 424176

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 423640

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	8.00	6.33		ug/L		79	29 - 120	1	35
2-Methylnaphthalene	8.00	6.40		ug/L		80	33 - 120	1	35
Acenaphthene	8.00	6.38		ug/L		80	33 - 120	2	35
Acenaphthylene	8.00	6.76		ug/L		85	38 - 120	1	35
Anthracene	8.00	7.26		ug/L		91	41 - 120	1	29
Benzo[a]anthracene	8.00	6.57		ug/L		82	55 - 123	1	31
Benzo[a]pyrene	8.00	7.38		ug/L		92	51 - 120	2	31
Benzo[b]fluoranthene	8.00	7.17		ug/L		90	43 - 120	5	35
Benzo[g,h,i]perylene	8.00	8.29		ug/L		104	45 - 120	3	35
Benzo[k]fluoranthene	8.00	6.97		ug/L		87	41 - 121	10	35
Chrysene	8.00	7.03		ug/L		88	47 - 120	2	30
Dibenz(a,h)anthracene	8.00	8.24		ug/L		103	54 - 123	2	35
Fluoranthene	8.00	7.21		ug/L		90	51 - 125	1	31
Fluorene	8.00	6.67		ug/L		83	39 - 120	5	35
Indeno[1,2,3-cd]pyrene	8.00	8.02		ug/L		100	45 - 123	0	35
Naphthalene	8.00	5.89		ug/L		74	34 - 120	3	35
Phenanthrene	8.00	6.62		ug/L		83	46 - 120	1	32
Pyrene	8.00	7.15		ug/L		89	51 - 125	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Terphenyl-d14	98		29 - 150

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Lab Sample ID: MB 580-423769/1-B

Matrix: Water

Analysis Batch: 423886

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 423769

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		110	65	ug/L		04/20/23 09:16	04/21/23 16:15	1
Motor Oil (>C24-C36)	ND		350	96	ug/L		04/20/23 09:16	04/21/23 16:15	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	71		50 - 150	04/20/23 09:16	04/21/23 16:15	1

Lab Sample ID: LCS 580-423769/2-B

Matrix: Water

Analysis Batch: 423886

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 423769

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
#2 Diesel (C10-C24)	4000	3680		ug/L		92	50 - 120
Motor Oil (>C24-C36)	4000	3780		ug/L		94	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	89		50 - 150

Eurofins Seattle

QC Sample Results

Client: AECOM

Job ID: 580-126032-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup (Continued)

Lab Sample ID: LCSD 580-423769/3-B

Matrix: Water

Analysis Batch: 423886

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 423769

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4000	3550		ug/L		89	50 - 120	4	26
Motor Oil (>C24-C36)	4000	3680		ug/L		92	64 - 120	2	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	89		50 - 150						

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 580-424048/14-A

Matrix: Water

Analysis Batch: 424219

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 424048

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/24/23 16:52	04/25/23 13:20	1
Barium	ND		0.020	0.0010	mg/L		04/24/23 16:52	04/25/23 13:20	1
Cadmium	ND		0.020	0.00090	mg/L		04/24/23 16:52	04/25/23 13:20	1
Chromium	ND		0.025	0.0027	mg/L		04/24/23 16:52	04/25/23 13:20	1
Lead	ND		0.030	0.0027	mg/L		04/24/23 16:52	04/25/23 13:20	1
Selenium	ND		0.10	0.0087	mg/L		04/24/23 16:52	04/25/23 13:20	1
Silver	ND		0.050	0.0085	mg/L		04/24/23 16:52	04/25/23 13:20	1

Lab Sample ID: LCS 580-424048/15-A

Matrix: Water

Analysis Batch: 424219

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 424048

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Arsenic	1.00	0.967		mg/L		97	80 - 120		
Barium	1.00	0.965		mg/L		97	80 - 120		
Cadmium	1.00	1.01		mg/L		101	80 - 120		
Chromium	1.00	0.962		mg/L		96	80 - 120		
Lead	1.00	1.00		mg/L		100	80 - 120		
Selenium	1.00	0.967		mg/L		97	80 - 120		
Silver	1.00	0.991		mg/L		99	80 - 120		

Lab Sample ID: LCSD 580-424048/16-A

Matrix: Water

Analysis Batch: 424219

Client Sample ID: Lab Control Sample Dup

Prep Type: Total Recoverable

Prep Batch: 424048

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	1.00	0.964		mg/L		96	80 - 120	0	20
Barium	1.00	0.955		mg/L		96	80 - 120	1	20
Cadmium	1.00	1.00		mg/L		100	80 - 120	1	20
Chromium	1.00	0.953		mg/L		95	80 - 120	1	20
Lead	1.00	0.985		mg/L		98	80 - 120	2	20
Selenium	1.00	0.976		mg/L		98	80 - 120	1	20
Silver	1.00	0.983		mg/L		98	80 - 120	1	20

Eurofins Seattle

QC Sample Results

Client: AECOM

Job ID: 580-126032-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 580-424093/23-A

Matrix: Water

Analysis Batch: 424152

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 424093

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/25/23 11:25	04/25/23 15:43	1

Lab Sample ID: LCS 580-424093/24-A

Matrix: Water

Analysis Batch: 424152

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 424093

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	2.00	1.93		ug/L		96	80 - 120

Lab Sample ID: LCSD 580-424093/25-A

Matrix: Water

Analysis Batch: 424152

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 424093

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	2.00	1.81		ug/L		90	80 - 120	6	20

Lab Chronicle

Client: AECOM

Job ID: 580-126032-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230413-MD-10-41-GW

Lab Sample ID: 580-126032-1

Date Collected: 04/13/23 14:36

Matrix: Water

Date Received: 04/14/23 09:21

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423563	ITR	EET SEA	04/18/23 22:43
Total/NA	Analysis	NWTPH-Gx		1	423559	ITR	EET SEA	04/18/23 22:43
Total/NA	Prep	3510C			423640	TGO	EET SEA	04/19/23 10:14
Total/NA	Analysis	8270E SIM		1	424176	T1L	EET SEA	04/26/23 00:17
Total/NA	Prep	3510C			423769	TGO	EET SEA	04/20/23 09:16
Total/NA	Cleanup	3630C			423770	TGO	EET SEA	04/20/23 09:21
Total/NA	Analysis	NWTPH-Dx		1	423886	KLW	EET SEA	04/21/23 17:56
Total Recoverable	Prep	3005A			424048	JLS	EET SEA	04/24/23 16:52
Total Recoverable	Analysis	6010D		1	424219	JLS	EET SEA	04/25/23 13:57
Total/NA	Prep	7470A			424093	JL	EET SEA	04/25/23 11:19
Total/NA	Analysis	7470A		1	424152	JL	EET SEA	04/25/23 16:08

Client Sample ID: 20230413-P-13-20-GW

Lab Sample ID: 580-126032-2

Date Collected: 04/13/23 14:35

Matrix: Water

Date Received: 04/14/23 09:21

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423563	ITR	EET SEA	04/18/23 23:08
Total/NA	Analysis	NWTPH-Gx		1	423559	ITR	EET SEA	04/18/23 23:08
Total/NA	Prep	3510C	RA		423640	TGO	EET SEA	04/19/23 10:14
Total/NA	Analysis	8270E SIM	RA	5	424691	T1L	EET SEA	05/02/23 20:58
Total/NA	Prep	3510C			423769	TGO	EET SEA	04/20/23 09:16
Total/NA	Cleanup	3630C			423770	TGO	EET SEA	04/20/23 09:21
Total/NA	Analysis	NWTPH-Dx		1	423886	KLW	EET SEA	04/21/23 18:16
Total Recoverable	Prep	3005A			424048	JLS	EET SEA	04/24/23 16:52
Total Recoverable	Analysis	6010D		1	424219	JLS	EET SEA	04/25/23 14:01
Total/NA	Prep	7470A			424093	JL	EET SEA	04/25/23 11:19
Total/NA	Analysis	7470A		1	424152	JL	EET SEA	04/25/23 16:15

Client Sample ID: Trip Blanks

Lab Sample ID: 580-126032-3

Date Collected: 04/13/23 00:01

Matrix: Water

Date Received: 04/14/23 09:21

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423563	ITR	EET SEA	04/18/23 23:32
Total/NA	Analysis	NWTPH-Gx		1	423559	ITR	EET SEA	04/18/23 23:32

