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July 14, 2021

Mr. Panjini Balaraju
Washington State Department of Ecology
Toxics Cleanup Program Southwest Regional Office
300 Desmond Drive
Lacey, WA 98503

Subject: Quarterly Progress Report – Second Quarter 2020
D Street Petroleum Site, Tacoma, Washington
**CONSENT DECREE 91-2-2012-1**

Dear Mr. Balaraju:

AECOM submits the following progress report for the D Street Petroleum Site located at 520 East D Street in Tacoma, Washington (the Site). This report is being submitted to the Washington State Department of Ecology (Ecology) on behalf of the D Street Potentially Liable Persons (PLP) Group: ExxonMobil Refining and Supply/Environmental Services (ExxonMobil, formerly Mobil), Shell Oil Company (Shell), and Chevron Environmental Management Company (Chevron EMC), in accordance with Consent Decree No. 91-2-2012-1. The Phillips 66 Company (formerly ConocoPhillips) transferred control of its allocated share of the D Street PLP Group to Chevron EMC, effective April 1, 2011.

A groundwater sampling and monitored natural attenuation program was implemented after the remedial system at the Site was turned off in October 2006. Groundwater monitoring is conducted in accordance with the Sampling and Analysis Plan for Groundwater Performance Monitoring Program and Work Plan for Well Installation/Decommissioning Activities, dated September 2011. This progress report covers the environmental monitoring data collected during the second quarter (April 1, 2020 through June 30, 2020). An evaluation of the second quarter 2020 data and natural attenuation processes will be presented in the 2020 Annual Progress Report, which is completed following the third quarter (September) 2020 monitoring event.

## 1.0 Site Description

The Site is an approximately 17-acre former Shell property located at 520 East D Street in Tacoma, Pierce County, Washington (Figure 1). The Site is located on a peninsula in Commencement Bay and is bounded to the west by the Thea Foss Waterway; to the north by various industrial properties, East 3rd Street, and Commencement Bay; to the east by East F Street and the Middle Waterway; and to the south by various industrial properties and 11th Street.

The Site includes an active bulk petroleum storage and distribution area currently occupied by Phillips 66 Company. Previous operators of the petroleum storage and distribution area include Mobil, British Petroleum (BP), Unocal/76 Products, and Tosco. The south and southwest end of the Site is owned and utilized by Globe Machine Manufacturing, a manufacturer of industrial machines. The east and northeast end of the Site is vacant and owned by Targa Resources with the exception of the northeastern-most area which is occupied by a pump station owned by Olympic Pipeline Company. These areas along with the groundwater monitoring well network and other site features are presented in Figure 2.

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## 2.0 Summary of Sampling Activities Conducted During the Reporting Period

The second quarter 2020 monitoring event included the following groundwater sampling activities conducted from June 23 through June 24, 2020:

- Water Level and Free Product Gauging
  - AECOM personnel measured water levels and free product thickness, when present, in 32 upper sand unit monitoring wells, six sentinel wells, six lower sand unit monitoring wells, and seven surface water compliance monitoring wells. Measurable free product was not observed in the monitoring wells gauged during this event.
  - The depths to groundwater and the calculated groundwater elevations based on the June 2020 measurements are presented in Table 1. Groundwater elevation contour maps are not provided due to high variability in the groundwater elevation data caused by tidal influences and other factors.
  - The predominant groundwater flow direction within the upper and lower sand units has historically been toward the southwest (toward the Thea Foss Waterway). Groundwater and tidal influence studies conducted in 2011 indicate a more diminished flow pattern toward the Thea Foss Waterway.

- Groundwater/Surface Water Compliance Sampling
  - Groundwater and surface water compliance samples were collected from 17 groundwater monitoring wells during this event:
    - Six upper sand unit groundwater monitoring wells (B-25, B-31, B-34, HC-111, RW-5R, RW-8)
    - Four wells E-22, FW-5R, FW-14, and T-2 serve as sentinel wells
    - Four surface water compliance monitoring wells (RR-1, RR-2, RR-4, and RR-5)
    - Three lower sand unit groundwater monitoring wells (DMW-2, DMW-4 and FW-13)
  - The wells were purged and sampled following low-flow sampling methodology. An in-line (i.e., flow-thru cell) multi-parameter water quality measurement device was used to continuously monitor pH, temperature, conductivity, oxidation-reduction potential (ORP), dissolved oxygen (DO), and turbidity. Representative water samples were collected when parameters stabilized over three recording intervals (three to five minutes each).

- Analytical Procedures
  - The groundwater and surface water compliance samples were submitted under proper chain-of-custody protocol to Eurofins TestAmerica Laboratories, Incorporated of Spokane, Washington. The laboratory analytical reports and chain-of-custody records are provided in Appendix A.
  - The following methods were used to analyze the samples identified above:
    - Benzene, toluene, ethylbenzene, and xylenes (BTEX) by U.S. Environmental Protection Agency (EPA) Method 8260D
    - Gasoline-range total petroleum hydrocarbons (TPH-G) by Northwest total petroleum hydrocarbons Method NWTPH-Gx

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  - Diesel-range total petroleum hydrocarbons (TPH-D) and total petroleum hydrocarbons in the heavy oil range (TPH-O) by Northwest total petroleum hydrocarbons Method NWTPH-Dx
  - Naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene by EPA Method 8270E selected ion monitoring (SIM)

- Purge water generated during this event was placed in a 55-gallon drum stored at the Site. The contents of the drum will be removed for disposal prior to the next quarterly groundwater monitoring event.

## 3.0 Summary of Data Validation Completed for Period Sampling Event

A data validation review was completed for the second quarter 2020 analytical data. The data was reviewed based on the EPA Contract Laboratory Program's *National Functional Guidelines for Organic Superfund Methods Data Review* dated January 2017 and standard laboratory quality control criteria.

The completeness of the analytical data for this groundwater monitoring event is 100%. The data qualifiers assigned by the laboratory are shown on the laboratory reports. The diluted analysis for BTEX for B-34 was analyzed 5 days past the method-recommended holding time. The results for benzene, m,p-xylene, and o-xylene for B-34 were qualified as estimated and flagged 'J' based on this holding time exceedance. Additionally, the laboratory noted that the percent differences for TPH-G in continuing calibration verifications (CCVs) were outside the control limit of ±20% in samples collected from FW-5R, B-25, B-34, and HC-111. The results for TPH-G in FW-5R, B-25, B-34, and HC-111 were qualified as estimated and flagged 'J'. The results for toluene and TPH-O for B-34 were qualified as estimated and flagged 'J' based on matrix spike/matrix spike duplicate results. Sample results and associated data qualifiers are presented in Table 2 and Appendix B: Table 1. The completed data review memorandum for this quarterly sampling event is provided in Appendix B.

## 4.0 Summary of Analytical Results for Period Sampling Event

This section provides a summary of the groundwater monitoring results from this event. Table 2 summarizes analytical results for groundwater monitoring wells sampled during the second quarter 2020. A copy of the laboratory analytical report is presented in Appendix A. Site-specific Surface Water Cleanup Levels and Groundwater Cleanup Levels were established by Ecology and D Street PLP Group representatives (effective September 3, 1991), as written in Appendix B of Consent Decree No. 91-2-2012-1. The cleanup levels were established for the following specific contaminants: benzene, toluene, and ethylbenzene. Cleanup levels were not established for total xylenes, TPH-G, TPH-D, or TPH-O.

- Benzene was detected in six upper sand unit wells (B-25, B-31, B-34, HC-111, RW-5R, and RW-8), two sentinel wells (E-22 and FW-5R), and two lower sand unit wells (DMW-2 and FW-13). Wells B-25, B-34, and HC-111 exceeded the surface water cleanup standard of 0.04 mg/L but did not exceed the groundwater cleanup standard of 0.16 mg/L. Benzene was

not detected in the surface water compliance wells sampled during this event. Benzene concentrations in the upper sand unit and resulting isocontours from this event are presented on Figure 3.

- Toluene was detected in four upper sand unit wells (B-25, B-31, B-34, and HC-111). None of the toluene detections exceeded the surface water cleanup standard of 5 mg/L or the groundwater cleanup standard of 20 mg/L. Toluene was not detected in the surface water compliance wells, sentinel wells, or lower sand unit wells sampled during this event.
- Ethylbenzene was detected in six upper sand unit wells (B-25, B-31, B-34, HC-111, RW-5R, and RW-8), two sentinel wells (E-22 and FW-5R), and one lower sand unit well (DMW-2). None of the ethylbenzene detections exceeded the surface water cleanup standard of 0.43 mg/L or the groundwater cleanup standard of 1.7 mg/L. Ethylbenzene was not detected in the surface water compliance wells sampled during this event.
- Total xylenes were detected in four upper sand unit wells (B-25, B-31, HC-111, and RW-5R) and one sentinel well (E-22). Total xylenes were not detected in the surface water compliance wells or lower sand unit wells sampled during this event. There are no cleanup standards for total xylenes for the Site.
- TPH-G was detected in six upper sand unit wells (B-25, B-31, B-34, HC-111, RW-5R, and RW-8), three sentinel wells (E-22, FW-5R, and T-2), one surface water compliance well (RR-1), and one lower sand unit well (DMW-4). There are no cleanup standards for TPH-G for the Site. TPH-G concentrations in the upper sand unit and resulting isocontours from this event are presented on Figure 4.
- TPH-D was detected in six upper sand unit wells (B-25, B-31, B-34, HC-111, RW-5R, and RW-8), two sentinel wells (E-22 and FW-5R), and three lower sand unit wells (DMW-2, DMW-4, FW-13). There are no cleanup standards for TPH-D for the Site. TPH-D concentrations in the upper sand unit and resulting isocontours from this event are presented on Figure 5.
- TPH-O was detected in five upper sand unit wells (B-31, B-34, HC-111, RW-5R, and RW-8), one sentinel well (E-22), and one lower sand unit well (DMW-2). There are no cleanup standards for TPH-O for the Site.
- Naphthalene was analyzed in three select wells (FW-5R, FW-14, and RR-2) during this quarterly sampling event. Naphthalene was detected in one sentinel well (FW-5R). There are no cleanup standards for naphthalene for the Site.

## 5.0 Summary of Field and Natural Attenuation Results for Period Sampling Event

Table 3 summarizes the field parameters for the groundwater monitoring wells sampled during this quarterly monitoring event. An evaluation of the natural attenuation processes occurring at the Site will be presented in the 2020 Annual Progress Report, which is completed following the third quarter (September) 2020 sampling event.

## 6.0 Discussion of Upper Sand Unit Shoreline Data

There were no exceedances of site groundwater or surface water cleanup standards in the sentinel wells (E-22, FW-5R, FW-14, and T-2) sampled during this event. TPH-G was detected in three sentinel wells (E-22, FW-5R, and T-2). TPH-D, benzene, and ethylbenzene were detected in two

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sentinel wells (E-22 and FW-5R). TPH-O and total xylenes were detected in one sentinel well (E-22). Naphthalene was detected in sentinel well FW-5R. Toluene were not detected in the sampled sentinel wells.

There were no exceedances of site groundwater or surface water cleanup standards in the surface water compliance wells (RR-1, RR-2, RR-4, and RR-5) sampled during this event. TPH-G was detected in RR-1 and TPH-D was detected in RR-5. TPH-O, BTEX and naphthalene were not detected in the surface water compliance wells sampled during this event. Further evaluation of this area will be provided in the 2020 Annual Progress Report.

## 7.0. Discussion of Lower Sand Unit Data

There were no exceedances of site groundwater or surface water cleanup standards in the lower sand unit wells (DMW-2, DMW-4, and FW-13). TPH-D was detected in all three lower sand unit wells. TPH-G was detected in DMW-4. TPH-O, benzene, and ethylbenzene were detected in DMW-2. Benzene was also detected in FW-13. Toluene and total xylenes were not detected in the lower sand unit wells.

## 8.0 Status of Recent and Upcoming Deliverables

- The First Quarter 2020 Progress Report was submitted in May 2021.
- The 2020 Annual Report is anticipated to be submitted in June 2021.

If you have any questions regarding this progress report, please call me at (503) 222-7200.

Sincerely,

AECOM

RDigiustino

Rebecca Digiustino
Geologist/ Technical Manager

Renee Knecht
Senior Geologist/Project Manager

cc: Andrea Wing – Shell Oil Company (electronic only)
Marla Madden – ExxonMobil (electronic only)
Eric Hetrick – Chevron (electronic only)
Rich Solomon – Phillips 66 (electronic only)

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**ATTACHMENTS:**

Figure 1 – Vicinity Map
Figure 2 – Site Map
Figure 3 – Benzene Concentrations in Groundwater, (Upper Sand Unit) June 2020
Figure 4 – TPH-G Concentrations in Groundwater, (Upper Sand Unit) June 2020
Figure 5 – TPH-D Concentrations in Groundwater, (Upper Sand Unit) June 2020
Table 1 – Groundwater Elevation Data, Second Quarter 2020
Table 2 – Summary of Groundwater Analytical Results, Second Quarter 2020
Table 3 – Summary of Field Parameters, Second Quarter 2020