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Eurofins Seattle

Accreditation/Certification Summary

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126032-1

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4167	07-07-23

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

Sample Summary

Client: AECOM

Job ID: 580-126032-1

Project/Site: SMP Portland Terminal Response Action GWM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-126032-1	20230413-MD-10-41-GW	Water	04/13/23 14:36	04/14/23 09:21
580-126032-2	20230413-P-13-20-GW	Water	04/13/23 14:35	04/14/23 09:21
580-126032-3	Trip Blanks	Water	04/13/23 00:01	04/14/23 09:21

1

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11

Eurofins TestAmerica, Portland
8920 SW Gemini Dr (Building 7)
Beaverton, OR 97008-7123
phone 503.906.9200

Chain of Custody Record



TestAmerica Laboratories, Inc. db/a Eurofins TestAmerica

Regulatory Program: ☐ OW ☐ NPDES ☐ RCRA ☐ Other:

Project Manager: Tom Bialobok

Email: Shira.Desjardins@eurofins.com

971-323-6281

Analysis Turnaround Time

☐ CALENDAR DAYS ☒ WORKING DAYS

TAT if different from Below _____
☒ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Project Name: SMP Portland Terminal

Task: Response Action GWM

Project # 6056219.6 POW148419 (Line 2)

Site Contact: Edward Le Cocq

Lab Contact: Elaine Walker

Date: 4/13/2023

Carrier:

COC No: 1 of 1 COCs

Sampler:

For Lab Use Only:

Walk-in Client:

Lab Sampling:

Job / SDG No.:

Sample Specific Notes:

Performs MS / MSD (Y / N)

Filtered Sample (Y / N)

NWTPH-DX w/ silica gel clean up

NWTPH-GX

BTEX + MTBE EPA 8260D

PAHs Low-Level, EPA 8270E(SIM), standard list

Total RCRAs Metals EPA 6010D/470A

Sample Specific Notes:

Sample Specific Notes:

Sample Specific Notes:

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Sample Specific Notes:



580-128032 Chain of Custody

Preservation Used: 1= Ice, 2= CI; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Custody Seals Intact: ☐ Yes ☐ No

Relinquished by:

Relinquished by: Christopher Schmidt

Relinquished by:

Relinquished by:

Custody Seal No.:

Company: AECOM

Company:

Company:

Company:

Cooler Temp. (°C): Obs'd:

Received by:

Received by:

Received in Laboratory by:

Received in Laboratory by:

Therm ID No.:

Company:

Company:

Company:

Company:

Environment Testing
TestAmerica

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

5/4/2023

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-126032-1

Login Number: 126032

List Number: 1

Creator: O'Connell, Jason I

List Source: Eurofins Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

PREPARED FOR

Attn: Christina Wheeler
AECOM
1111 Third Ave
Suite 1600
Seattle, Washington 98101

Generated 5/8/2023 3:04:59 PM

JOB DESCRIPTION

SMP Portland Terminal Response Action GWM

JOB NUMBER

580-126014-1

Eurofins Seattle

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northwest, LLC Project Manager.

Authorization



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Authorized for release by
Marie Walker, Senior Project Manager
M.Elaine.Walker@et.eurofinsus.com
(253)248-4972

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Case Narrative

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126014-1

Job ID: 580-126014-1

Laboratory: Eurofins Seattle

Narrative

Job Narrative 580-126014-1

Receipt

Five samples were received on 4/13/2023 4:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.1° C.

GC/MS VOA

Method 8260D: The following sample was diluted to bring the concentration of target analytes within the calibration range: 20230410-MW-18-19-RA (580-126014-1). Elevated reporting limits (RLs) are provided.

Method 8260D: The following sample was diluted to bring the concentration of target analytes within the calibration range: 20230412-P-05-15-RA (580-126014-4). Elevated reporting limits (RLs) are provided.

Method NWTPH-Gx: The following sample was diluted to bring the concentration of target analytes within the calibration range: 20230410-MW-18-19-RA (580-126014-1). Elevated reporting limits (RLs) are provided.

Method NWTPH-Gx: The following sample was diluted to bring the concentration of target analytes within the calibration range: 20230412-P-05-15-RA (580-126014-4). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

Method 8270E SIM: The method blank for preparation batch 580-423440 and analytical batch 580-424033 contained Dibenz(a,h)anthracene and Indeno[1,2,3-cd]pyrene above the method detection limit. This target analyte concentration was less than half the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8270E SIM: The following samples were diluted to bring the concentration of target analytes within the calibration range: 20230410-MW-18-19-RA (580-126014-1) and 20230412-P-05-15-RA (580-126014-4). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method NWTPH-Dx: The method blank for preparation batch 580-423635 and analytical batch 580-423886 contained Motor Oil (>C24-C36) above the reporting limit (RL). None of the samples associated with this method blank contained the target compound above the RL; therefore, re-extraction of samples were not performed.

Method NWTPH-Dx: The method blank for preparation batch 580-423997 and analytical batch 580-424056 contained Motor Oil (>C24-C36) above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Methods 7470A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 580-423910 and analytical batch 580-423966 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: AECOM

Job ID: 580-126014-1

Project/Site: SMP Portland Terminal Response Action GWM

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client Sample Results

Client: AECOM

Job ID: 580-126014-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230410-MW-18-19-RA

Lab Sample ID: 580-126014-1

Date Collected: 04/10/23 13:45

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1100		100	24	ug/L			04/18/23 17:56	100
Ethylbenzene	3700		100	50	ug/L			04/18/23 17:56	100
m-Xylene & p-Xylene	14000		200	53	ug/L			04/18/23 17:56	100
o-Xylene	6100		100	39	ug/L			04/18/23 17:56	100
Methyl tert-butyl ether	ND		100	44	ug/L			04/18/23 17:56	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		80 - 120		04/18/23 17:56	100
4-Bromofluorobenzene (Surr)	98		80 - 120		04/18/23 17:56	100
Toluene-d8 (Surr)	97		80 - 120		04/18/23 17:56	100
Dibromofluoromethane (Surr)	96		80 - 120		04/18/23 17:56	100

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	30000		1000	390	ug/L			04/20/23 15:33	1000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		80 - 120		04/20/23 15:33	1000
4-Bromofluorobenzene (Surr)	97		80 - 120		04/20/23 15:33	1000
Toluene-d8 (Surr)	98		80 - 120		04/20/23 15:33	1000
Dibromofluoromethane (Surr)	103		80 - 120		04/20/23 15:33	1000

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	170000		5000	1400	ug/L			04/18/23 17:56	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		77 - 123		04/18/23 17:56	100

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	19		0.11	0.035	ug/L		04/17/23 13:25	04/24/23 21:24	1
2-Methylnaphthalene	40		0.21	0.042	ug/L		04/17/23 13:25	04/24/23 21:24	1
Acenaphthene	0.36		0.11	0.015	ug/L		04/17/23 13:25	04/24/23 21:24	1
Acenaphthylene	ND		0.053	0.0096	ug/L		04/17/23 13:25	04/24/23 21:24	1
Anthracene	0.038	J	0.11	0.023	ug/L		04/17/23 13:25	04/24/23 21:24	1
Benzo[a]anthracene	0.029	J	0.053	0.015	ug/L		04/17/23 13:25	04/24/23 21:24	1
Benzo[a]pyrene	ND		0.11	0.023	ug/L		04/17/23 13:25	04/24/23 21:24	1
Benzo[b]fluoranthene	0.047	J	0.11	0.023	ug/L		04/17/23 13:25	04/24/23 21:24	1
Benzo[g,h,i]perylene	0.043	J	0.053	0.013	ug/L		04/17/23 13:25	04/24/23 21:24	1
Benzo[k]fluoranthene	0.041	J	0.053	0.013	ug/L		04/17/23 13:25	04/24/23 21:24	1
Chrysene	0.045	J	0.11	0.039	ug/L		04/17/23 13:25	04/24/23 21:24	1
Dibenz(a,h)anthracene	0.045	J B	0.11	0.016	ug/L		04/17/23 13:25	04/24/23 21:24	1
Fluoranthene	0.066	J	0.21	0.057	ug/L		04/17/23 13:25	04/24/23 21:24	1
Fluorene	0.59		0.11	0.018	ug/L		04/17/23 13:25	04/24/23 21:24	1
Indeno[1,2,3-cd]pyrene	0.056	B	0.053	0.015	ug/L		04/17/23 13:25	04/24/23 21:24	1
Phenanthrene	0.20		0.11	0.033	ug/L		04/17/23 13:25	04/24/23 21:24	1
Pyrene	0.050	J	0.11	0.035	ug/L		04/17/23 13:25	04/24/23 21:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	92		29 - 150	04/17/23 13:25	04/24/23 21:24	1

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Client Sample Results

Client: AECOM

Job ID: 580-126014-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230410-MW-18-19-RA