Appendix A – Analytical Data
Appendix B – Summary Data Quality Review

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# FIGURES


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0 2,000 4,000 Feet

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## VICINITY MAP

D STREET PETROLEUM SITE
TACOMA, WASHINGTON

**FIGURE 1**

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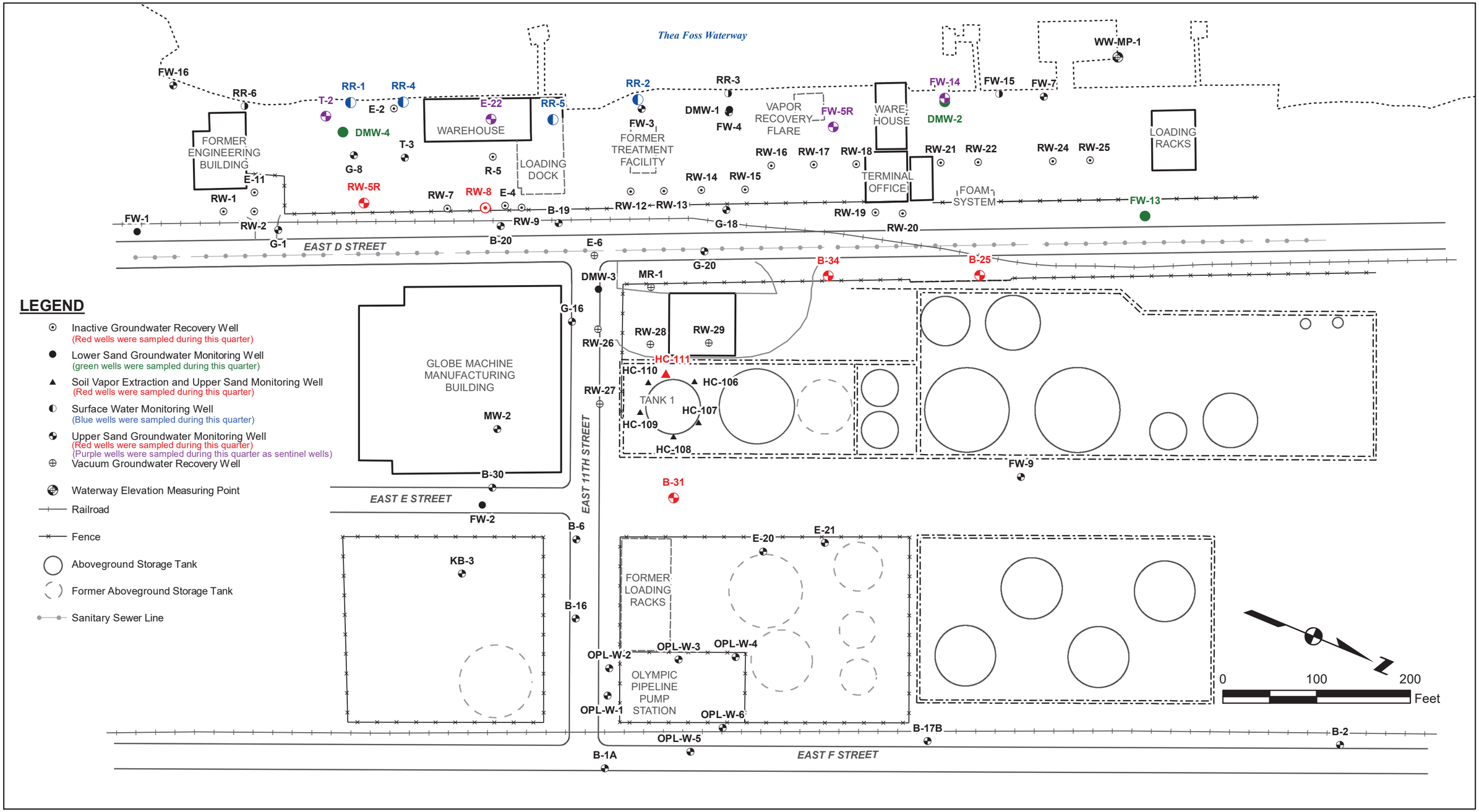


## LEGEND

- Inactive Groundwater Recovery Well
  (Red wells were sampled during this quarter)
- Lower Sand Groundwater Monitoring Well
  (green wells were sampled during this quarter)
- Soil Vapor Extraction and Upper Sand Monitoring Well
  (Red wells were sampled during this quarter)
- Surface Water Monitoring Well
  (Blue wells were sampled during this quarter)
- Upper Sand Groundwater Monitoring Well
  (Red wells were sampled during this quarter)
  (Purple wells were sampled during this quarter as sentinel wells)
- Vacuum Groundwater Recovery Well
- Waterway Elevation Measuring Point
- Railroad
- Fence
- Aboveground Storage Tank
- Former Aboveground Storage Tank
- Sanitary Sewer Line

Source: Landau Associates, 2009.
Maul Foster & Alongi, Inc. 2002.
USGS, 2009.
URS, 2014.

**SITE MAP**

D STREET PETROLEUM SITE
TACOMA, WASHINGTON

**FIGURE 2**

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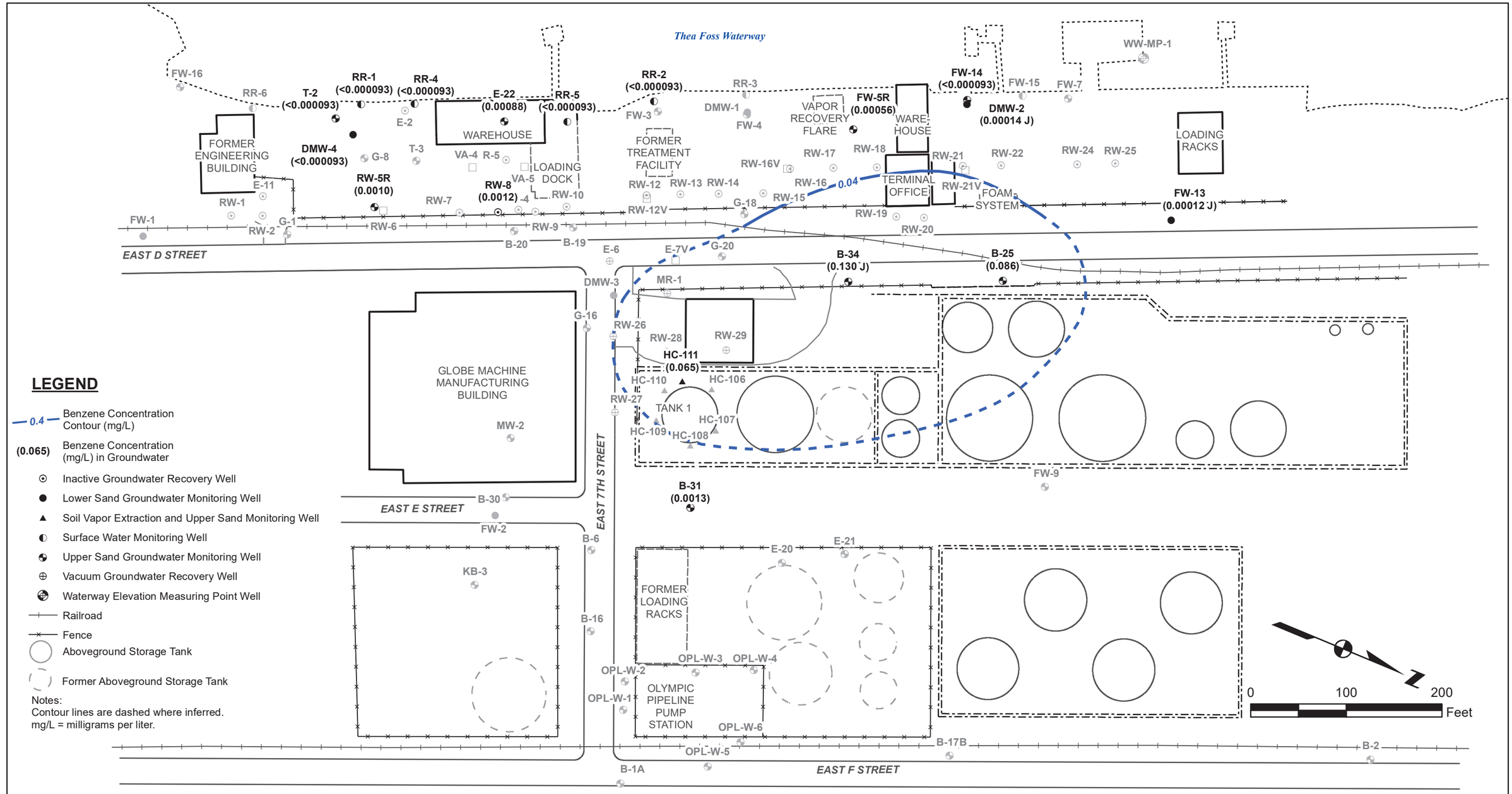


## LEGEND

- 0.4 — Benzene Concentration Contour (mg/L)
- (0.065) Benzene Concentration (mg/L) in Groundwater
- Inactive Groundwater Recovery Well
- Lower Sand Groundwater Monitoring Well
- Soil Vapor Extraction and Upper Sand Monitoring Well
- Surface Water Monitoring Well
- Upper Sand Groundwater Monitoring Well
- Vacuum Groundwater Recovery Well
- Waterway Elevation Measuring Point Well
- Railroad
- Fence
- Aboveground Storage Tank
- Former Aboveground Storage Tank

Notes:
Contour lines are dashed where inferred.
mg/L = milligrams per liter.

Source: Landau Associates, 2009.
Maul Foster & Alongi, Inc. 2002.
USGS, 2009.

**BENZENE CONCENTRATIONS IN GROUNDWATER (UPPER SAND UNIT) JUNE 2020**

D STREET PETROLEUM SITE
TACOMA, WASHINGTON

**FIGURE 3**

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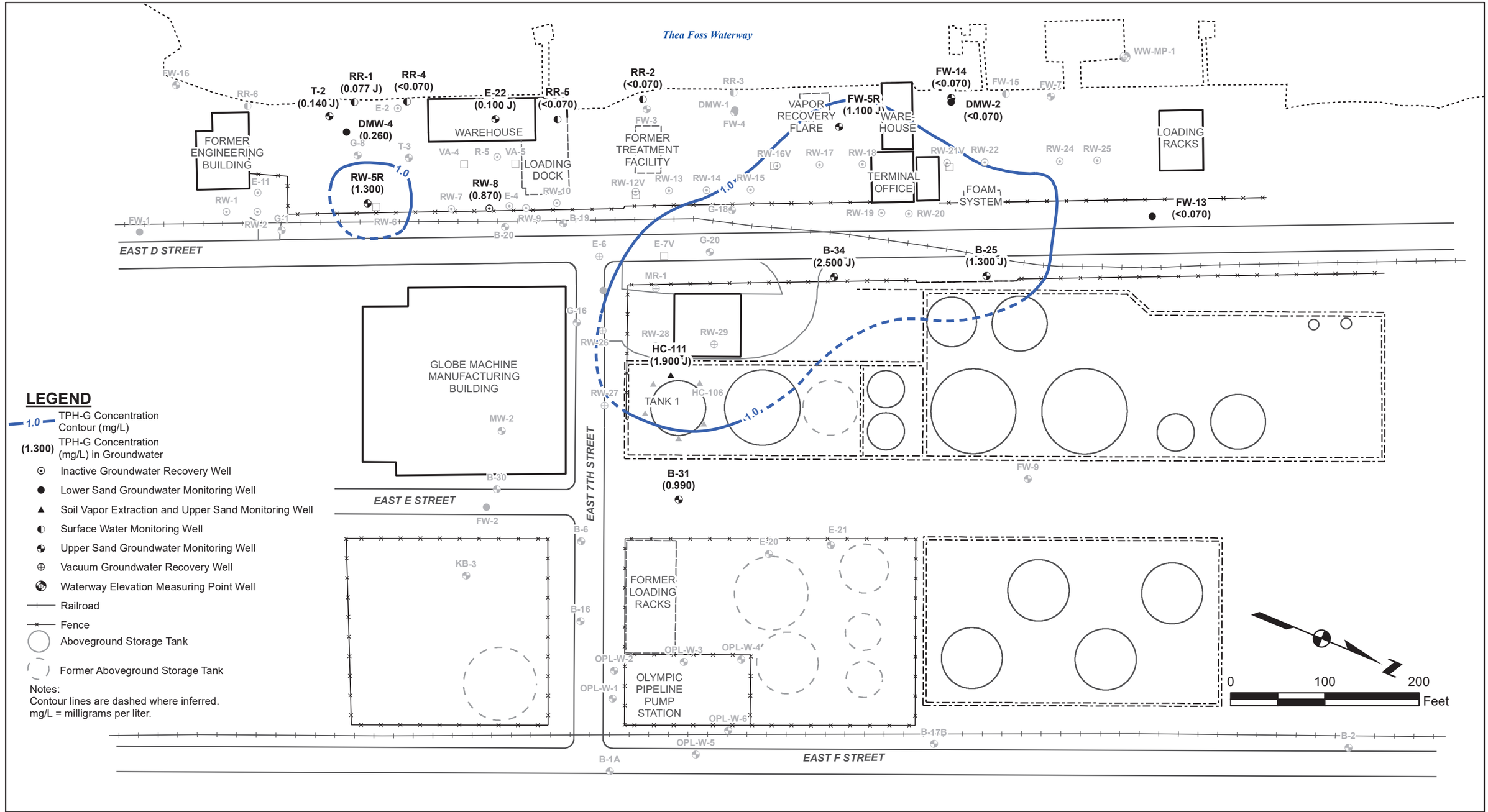


## LEGEND

- 1.0 — TPH-G Concentration Contour (mg/L)
- (1.300) TPH-G Concentration (mg/L) in Groundwater
- Inactive Groundwater Recovery Well
- Lower Sand Groundwater Monitoring Well
- Soil Vapor Extraction and Upper Sand Monitoring Well
- Surface Water Monitoring Well
- Upper Sand Groundwater Monitoring Well
- Vacuum Groundwater Recovery Well
- Waterway Elevation Measuring Point Well
- Railroad
- Fence
- Aboveground Storage Tank
- Former Aboveground Storage Tank

Notes:
Contour lines are dashed where inferred.
mg/L = milligrams per liter.

Source: Landau Associates, 2009.
Maul Foster & Alongi, Inc. 2002.
USGS, 2009.

**TPH-G CONCENTRATIONS IN GROUNDWATER (UPPER SAND UNIT) JUNE 2020**

D STREET PETROLEUM SITE
TACOMA, WASHINGTON

**FIGURE 4**

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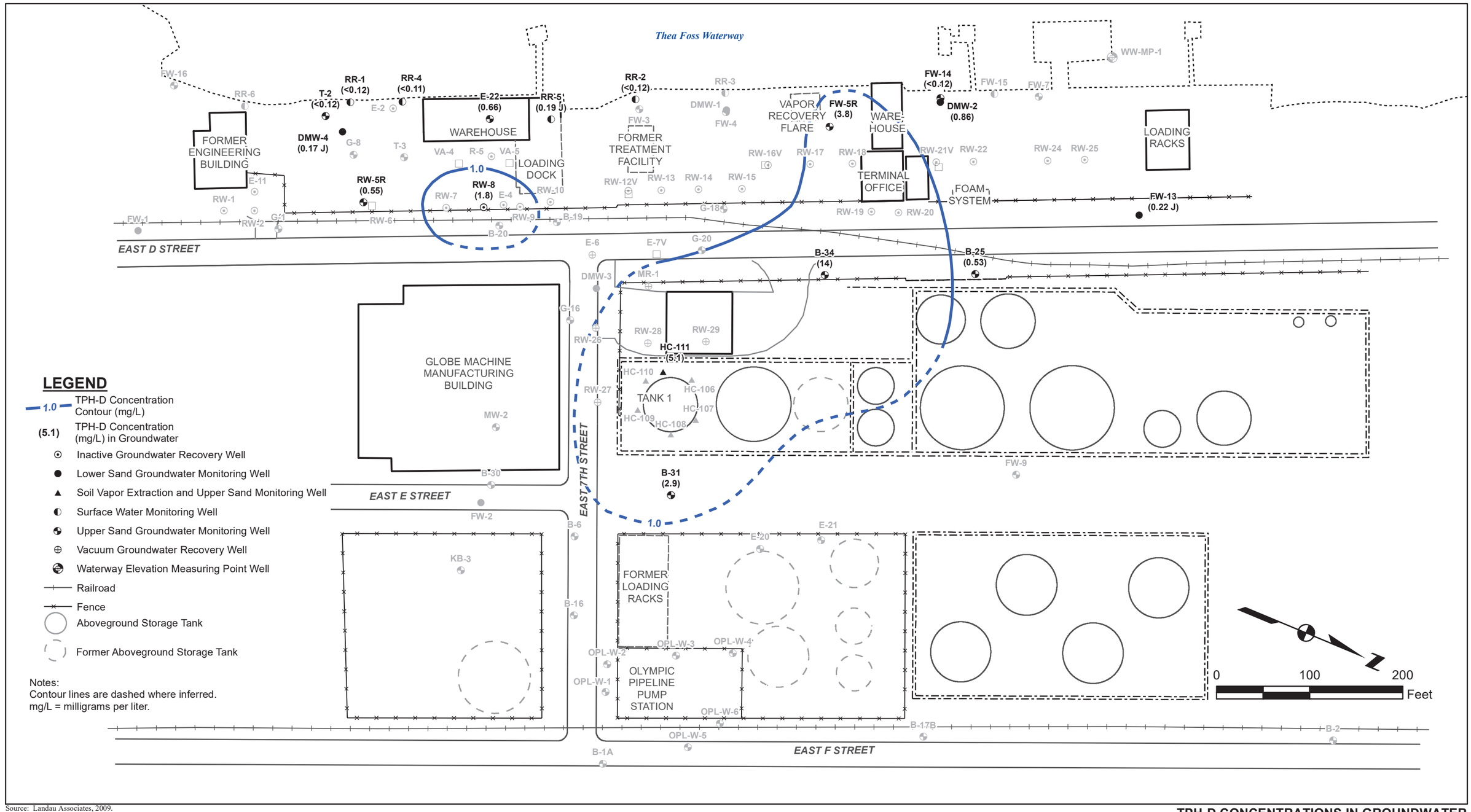


## LEGEND

- 1.0 — TPH-D Concentration Contour (mg/L)
- (5.1) TPH-D Concentration (mg/L) in Groundwater
- Inactive Groundwater Recovery Well
- Lower Sand Groundwater Monitoring Well
- Soil Vapor Extraction and Upper Sand Monitoring Well
- Surface Water Monitoring Well
- Upper Sand Groundwater Monitoring Well
- Vacuum Groundwater Recovery Well
- Waterway Elevation Measuring Point Well
- Railroad
- Fence
- Aboveground Storage Tank
- Former Aboveground Storage Tank

Notes:
Contour lines are dashed where inferred.
mg/L = milligrams per liter.