Lab Sample ID: 580-126014-1

Date Collected: 04/10/23 13:45

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	150		5.3	1.7	ug/L		04/17/23 13:25	05/05/23 12:30	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	103		29 - 150				04/17/23 13:25	05/05/23 12:30	10

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	3800		120	69	ug/L		04/18/23 09:38	04/20/23 15:05	1
Motor Oil (>C24-C36)	180	J	370	100	ug/L		04/18/23 09:38	04/20/23 15:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	82		50 - 150				04/18/23 09:38	04/20/23 15:05	1

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/20/23 16:19	04/21/23 17:15	1
Barium	0.87		0.020	0.0010	mg/L		04/20/23 16:19	04/21/23 17:15	1
Cadmium	ND		0.020	0.00090	mg/L		04/20/23 16:19	04/21/23 17:15	1
Chromium	ND		0.025	0.0027	mg/L		04/20/23 16:19	04/21/23 17:15	1
Lead	0.010	J	0.030	0.0027	mg/L		04/20/23 16:19	04/21/23 17:15	1
Selenium	ND		0.10	0.0087	mg/L		04/20/23 16:19	04/21/23 17:15	1
Silver	ND		0.050	0.0085	mg/L		04/20/23 16:19	04/21/23 17:15	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/21/23 11:37	04/21/23 17:48	1

Client Sample Results

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126014-1

Client Sample ID: 20230410-MW-19-22-RA

Lab Sample ID: 580-126014-2

Date Collected: 04/10/23 13:00

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.4		1.0	0.24	ug/L			04/20/23 15:08	1
Toluene	ND		1.0	0.39	ug/L			04/20/23 15:08	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/20/23 15:08	1
m-Xylene & p-Xylene	0.62	J	2.0	0.53	ug/L			04/20/23 15:08	1
o-Xylene	2.2		1.0	0.39	ug/L			04/20/23 15:08	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/20/23 15:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		80 - 120		04/20/23 15:08	1
4-Bromofluorobenzene (Surr)	101		80 - 120		04/20/23 15:08	1
Toluene-d8 (Surr)	94		80 - 120		04/20/23 15:08	1
Dibromofluoromethane (Surr)	103		80 - 120		04/20/23 15:08	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	1400		50	14	ug/L			04/18/23 18:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		77 - 123		04/18/23 18:47	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	0.13		0.11	0.035	ug/L		04/17/23 13:25	04/24/23 21:48	1
2-Methylnaphthalene	0.043	J	0.21	0.041	ug/L		04/17/23 13:25	04/24/23 21:48	1
Acenaphthene	1.1		0.11	0.015	ug/L		04/17/23 13:25	04/24/23 21:48	1
Acenaphthylene	0.31		0.053	0.0096	ug/L		04/17/23 13:25	04/24/23 21:48	1
Anthracene	0.050	J	0.11	0.023	ug/L		04/17/23 13:25	04/24/23 21:48	1
Benzo[a]anthracene	ND		0.053	0.015	ug/L		04/17/23 13:25	04/24/23 21:48	1
Benzo[a]pyrene	ND		0.11	0.023	ug/L		04/17/23 13:25	04/24/23 21:48	1
Benzo[b]fluoranthene	ND		0.11	0.023	ug/L		04/17/23 13:25	04/24/23 21:48	1
Benzo[g,h,i]perylene	ND		0.053	0.013	ug/L		04/17/23 13:25	04/24/23 21:48	1
Benzo[k]fluoranthene	ND		0.053	0.013	ug/L		04/17/23 13:25	04/24/23 21:48	1
Chrysene	ND		0.11	0.039	ug/L		04/17/23 13:25	04/24/23 21:48	1
Dibenz(a,h)anthracene	ND		0.11	0.016	ug/L		04/17/23 13:25	04/24/23 21:48	1
Fluoranthene	ND		0.21	0.057	ug/L		04/17/23 13:25	04/24/23 21:48	1
Fluorene	2.5		0.11	0.018	ug/L		04/17/23 13:25	04/24/23 21:48	1
Indeno[1,2,3-cd]pyrene	ND		0.053	0.015	ug/L		04/17/23 13:25	04/24/23 21:48	1
Naphthalene	0.60		0.53	0.17	ug/L		04/17/23 13:25	04/24/23 21:48	1
Phenanthrene	1.2		0.11	0.033	ug/L		04/17/23 13:25	04/24/23 21:48	1
Pyrene	0.061	J	0.11	0.035	ug/L		04/17/23 13:25	04/24/23 21:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	91		29 - 150	04/17/23 13:25	04/24/23 21:48	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	750		110	68	ug/L		04/18/23 09:38	04/20/23 15:25	1
Motor Oil (>C24-C36)	260	J	360	100	ug/L		04/18/23 09:38	04/20/23 15:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	75		50 - 150	04/18/23 09:38	04/20/23 15:25	1

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Client Sample Results

Client: AECOM

Job ID: 580-126014-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230410-MW-19-22-RA

Lab Sample ID: 580-126014-2

Date Collected: 04/10/23 13:00

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0077	J	0.060	0.0072	mg/L		04/20/23 16:19	04/21/23 17:19	1
Barium	0.18		0.020	0.0010	mg/L		04/20/23 16:19	04/21/23 17:19	1
Cadmium	ND		0.020	0.00090	mg/L		04/20/23 16:19	04/21/23 17:19	1
Chromium	ND		0.025	0.0027	mg/L		04/20/23 16:19	04/21/23 17:19	1
Lead	0.0077	J	0.030	0.0027	mg/L		04/20/23 16:19	04/21/23 17:19	1
Selenium	ND		0.10	0.0087	mg/L		04/20/23 16:19	04/21/23 17:19	1
Silver	ND		0.050	0.0085	mg/L		04/20/23 16:19	04/21/23 17:19	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/21/23 11:37	04/21/23 17:55	1

Client Sample Results

Client: AECOM

Job ID: 580-126014-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230412-P-03-11-RA

Lab Sample ID: 580-126014-3

Date Collected: 04/12/23 09:53

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/19/23 08:27	1
Toluene	ND		1.0	0.39	ug/L			04/19/23 08:27	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/19/23 08:27	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/19/23 08:27	1
o-Xylene	ND		1.0	0.39	ug/L			04/19/23 08:27	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/19/23 08:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		80 - 120		04/19/23 08:27	1
4-Bromofluorobenzene (Surr)	97		80 - 120		04/19/23 08:27	1
Toluene-d8 (Surr)	96		80 - 120		04/19/23 08:27	1
Dibromofluoromethane (Surr)	103		80 - 120		04/19/23 08:27	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	63		50	14	ug/L			04/19/23 08:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		77 - 123		04/19/23 08:27	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.10	0.033	ug/L		04/18/23 09:28	04/26/23 04:36	1
2-Methylnaphthalene	ND		0.20	0.040	ug/L		04/18/23 09:28	04/26/23 04:36	1
Acenaphthene	0.039	J	0.10	0.014	ug/L		04/18/23 09:28	04/26/23 04:36	1
Acenaphthylene	0.0095	J	0.051	0.0091	ug/L		04/18/23 09:28	04/26/23 04:36	1
Anthracene	ND		0.10	0.022	ug/L		04/18/23 09:28	04/26/23 04:36	1
Benzo[a]anthracene	ND		0.051	0.014	ug/L		04/18/23 09:28	04/26/23 04:36	1
Benzo[a]pyrene	ND		0.10	0.022	ug/L		04/18/23 09:28	04/26/23 04:36	1
Benzo[b]fluoranthene	ND		0.10	0.022	ug/L		04/18/23 09:28	04/26/23 04:36	1
Benzo[g,h,i]perylene	ND		0.051	0.012	ug/L		04/18/23 09:28	04/26/23 04:36	1
Benzo[k]fluoranthene	ND		0.051	0.012	ug/L		04/18/23 09:28	04/26/23 04:36	1
Chrysene	ND		0.10	0.038	ug/L		04/18/23 09:28	04/26/23 04:36	1
Dibenz(a,h)anthracene	ND		0.10	0.015	ug/L		04/18/23 09:28	04/26/23 04:36	1
Fluoranthene	ND		0.20	0.055	ug/L		04/18/23 09:28	04/26/23 04:36	1
Fluorene	0.044	J	0.10	0.017	ug/L		04/18/23 09:28	04/26/23 04:36	1
Indeno[1,2,3-cd]pyrene	ND		0.051	0.014	ug/L		04/18/23 09:28	04/26/23 04:36	1
Naphthalene	ND		0.51	0.17	ug/L		04/18/23 09:28	04/26/23 04:36	1
Phenanthrene	ND		0.10	0.031	ug/L		04/18/23 09:28	04/26/23 04:36	1
Pyrene	ND		0.10	0.033	ug/L		04/18/23 09:28	04/26/23 04:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	92		29 - 150	04/18/23 09:28	04/26/23 04:36	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	80	J	110	66	ug/L		04/24/23 10:03	04/25/23 02:33	1
Motor Oil (>C24-C36)	260	J B	360	98	ug/L		04/24/23 10:03	04/25/23 02:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	60		50 - 150	04/24/23 10:03	04/25/23 02:33	1

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Client Sample Results

Client: AECOM

Job ID: 580-126014-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230412-P-03-11-RA

Lab Sample ID: 580-126014-3

Date Collected: 04/12/23 09:53

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/20/23 16:19	04/21/23 17:22	1
Barium	0.030		0.020	0.0010	mg/L		04/20/23 16:19	04/21/23 17:22	1
Cadmium	ND		0.020	0.00090	mg/L		04/20/23 16:19	04/21/23 17:22	1
Chromium	ND		0.025	0.0027	mg/L		04/20/23 16:19	04/21/23 17:22	1
Lead	0.018	J	0.030	0.0027	mg/L		04/20/23 16:19	04/21/23 17:22	1
Selenium	ND		0.10	0.0087	mg/L		04/20/23 16:19	04/21/23 17:22	1
Silver	ND		0.050	0.0085	mg/L		04/20/23 16:19	04/21/23 17:22	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/21/23 11:37	04/21/23 17:57	1

Client Sample Results

Client: AECOM

Job ID: 580-126014-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230412-P-05-15-RA

Lab Sample ID: 580-126014-4

Date Collected: 04/12/23 13:33

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		5.0	2.2	ug/L			04/19/23 08:51	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		80 - 120					04/19/23 08:51	5
4-Bromofluorobenzene (Surr)	101		80 - 120					04/19/23 08:51	5
Toluene-d8 (Surr)	98		80 - 120					04/19/23 08:51	5
Dibromofluoromethane (Surr)	97		80 - 120					04/19/23 08:51	5

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1800		50	12	ug/L			04/22/23 00:35	50
Toluene	3000		50	20	ug/L			04/22/23 00:35	50
Ethylbenzene	1700		50	25	ug/L			04/22/23 00:35	50
m-Xylene & p-Xylene	6700		100	27	ug/L			04/22/23 00:35	50
o-Xylene	2400		50	20	ug/L			04/22/23 00:35	50
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		80 - 120					04/22/23 00:35	50
4-Bromofluorobenzene (Surr)	105		80 - 120					04/22/23 00:35	50
Toluene-d8 (Surr)	93		80 - 120					04/22/23 00:35	50
Dibromofluoromethane (Surr)	96		80 - 120					04/22/23 00:35	50

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	39000		250	70	ug/L			04/19/23 08:51	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		77 - 123					04/19/23 08:51	5

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	22		0.11	0.035	ug/L		04/18/23 09:28	04/26/23 04:55	1
Acenaphthene	0.60		0.11	0.015	ug/L		04/18/23 09:28	04/26/23 04:55	1
Acenaphthylene	0.11		0.053	0.0096	ug/L		04/18/23 09:28	04/26/23 04:55	1
Anthracene	0.034	J	0.11	0.023	ug/L		04/18/23 09:28	04/26/23 04:55	1
Benzo[a]anthracene	ND		0.053	0.015	ug/L		04/18/23 09:28	04/26/23 04:55	1
Benzo[a]pyrene	ND		0.11	0.023	ug/L		04/18/23 09:28	04/26/23 04:55	1
Benzo[b]fluoranthene	ND		0.11	0.023	ug/L		04/18/23 09:28	04/26/23 04:55	1
Benzo[g,h,i]perylene	ND		0.053	0.013	ug/L		04/18/23 09:28	04/26/23 04:55	1
Benzo[k]fluoranthene	ND		0.053	0.013	ug/L		04/18/23 09:28	04/26/23 04:55	1
Chrysene	ND		0.11	0.039	ug/L		04/18/23 09:28	04/26/23 04:55	1
Dibenz(a,h)anthracene	ND		0.11	0.016	ug/L		04/18/23 09:28	04/26/23 04:55	1
Fluoranthene	ND		0.21	0.057	ug/L		04/18/23 09:28	04/26/23 04:55	1
Fluorene	0.99		0.11	0.018	ug/L		04/18/23 09:28	04/26/23 04:55	1
Indeno[1,2,3-cd]pyrene	ND		0.053	0.015	ug/L		04/18/23 09:28	04/26/23 04:55	1
Phenanthrene	0.21		0.11	0.033	ug/L		04/18/23 09:28	04/26/23 04:55	1
Pyrene	0.036	J	0.11	0.035	ug/L		04/18/23 09:28	04/26/23 04:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	78		29 - 150				04/18/23 09:28	04/26/23 04:55	1

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Client Sample Results

Client: AECOM

Job ID: 580-126014-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230412-P-05-15-RA

Lab Sample ID: 580-126014-4

Date Collected: 04/12/23 13:33

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	43		4.2	0.83	ug/L		04/18/23 09:28	05/05/23 12:54	20
Naphthalene	140		11	3.5	ug/L		04/18/23 09:28	05/05/23 12:54	20
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	79		29 - 150				04/18/23 09:28	05/05/23 12:54	20

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	2500		120	70	ug/L		04/19/23 09:43	04/21/23 21:38	1
Motor Oil (>C24-C36)	150	J B	370	100	ug/L		04/19/23 09:43	04/21/23 21:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	65		50 - 150				04/19/23 09:43	04/21/23 21:38	1

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/20/23 16:19	04/21/23 17:26	1
Barium	1.0		0.020	0.0010	mg/L		04/20/23 16:19	04/21/23 17:26	1
Cadmium	ND		0.020	0.00090	mg/L		04/20/23 16:19	04/21/23 17:26	1
Chromium	ND		0.025	0.0027	mg/L		04/20/23 16:19	04/21/23 17:26	1
Lead	0.0061	J	0.030	0.0027	mg/L		04/20/23 16:19	04/21/23 17:26	1
Selenium	ND		0.10	0.0087	mg/L		04/20/23 16:19	04/21/23 17:26	1
Silver	ND		0.050	0.0085	mg/L		04/20/23 16:19	04/21/23 17:26	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/21/23 11:37	04/21/23 17:59	1

Client Sample Results

Client: AECOM

Job ID: 580-126014-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: Trip Blanks

Lab Sample ID: 580-126014-5

Date Collected: 04/10/23 00:01

Matrix: Water

Date Received: 04/13/23 16:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/18/23 19:12	1
Toluene	ND		1.0	0.39	ug/L			04/18/23 19:12	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/18/23 19:12	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/18/23 19:12	1
o-Xylene	ND		1.0	0.39	ug/L			04/18/23 19:12	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/18/23 19:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		80 - 120		04/18/23 19:12	1
4-Bromofluorobenzene (Surr)	92		80 - 120		04/18/23 19:12	1
Toluene-d8 (Surr)	92		80 - 120		04/18/23 19:12	1
Dibromofluoromethane (Surr)	111		80 - 120		04/18/23 19:12	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	ND		50	14	ug/L			04/18/23 19:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		77 - 123		04/18/23 19:12	1

QC Sample Results

Client: AECOM

Job ID: 580-126014-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-423550/6

Matrix: Water

Analysis Batch: 423550

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/18/23 14:15	1
Toluene	ND		1.0	0.39	ug/L			04/18/23 14:15	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/18/23 14:15	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/18/23 14:15	1
o-Xylene	ND		1.0	0.39	ug/L			04/18/23 14:15	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/18/23 14:15	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		80 - 120		04/18/23 14:15	1
4-Bromofluorobenzene (Surr)	92		80 - 120		04/18/23 14:15	1
Toluene-d8 (Surr)	92		80 - 120		04/18/23 14:15	1
Dibromofluoromethane (Surr)	113		80 - 120		04/18/23 14:15	1

Lab Sample ID: LCS 580-423550/7

Matrix: Water

Analysis Batch: 423550

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	10.0	10.1		ug/L		101	80 - 122
Toluene	10.0	10.4		ug/L		104	80 - 120
Ethylbenzene	10.0	10.9		ug/L		109	80 - 120
m-Xylene & p-Xylene	10.0	10.6		ug/L		106	80 - 120
o-Xylene	10.0	10.7		ug/L		107	80 - 120
Methyl tert-butyl ether	10.0	10.1		ug/L		101	72 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	93		80 - 120
4-Bromofluorobenzene (Surr)	101		80 - 120
Toluene-d8 (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	100		80 - 120