Source: Landau Associates, 2009.
Maul Foster & Alongi, Inc. 2002.
USGS, 2009.

**TPH-D CONCENTRATIONS IN GROUNDWATER (UPPER SAND UNIT) JUNE 2020**

D STREET PETROLEUM SITE
TACOMA, WASHINGTON

**FIGURE 5**

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# TABLES

**Table 1**
**Groundwater Elevation Data**
**Second Quarter 2020**
**D Street Petroleum Site**

| Well ID | Well Elevation (ft) (a) | Date | Time | Depth to Groundwater (ft) | Apparent Product Thickness (ft) | Groundwater Elevation (ft) | |
|---|---|---|---|---|---|---|---|
| ***Upper Sand Unit*** | | | | | | | |
| **B-1A** | 14.15 | NR | NR | NR | -- | NR | Cannot locate |
| **B-2** | 13.78 | NR | NR | NR | -- | NR | Located in street |
| **B-6** | 14.25 | NR | NR | NR | -- | NR | Located in street |
| **B-16** | 14.40 | NR | NR | NR | -- | NR | Located in street |
| **B-17B** | 14.16 | 6/23/2020 | 10:10 | 6.98 | -- | 7.18 | |
| **B-19** | 13.31 | NR | NR | NR | -- | NR | Well cap stuck |
| **B-20** | 13.48 | 6/23/2020 | 15:25 | 7.58 | -- | 5.90 | |
| **B-25** | 13.96 | 6/23/2020 | 12:00 | 7.68 | -- | 6.28 | |
| **B-30** | 14.46 | 6/23/2020 | 10:23 | NR | -- | NR | Blockage at 4.68 feet below top of casing |
| **B-31** | 14.46 | 6/23/2020 | 9:27 | 7.89 | -- | 6.57 | |
| **B-34** | 14.36 | 6/23/2020 | 12:00 | 7.96 | -- | 6.40 | |
| **E-4** | 12.09 | 6/23/2020 | 15:18 | 6.38 | -- | 5.71 | |
| **E-6** | 12.14 | NR | NR | NR | -- | NR | Located in street |
| **E-20** | NS | 6/23/2020 | 10:55 | 6.98 | -- | NR | |
| **E-21** | 14.13 | 6/23/2020 | 10:57 | 7.32 | -- | 6.81 | |
| **FW-7** | 13.33 | NR | NR | NR | -- | NR | |
| **FW-16** | 12.35 | 6/23/2020 | 10:42 | 7.70 | -- | 4.65 | |
| **G-1** | 13.43 (b) | 6/23/2020 | 10:30 | 7.49 | -- | 5.94 | |
| **G-8** | 13.25 | 6/23/2020 | 15:03 | 7.25 | -- | 6.00 | |
| **G-16** | 13.23 | 6/23/2020 | 9:22 | 7.02 | -- | 6.21 | |
| **G-18** | 13.54 | 6/24/2020 | 12:30 | 7.18 | -- | 6.36 | |
| **G-20** | 13.11 | NR | NR | NR | -- | NR | Located in street |
| **HC-108** | 15.30 | 6/24/2020 | 11:15 | 8.78 | -- | 6.52 | |
| **HC-111** | 14.62 | 6/24/2020 | 11:00 | 8.12 | -- | 6.50 | |
| **MR-1** | 14.26 | NR | NR | NR | -- | NR | Inaccessible |
| **MW-2** | NS | 6/23/2020 | 11:15 | 9.28 | -- | NS | |
| **R-5** | 11.69 | 6/23/2020 | 15:06 | 7.84 | -- | 3.85 | |
| **RW-1** | 12.94 | 6/23/2020 | 10:34 | 6.90 | -- | 6.04 | |
| **RW-2** | 12.76 | 6/23/2020 | 10:32 | 6.78 | -- | 5.98 | |
| **RW-5R** | 13.76 | 6/24/2020 | 14:45 | 7.82 | -- | 5.94 | |
| **RW-7** | 12.46 | NR | NR | NR | -- | NR | Inaccessible |
| **RW-8** | 12.71 | 6/23/2020 | 14:30 | 6.74 | -- | 5.97 | |
| **RW-9** | 12.59 | 6/23/2020 | 15:20 | 6.32 | -- | 6.27 | |
| **RW-12** | 13.21 | 6/23/2020 | 14:59 | 7.01 | -- | 6.20 | |
| **RW-13** | 13.94 | 6/23/2020 | 14:58 | 7.78 | -- | 6.16 | |
| **RW-14** | 13.52 | 6/23/2020 | 14:57 | 7.65 | -- | 5.87 | |
| **RW-15** | 13.15 | 6/23/2020 | 14:56 | 7.46 | -- | 5.69 | |
| **RW-16** | 12.43 | NR | NR | NR | -- | NR | |
| **RW-17** | 12.29 | 6/23/2020 | 14:55 | 6.38 | -- | 5.91 | |
| **RW-18** | 12.53 | NR | NR | NR | -- | NR | |
| **RW-19** | 12.97 | 6/23/2020 | 9:11 | 6.75 | -- | 6.22 | |
| **RW-20** | 12.80 | 6/23/2020 | 9:09 | 6.55 | -- | 6.25 | |
| **RW-21** | 13.35 | NR | NR | NR | -- | NR | |
| **RW-22** | 12.72 | NR | NR | NR | -- | NR | Slip cap stuck on (glued) |
| **RW-24** | 13.63 | 6/24/2020 | 10:20 | 7.38 | -- | 6.25 | |
| **RW-25** | 13.07 | NR | NR | NR | -- | NR | |
| **RW-26** | 11.93 | NR | NR | NR | -- | NR | Vault lid is broken |
| **RW-28** | 14.62 | 6/24/2020 | 12:20 | 8.54 | -- | 6.08 | |
| **RW-29** | 13.83 | NR | NR | NR | -- | NR | Stuck slot |
| **T-3** | 13.03 | 6/23/2020 | 15:00 | 7.03 | -- | 6.00 | |
| **W-1** | NR | NR | NR | NR | -- | NR | |
| ***Upper Sand Unit - Sentinel*** | | | | | | | |
| **E-22** | 16.74 | 6/23/2020 | 11:24 | 12.22 | -- | 4.52 | |
| **FW-3** | 14.11 (b) | 6/24/2020 | 13:55 | 7.60 | -- | 6.51 | |
| **FW-4** | 14.21 | 6/23/2020 | 14:52 | 10.70 | -- | 3.51 | |
| **FW-5R** | 12.78 | 6/23/2020 | 14:44 | 7.82 | -- | 4.96 | |
| **FW-14** | 13.17 | 6/24/2020 | 9:58 | 7.08 | -- | 6.09 | |
| **T-2** | 11.62 | 6/23/2020 | 11:00 | 9.53 | -- | 2.09 | |

**Table 1**
**Groundwater Elevation Data**
**Second Quarter 2020**
**D Street Petroleum Site**

| Well ID | Well Elevation (ft) (a) | Date | Time | Depth to Groundwater (ft) | Apparent Product Thickness (ft) | Groundwater Elevation (ft) | |
|---|---|---|---|---|---|---|---|
| ***Lower Sand Unit*** | | | | | | | |
| **FW-1** | 13.63 | 6/23/2020 | 10:36 | 8.82 | -- | 4.81 | |
| **FW-2** | 14.32 | NR | NR | NR | -- | NR | Located in street |
| **FW-13** | 13.13 | 6/23/2020 | 11:00 | 8.26 | -- | 4.87 | |
| **DMW-1** | 13.72 | 6/23/2020 | 14:50 | 12.78 | -- | 0.94 | |
| **DMW-2** | 12.97 | 6/24/2020 | 9:54 | 7.60 | -- | 5.37 | |
| **DMW-3** | 12.83 | 6/23/2020 | 9:25 | 6.98 | -- | 5.85 | |
| **DMW-4** | 11.72 | 6/23/2020 | 13:30 | 10.51 | -- | 1.21 | |
| ***Upper Sand Unit - Surface Water Compliance*** | | | | | | | |
| **RR-1** | 14.79 (b) | 6/23/2020 | 12:40 | 9.24 | -- | 5.55 | |
| **RR-2** | 15.71 (b) | 6/24/2020 | 13:25 | 10.09 | -- | 5.62 | |
| **RR-3** | 15.78 (b) | 6/23/2020 | 14:20 | 10.32 | -- | 5.46 | |
| **RR-4** | 13.19 (c) | 6/23/2020 | 12:31 | 7.53 | -- | 5.66 | |
| **RR-5** | 16.53 | 6/23/2020 | 13:44 | 11.33 | -- | 5.20 | |
| **RR-6** | 11.31 | 6/23/2020 | 10:40 | 7.12 | -- | 4.19 | |
| **FW-15** | NS | 6/24/2020 | 10:11 | 7.13 | -- | NS | |

Notes
Groundwater elevations corrected for free product using following equation, if applicable:
Well Elevation - Depth to Groundwater + (Apparent Product Thickness x 0.80)
ID = Identification
NS = No survey data provided or available
NR = Not recorded
-- = Product was not detected
(a) Top of casing elevation, October 2013, based on NAVD 88, unless otherwise noted
(b) Top of casing elevation, March 2011, based on NAVD 88
(c) Top of casing elevation, October 2011, based on NAVD 88
ft = Feet
DRY = Dry well, no water detected

**Table 2**
**Summary of Groundwater Analytical Results**
**Second Quarter 2020**
**D Street Petroleum Site**

| | Analyte: | | | TPH-G | | TPH-D | | TPH-O | | Benzene | | Ethylbenzene | | m-Xylene & p-Xylene | | o-Xylene | | Toluene | | Xylenes (total) | | Naphthalene | | 2-Methylaphthalene | | 1-Methylaphthalene | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Surface Water Cleanup Standards: | | | --- | | --- | | --- | | 0.04 | | 0.43 | | --- | | --- | | 5 | | --- | | --- | | --- | | --- | |
| | Groundwater Cleanup Standards: | | | --- | | --- | | --- | | 0.16 | | 1.7 | | --- | | --- | | 20 | | --- | | --- | | --- | | --- | |
| | Sample ID | Laboratory ID | Date Collected | | | | | | | | | | | | | | | | | | | | | | | | |
| Upper Sand Unit | B-25 | 590-13419-2 | 6/24/2020 | 1.3 | J | 0.53 | | 0.13 | U | **0.086** | | 0.00044 | J | 0.0025 | | 0.00016 | U | 0.0013 | | 0.0025 | J | -- | | -- | | -- | |
| | B-31 | 590-13419-14 | 6/23/2020 | 0.99 | | 2.9 | | 0.27 | J | 0.0013 | | 0.0099 | | 0.017 | | 0.0013 | | 0.0039 | | 0.018 | | -- | | -- | | -- | |
| | B-34 | 590-13419-6 | 6/24/2020 | 2.5 | J | 14 | | 1.6 | J | **0.130** | J | 0.012 | | 0.0028 | UJ | 0.0016 | UJ | 0.0055 | J | 0.0044 | UJ | -- | | -- | | -- | |
| | HC-111 | 590-13419-7 | 6/24/2020 | 1.9 | J | 5.1 | | 0.49 | | **0.065** | | 0.078 | | 0.015 | | 0.0014 | | 0.0078 | | 0.017 | | -- | | -- | | -- | |
| | RW-5R | 590-13419-10 | 6/23/2020 | 1.3 | | 0.55 | | 0.14 | J | 0.0010 | | 0.0043 | | 0.00063 | J | 0.00016 | U | 0.00031 | U | 0.00063 | J | -- | | -- | | -- | |
| | RW-8 | 590-13419-19 | 6/23/2020 | 0.870 | | 1.8 | | 0.40 | J | 0.0012 | | 0.00063 | J | 0.00028 | U | 0.00016 | U | 0.00031 | U | 0.00044 | U | -- | | -- | | -- | |
| Upper Sand Unit - Sentinel | E-22 | 590-13419-13 | 6/23/2020 | 0.1 | J | 0.66 | | 0.76 | | 0.00088 | | 0.0012 | | 0.00060 | J | 0.00016 | U | 0.00031 | U | 0.00060 | J | -- | | -- | | -- | |
| | FW-5R | 590-13419-1 | 6/24/2020 | 1.1 | J | 3.8 | | 0.15 | U | 0.00056 | | 0.00041 | J | 0.00028 | U | 0.00016 | U | 0.00031 | U | 0.00044 | U | 0.0012 | | 0.550 | | 0.380 | |
| | FW-14 | 590-13419-4 | 6/24/2020 | 0.070 | U | 0.12 | U | 0.13 | U | 0.000093 | U | 0.00020 | U | 0.00028 | U | 0.00016 | U | 0.00031 | U | 0.00044 | U | 0.000058 | U | 0.000048 | U | 0.000025 | U |
| | T-2 | 590-13419-15 | 6/23/2020 | 0.140 | J | 0.12 | U | 0.13 | U | 0.000093 | U | 0.00020 | U | 0.00028 | U | 0.00016 | U | 0.00031 | U | 0.00044 | U | -- | | -- | | -- | |
| | T-2 (DUP) | 590-13419-16 | 6/23/2020 | 0.130 | J | 0.12 | U | 0.13 | U | 0.000093 | U | 0.00020 | U | 0.00028 | U | 0.00016 | U | 0.00031 | U | 0.00044 | U | -- | | -- | | -- | |
| Upper Sand Unit - Surface Water Compliance | RR-1 | 590-13419-17 | 6/23/2020 | 0.077 | J | 0.12 | U | 0.13 | U | 0.000093 | U | 0.00020 | U | 0.00028 | U | 0.00016 | U | 0.00031 | U | 0.00044 | U | -- | | -- | | -- | |
| | RR-2 | 590-13419-5 | 6/24/2020 | 0.070 | U | 0.12 | U | 0.13 | U | 0.000093 | U | 0.00020 | U | 0.00028 | U | 0.00016 | U | 0.00031 | U | 0.00044 | U | 0.000059 | U | 0.000049 | U | 0.000026 | J |
| | RR-4 | 590-13419-12 | 6/23/2020 | 0.070 | U | 0.11 | U | 0.12 | U | 0.000093 | U | 0.00020 | U | 0.00028 | U | 0.00016 | U | 0.00031 | U | 0.00044 | U | -- | | -- | | -- | |
| | RR-5 | 590-13419-11 | 6/23/2020 | 0.070 | U | 0.19 | J | 0.13 | U | 0.000093 | U | 0.00020 | U | 0.00028 | U | 0.00016 | U | 0.00031 | U | 0.00044 | U | -- | | -- | | -- | |
| Lower Sand Unit | DMW-2 | 590-13419-8 | 6/24/2020 | 0.070 | U | 0.86 | | 0.17 | J | 0.00014 | J | 0.00021 | J | 0.00028 | U | 0.00016 | U | 0.00031 | U | 0.00044 | U | -- | | -- | | -- | |
| | DMW-2 (DUP) | 590-13419-9 | 6/24/2020 | 0.070 | U | 0.83 | | 0.16 | J | 0.000093 | U | 0.00020 | U | 0.00028 | U | 0.00016 | U | 0.00031 | U | 0.00044 | U | -- | | -- | | -- | |
| | DMW-4 | 590-13419-18 | 6/23/2020 | 0.26 | | 0.17 | J | 0.14 | U | 0.000093 | U | 0.00020 | U | 0.00028 | U | 0.00016 | U | 0.00031 | U | 0.00044 | U | -- | | -- | | -- | |
| | FW-13 | 590-13419-3 | 6/24/2020 | 0.070 | U | 0.22 | J | 0.13 | U | 0.00012 | J | 0.00020 | U | 0.00028 | U | 0.00016 | U | 0.00031 | U | 0.00044 | U | -- | | -- | | -- | |