Lab Sample ID: LCSD 580-423550/8

Matrix: Water

Analysis Batch: 423550

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	10.0	9.97		ug/L		100	80 - 122	2	14
Toluene	10.0	10.0		ug/L		100	80 - 120	4	13
Ethylbenzene	10.0	10.6		ug/L		106	80 - 120	3	14
m-Xylene & p-Xylene	10.0	10.5		ug/L		105	80 - 120	1	14
o-Xylene	10.0	10.5		ug/L		105	80 - 120	2	16
Methyl tert-butyl ether	10.0	10.2		ug/L		102	72 - 120	1	18

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		80 - 120
4-Bromofluorobenzene (Surr)	99		80 - 120
Toluene-d8 (Surr)	97		80 - 120

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QC Sample Results

Client: AECOM

Job ID: 580-126014-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-423550/8

Matrix: Water

Analysis Batch: 423550

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	102		80 - 120

Lab Sample ID: MB 580-423571/6

Matrix: Water

Analysis Batch: 423571

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	ND		1.0	0.24	ug/L			04/19/23 05:36	1
Toluene	ND		1.0	0.39	ug/L			04/19/23 05:36	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/19/23 05:36	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/19/23 05:36	1
o-Xylene	ND		1.0	0.39	ug/L			04/19/23 05:36	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/19/23 05:36	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	99		80 - 120		04/19/23 05:36	1
4-Bromofluorobenzene (Surr)	96		80 - 120		04/19/23 05:36	1
Toluene-d8 (Surr)	94		80 - 120		04/19/23 05:36	1
Dibromofluoromethane (Surr)	98		80 - 120		04/19/23 05:36	1

Lab Sample ID: LCS 580-423571/7

Matrix: Water

Analysis Batch: 423571

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec
	Added	Result	Qualifier			Limits	
Benzene	10.0	9.89		ug/L		99	80 - 122
Toluene	10.0	9.79		ug/L		98	80 - 120
Ethylbenzene	10.0	9.91		ug/L		99	80 - 120
m-Xylene & p-Xylene	10.0	9.76		ug/L		98	80 - 120
o-Xylene	10.0	9.94		ug/L		99	80 - 120
Methyl tert-butyl ether	10.0	9.31		ug/L		93	72 - 120

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	94		80 - 120
4-Bromofluorobenzene (Surr)	99		80 - 120
Toluene-d8 (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	95		80 - 120

Lab Sample ID: LCSD 580-423571/8

Matrix: Water

Analysis Batch: 423571

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec	%Rec	RPD	RPD
	Added	Result	Qualifier			Limits		Limit	
Benzene	10.0	10.4		ug/L		104	80 - 122	5	14
Toluene	10.0	10.0		ug/L		100	80 - 120	2	13
Ethylbenzene	10.0	9.98		ug/L		100	80 - 120	1	14
m-Xylene & p-Xylene	10.0	10.2		ug/L		102	80 - 120	4	14
o-Xylene	10.0	10.2		ug/L		102	80 - 120	3	16

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QC Sample Results

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126014-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-423571/8

Matrix: Water

Analysis Batch: 423571

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methyl tert-butyl ether	10.0	9.56		ug/L		96	72 - 120	3	18
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	96		80 - 120						
4-Bromofluorobenzene (Surr)	97		80 - 120						
Toluene-d8 (Surr)	101		80 - 120						
Dibromofluoromethane (Surr)	96		80 - 120						

Lab Sample ID: MB 580-423670/6

Matrix: Water

Analysis Batch: 423670

Client Sample ID: Method Blank

Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/20/23 07:29	1
Toluene	ND		1.0	0.39	ug/L			04/20/23 07:29	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/20/23 07:29	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/20/23 07:29	1
o-Xylene	ND		1.0	0.39	ug/L			04/20/23 07:29	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			04/20/23 07:29	1
	MB	MB							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		80 - 120					04/20/23 07:29	1
4-Bromofluorobenzene (Surr)	88		80 - 120					04/20/23 07:29	1
Toluene-d8 (Surr)	96		80 - 120					04/20/23 07:29	1
Dibromofluoromethane (Surr)	102		80 - 120					04/20/23 07:29	1

Lab Sample ID: LCS 580-423670/7

Matrix: Water

Analysis Batch: 423670

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	10.0	9.89		ug/L		99	80 - 122
Toluene	10.0	10.2		ug/L		102	80 - 120
Ethylbenzene	10.0	10.1		ug/L		101	80 - 120
m-Xylene & p-Xylene	10.0	9.93		ug/L		99	80 - 120
o-Xylene	10.0	10.0		ug/L		100	80 - 120
Methyl tert-butyl ether	10.0	8.85		ug/L		89	72 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	90		80 - 120				
4-Bromofluorobenzene (Surr)	103		80 - 120				
Toluene-d8 (Surr)	98		80 - 120				
Dibromofluoromethane (Surr)	99		80 - 120				

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QC Sample Results

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126014-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-423670/8

Matrix: Water

Analysis Batch: 423670

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	10.0	9.86		ug/L		99	80 - 122	0	14
Toluene	10.0	9.94		ug/L		99	80 - 120	2	13
Ethylbenzene	10.0	9.76		ug/L		98	80 - 120	4	14
m-Xylene & p-Xylene	10.0	9.92		ug/L		99	80 - 120	0	14
o-Xylene	10.0	10.1		ug/L		101	80 - 120	1	16
Methyl tert-butyl ether	10.0	8.89		ug/L		89	72 - 120	0	18

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		80 - 120
4-Bromofluorobenzene (Surr)	99		80 - 120
Toluene-d8 (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	98		80 - 120

Lab Sample ID: MB 580-423907/6

Matrix: Water

Analysis Batch: 423907

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.24	ug/L			04/21/23 14:40	1
Toluene	ND		1.0	0.39	ug/L			04/21/23 14:40	1
Ethylbenzene	ND		1.0	0.50	ug/L			04/21/23 14:40	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			04/21/23 14:40	1
o-Xylene	ND		1.0	0.39	ug/L			04/21/23 14:40	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		80 - 120		04/21/23 14:40	1
4-Bromofluorobenzene (Surr)	95		80 - 120		04/21/23 14:40	1
Toluene-d8 (Surr)	93		80 - 120		04/21/23 14:40	1
Dibromofluoromethane (Surr)	103		80 - 120		04/21/23 14:40	1

Lab Sample ID: LCS 580-423907/7

Matrix: Water

Analysis Batch: 423907

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	10.0	9.30		ug/L		93	80 - 122
Toluene	10.0	9.52		ug/L		95	80 - 120
Ethylbenzene	10.0	9.59		ug/L		96	80 - 120
m-Xylene & p-Xylene	10.0	9.84		ug/L		98	80 - 120
o-Xylene	10.0	9.61		ug/L		96	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		80 - 120
4-Bromofluorobenzene (Surr)	107		80 - 120
Toluene-d8 (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	98		80 - 120

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QC Sample Results

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126014-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-423907/8

Matrix: Water

Analysis Batch: 423907

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	10.0	9.89		ug/L		99	80 - 122	6	14
Toluene	10.0	9.95		ug/L		100	80 - 120	4	13
Ethylbenzene	10.0	9.89		ug/L		99	80 - 120	3	14
m-Xylene & p-Xylene	10.0	10.2		ug/L		102	80 - 120	4	14
o-Xylene	10.0	10.2		ug/L		102	80 - 120	6	16

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		80 - 120
4-Bromofluorobenzene (Surr)	101		80 - 120
Toluene-d8 (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	97		80 - 120

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Lab Sample ID: MB 580-423547/6

Matrix: Water

Analysis Batch: 423547

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	ND		50	14	ug/L			04/18/23 14:15	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		77 - 123		04/18/23 14:15	1

Lab Sample ID: LCS 580-423547/9

Matrix: Water

Analysis Batch: 423547

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics C7-C12	1000	1040		ug/L		104	55 - 148

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		77 - 123

Lab Sample ID: LCSD 580-423547/10

Matrix: Water

Analysis Batch: 423547

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics C7-C12	1000	1100		ug/L		110	55 - 148	5	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		77 - 123

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QC Sample Results

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126014-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS) (Continued)

Lab Sample ID: MB 580-423567/6

Matrix: Water

Analysis Batch: 423567

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics C7-C12	ND		50	14	ug/L			04/19/23 05:36	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		77 - 123					04/19/23 05:36	1