**Notes:**
All results in milligrams per liter (mg/L).
-- = Not analyzed.
ID = Identification
J = The analyte is present in the sample; the reported concentration is an estimate.
TPH = Total Petroleum Hydrocarbons
TPH-D = Total Petroleum Hydrocarbons as Diesel Range
TPH-G = Total Petroleum Hydrocarbons as Gasoline Range
TPH-O = Total Petroleum Hydrocarbons as Oil Range
U = Not detected above the reported quantitation limit
UJ = Not detected above the reported quantitation limit. The quantitation limit is estimated.
**Bold** indicates an exceedance of surface water cleanup levels.
**Bold** indicates an exceedance of groundwater cleanup levels.
Site-Specific Surface Cleanup Level, Consent Decree No. 91-2-2012-1, effective 9/3/91
Site-Specific Groundwater Cleanup Level, Consent Decree No. 91-2-2012-1, effective 9/3/91

**Table 3**
**Summary of Field Parameters**
**Second Quarter 2020**
**D Street Petroleum Site**

| | Sample ID | Date Collected | Temperature (°C) | pH | Conductivity (mS/cm) | Oxidation Reduction Potential (mV) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|---|---|---|---|---|---|---|---|---|
| Upper Sand Unit | B-25 | 6/24/2020 | 17.28 | 7.10 | 0.490 | -159 | 0.0 | 0.71 |
| | B-31 | 6/23/2020 | 16.86 | 6.95 | 0.557 | -89 | 8.0 | 7.46 |
| | B-34 | 6/24/2020 | 18.66 | 6.52 | 1.34 | -134 | 0.0 | 0.83 |
| | HC-111 | 6/24/2020 | 17.10 | 6.39 | 0.720 | -197 | 2.2 | 0.98 |
| | RW-5R | 6/23/2020 | 21.93 | 6.74 | 0.823 | -199 | 26.6 | 0.63 |
| | RW-8 | 6/23/2020 | 21.48 | 7.31 | 0.868 | -305 | 15.2 | 4.26 |
| Upper Sand Unit - Sentinel | E-22 | 6/23/2020 | 15.86 | 7.32 | 23.3 | -373 | 0.0 | 0.96 |
| | FW-5R | 6/24/2020 | 21.38 | 6.98 | 0.597 | -138 | 17.0 | 0.62 |
| | FW-14 | 6/24/2020 | 17.49 | 7.13 | 30.1 | 24 | 0.0 | 4.31 |
| | T-2 | 6/23/2020 | 17.75 | 6.53 | 27.2 | -85 | 2.4 | 3.91 |
| Upper Sand Unit - Surface Water Compliance | RR-1 | 6/23/2020 | 17.53 | 6.85 | 27.6 | -279 | 0.0 | 9.24 |
| | RR-2 | 6/24/2020 | 24.74 | 6.79 | 25.7 | 3 | 138 | 1.64 |
| | RR-4 | 6/23/2020 | 17.39 | 6.76 | 32.3 | -231 | 0.0 | 0.94 |
| | RR-5 | 6/23/2020 | 21.09 | 5.85 | 12.4 | -223 | 9.2 | 0.97 |
| Lower Sand Unit | DMW-2 | 6/24/2020 | 17.4 | 7.10 | 15.6 | -306 | 0.0 | 0.81 |
| | DMW-4 | 6/23/2020 | 20.85 | 7.70 | 21.7 | -358 | 63.6 | 5.99 |
| | FW-13 | 6/24/2020 | 17.01 | 7.65 | 0.510 | -199 | 0.0 | 0.91 |

**Notes:**
°C = degrees Celsius
mg/L = milligrams per liter
mS/m = millisiemens per meter
mV = millivolts
NTU = nephelometric turbidity units
ID = Identification
Field parameters (pH, conductivity, dissolved oxygen, temperature, and Oxygen Reduction Potential) are measured during well purging. Final stabilized parameters are shown in the table above.
Conductivity units may have been incorrectly entered in the field - results may not be accurate.

# APPENDIX A
# Analytical Data

eurofins | Environment Testing America

# ANALYTICAL REPORT

Eurofins TestAmerica, Spokane
11922 East 1st Ave
Spokane, WA 99206
Tel: (509)924-9200

Laboratory Job ID: 590-13419-1
Client Project/Site: Tacoma D St Terminal-Phillips 66
Revision: 1

For:
AECOM
111 SW Columbia Street, Suite 1500
Portland, Oregon 97201

Attn: Mr. Tyler Hemry

*Authorized for release by:*
*4/20/2021 12:33:41 PM*

Randee Arrington, Lab Director
(509)924-9200
Randee.Arrington@Eurofinset.com

# Table of Contents

Client: AECOM
Job ID: 590-13419-1
Project/Site: Tacoma D St Terminal-Phillips 66

## Job ID: 590-13419-1

### Laboratory: Eurofins TestAmerica, Spokane

**Narrative**

**Revision**
The report being provided is a revision of the original report sent on 7/16/2020. The report (revision 1) is being revised due to: The 8260D MS/MSD parent sample was reported from a 10x dilution for m,p-Xylene, o-Xylene and Xylenes, Total but the MS/MSD data was reported from the initial run at a 1x dilution.

**Receipt**
The samples were received on 6/26/2020 1:40 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.1º C.

**Receipt Exceptions**
The following sample was listed on the Chain of Custody (COC); however, no sample was received: TB-1 (590-13419-20).

**GC/MS VOA**
Method 8260D: The laboratory control sample duplicate (LCSD) for analytical batch 590-28064 recovered outside control limits for the following analytes: m,p-Xylene and o-Xylene. These analytes were biased high in the LCSD and were not detected in the associated samples; therefore, the data have been reported.

Method 8260D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 590-28064 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8260D: Surrogate recovery for the following samples were outside control limits: B-34 (590-13419-6[MS]). Evidence of matrix interference due to high target analytes is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8260D: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 590-28153 recovered outside control limits for the following analytes: Toluene.

Method 8260D: Reanalysis of the following sample was performed outside of the analytical holding time due to sample required dilution: B-34 (590-13419-6).

Method 8260D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 590-28153 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8260D: The laboratory control sample duplicate (LCSD) for analytical batch 590-28064 recovered outside control limits for the following analytes: m,p-Xylene and o-Xylene. Samples were re-analyzed out of hold with concurring results. The following samples are affected: B-25 (590-13419-2) and HC-111 (590-13419-7).

Method NWTPH-Gx: The continuing calibration verification (CCV) associated with batch 590-28062 recovered above the upper control limit for Gasoline. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method NWTPH-Gx: The continuing calibration verification (CCV) associated with batch 590-28152 recovered outside acceptance criteria, low biased, for Gasoline. The following sample is affected: B-34 (590-13419-6[MSD]).

Method NWTPH-Gx: The continuing calibration verification (CCV) associated with batch 590-28062 recovered above the upper control limit for Gasoline. The samples associated with this CCV were re-analyzed out of hold with concurring results; therefore, the original data has been reported.

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

**GC/MS Semi VOA**
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

**GC Semi VOA**
Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to individual peaks in the following sample: FW-5R

## Job ID: 590-13419-1 (Continued)

### Laboratory: Eurofins TestAmerica, Spokane (Continued)

(590-13419-1).

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to gasoline overlap in the following sample: B-25 (590-13419-2).

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to heavily weathered diesel and/or possible biogenic interference in the following sample: FW-13 (590-13419-3).

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to heavily weathered diesel in the following samples: B-34 (590-13419-6), DMW-2 (590-13419-8), DMW-2-DUP (590-13419-9), RR-5 (590-13419-11), E-22 (590-13419-13) and DMW-4 (590-13419-18).

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to gasoline overlap as well as heavily weathered diesel in the following samples: HC-111 (590-13419-7), RW-5R (590-13419-10), B-31 (590-13419-14) and RW-8 (590-13419-19).

Method NWTPH-Dx: Due to the high concentration of Diesel Range Organics (DRO) (C10-C25), the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 590-28023 and analytical batch 590-28022 could not be evaluated for accuracy and precision. The associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) met acceptance criteria.

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

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

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

# Sample Summary

Client: AECOM
Project/Site: Tacoma D St Terminal-Phillips 66

Job ID: 590-13419-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Asset ID |
|---|---|---|---|---|---|
| 590-13419-1 | FW-5R | Water | 06/24/20 14:00 | 06/26/20 13:40 | |
| 590-13419-2 | B-25 | Water | 06/24/20 12:55 | 06/26/20 13:40 | |
| 590-13419-3 | FW-13 | Water | 06/24/20 11:45 | 06/26/20 13:40 | |
| 590-13419-4 | FW-14 | Water | 06/24/20 10:38 | 06/26/20 13:40 | |
| 590-13419-5 | RR-2 | Water | 06/24/20 14:10 | 06/26/20 13:40 | |
| 590-13419-6 | B-34 | Water | 06/24/20 12:45 | 06/26/20 13:40 | |
| 590-13419-7 | HC-111 | Water | 06/24/20 11:45 | 06/26/20 13:40 | |
| 590-13419-8 | DMW-2 | Water | 06/24/20 10:35 | 06/26/20 13:40 | |
| 590-13419-9 | DMW-2-DUP | Water | 06/24/20 10:35 | 06/26/20 13:40 | |
| 590-13419-10 | RW-5R | Water | 06/23/20 15:25 | 06/26/20 13:40 | |
| 590-13419-11 | RR-5 | Water | 06/23/20 14:25 | 06/26/20 13:40 | |
| 590-13419-12 | RR-4 | Water | 06/23/20 13:25 | 06/26/20 13:40 | |
| 590-13419-13 | E-22 | Water | 06/23/20 12:10 | 06/26/20 13:40 | |
| 590-13419-14 | B-31 | Water | 06/23/20 10:30 | 06/26/20 13:40 | |
| 590-13419-15 | T-2 | Water | 06/23/20 11:40 | 06/26/20 13:40 | |
| 590-13419-16 | T-2-DUP | Water | 06/23/20 11:40 | 06/26/20 13:40 | |
| 590-13419-17 | RR-1 | Water | 06/23/20 13:18 | 06/26/20 13:40 | |
| 590-13419-18 | DMW-4 | Water | 06/23/20 14:05 | 06/26/20 13:40 | |
| 590-13419-19 | RW-8 | Water | 06/23/20 15:05 | 06/26/20 13:40 | |

# Method Summary

Client: AECOM
Job ID: 590-13419-1
Project/Site: Tacoma D St Terminal-Phillips 66

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 8260D | Volatile Organic Compounds by GC/MS | SW846 | TAL SPK |
| NWTPH-Gx | Northwest - Volatile Petroleum Products (GC/MS) | NWTPH | TAL SPK |
| 8270E SIM | Semivolatile Organic Compounds (GC/MS SIM) | SW846 | TAL SPK |
| NWTPH-Dx | Northwest - Semi-Volatile Petroleum Products (GC) | NWTPH | TAL SPK |
| 3510C | Liquid-Liquid Extraction (Separatory Funnel) | SW846 | TAL SPK |
| 5030C | Purge and Trap | SW846 | TAL SPK |

**Protocol References:**

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL SPK = Eurofins TestAmerica, Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

# Detection Summary

Client: AECOM
Job ID: 590-13419-1
Project/Site: Tacoma D St Terminal-Phillips 66

## Client Sample ID: FW-5R — Lab Sample ID: 590-13419-1

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.56 | | 0.40 | 0.093 | ug/L | 1 | | 8260D | Total/NA |
| Ethylbenzene | 0.41 | J | 1.0 | 0.20 | ug/L | 1 | | 8260D | Total/NA |
| Gasoline | 1100 | | 150 | 70 | ug/L | 1 | | NWTPH-Gx | Total/NA |
| Naphthalene | 1.2 | | 0.10 | 0.059 | ug/L | 1 | | 8270E SIM | Total/NA |
| 2-Methylnaphthalene | 550 | | 1.0 | 0.49 | ug/L | 10 | | 8270E SIM | Total/NA |
| 1-Methylnaphthalene | 380 | | 1.0 | 0.26 | ug/L | 10 | | 8270E SIM | Total/NA |
| Diesel Range Organics (DRO) (C10-C25) | 3.8 | | 0.29 | 0.13 | mg/L | 1 | | NWTPH-Dx | Total/NA |

## Client Sample ID: B-25 — Lab Sample ID: 590-13419-2

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 86 | | 0.40 | 0.093 | ug/L | 1 | | 8260D | Total/NA |
| Ethylbenzene | 0.44 | J | 1.0 | 0.20 | ug/L | 1 | | 8260D | Total/NA |
| m,p-Xylene | 2.5 | * | 2.0 | 0.28 | ug/L | 1 | | 8260D | Total/NA |
| Toluene | 1.3 | | 1.0 | 0.31 | ug/L | 1 | | 8260D | Total/NA |
| Xylenes, Total | 2.5 | J | 3.0 | 0.44 | ug/L | 1 | | 8260D | Total/NA |
| Gasoline | 1300 | | 150 | 70 | ug/L | 1 | | NWTPH-Gx | Total/NA |
| Diesel Range Organics (DRO) (C10-C25) | 0.53 | | 0.26 | 0.12 | mg/L | 1 | | NWTPH-Dx | Total/NA |

## Client Sample ID: FW-13 — Lab Sample ID: 590-13419-3

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.12 | J | 0.40 | 0.093 | ug/L | 1 | | 8260D | Total/NA |
| Diesel Range Organics (DRO) (C10-C25) | 0.22 | J | 0.26 | 0.12 | mg/L | 1 | | NWTPH-Dx | Total/NA |

## Client Sample ID: FW-14 — Lab Sample ID: 590-13419-4

No Detections.

## Client Sample ID: RR-2 — Lab Sample ID: 590-13419-5

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 0.026 | J | 0.10 | 0.026 | ug/L | 1 | | 8270E SIM | Total/NA |

## Client Sample ID: B-34 — Lab Sample ID: 590-13419-6

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 130 | H F2 F1 | 4.0 | 0.93 | ug/L | 10 | | 8260D | Total/NA |
| Ethylbenzene | 12 | F1 | 1.0 | 0.20 | ug/L | 1 | | 8260D | Total/NA |
| Toluene | 5.5 | F1 F2 | 1.0 | 0.31 | ug/L | 1 | | 8260D | Total/NA |
| Gasoline | 2500 | | 150 | 70 | ug/L | 1 | | NWTPH-Gx | Total/NA |
| Diesel Range Organics (DRO) (C10-C25) | 14 | | 0.23 | 0.10 | mg/L | 1 | | NWTPH-Dx | Total/NA |
| Residual Range Organics (RRO) (C25-C36) | 1.6 | F1 F2 | 0.38 | 0.11 | mg/L | 1 | | NWTPH-Dx | Total/NA |

## Client Sample ID: HC-111 — Lab Sample ID: 590-13419-7

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 65 | | 0.40 | 0.093 | ug/L | 1 | | 8260D | Total/NA |
| Ethylbenzene | 78 | | 1.0 | 0.20 | ug/L | 1 | | 8260D | Total/NA |
| m,p-Xylene | 15 | * | 2.0 | 0.28 | ug/L | 1 | | 8260D | Total/NA |

This Detection Summary does not include radiochemical test results.

# Detection Summary

Client: AECOM
Job ID: 590-13419-1
Project/Site: Tacoma D St Terminal-Phillips 66

## Client Sample ID: HC-111 (Continued) — Lab Sample ID: 590-13419-7

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| o-Xylene | 1.4 | * | 1.0 | 0.16 | ug/L | 1 | | 8260D | Total/NA |
| Toluene | 7.8 | | 1.0 | 0.31 | ug/L | 1 | | 8260D | Total/NA |
| Xylenes, Total | 17 | | 3.0 | 0.44 | ug/L | 1 | | 8260D | Total/NA |
| Gasoline | 1900 | | 150 | 70 | ug/L | 1 | | NWTPH-Gx | Total/NA |
| Diesel Range Organics (DRO) (C10-C25) | 5.1 | | 0.27 | 0.12 | mg/L | 1 | | NWTPH-Dx | Total/NA |
| Residual Range Organics (RRO) (C25-C36) | 0.49 | | 0.44 | 0.13 | mg/L | 1 | | NWTPH-Dx | Total/NA |

## Client Sample ID: DMW-2 — Lab Sample ID: 590-13419-8

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.14 | J | 0.40 | 0.093 | ug/L | 1 | | 8260D | Total/NA |
| Ethylbenzene | 0.21 | J | 1.0 | 0.20 | ug/L | 1 | | 8260D | Total/NA |
| Diesel Range Organics (DRO) (C10-C25) | 0.86 | | 0.23 | 0.10 | mg/L | 1 | | NWTPH-Dx | Total/NA |
| Residual Range Organics (RRO) (C25-C36) | 0.17 | J | 0.38 | 0.11 | mg/L | 1 | | NWTPH-Dx | Total/NA |

## Client Sample ID: DMW-2-DUP — Lab Sample ID: 590-13419-9

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) (C10-C25) | 0.83 | | 0.23 | 0.10 | mg/L | 1 | | NWTPH-Dx | Total/NA |
| Residual Range Organics (RRO) (C25-C36) | 0.16 | J | 0.38 | 0.11 | mg/L | 1 | | NWTPH-Dx | Total/NA |

## Client Sample ID: RW-5R — Lab Sample ID: 590-13419-10

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 1.0 | | 0.40 | 0.093 | ug/L | 1 | | 8260D | Total/NA |
| Ethylbenzene | 4.3 | | 1.0 | 0.20 | ug/L | 1 | | 8260D | Total/NA |
| m,p-Xylene | 0.63 | J | 2.0 | 0.28 | ug/L | 1 | | 8260D | Total/NA |
| Xylenes, Total | 0.63 | J | 3.0 | 0.44 | ug/L | 1 | | 8260D | Total/NA |
| Gasoline | 1300 | | 150 | 70 | ug/L | 1 | | NWTPH-Gx | Total/NA |
| Diesel Range Organics (DRO) (C10-C25) | 0.55 | | 0.24 | 0.11 | mg/L | 1 | | NWTPH-Dx | Total/NA |
| Residual Range Organics (RRO) (C25-C36) | 0.14 | J | 0.40 | 0.12 | mg/L | 1 | | NWTPH-Dx | Total/NA |

## Client Sample ID: RR-5 — Lab Sample ID: 590-13419-11

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) (C10-C25) | 0.19 | J | 0.26 | 0.12 | mg/L | 1 | | NWTPH-Dx | Total/NA |

## Client Sample ID: RR-4 — Lab Sample ID: 590-13419-12

No Detections.

## Client Sample ID: E-22 — Lab Sample ID: 590-13419-13

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.88 | | 0.40 | 0.093 | ug/L | 1 | | 8260D | Total/NA |
| Ethylbenzene | 1.2 | | 1.0 | 0.20 | ug/L | 1 | | 8260D | Total/NA |
| m,p-Xylene | 0.60 | J | 2.0 | 0.28 | ug/L | 1 | | 8260D | Total/NA |

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Spokane

## Client Sample ID: E-22 (Continued) — Lab Sample ID: 590-13419-13

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Xylenes, Total | 0.60 | J | 3.0 | 0.44 | ug/L | 1 | | 8260D | Total/NA |
| Gasoline | 100 | J | 150 | 70 | ug/L | 1 | | NWTPH-Gx | Total/NA |
| Diesel Range Organics (DRO) (C10-C25) | 0.66 | | 0.27 | 0.12 | mg/L | 1 | | NWTPH-Dx | Total/NA |
| Residual Range Organics (RRO) (C25-C36) | 0.76 | | 0.45 | 0.13 | mg/L | 1 | | NWTPH-Dx | Total/NA |

## Client Sample ID: B-31 — Lab Sample ID: 590-13419-14

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 1.3 | | 0.40 | 0.093 | ug/L | 1 | | 8260D | Total/NA |
| Ethylbenzene | 9.9 | | 1.0 | 0.20 | ug/L | 1 | | 8260D | Total/NA |
| m,p-Xylene | 17 | | 2.0 | 0.28 | ug/L | 1 | | 8260D | Total/NA |
| o-Xylene | 1.3 | | 1.0 | 0.16 | ug/L | 1 | | 8260D | Total/NA |
| Toluene | 3.9 | | 1.0 | 0.31 | ug/L | 1 | | 8260D | Total/NA |
| Xylenes, Total | 18 | | 3.0 | 0.44 | ug/L | 1 | | 8260D | Total/NA |
| Gasoline | 990 | | 150 | 70 | ug/L | 1 | | NWTPH-Gx | Total/NA |
| Diesel Range Organics (DRO) (C10-C25) | 2.9 | | 0.28 | 0.13 | mg/L | 1 | | NWTPH-Dx | Total/NA |
| Residual Range Organics (RRO) (C25-C36) | 0.27 | J | 0.47 | 0.14 | mg/L | 1 | | NWTPH-Dx | Total/NA |

## Client Sample ID: T-2 — Lab Sample ID: 590-13419-15

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | 140 | J | 150 | 70 | ug/L | 1 | | NWTPH-Gx | Total/NA |

## Client Sample ID: T-2-DUP — Lab Sample ID: 590-13419-16

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | 130 | J | 150 | 70 | ug/L | 1 | | NWTPH-Gx | Total/NA |

## Client Sample ID: RR-1 — Lab Sample ID: 590-13419-17

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | 77 | J | 150 | 70 | ug/L | 1 | | NWTPH-Gx | Total/NA |

## Client Sample ID: DMW-4 — Lab Sample ID: 590-13419-18

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | 260 | | 150 | 70 | ug/L | 1 | | NWTPH-Gx | Total/NA |
| Diesel Range Organics (DRO) (C10-C25) | 0.17 | J | 0.28 | 0.13 | mg/L | 1 | | NWTPH-Dx | Total/NA |

## Client Sample ID: RW-8 — Lab Sample ID: 590-13419-19

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 1.2 | | 0.40 | 0.093 | ug/L | 1 | | 8260D | Total/NA |
| Ethylbenzene | 0.63 | J | 1.0 | 0.20 | ug/L | 1 | | 8260D | Total/NA |
| Gasoline | 870 | | 150 | 70 | ug/L | 1 | | NWTPH-Gx | Total/NA |
| Diesel Range Organics (DRO) (C10-C25) | 1.8 | | 0.26 | 0.12 | mg/L | 1 | | NWTPH-Dx | Total/NA |
| Residual Range Organics (RRO) (C25-C36) | 0.40 | J | 0.43 | 0.13 | mg/L | 1 | | NWTPH-Dx | Total/NA |

This Detection Summary does not include radiochemical test results.

## Client Sample ID: FW-5R
**Lab Sample ID: 590-13419-1**
**Date Collected: 06/24/20 14:00**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Benzene** | **0.56** | | 0.40 | 0.093 | ug/L | | | 07/07/20 13:28 | 1 |
| **Ethylbenzene** | **0.41** | **J** | 1.0 | 0.20 | ug/L | | | 07/07/20 13:28 | 1 |
| m,p-Xylene | ND | * | 2.0 | 0.28 | ug/L | | | 07/07/20 13:28 | 1 |
| o-Xylene | ND | * | 1.0 | 0.16 | ug/L | | | 07/07/20 13:28 | 1 |
| Toluene | ND | | 1.0 | 0.31 | ug/L | | | 07/07/20 13:28 | 1 |
| Xylenes, Total | ND | | 3.0 | 0.44 | ug/L | | | 07/07/20 13:28 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *99* | | *80 - 120* | | *07/07/20 13:28* | *1* |
| *4-Bromofluorobenzene (Surr)* | *91* | | *80 - 120* | | *07/07/20 13:28* | *1* |
| *Dibromofluoromethane (Surr)* | *103* | | *80 - 120* | | *07/07/20 13:28* | *1* |
| *Toluene-d8 (Surr)* | *98* | | *80 - 120* | | *07/07/20 13:28* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Gasoline** | **1100** | | 150 | 70 | ug/L | | | 07/07/20 13:28 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *91* | | *68.7 - 141* | | *07/07/20 13:28* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Naphthalene** | **1.2** | | 0.10 | 0.059 | ug/L | | 07/01/20 12:56 | 07/01/20 15:29 | 1 |
| **2-Methylnaphthalene** | **550** | | 1.0 | 0.49 | ug/L | | 07/01/20 12:56 | 07/06/20 12:10 | 10 |
| **1-Methylnaphthalene** | **380** | | 1.0 | 0.26 | ug/L | | 07/01/20 12:56 | 07/06/20 12:10 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Nitrobenzene-d5* | *86* | | *44 - 121* | *07/01/20 12:56* | *07/01/20 15:29* | *1* |
| *Nitrobenzene-d5* | *97* | | *44 - 121* | *07/01/20 12:56* | *07/06/20 12:10* | *10* |

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Diesel Range Organics (DRO) (C10-C25)** | **3.8** | | 0.29 | 0.13 | mg/L | | 07/01/20 14:21 | 07/01/20 16:35 | 1 |
| Residual Range Organics (RRO) (C25-C36) | ND | | 0.48 | 0.15 | mg/L | | 07/01/20 14:21 | 07/01/20 16:35 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *90* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 16:35* | *1* |
| *n-Triacontane-d62* | *87* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 16:35* | *1* |

## Client Sample ID: B-25
**Lab Sample ID: 590-13419-2**
**Date Collected: 06/24/20 12:55**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Benzene** | **86** | | 0.40 | 0.093 | ug/L | | | 07/07/20 13:49 | 1 |
| **Ethylbenzene** | **0.44** | **J** | 1.0 | 0.20 | ug/L | | | 07/07/20 13:49 | 1 |
| **m,p-Xylene** | **2.5** | ***** | 2.0 | 0.28 | ug/L | | | 07/07/20 13:49 | 1 |
| o-Xylene | ND | * | 1.0 | 0.16 | ug/L | | | 07/07/20 13:49 | 1 |
| **Toluene** | **1.3** | | 1.0 | 0.31 | ug/L | | | 07/07/20 13:49 | 1 |

## Client Sample ID: B-25
**Lab Sample ID: 590-13419-2**
**Date Collected: 06/24/20 12:55**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Xylenes, Total** | **2.5** | **J** | 3.0 | 0.44 | ug/L | | | 07/07/20 13:49 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *91* | | *80 - 120* | | *07/07/20 13:49* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *88* | | *80 - 120* | | *07/13/20 13:25* | *1* |
| *4-Bromofluorobenzene (Surr)* | *94* | | *80 - 120* | | *07/07/20 13:49* | *1* |
| *4-Bromofluorobenzene (Surr)* | *90* | | *80 - 120* | | *07/13/20 13:25* | *1* |
| *Dibromofluoromethane (Surr)* | *97* | | *80 - 120* | | *07/07/20 13:49* | *1* |
| *Dibromofluoromethane (Surr)* | *99* | | *80 - 120* | | *07/13/20 13:25* | *1* |
| *Toluene-d8 (Surr)* | *91* | | *80 - 120* | | *07/07/20 13:49* | *1* |
| *Toluene-d8 (Surr)* | *95* | | *80 - 120* | | *07/13/20 13:25* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Gasoline** | **1300** | | 150 | 70 | ug/L | | | 07/07/20 13:49 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *94* | | *68.7 - 141* | | *07/07/20 13:49* | *1* |