Lab Sample ID: LCS 580-423567/9

Matrix: Water

Analysis Batch: 423567

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Gasoline Range Organics C7-C12	1000	1030		ug/L		103	55 - 148	
Surrogate	LCS %Recovery	LCS Qualifier	Limits					
4-Bromofluorobenzene (Surr)	104		77 - 123					

Lab Sample ID: LCSD 580-423567/10

Matrix: Water

Analysis Batch: 423567

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics C7-C12	1000	991		ug/L		99	55 - 148	3	10
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	102		77 - 123						

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 580-423440/1-A

Matrix: Water

Analysis Batch: 424033

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 423440

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.10	0.033	ug/L		04/17/23 13:25	04/24/23 14:53	1
2-Methylnaphthalene	ND		0.20	0.039	ug/L		04/17/23 13:25	04/24/23 14:53	1
Acenaphthene	ND		0.10	0.014	ug/L		04/17/23 13:25	04/24/23 14:53	1
Acenaphthylene	ND		0.050	0.0090	ug/L		04/17/23 13:25	04/24/23 14:53	1
Anthracene	ND		0.10	0.022	ug/L		04/17/23 13:25	04/24/23 14:53	1
Benzo[a]anthracene	ND		0.050	0.014	ug/L		04/17/23 13:25	04/24/23 14:53	1
Benzo[a]pyrene	ND		0.10	0.022	ug/L		04/17/23 13:25	04/24/23 14:53	1
Benzo[b]fluoranthene	ND		0.10	0.022	ug/L		04/17/23 13:25	04/24/23 14:53	1
Benzo[g,h,i]perylene	ND		0.050	0.012	ug/L		04/17/23 13:25	04/24/23 14:53	1
Benzo[k]fluoranthene	ND		0.050	0.012	ug/L		04/17/23 13:25	04/24/23 14:53	1
Chrysene	ND		0.10	0.037	ug/L		04/17/23 13:25	04/24/23 14:53	1
Dibenz(a,h)anthracene	0.0185	J	0.10	0.015	ug/L		04/17/23 13:25	04/24/23 14:53	1
Fluoranthene	ND		0.20	0.054	ug/L		04/17/23 13:25	04/24/23 14:53	1
Fluorene	ND		0.10	0.017	ug/L		04/17/23 13:25	04/24/23 14:53	1

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QC Sample Results

Client: AECOM

Job ID: 580-126014-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: MB 580-423440/1-A

Matrix: Water

Analysis Batch: 424033

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 423440

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Indeno[1,2,3-cd]pyrene	0.0160	J	0.050	0.014	ug/L		04/17/23 13:25	04/24/23 14:53	1
Naphthalene	ND		0.50	0.16	ug/L		04/17/23 13:25	04/24/23 14:53	1
Phenanthrene	ND		0.10	0.031	ug/L		04/17/23 13:25	04/24/23 14:53	1
Pyrene	ND		0.10	0.033	ug/L		04/17/23 13:25	04/24/23 14:53	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	115		29 - 150	04/17/23 13:25	04/24/23 14:53	1

Lab Sample ID: LCS 580-423440/2-A

Matrix: Water

Analysis Batch: 424033

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 423440

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	8.00	6.07		ug/L		76	29 - 120
2-Methylnaphthalene	8.00	6.16		ug/L		77	33 - 120
Acenaphthene	8.00	6.26		ug/L		78	33 - 120
Acenaphthylene	8.00	6.73		ug/L		84	38 - 120
Anthracene	8.00	7.57		ug/L		95	41 - 120
Benzo[a]anthracene	8.00	7.22		ug/L		90	55 - 123
Benzo[a]pyrene	8.00	8.10		ug/L		101	51 - 120
Benzo[b]fluoranthene	8.00	7.34		ug/L		92	43 - 120
Benzo[g,h,i]perylene	8.00	8.64		ug/L		108	45 - 120
Benzo[k]fluoranthene	8.00	8.03		ug/L		100	41 - 121
Chrysene	8.00	7.72		ug/L		97	47 - 120
Dibenz(a,h)anthracene	8.00	8.50		ug/L		106	54 - 123
Fluoranthene	8.00	7.68		ug/L		96	51 - 125
Fluorene	8.00	6.72		ug/L		84	39 - 120
Indeno[1,2,3-cd]pyrene	8.00	8.22		ug/L		103	45 - 123
Naphthalene	8.00	5.66		ug/L		71	34 - 120
Phenanthrene	8.00	6.98		ug/L		87	46 - 120
Pyrene	8.00	7.73		ug/L		97	51 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	110		29 - 150

Lab Sample ID: LCSD 580-423440/3-A

Matrix: Water

Analysis Batch: 424033

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 423440

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	8.00	5.97		ug/L		75	29 - 120	2	35
2-Methylnaphthalene	8.00	6.11		ug/L		76	33 - 120	1	35
Acenaphthene	8.00	6.14		ug/L		77	33 - 120	2	35
Acenaphthylene	8.00	6.76		ug/L		84	38 - 120	0	35
Anthracene	8.00	7.53		ug/L		94	41 - 120	1	29
Benzo[a]anthracene	8.00	7.03		ug/L		88	55 - 123	3	31
Benzo[a]pyrene	8.00	7.80		ug/L		98	51 - 120	4	31
Benzo[b]fluoranthene	8.00	7.66		ug/L		96	43 - 120	4	35

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QC Sample Results

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126014-1

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCSD 580-423440/3-A

Matrix: Water

Analysis Batch: 424033

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 423440

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzo[g,h,i]perylene	8.00	8.45		ug/L		106	45 - 120	2	35
Benzo[k]fluoranthene	8.00	7.43		ug/L		93	41 - 121	8	35
Chrysene	8.00	7.46		ug/L		93	47 - 120	3	30
Dibenz(a,h)anthracene	8.00	8.52		ug/L		107	54 - 123	0	35
Fluoranthene	8.00	7.52		ug/L		94	51 - 125	2	31
Fluorene	8.00	6.50		ug/L		81	39 - 120	3	35
Indeno[1,2,3-cd]pyrene	8.00	8.24		ug/L		103	45 - 123	0	35
Naphthalene	8.00	5.64		ug/L		70	34 - 120	0	35
Phenanthrene	8.00	7.10		ug/L		89	46 - 120	2	32
Pyrene	8.00	7.53		ug/L		94	51 - 125	3	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Terphenyl-d14	107		29 - 150

Lab Sample ID: MB 580-423495/1-A

Matrix: Water

Analysis Batch: 424173

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 423495

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.10	0.033	ug/L		04/18/23 09:28	04/25/23 21:53	1
2-Methylnaphthalene	ND		0.20	0.039	ug/L		04/18/23 09:28	04/25/23 21:53	1
Acenaphthene	ND		0.10	0.014	ug/L		04/18/23 09:28	04/25/23 21:53	1
Acenaphthylene	ND		0.050	0.0090	ug/L		04/18/23 09:28	04/25/23 21:53	1
Anthracene	ND		0.10	0.022	ug/L		04/18/23 09:28	04/25/23 21:53	1
Benzo[a]anthracene	ND		0.050	0.014	ug/L		04/18/23 09:28	04/25/23 21:53	1
Benzo[a]pyrene	ND		0.10	0.022	ug/L		04/18/23 09:28	04/25/23 21:53	1
Benzo[b]fluoranthene	ND		0.10	0.022	ug/L		04/18/23 09:28	04/25/23 21:53	1
Benzo[g,h,i]perylene	ND		0.050	0.012	ug/L		04/18/23 09:28	04/25/23 21:53	1
Benzo[k]fluoranthene	ND		0.050	0.012	ug/L		04/18/23 09:28	04/25/23 21:53	1
Chrysene	ND		0.10	0.037	ug/L		04/18/23 09:28	04/25/23 21:53	1
Dibenz(a,h)anthracene	ND		0.10	0.015	ug/L		04/18/23 09:28	04/25/23 21:53	1
Fluoranthene	ND		0.20	0.054	ug/L		04/18/23 09:28	04/25/23 21:53	1
Fluorene	ND		0.10	0.017	ug/L		04/18/23 09:28	04/25/23 21:53	1
Indeno[1,2,3-cd]pyrene	ND		0.050	0.014	ug/L		04/18/23 09:28	04/25/23 21:53	1
Naphthalene	ND		0.50	0.16	ug/L		04/18/23 09:28	04/25/23 21:53	1
Phenanthrene	ND		0.10	0.031	ug/L		04/18/23 09:28	04/25/23 21:53	1
Pyrene	ND		0.10	0.033	ug/L		04/18/23 09:28	04/25/23 21:53	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	96		29 - 150	04/18/23 09:28	04/25/23 21:53	1