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Diesel Range Organics (DRO) (C10-C25)** | **0.53** | | 0.26 | 0.12 | mg/L | | 07/01/20 14:21 | 07/01/20 16:57 | 1 |
| Residual Range Organics (RRO) (C25-C36) | ND | | 0.44 | 0.13 | mg/L | | 07/01/20 14:21 | 07/01/20 16:57 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *82* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 16:57* | *1* |
| *n-Triacontane-d62* | *88* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 16:57* | *1* |

## Client Sample ID: FW-13
**Lab Sample ID: 590-13419-3**
**Date Collected: 06/24/20 11:45**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Benzene** | **0.12** | **J** | 0.40 | 0.093 | ug/L | | | 07/07/20 14:09 | 1 |
| Ethylbenzene | ND | | 1.0 | 0.20 | ug/L | | | 07/07/20 14:09 | 1 |
| m,p-Xylene | ND | * | 2.0 | 0.28 | ug/L | | | 07/07/20 14:09 | 1 |
| o-Xylene | ND | * | 1.0 | 0.16 | ug/L | | | 07/07/20 14:09 | 1 |
| Toluene | ND | | 1.0 | 0.31 | ug/L | | | 07/07/20 14:09 | 1 |
| Xylenes, Total | ND | | 3.0 | 0.44 | ug/L | | | 07/07/20 14:09 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *97* | | *80 - 120* | | *07/07/20 14:09* | *1* |
| *4-Bromofluorobenzene (Surr)* | *90* | | *80 - 120* | | *07/07/20 14:09* | *1* |
| *Dibromofluoromethane (Surr)* | *103* | | *80 - 120* | | *07/07/20 14:09* | *1* |
| *Toluene-d8 (Surr)* | *99* | | *80 - 120* | | *07/07/20 14:09* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | ND | | 150 | 70 | ug/L | | | 07/07/20 14:09 | 1 |

## Client Sample ID: FW-13

**Date Collected: 06/24/20 11:45**
**Date Received: 06/26/20 13:40**

**Lab Sample ID: 590-13419-3**
**Matrix: Water**

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *90* | | *68.7 - 141* | | *07/07/20 14:09* | *1* |

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Diesel Range Organics (DRO) (C10-C25)** | **0.22** | **J** | 0.26 | 0.12 | mg/L | | 07/01/20 14:21 | 07/01/20 17:18 | 1 |
| Residual Range Organics (RRO) (C25-C36) | ND | | 0.44 | 0.13 | mg/L | | 07/01/20 14:21 | 07/01/20 17:18 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *86* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 17:18* | *1* |
| *n-Triacontane-d62* | *88* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 17:18* | *1* |

## Client Sample ID: FW-14

**Date Collected: 06/24/20 10:38**
**Date Received: 06/26/20 13:40**

**Lab Sample ID: 590-13419-4**
**Matrix: Water**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 0.40 | 0.093 | ug/L | | | 07/07/20 14:29 | 1 |
| Ethylbenzene | ND | | 1.0 | 0.20 | ug/L | | | 07/07/20 14:29 | 1 |
| m,p-Xylene | ND | * | 2.0 | 0.28 | ug/L | | | 07/07/20 14:29 | 1 |
| o-Xylene | ND | * | 1.0 | 0.16 | ug/L | | | 07/07/20 14:29 | 1 |
| Toluene | ND | | 1.0 | 0.31 | ug/L | | | 07/07/20 14:29 | 1 |
| Xylenes, Total | ND | | 3.0 | 0.44 | ug/L | | | 07/07/20 14:29 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *101* | | *80 - 120* | | *07/07/20 14:29* | *1* |
| *4-Bromofluorobenzene (Surr)* | *98* | | *80 - 120* | | *07/07/20 14:29* | *1* |
| *Dibromofluoromethane (Surr)* | *101* | | *80 - 120* | | *07/07/20 14:29* | *1* |
| *Toluene-d8 (Surr)* | *105* | | *80 - 120* | | *07/07/20 14:29* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | ND | | 150 | 70 | ug/L | | | 07/07/20 14:29 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *98* | | *68.7 - 141* | | *07/07/20 14:29* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Naphthalene | ND | | 0.099 | 0.058 | ug/L | | 07/01/20 12:56 | 07/01/20 15:52 | 1 |
| 2-Methylnaphthalene | ND | | 0.099 | 0.048 | ug/L | | 07/01/20 12:56 | 07/01/20 15:52 | 1 |
| 1-Methylnaphthalene | ND | | 0.099 | 0.025 | ug/L | | 07/01/20 12:56 | 07/01/20 15:52 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *Nitrobenzene-d5* | *92* | | *44 - 121* | *07/01/20 12:56* | *07/01/20 15:52* | *1* |

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) (C10-C25) | ND | | 0.26 | 0.12 | mg/L | | 07/01/20 14:21 | 07/01/20 17:39 | 1 |

## Client Sample ID: FW-14

**Lab Sample ID: 590-13419-4**
**Date Collected: 06/24/20 10:38**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Residual Range Organics (RRO) (C25-C36) | ND | | 0.44 | 0.13 | mg/L | | 07/01/20 14:21 | 07/01/20 17:39 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *82* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 17:39* | *1* |
| *n-Triacontane-d62* | *83* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 17:39* | *1* |

## Client Sample ID: RR-2

**Lab Sample ID: 590-13419-5**
**Date Collected: 06/24/20 14:10**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 0.40 | 0.093 | ug/L | | | 07/07/20 14:50 | 1 |
| Ethylbenzene | ND | | 1.0 | 0.20 | ug/L | | | 07/07/20 14:50 | 1 |
| m,p-Xylene | ND | * | 2.0 | 0.28 | ug/L | | | 07/07/20 14:50 | 1 |
| o-Xylene | ND | * | 1.0 | 0.16 | ug/L | | | 07/07/20 14:50 | 1 |
| Toluene | ND | | 1.0 | 0.31 | ug/L | | | 07/07/20 14:50 | 1 |
| Xylenes, Total | ND | | 3.0 | 0.44 | ug/L | | | 07/07/20 14:50 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *106* | | *80 - 120* | | *07/07/20 14:50* | *1* |
| *4-Bromofluorobenzene (Surr)* | *96* | | *80 - 120* | | *07/07/20 14:50* | *1* |
| *Dibromofluoromethane (Surr)* | *108* | | *80 - 120* | | *07/07/20 14:50* | *1* |
| *Toluene-d8 (Surr)* | *104* | | *80 - 120* | | *07/07/20 14:50* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | ND | | 150 | 70 | ug/L | | | 07/07/20 14:50 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *96* | | *68.7 - 141* | | *07/07/20 14:50* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Naphthalene | ND | | 0.10 | 0.059 | ug/L | | 07/01/20 12:56 | 07/01/20 16:15 | 1 |
| 2-Methylnaphthalene | ND | | 0.10 | 0.049 | ug/L | | 07/01/20 12:56 | 07/01/20 16:15 | 1 |
| **1-Methylnaphthalene** | **0.026** | **J** | 0.10 | 0.026 | ug/L | | 07/01/20 12:56 | 07/01/20 16:15 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Nitrobenzene-d5* | *105* | | *44 - 121* | *07/01/20 12:56* | *07/01/20 16:15* | *1* |

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) (C10-C25) | ND | | 0.26 | 0.12 | mg/L | | 07/01/20 14:21 | 07/01/20 18:00 | 1 |
| Residual Range Organics (RRO) (C25-C36) | ND | | 0.44 | 0.13 | mg/L | | 07/01/20 14:21 | 07/01/20 18:00 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *76* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 18:00* | *1* |
| *n-Triacontane-d62* | *75* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 18:00* | *1* |

## Client Sample ID: B-34

**Date Collected: 06/24/20 12:45**
**Date Received: 06/26/20 13:40**

**Lab Sample ID: 590-13419-6**
**Matrix: Water**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Benzene** | **130** | **H F2 F1** | 4.0 | 0.93 | ug/L | | | 07/13/20 14:29 | 10 |
| **Ethylbenzene** | **12** | **F1** | 1.0 | 0.20 | ug/L | | | 07/07/20 15:10 | 1 |
| m,p-Xylene | ND | H F1 | 20 | 2.8 | ug/L | | | 07/13/20 14:29 | 10 |
| o-Xylene | ND | H F2 F1 | 10 | 1.6 | ug/L | | | 07/13/20 14:29 | 10 |
| **Toluene** | **5.5** | **F1 F2** | 1.0 | 0.31 | ug/L | | | 07/07/20 15:10 | 1 |
| Xylenes, Total | ND | H | 30 | 4.4 | ug/L | | | 07/13/20 14:29 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *96* | | *80 - 120* | | *07/07/20 15:10* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *100* | | *80 - 120* | | *07/13/20 14:29* | *10* |
| *4-Bromofluorobenzene (Surr)* | *87* | | *80 - 120* | | *07/07/20 15:10* | *1* |
| *4-Bromofluorobenzene (Surr)* | *93* | | *80 - 120* | | *07/13/20 14:29* | *10* |
| *Dibromofluoromethane (Surr)* | *91* | | *80 - 120* | | *07/07/20 15:10* | *1* |
| *Dibromofluoromethane (Surr)* | *96* | | *80 - 120* | | *07/13/20 14:29* | *10* |
| *Toluene-d8 (Surr)* | *102* | | *80 - 120* | | *07/07/20 15:10* | *1* |
| *Toluene-d8 (Surr)* | *112* | | *80 - 120* | | *07/13/20 14:29* | *10* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Gasoline** | **2500** | | 150 | 70 | ug/L | | | 07/07/20 15:10 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *87* | | *68.7 - 141* | | *07/07/20 15:10* | *1* |

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Diesel Range Organics (DRO) (C10-C25)** | **14** | | 0.23 | 0.10 | mg/L | | 07/01/20 14:21 | 07/01/20 18:22 | 1 |
| **Residual Range Organics (RRO) (C25-C36)** | **1.6** | **F1 F2** | 0.38 | 0.11 | mg/L | | 07/01/20 14:21 | 07/01/20 18:22 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *109* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 18:22* | *1* |
| *n-Triacontane-d62* | *98* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 18:22* | *1* |

## Client Sample ID: HC-111

**Date Collected: 06/24/20 11:45**
**Date Received: 06/26/20 13:40**

**Lab Sample ID: 590-13419-7**
**Matrix: Water**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Benzene** | **65** | | 0.40 | 0.093 | ug/L | | | 07/07/20 16:32 | 1 |
| **Ethylbenzene** | **78** | | 1.0 | 0.20 | ug/L | | | 07/07/20 16:32 | 1 |
| **m,p-Xylene** | **15** | * | 2.0 | 0.28 | ug/L | | | 07/07/20 16:32 | 1 |
| **o-Xylene** | **1.4** | * | 1.0 | 0.16 | ug/L | | | 07/07/20 16:32 | 1 |
| **Toluene** | **7.8** | | 1.0 | 0.31 | ug/L | | | 07/07/20 16:32 | 1 |
| **Xylenes, Total** | **17** | | 3.0 | 0.44 | ug/L | | | 07/07/20 16:32 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *90* | | *80 - 120* | | *07/07/20 16:32* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *96* | | *80 - 120* | | *07/13/20 16:35* | *1* |
| *4-Bromofluorobenzene (Surr)* | *80* | | *80 - 120* | | *07/07/20 16:32* | *1* |

## Client Sample ID: HC-111
**Lab Sample ID: 590-13419-7**
**Date Collected: 06/24/20 11:45**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

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

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene (Surr) | 103 | | 80 - 120 | | 07/13/20 16:35 | 1 |
| Dibromofluoromethane (Surr) | 96 | | 80 - 120 | | 07/07/20 16:32 | 1 |
| Dibromofluoromethane (Surr) | 91 | | 80 - 120 | | 07/13/20 16:35 | 1 |
| Toluene-d8 (Surr) | 98 | | 80 - 120 | | 07/07/20 16:32 | 1 |
| Toluene-d8 (Surr) | 89 | | 80 - 120 | | 07/13/20 16:35 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | 1900 | | 150 | 70 | ug/L | | | 07/07/20 16:32 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene (Surr) | 80 | | 68.7 - 141 | | 07/07/20 16:32 | 1 |

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) (C10-C25) | 5.1 | | 0.27 | 0.12 | mg/L | | 07/01/20 14:21 | 07/01/20 19:47 | 1 |
| Residual Range Organics (RRO) (C25-C36) | 0.49 | | 0.44 | 0.13 | mg/L | | 07/01/20 14:21 | 07/01/20 19:47 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| o-Terphenyl | 86 | | 50 - 150 | 07/01/20 14:21 | 07/01/20 19:47 | 1 |
| n-Triacontane-d62 | 96 | | 50 - 150 | 07/01/20 14:21 | 07/01/20 19:47 | 1 |

## Client Sample ID: DMW-2
**Lab Sample ID: 590-13419-8**
**Date Collected: 06/24/20 10:35**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.14 | J | 0.40 | 0.093 | ug/L | | | 07/07/20 16:52 | 1 |
| Ethylbenzene | 0.21 | J | 1.0 | 0.20 | ug/L | | | 07/07/20 16:52 | 1 |
| m,p-Xylene | ND | * | 2.0 | 0.28 | ug/L | | | 07/07/20 16:52 | 1 |
| o-Xylene | ND | * | 1.0 | 0.16 | ug/L | | | 07/07/20 16:52 | 1 |
| Toluene | ND | | 1.0 | 0.31 | ug/L | | | 07/07/20 16:52 | 1 |
| Xylenes, Total | ND | | 3.0 | 0.44 | ug/L | | | 07/07/20 16:52 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 100 | | 80 - 120 | | 07/07/20 16:52 | 1 |
| 4-Bromofluorobenzene (Surr) | 92 | | 80 - 120 | | 07/07/20 16:52 | 1 |
| Dibromofluoromethane (Surr) | 105 | | 80 - 120 | | 07/07/20 16:52 | 1 |
| Toluene-d8 (Surr) | 105 | | 80 - 120 | | 07/07/20 16:52 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | ND | | 150 | 70 | ug/L | | | 07/07/20 16:52 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene (Surr) | 92 | | 68.7 - 141 | | 07/07/20 16:52 | 1 |

## Client Sample ID: DMW-2
**Lab Sample ID: 590-13419-8**
**Date Collected: 06/24/20 10:35**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) (C10-C25) | 0.86 | | 0.23 | 0.10 | mg/L | | 07/01/20 14:21 | 07/01/20 20:08 | 1 |
| Residual Range Organics (RRO) (C25-C36) | 0.17 | J | 0.38 | 0.11 | mg/L | | 07/01/20 14:21 | 07/01/20 20:08 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *80* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 20:08* | *1* |
| *n-Triacontane-d62* | *90* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 20:08* | *1* |

## Client Sample ID: DMW-2-DUP
**Lab Sample ID: 590-13419-9**
**Date Collected: 06/24/20 10:35**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 0.40 | 0.093 | ug/L | | | 07/07/20 17:13 | 1 |
| Ethylbenzene | ND | | 1.0 | 0.20 | ug/L | | | 07/07/20 17:13 | 1 |
| m,p-Xylene | ND | * | 2.0 | 0.28 | ug/L | | | 07/07/20 17:13 | 1 |
| o-Xylene | ND | * | 1.0 | 0.16 | ug/L | | | 07/07/20 17:13 | 1 |
| Toluene | ND | | 1.0 | 0.31 | ug/L | | | 07/07/20 17:13 | 1 |
| Xylenes, Total | ND | | 3.0 | 0.44 | ug/L | | | 07/07/20 17:13 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *103* | | *80 - 120* | | *07/07/20 17:13* | *1* |
| *4-Bromofluorobenzene (Surr)* | *95* | | *80 - 120* | | *07/07/20 17:13* | *1* |
| *Dibromofluoromethane (Surr)* | *103* | | *80 - 120* | | *07/07/20 17:13* | *1* |
| *Toluene-d8 (Surr)* | *102* | | *80 - 120* | | *07/07/20 17:13* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | ND | | 150 | 70 | ug/L | | | 07/07/20 17:13 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *95* | | *68.7 - 141* | | *07/07/20 17:13* | *1* |

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) (C10-C25) | 0.83 | | 0.23 | 0.10 | mg/L | | 07/01/20 14:21 | 07/01/20 20:30 | 1 |
| Residual Range Organics (RRO) (C25-C36) | 0.16 | J | 0.38 | 0.11 | mg/L | | 07/01/20 14:21 | 07/01/20 20:30 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *80* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 20:30* | *1* |
| *n-Triacontane-d62* | *89* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 20:30* | *1* |

## Client Sample ID: RW-5R
**Lab Sample ID: 590-13419-10**
**Date Collected: 06/23/20 15:25**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 1.0 | | 0.40 | 0.093 | ug/L | | | 07/06/20 17:28 | 1 |

## Client Sample ID: RW-5R

**Lab Sample ID: 590-13419-10**

**Date Collected: 06/23/20 15:25**

**Matrix: Water**

**Date Received: 06/26/20 13:40**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | 4.3 | | 1.0 | 0.20 | ug/L | | | 07/06/20 17:28 | 1 |
| m,p-Xylene | 0.63 | J | 2.0 | 0.28 | ug/L | | | 07/06/20 17:28 | 1 |
| o-Xylene | ND | | 1.0 | 0.16 | ug/L | | | 07/06/20 17:28 | 1 |
| Toluene | ND | | 1.0 | 0.31 | ug/L | | | 07/06/20 17:28 | 1 |
| Xylenes, Total | 0.63 | J | 3.0 | 0.44 | ug/L | | | 07/06/20 17:28 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *102* | | *80 - 120* | | *07/06/20 17:28* | *1* |
| *4-Bromofluorobenzene (Surr)* | *96* | | *80 - 120* | | *07/06/20 17:28* | *1* |
| *Dibromofluoromethane (Surr)* | *99* | | *80 - 120* | | *07/06/20 17:28* | *1* |
| *Toluene-d8 (Surr)* | *104* | | *80 - 120* | | *07/06/20 17:28* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | 1300 | | 150 | 70 | ug/L | | | 07/06/20 17:28 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *96* | | *68.7 - 141* | | *07/06/20 17:28* | *1* |

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) (C10-C25) | 0.55 | | 0.24 | 0.11 | mg/L | | 07/01/20 14:21 | 07/01/20 20:51 | 1 |
| Residual Range Organics (RRO) (C25-C36) | 0.14 | J | 0.40 | 0.12 | mg/L | | 07/01/20 14:21 | 07/01/20 20:51 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *78* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 20:51* | *1* |
| *n-Triacontane-d62* | *89* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 20:51* | *1* |

## Client Sample ID: RR-5

**Lab Sample ID: 590-13419-11**

**Date Collected: 06/23/20 14:25**

**Matrix: Water**

**Date Received: 06/26/20 13:40**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 0.40 | 0.093 | ug/L | | | 07/06/20 17:50 | 1 |
| Ethylbenzene | ND | | 1.0 | 0.20 | ug/L | | | 07/06/20 17:50 | 1 |
| m,p-Xylene | ND | | 2.0 | 0.28 | ug/L | | | 07/06/20 17:50 | 1 |
| o-Xylene | ND | | 1.0 | 0.16 | ug/L | | | 07/06/20 17:50 | 1 |
| Toluene | ND | | 1.0 | 0.31 | ug/L | | | 07/06/20 17:50 | 1 |
| Xylenes, Total | ND | | 3.0 | 0.44 | ug/L | | | 07/06/20 17:50 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *100* | | *80 - 120* | | *07/06/20 17:50* | *1* |
| *4-Bromofluorobenzene (Surr)* | *100* | | *80 - 120* | | *07/06/20 17:50* | *1* |
| *Dibromofluoromethane (Surr)* | *102* | | *80 - 120* | | *07/06/20 17:50* | *1* |
| *Toluene-d8 (Surr)* | *99* | | *80 - 120* | | *07/06/20 17:50* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | ND | | 150 | 70 | ug/L | | | 07/06/20 17:50 | 1 |

## Client Sample ID: RR-5

**Lab Sample ID: 590-13419-11**

**Date Collected: 06/23/20 14:25**

**Matrix: Water**

**Date Received: 06/26/20 13:40**

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene (Surr) | 100 | | 68.7 - 141 | | 07/06/20 17:50 | 1 |

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) (C10-C25) | 0.19 | J | 0.26 | 0.12 | mg/L | | 07/01/20 14:21 | 07/01/20 21:12 | 1 |
| Residual Range Organics (RRO) (C25-C36) | ND | | 0.44 | 0.13 | mg/L | | 07/01/20 14:21 | 07/01/20 21:12 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| o-Terphenyl | 87 | | 50 - 150 | 07/01/20 14:21 | 07/01/20 21:12 | 1 |
| n-Triacontane-d62 | 97 | | 50 - 150 | 07/01/20 14:21 | 07/01/20 21:12 | 1 |

## Client Sample ID: RR-4

**Lab Sample ID: 590-13419-12**

**Date Collected: 06/23/20 13:25**

**Matrix: Water**

**Date Received: 06/26/20 13:40**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 0.40 | 0.093 | ug/L | | | 07/06/20 18:11 | 1 |
| Ethylbenzene | ND | | 1.0 | 0.20 | ug/L | | | 07/06/20 18:11 | 1 |
| m,p-Xylene | ND | | 2.0 | 0.28 | ug/L | | | 07/06/20 18:11 | 1 |
| o-Xylene | ND | | 1.0 | 0.16 | ug/L | | | 07/06/20 18:11 | 1 |
| Toluene | ND | | 1.0 | 0.31 | ug/L | | | 07/06/20 18:11 | 1 |
| Xylenes, Total | ND | | 3.0 | 0.44 | ug/L | | | 07/06/20 18:11 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 106 | | 80 - 120 | | 07/06/20 18:11 | 1 |
| 4-Bromofluorobenzene (Surr) | 104 | | 80 - 120 | | 07/06/20 18:11 | 1 |
| Dibromofluoromethane (Surr) | 106 | | 80 - 120 | | 07/06/20 18:11 | 1 |
| Toluene-d8 (Surr) | 102 | | 80 - 120 | | 07/06/20 18:11 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | ND | | 150 | 70 | ug/L | | | 07/06/20 18:11 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene (Surr) | 104 | | 68.7 - 141 | | 07/06/20 18:11 | 1 |

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) (C10-C25) | ND | | 0.24 | 0.11 | mg/L | | 07/01/20 14:21 | 07/01/20 21:34 | 1 |
| Residual Range Organics (RRO) (C25-C36) | ND | | 0.40 | 0.12 | mg/L | | 07/01/20 14:21 | 07/01/20 21:34 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| o-Terphenyl | 81 | | 50 - 150 | 07/01/20 14:21 | 07/01/20 21:34 | 1 |
| n-Triacontane-d62 | 86 | | 50 - 150 | 07/01/20 14:21 | 07/01/20 21:34 | 1 |

## Client Sample ID: E-22

**Lab Sample ID: 590-13419-13**

**Date Collected: 06/23/20 12:10**

**Matrix: Water**

**Date Received: 06/26/20 13:40**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.88 | | 0.40 | 0.093 | ug/L | | | 07/06/20 18:32 | 1 |
| Ethylbenzene | 1.2 | | 1.0 | 0.20 | ug/L | | | 07/06/20 18:32 | 1 |
| m,p-Xylene | 0.60 | J | 2.0 | 0.28 | ug/L | | | 07/06/20 18:32 | 1 |
| o-Xylene | ND | | 1.0 | 0.16 | ug/L | | | 07/06/20 18:32 | 1 |
| Toluene | ND | | 1.0 | 0.31 | ug/L | | | 07/06/20 18:32 | 1 |
| Xylenes, Total | 0.60 | J | 3.0 | 0.44 | ug/L | | | 07/06/20 18:32 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *107* | | *80 - 120* | | *07/06/20 18:32* | *1* |
| *4-Bromofluorobenzene (Surr)* | *102* | | *80 - 120* | | *07/06/20 18:32* | *1* |
| *Dibromofluoromethane (Surr)* | *102* | | *80 - 120* | | *07/06/20 18:32* | *1* |
| *Toluene-d8 (Surr)* | *100* | | *80 - 120* | | *07/06/20 18:32* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | 100 | J | 150 | 70 | ug/L | | | 07/06/20 18:32 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *102* | | *68.7 - 141* | | *07/06/20 18:32* | *1* |

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) (C10-C25) | 0.66 | | 0.27 | 0.12 | mg/L | | 07/01/20 14:21 | 07/01/20 21:55 | 1 |
| Residual Range Organics (RRO) (C25-C36) | 0.76 | | 0.45 | 0.13 | mg/L | | 07/01/20 14:21 | 07/01/20 21:55 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *83* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 21:55* | *1* |
| *n-Triacontane-d62* | *92* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 21:55* | *1* |

## Client Sample ID: B-31

**Lab Sample ID: 590-13419-14**

**Date Collected: 06/23/20 10:30**

**Matrix: Water**

**Date Received: 06/26/20 13:40**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 1.3 | | 0.40 | 0.093 | ug/L | | | 07/06/20 18:53 | 1 |
| Ethylbenzene | 9.9 | | 1.0 | 0.20 | ug/L | | | 07/06/20 18:53 | 1 |
| m,p-Xylene | 17 | | 2.0 | 0.28 | ug/L | | | 07/06/20 18:53 | 1 |
| o-Xylene | 1.3 | | 1.0 | 0.16 | ug/L | | | 07/06/20 18:53 | 1 |
| Toluene | 3.9 | | 1.0 | 0.31 | ug/L | | | 07/06/20 18:53 | 1 |
| Xylenes, Total | 18 | | 3.0 | 0.44 | ug/L | | | 07/06/20 18:53 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *105* | | *80 - 120* | | *07/06/20 18:53* | *1* |
| *4-Bromofluorobenzene (Surr)* | *92* | | *80 - 120* | | *07/06/20 18:53* | *1* |
| *Dibromofluoromethane (Surr)* | *98* | | *80 - 120* | | *07/06/20 18:53* | *1* |
| *Toluene-d8 (Surr)* | *103* | | *80 - 120* | | *07/06/20 18:53* | *1* |

Client: AECOM
Job ID: 590-13419-1
Project/Site: Tacoma D St Terminal-Phillips 66

## Client Sample ID: B-31
**Lab Sample ID: 590-13419-14**
**Date Collected: 06/23/20 10:30**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | 990 | | 150 | 70 | ug/L | | | 07/06/20 18:53 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *92* | | *68.7 - 141* | | *07/06/20 18:53* | *1* |

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) (C10-C25) | 2.9 | | 0.28 | 0.13 | mg/L | | 07/01/20 14:21 | 07/01/20 22:16 | 1 |
| Residual Range Organics (RRO) (C25-C36) | 0.27 | J | 0.47 | 0.14 | mg/L | | 07/01/20 14:21 | 07/01/20 22:16 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *86* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 22:16* | *1* |
| *n-Triacontane-d62* | *92* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 22:16* | *1* |

## Client Sample ID: T-2
**Lab Sample ID: 590-13419-15**
**Date Collected: 06/23/20 11:40**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 0.40 | 0.093 | ug/L | | | 07/06/20 19:15 | 1 |
| Ethylbenzene | ND | | 1.0 | 0.20 | ug/L | | | 07/06/20 19:15 | 1 |
| m,p-Xylene | ND | | 2.0 | 0.28 | ug/L | | | 07/06/20 19:15 | 1 |
| o-Xylene | ND | | 1.0 | 0.16 | ug/L | | | 07/06/20 19:15 | 1 |
| Toluene | ND | | 1.0 | 0.31 | ug/L | | | 07/06/20 19:15 | 1 |
| Xylenes, Total | ND | | 3.0 | 0.44 | ug/L | | | 07/06/20 19:15 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *100* | | *80 - 120* | | *07/06/20 19:15* | *1* |
| *4-Bromofluorobenzene (Surr)* | *100* | | *80 - 120* | | *07/06/20 19:15* | *1* |
| *Dibromofluoromethane (Surr)* | *103* | | *80 - 120* | | *07/06/20 19:15* | *1* |
| *Toluene-d8 (Surr)* | *101* | | *80 - 120* | | *07/06/20 19:15* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | 140 | J | 150 | 70 | ug/L | | | 07/06/20 19:15 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *100* | | *68.7 - 141* | | *07/06/20 19:15* | *1* |

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) (C10-C25) | ND | | 0.26 | 0.12 | mg/L | | 07/01/20 14:21 | 07/01/20 22:38 | 1 |
| Residual Range Organics (RRO) (C25-C36) | ND | | 0.43 | 0.13 | mg/L | | 07/01/20 14:21 | 07/01/20 22:38 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *79* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 22:38* | *1* |
| *n-Triacontane-d62* | *83* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 22:38* | *1* |

## Client Sample ID: T-2-DUP

**Lab Sample ID: 590-13419-16**

**Date Collected: 06/23/20 11:40**

**Matrix: Water**

**Date Received: 06/26/20 13:40**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 0.40 | 0.093 | ug/L | | | 07/06/20 19:56 | 1 |
| Ethylbenzene | ND | | 1.0 | 0.20 | ug/L | | | 07/06/20 19:56 | 1 |
| m,p-Xylene | ND | | 2.0 | 0.28 | ug/L | | | 07/06/20 19:56 | 1 |
| o-Xylene | ND | | 1.0 | 0.16 | ug/L | | | 07/06/20 19:56 | 1 |
| Toluene | ND | | 1.0 | 0.31 | ug/L | | | 07/06/20 19:56 | 1 |
| Xylenes, Total | ND | | 3.0 | 0.44 | ug/L | | | 07/06/20 19:56 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *106* | | *80 - 120* | | *07/06/20 19:56* | *1* |
| *4-Bromofluorobenzene (Surr)* | *96* | | *80 - 120* | | *07/06/20 19:56* | *1* |
| *Dibromofluoromethane (Surr)* | *104* | | *80 - 120* | | *07/06/20 19:56* | *1* |
| *Toluene-d8 (Surr)* | *107* | | *80 - 120* | | *07/06/20 19:56* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Gasoline** | **130** | **J** | 150 | 70 | ug/L | | | 07/06/20 19:56 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *96* | | *68.7 - 141* | | *07/06/20 19:56* | *1* |