Lab Sample ID: LCS 580-423495/2-A

Matrix: Water

Analysis Batch: 424173

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 423495

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	8.00	5.28		ug/L		66	29 - 120
2-Methylnaphthalene	8.00	5.14		ug/L		64	33 - 120

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QC Sample Results

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126014-1

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCS 580-423495/2-A

Matrix: Water

Analysis Batch: 424173

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 423495

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acenaphthene	8.00	5.66		ug/L		71	33 - 120
Acenaphthylene	8.00	5.68		ug/L		71	38 - 120
Anthracene	8.00	6.13		ug/L		77	41 - 120
Benzo[a]anthracene	8.00	6.14		ug/L		77	55 - 123
Benzo[a]pyrene	8.00	6.59		ug/L		82	51 - 120
Benzo[b]fluoranthene	8.00	6.36		ug/L		80	43 - 120
Benzo[g,h,i]perylene	8.00	7.03		ug/L		88	45 - 120
Benzo[k]fluoranthene	8.00	6.75		ug/L		84	41 - 121
Chrysene	8.00	6.46		ug/L		81	47 - 120
Dibenz(a,h)anthracene	8.00	7.21		ug/L		90	54 - 123
Fluoranthene	8.00	6.32		ug/L		79	51 - 125
Fluorene	8.00	6.16		ug/L		77	39 - 120
Indeno[1,2,3-cd]pyrene	8.00	6.84		ug/L		86	45 - 123
Naphthalene	8.00	5.26		ug/L		66	34 - 120
Phenanthrene	8.00	5.99		ug/L		75	46 - 120
Pyrene	8.00	6.37		ug/L		80	51 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	89		29 - 150

Lab Sample ID: LCSD 580-423495/3-A

Matrix: Water

Analysis Batch: 424173

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 423495

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	8.00	4.73		ug/L		59	29 - 120	11	35
2-Methylnaphthalene	8.00	4.59		ug/L		57	33 - 120	11	35
Acenaphthene	8.00	5.08		ug/L		63	33 - 120	11	35
Acenaphthylene	8.00	5.08		ug/L		64	38 - 120	11	35
Anthracene	8.00	5.55		ug/L		69	41 - 120	10	29
Benzo[a]anthracene	8.00	5.64		ug/L		71	55 - 123	8	31
Benzo[a]pyrene	8.00	6.06		ug/L		76	51 - 120	8	31
Benzo[b]fluoranthene	8.00	5.72		ug/L		72	43 - 120	11	35
Benzo[g,h,i]perylene	8.00	6.43		ug/L		80	45 - 120	9	35
Benzo[k]fluoranthene	8.00	6.34		ug/L		79	41 - 121	6	35
Chrysene	8.00	5.97		ug/L		75	47 - 120	8	30
Dibenz(a,h)anthracene	8.00	6.49		ug/L		81	54 - 123	11	35
Fluoranthene	8.00	5.78		ug/L		72	51 - 125	9	31
Fluorene	8.00	5.57		ug/L		70	39 - 120	10	35
Indeno[1,2,3-cd]pyrene	8.00	6.18		ug/L		77	45 - 123	10	35
Naphthalene	8.00	4.74		ug/L		59	34 - 120	10	35
Phenanthrene	8.00	5.42		ug/L		68	46 - 120	10	32
Pyrene	8.00	5.86		ug/L		73	51 - 125	8	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Terphenyl-d14	83		29 - 150

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QC Sample Results

Client: AECOM

Job ID: 580-126014-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Lab Sample ID: MB 580-423497/1-B

Matrix: Water

Analysis Batch: 423783

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 423497

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		110	65	ug/L		04/18/23 09:38	04/20/23 13:24	1
Motor Oil (>C24-C36)	ND		350	96	ug/L		04/18/23 09:38	04/20/23 13:24	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	74		50 - 150				04/18/23 09:38	04/20/23 13:24	1

Lab Sample ID: LCS 580-423497/2-B

Matrix: Water

Analysis Batch: 423783

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 423497

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
#2 Diesel (C10-C24)	4000	3780		ug/L		94	50 - 120	
Motor Oil (>C24-C36)	4000	4080		ug/L		102	64 - 120	
Surrogate	LCS %Recovery	LCS Qualifier	Limits					
o-Terphenyl	95		50 - 150					

Lab Sample ID: LCSD 580-423497/3-B

Matrix: Water

Analysis Batch: 423783

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 423497

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4000	3810		ug/L		95	50 - 120	1	26
Motor Oil (>C24-C36)	4000	3990		ug/L		100	64 - 120	2	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	94		50 - 150						

Lab Sample ID: MB 580-423635/1-B

Matrix: Water

Analysis Batch: 423886

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 423635

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		110	65	ug/L		04/19/23 09:43	04/21/23 18:56	1
Motor Oil (>C24-C36)	376		350	96	ug/L		04/19/23 09:43	04/21/23 18:56	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	67		50 - 150				04/19/23 09:43	04/21/23 18:56	1

Lab Sample ID: LCS 580-423635/2-B

Matrix: Water

Analysis Batch: 423886

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 423635

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
#2 Diesel (C10-C24)	4000	2980		ug/L		74	50 - 120	
Motor Oil (>C24-C36)	4000	3310		ug/L		83	64 - 120	

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QC Sample Results

Client: AECOM

Job ID: 580-126014-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup (Continued)

Lab Sample ID: LCS 580-423635/2-B

Matrix: Water

Analysis Batch: 423886

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 423635

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	74		50 - 150

Lab Sample ID: LCSD 580-423635/3-B

Matrix: Water

Analysis Batch: 423886

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 423635

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4000	3120		ug/L		78	50 - 120	5	26
Motor Oil (>C24-C36)	4000	3420		ug/L		85	64 - 120	3	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
o-Terphenyl	80		50 - 150

Lab Sample ID: MB 580-423997/1-B

Matrix: Water

Analysis Batch: 424056

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 423997

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		110	65	ug/L		04/24/23 10:03	04/25/23 01:37	1
Motor Oil (>C24-C36)	137	J	350	96	ug/L		04/24/23 10:03	04/25/23 01:37	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	56		50 - 150	04/24/23 10:03	04/25/23 01:37	1

Lab Sample ID: LCS 580-423997/2-B

Matrix: Water

Analysis Batch: 424056

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 423997

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
#2 Diesel (C10-C24)	4000	2980		ug/L		74	50 - 120
Motor Oil (>C24-C36)	4000	3130		ug/L		78	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	75		50 - 150

Lab Sample ID: LCSD 580-423997/3-B

Matrix: Water

Analysis Batch: 424056

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 423997

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	4000	3070		ug/L		77	50 - 120	3	26
Motor Oil (>C24-C36)	4000	3370		ug/L		84	64 - 120	7	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
o-Terphenyl	84		50 - 150

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QC Sample Results

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126014-1

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 580-423853/25-A
Matrix: Water
Analysis Batch: 424008

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 423853

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.060	0.0072	mg/L		04/20/23 16:19	04/21/23 16:27	1
Barium	ND		0.020	0.0010	mg/L		04/20/23 16:19	04/21/23 16:27	1
Cadmium	ND		0.020	0.00090	mg/L		04/20/23 16:19	04/21/23 16:27	1
Chromium	ND		0.025	0.0027	mg/L		04/20/23 16:19	04/21/23 16:27	1
Lead	ND		0.030	0.0027	mg/L		04/20/23 16:19	04/21/23 16:27	1
Selenium	ND		0.10	0.0087	mg/L		04/20/23 16:19	04/21/23 16:27	1
Silver	ND		0.050	0.0085	mg/L		04/20/23 16:19	04/21/23 16:27	1

Lab Sample ID: LCS 580-423853/26-A
Matrix: Water
Analysis Batch: 424008

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 423853

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	1.00		mg/L		100	80 - 120
Barium	1.00	1.00		mg/L		100	80 - 120
Cadmium	1.00	0.982		mg/L		98	80 - 120
Chromium	1.00	0.991		mg/L		99	80 - 120
Lead	1.00	1.03		mg/L		103	80 - 120
Selenium	1.00	1.02		mg/L		102	80 - 120
Silver	1.00	1.01		mg/L		101	80 - 120

Lab Sample ID: LCSD 580-423853/27-A
Matrix: Water
Analysis Batch: 424008

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 423853

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	1.00	1.02		mg/L		102	80 - 120	1	20
Barium	1.00	1.01		mg/L		101	80 - 120	1	20
Cadmium	1.00	0.995		mg/L		100	80 - 120	1	20
Chromium	1.00	1.00		mg/L		100	80 - 120	1	20
Lead	1.00	1.04		mg/L		104	80 - 120	1	20
Selenium	1.00	1.03		mg/L		103	80 - 120	2	20
Silver	1.00	1.01		mg/L		101	80 - 120	0	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 580-423910/22-A
Matrix: Water
Analysis Batch: 423966

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 423910

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.30	0.15	ug/L		04/21/23 11:39	04/21/23 17:19	1

Lab Sample ID: LCS 580-423910/23-A
Matrix: Water
Analysis Batch: 423966

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 423910

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	2.00	2.06		ug/L		103	80 - 120

Eurofins Seattle

QC Sample Results

Client: AECOM

Job ID: 580-126014-1

Project/Site: SMP Portland Terminal Response Action GWM

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCSD 580-423910/24-A

Matrix: Water

Analysis Batch: 423966

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 423910

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	2.00	2.16		ug/L		108	80 - 120	5	20

Lab Chronicle

Client: AECOM

Job ID: 580-126014-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230410-MW-18-19-RA

Lab Sample ID: 580-126014-1

Date Collected: 04/10/23 13:45

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		100	423550	ITR	EET SEA	04/18/23 17:56
Total/NA	Analysis	8260D	DL	1000	423670	ITR	EET SEA	04/20/23 15:33
Total/NA	Analysis	NWTPH-Gx		100	423547	ITR	EET SEA	04/18/23 17:56
Total/NA	Prep	3510C			423440	TGO	EET SEA	04/17/23 13:25
Total/NA	Analysis	8270E SIM		1	424033	K1K	EET SEA	04/24/23 21:24
Total/NA	Prep	3510C	DL		423440	TGO	EET SEA	04/17/23 13:25
Total/NA	Analysis	8270E SIM	DL	10	425122	TL1	EET SEA	05/05/23 12:30
Total/NA	Prep	3510C			423497	TGO	EET SEA	04/18/23 09:38
Total/NA	Cleanup	3630C			423509	TGO	EET SEA	04/18/23 09:59
Total/NA	Analysis	NWTPH-Dx		1	423783	KLW	EET SEA	04/20/23 15:05
Total Recoverable	Prep	3005A			423853	JLS	EET SEA	04/20/23 16:19
Total Recoverable	Analysis	6010D		1	424008	JLS	EET SEA	04/21/23 17:15
Total/NA	Prep	7470A			423910	JL	EET SEA	04/21/23 11:37
Total/NA	Analysis	7470A		1	423966	JL	EET SEA	04/21/23 17:48

Client Sample ID: 20230410-MW-19-22-RA

Lab Sample ID: 580-126014-2

Date Collected: 04/10/23 13:00

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423670	ITR	EET SEA	04/20/23 15:08
Total/NA	Analysis	NWTPH-Gx		1	423547	ITR	EET SEA	04/18/23 18:47
Total/NA	Prep	3510C			423440	TGO	EET SEA	04/17/23 13:25
Total/NA	Analysis	8270E SIM		1	424033	K1K	EET SEA	04/24/23 21:48
Total/NA	Prep	3510C			423497	TGO	EET SEA	04/18/23 09:38
Total/NA	Cleanup	3630C			423509	TGO	EET SEA	04/18/23 09:59
Total/NA	Analysis	NWTPH-Dx		1	423783	KLW	EET SEA	04/20/23 15:25
Total Recoverable	Prep	3005A			423853	JLS	EET SEA	04/20/23 16:19
Total Recoverable	Analysis	6010D		1	424008	JLS	EET SEA	04/21/23 17:19
Total/NA	Prep	7470A			423910	JL	EET SEA	04/21/23 11:37
Total/NA	Analysis	7470A		1	423966	JL	EET SEA	04/21/23 17:55

Client Sample ID: 20230412-P-03-11-RA

Lab Sample ID: 580-126014-3

Date Collected: 04/12/23 09:53

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423571	ITR	EET SEA	04/19/23 08:27
Total/NA	Analysis	NWTPH-Gx		1	423567	ITR	EET SEA	04/19/23 08:27
Total/NA	Prep	3510C			423495	TGO	EET SEA	04/18/23 09:28
Total/NA	Analysis	8270E SIM		1	424173	T1L	EET SEA	04/26/23 04:36
Total/NA	Prep	3510C			423997	TGO	EET SEA	04/24/23 10:03
Total/NA	Cleanup	3630C			423999	TGO	EET SEA	04/24/23 10:12
Total/NA	Analysis	NWTPH-Dx		1	424056	KLW	EET SEA	04/25/23 02:33

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Lab Chronicle

Client: AECOM

Job ID: 580-126014-1

Project/Site: SMP Portland Terminal Response Action GWM

Client Sample ID: 20230412-P-03-11-RA

Lab Sample ID: 580-126014-3

Date Collected: 04/12/23 09:53

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			423853	JLS	EET SEA	04/20/23 16:19
Total Recoverable	Analysis	6010D		1	424008	JLS	EET SEA	04/21/23 17:22
Total/NA	Prep	7470A			423910	JL	EET SEA	04/21/23 11:37
Total/NA	Analysis	7470A		1	423966	JL	EET SEA	04/21/23 17:57

Client Sample ID: 20230412-P-05-15-RA

Lab Sample ID: 580-126014-4

Date Collected: 04/12/23 13:33

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		5	423571	ITR	EET SEA	04/19/23 08:51
Total/NA	Analysis	8260D	DL	50	423907	ITR	EET SEA	04/22/23 00:35
Total/NA	Analysis	NWTPH-Gx		5	423567	ITR	EET SEA	04/19/23 08:51
Total/NA	Prep	3510C	DL		423495	TGO	EET SEA	04/18/23 09:28
Total/NA	Analysis	8270E SIM	DL	20	425122	TL1	EET SEA	05/05/23 12:54
Total/NA	Prep	3510C			423495	TGO	EET SEA	04/18/23 09:28
Total/NA	Analysis	8270E SIM		1	424173	T1L	EET SEA	04/26/23 04:55
Total/NA	Prep	3510C			423635	TGO	EET SEA	04/19/23 09:43
Total/NA	Cleanup	3630C			423636	TGO	EET SEA	04/19/23 09:52
Total/NA	Analysis	NWTPH-Dx		1	423886	KLW	EET SEA	04/21/23 21:38
Total Recoverable	Prep	3005A			423853	JLS	EET SEA	04/20/23 16:19
Total Recoverable	Analysis	6010D		1	424008	JLS	EET SEA	04/21/23 17:26
Total/NA	Prep	7470A			423910	JL	EET SEA	04/21/23 11:37
Total/NA	Analysis	7470A		1	423966	JL	EET SEA	04/21/23 17:59

Client Sample ID: Trip Blanks

Lab Sample ID: 580-126014-5

Date Collected: 04/10/23 00:01

Matrix: Water

Date Received: 04/13/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	423550	ITR	EET SEA	04/18/23 19:12
Total/NA	Analysis	NWTPH-Gx		1	423547	ITR	EET SEA	04/18/23 19:12

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: AECOM
Project/Site: SMP Portland Terminal Response Action GWM

Job ID: 580-126014-1

Laboratory: Eurofins Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4167	07-07-23

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

Sample Summary

Client: AECOM

Job ID: 580-126014-1

Project/Site: SMP Portland Terminal Response Action GWM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-126014-1	20230410-MW-18-19-RA	Water	04/10/23 13:45	04/13/23 16:00
580-126014-2	20230410-MW-19-22-RA	Water	04/10/23 13:00	04/13/23 16:00
580-126014-3	20230412-P-03-11-RA	Water	04/12/23 09:53	04/13/23 16:00
580-126014-4	20230412-P-05-15-RA	Water	04/12/23 13:33	04/13/23 16:00
580-126014-5	Trip Blanks	Water	04/10/23 00:01	04/13/23 16:00

Environment Testing
TestAmerica

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

5/8/2023

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-126014-1

Login Number: 126014

List Number: 1

Creator: O'Connell, Jason I

List Source: Eurofins Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

About AECOM

AECOM (NYSE: ACM) is a global provider of professional technical and management support services to a broad range of markets, including transportation, facilities, environmental, energy, water and government. With approximately 100,000 employees around the world, AECOM is a leader in all of the key markets that it serves. AECOM provides a blend of global reach, local knowledge, innovation, and collaborative technical excellence in delivering solutions that enhance and sustain the world's built, natural, and social environments. A Fortune 500 company, AECOM serves clients in more than 100 countries and has annual revenue in excess of \$6 billion.

More information on AECOM and its services can be found at www.aecom.com.

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