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) (C10-C25) | ND | | 0.27 | 0.12 | mg/L | | 07/01/20 14:21 | 07/01/20 23:20 | 1 |
| Residual Range Organics (RRO) (C25-C36) | ND | | 0.44 | 0.13 | mg/L | | 07/01/20 14:21 | 07/01/20 23:20 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *78* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 23:20* | *1* |
| *n-Triacontane-d62* | *83* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 23:20* | *1* |

## Client Sample ID: RR-1

**Lab Sample ID: 590-13419-17**

**Date Collected: 06/23/20 13:18**

**Matrix: Water**

**Date Received: 06/26/20 13:40**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 0.40 | 0.093 | ug/L | | | 07/06/20 20:17 | 1 |
| Ethylbenzene | ND | | 1.0 | 0.20 | ug/L | | | 07/06/20 20:17 | 1 |
| m,p-Xylene | ND | | 2.0 | 0.28 | ug/L | | | 07/06/20 20:17 | 1 |
| o-Xylene | ND | | 1.0 | 0.16 | ug/L | | | 07/06/20 20:17 | 1 |
| Toluene | ND | | 1.0 | 0.31 | ug/L | | | 07/06/20 20:17 | 1 |
| Xylenes, Total | ND | | 3.0 | 0.44 | ug/L | | | 07/06/20 20:17 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *102* | | *80 - 120* | | *07/06/20 20:17* | *1* |
| *4-Bromofluorobenzene (Surr)* | *105* | | *80 - 120* | | *07/06/20 20:17* | *1* |
| *Dibromofluoromethane (Surr)* | *100* | | *80 - 120* | | *07/06/20 20:17* | *1* |
| *Toluene-d8 (Surr)* | *98* | | *80 - 120* | | *07/06/20 20:17* | *1* |

## Client Sample ID: RR-1
**Lab Sample ID: 590-13419-17**
**Date Collected: 06/23/20 13:18**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | 77 | J | 150 | 70 | ug/L | | | 07/06/20 20:17 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *105* | | *68.7 - 141* | | *07/06/20 20:17* | *1* |

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) (C10-C25) | ND | | 0.25 | 0.12 | mg/L | | 07/01/20 14:21 | 07/01/20 23:42 | 1 |
| Residual Range Organics (RRO) (C25-C36) | ND | | 0.42 | 0.13 | mg/L | | 07/01/20 14:21 | 07/01/20 23:42 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *79* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 23:42* | *1* |
| *n-Triacontane-d62* | *81* | | *50 - 150* | *07/01/20 14:21* | *07/01/20 23:42* | *1* |

## Client Sample ID: DMW-4
**Lab Sample ID: 590-13419-18**
**Date Collected: 06/23/20 14:05**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 0.40 | 0.093 | ug/L | | | 07/06/20 20:37 | 1 |
| Ethylbenzene | ND | | 1.0 | 0.20 | ug/L | | | 07/06/20 20:37 | 1 |
| m,p-Xylene | ND | | 2.0 | 0.28 | ug/L | | | 07/06/20 20:37 | 1 |
| o-Xylene | ND | | 1.0 | 0.16 | ug/L | | | 07/06/20 20:37 | 1 |
| Toluene | ND | | 1.0 | 0.31 | ug/L | | | 07/06/20 20:37 | 1 |
| Xylenes, Total | ND | | 3.0 | 0.44 | ug/L | | | 07/06/20 20:37 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *99* | | *80 - 120* | | *07/06/20 20:37* | *1* |
| *4-Bromofluorobenzene (Surr)* | *101* | | *80 - 120* | | *07/06/20 20:37* | *1* |
| *Dibromofluoromethane (Surr)* | *103* | | *80 - 120* | | *07/06/20 20:37* | *1* |
| *Toluene-d8 (Surr)* | *98* | | *80 - 120* | | *07/06/20 20:37* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | 260 | | 150 | 70 | ug/L | | | 07/06/20 20:37 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *101* | | *68.7 - 141* | | *07/06/20 20:37* | *1* |

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) (C10-C25) | 0.17 | J | 0.28 | 0.13 | mg/L | | 07/01/20 14:21 | 07/02/20 00:03 | 1 |
| Residual Range Organics (RRO) (C25-C36) | ND | | 0.46 | 0.14 | mg/L | | 07/01/20 14:21 | 07/02/20 00:03 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *81* | | *50 - 150* | *07/01/20 14:21* | *07/02/20 00:03* | *1* |
| *n-Triacontane-d62* | *83* | | *50 - 150* | *07/01/20 14:21* | *07/02/20 00:03* | *1* |

Client: AECOM
Job ID: 590-13419-1
Project/Site: Tacoma D St Terminal-Phillips 66

## Client Sample ID: RW-8
**Lab Sample ID: 590-13419-19**
**Date Collected: 06/23/20 15:05**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Benzene** | **1.2** | | 0.40 | 0.093 | ug/L | | | 07/06/20 20:58 | 1 |
| **Ethylbenzene** | **0.63** | **J** | 1.0 | 0.20 | ug/L | | | 07/06/20 20:58 | 1 |
| m,p-Xylene | ND | | 2.0 | 0.28 | ug/L | | | 07/06/20 20:58 | 1 |
| o-Xylene | ND | | 1.0 | 0.16 | ug/L | | | 07/06/20 20:58 | 1 |
| Toluene | ND | | 1.0 | 0.31 | ug/L | | | 07/06/20 20:58 | 1 |
| Xylenes, Total | ND | | 3.0 | 0.44 | ug/L | | | 07/06/20 20:58 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *98* | | *80 - 120* | | *07/06/20 20:58* | *1* |
| *4-Bromofluorobenzene (Surr)* | *90* | | *80 - 120* | | *07/06/20 20:58* | *1* |
| *Dibromofluoromethane (Surr)* | *100* | | *80 - 120* | | *07/06/20 20:58* | *1* |
| *Toluene-d8 (Surr)* | *95* | | *80 - 120* | | *07/06/20 20:58* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Gasoline** | **870** | | 150 | 70 | ug/L | | | 07/06/20 20:58 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *90* | | *68.7 - 141* | | *07/06/20 20:58* | *1* |

### Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Diesel Range Organics (DRO) (C10-C25)** | **1.8** | | 0.26 | 0.12 | mg/L | | 07/01/20 14:21 | 07/02/20 00:24 | 1 |
| **Residual Range Organics (RRO) (C25-C36)** | **0.40** | **J** | 0.43 | 0.13 | mg/L | | 07/01/20 14:21 | 07/02/20 00:24 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-Terphenyl* | *89* | | *50 - 150* | *07/01/20 14:21* | *07/02/20 00:24* | *1* |
| *n-Triacontane-d62* | *94* | | *50 - 150* | *07/01/20 14:21* | *07/02/20 00:24* | *1* |

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

### Lab Sample ID: MB 590-28058/13
### Matrix: Water
### Analysis Batch: 28058

Client Sample ID: Method Blank
Prep Type: Total/NA

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| . enuene | g D | | 0L40 | 0L093 | 72/8 | | | 0, /06/X0 16:X5 | 1 |
| Ethylbenuene | g D | | 1L0 | 0LX0 | 72/8 | | | 0, /06/X0 16:X5 | 1 |
| m*p-Rylene | g D | | XL0 | 0LXN | 72/8 | | | 0, /06/X0 16:X5 | 1 |
| o-Rylene | g D | | 1L0 | 0L16 | 72/8 | | | 0, /06/X0 16:X5 | 1 |
| Tol7ene | g D | | 1L0 | 0L31 | 72/8 | | | 0, /06/X0 16:X5 | 1 |
| Rylenes* Total | g D | | 3L0 | 0L44 | 72/8 | | | 0, /06/X0 16:X5 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *198* | | *09 - 129* | | *97/93/29 13:2B* | *1* |
| *4-mrof obuorozenTene (Surr)* | *192* | | *09 - 129* | | *97/93/29 13:2B* | *1* |
| *Dizrof obuorof ethane (Surr)* | *198* | | *09 - 129* | | *97/93/29 13:2B* | *1* |
| *6oluene-d0 (Surr)* | *193* | | *09 - 129* | | *97/93/29 13:2B* | *1* |

### Lab Sample ID: LCS 590-28058/1012
### Matrix: Water
### Analysis Batch: 28058

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| . enuene | 10L0 | 9L63 | | 72/8 | | 96 | N0 - 1X6 |
| Ethylbenuene | 10L0 | 9LNN | | 72/8 | | 99 | N0 - 1X0 |
| m*p-Rylene | 10L0 | 11L6 | | 72/8 | | 116 | N0 - 1X0 |
| o-Rylene | 10L0 | 11L1 | | 72/8 | | 111 | N0 - 1X0 |
| Tol7ene | 10L0 | 11L5 | | 72/8 | | 115 | N0 - 1X3 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *. 7* | | *09 - 129* |
| *4-mrof obuorozenTene (Surr)* | *. 0* | | *09 - 129* |
| *Dizrof obuorof ethane (Surr)* | *199* | | *09 - 129* |
| *6oluene-d0 (Surr)* | *. 7* | | *09 - 129* |

### Lab Sample ID: MB 590-28064/8
### Matrix: Water
### Analysis Batch: 28064

Client Sample ID: Method Blank
Prep Type: Total/NA

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| . enuene | g D | | 0L40 | 0L093 | 72/8 | | | 0, /0, /X0 1X:4N | 1 |
| Ethylbenuene | g D | | 1L0 | 0LX0 | 72/8 | | | 0, /0, /X0 1X:4N | 1 |
| m*p-Rylene | g D | | XL0 | 0LXN | 72/8 | | | 0, /0, /X0 1X:4N | 1 |
| o-Rylene | g D | | 1L0 | 0L16 | 72/8 | | | 0, /0, /X0 1X:4N | 1 |
| Tol7ene | g D | | 1L0 | 0L31 | 72/8 | | | 0, /0, /X0 1X:4N | 1 |
| Rylenes* Total | g D | | 3L0 | 0L44 | 72/8 | | | 0, /0, /X0 1X:4N | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *. 7* | | *09 - 129* | | *97/97/29 12:40* | *1* |
| *4-mrof obuorozenTene (Surr)* | *118* | | *09 - 129* | | *97/97/29 12:40* | *1* |
| *Dizrof obuorof ethane (Surr)* | *191* | | *09 - 129* | | *97/97/29 12:40* | *1* |
| *6oluene-d0 (Surr)* | *193* | | *09 - 129* | | *97/97/29 12:40* | *1* |

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

### Lab Sample ID: LCS 590-28064/1003
### Matrix: Water
### Analysis Batch: 28064

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| . enuene | | | 10L0 | 9LN4 | | 72/8 | | 9N | N0 - 1X6 | | |
| Ethylbenuene | | | 10L0 | 9L50 | | 72/8 | | 95 | N0 - 1X0 | | |
| m*p-Rylene | | | 10L0 | 10LN | | 72/8 | | 10N | N0 - 1X0 | | |
| o-Rylene | | | 10L0 | 10l6 | | 72/8 | | 106 | N0 - 1X0 | | |
| Tol7ene | | | 10L0 | 10l6 | | 72/8 | | 106 | N0 - 1X3 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *. 3* | | *09 - 129* |
| *4-mrof obuorozenTene (Surr)* | *. 3* | | *09 - 129* |
| *Dizrof obuorof ethane (Surr)* | *192* | | *09 - 129* |
| *6oluene-d0 (Surr)* | *. B* | | *09 - 129* |

### Lab Sample ID: LCSD 590-28064/6
### Matrix: Water
### Analysis Batch: 28064

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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| . enuene | | | 10L0 | 10l5 | | 72/8 | | 105 | N0 - 1X6 | , | 1N |
| Ethylbenuene | | | 10L0 | 11L0 | | 72/8 | | 110 | N0 - 1X0 | 15 | 1N |
| m*p-Rylene | | | 10L0 | 1XLX | ) | 72/8 | | 1XX | N0 - 1X0 | 13 | 1N |
| o-Rylene | | | 10L0 | 1XL4 | ) | 72/8 | | 1X4 | N0 - 1X0 | 15 | 1, |
| Tol7ene | | | 10L0 | 1XLX | | 72/8 | | 1XX | N0 - 1X3 | 15 | 1N |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *190* | | *09 - 129* |
| *4-mrof obuorozenTene (Surr)* | *. 0* | | *09 - 129* |
| *Dizrof obuorof ethane (Surr)* | *194* | | *09 - 129* |
| *6oluene-d0 (Surr)* | *192* | | *09 - 129* |

### Lab Sample ID: 590-13419-6MS
### Matrix: Water
### Analysis Batch: 28064

Client Sample ID: B-34
Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylbenuene | 1X | f 1 | 10L0 | 1NL1 | f 1 | 72/8 | | 64 | N0 - 1X0 | | |
| Tol7ene | 5l5 | f 1 f X | 10L0 | 14L1 | | 72/8 | | N6 | N0 - 1X3 | | |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *19B* | | *09 - 129* |
| *4-mrof obuorozenTene (Surr)* | *. 2* | | *09 - 129* |
| *Dizrof obuorof ethane (Surr)* | *. 4* | | *09 - 129* |
| *6oluene-d0 (Surr)* | *. .* | | *09 - 129* |

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

### Lab Sample ID: 590-13419-6MSD
### Matrix: Water
### Analysis Batch: 28064

### Client Sample ID: B-34
### Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylbenuene | 1X | f 1 | 10L0 | X1L3 | | 72/8 | | 9, | N0 - 1X0 | 16 | 1N |
| Tol7ene | 5L5 | f 1 f X | 10L0 | 1, l9 | f 1 f X | 72/8 | | 1X4 | N0 - 1X3 | X4 | 1N |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *. .* | | *09 - 129* |
| *4-mrof obuorozenTene (Surr)* | *. 1* | | *09 - 129* |
| *Dizrof obuorof ethane (Surr)* | *. 1* | | *09 - 129* |
| *6oluene-d0 (Surr)* | *. 4* | | *09 - 129* |

### Lab Sample ID: MB 590-28153/6
### Matrix: Water
### Analysis Batch: 28153

### Client Sample ID: Method Blank
### Prep Type: Total/NA

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| . enuene | g D | | 0L40 | 0L093 | 72/8 | | | 0, /13/X0 1X:43 | 1 |
| Ethylbenuene | g D | | 1L0 | 0LX0 | 72/8 | | | 0, /13/X0 1X:43 | 1 |
| m*p-Rylene | g D | | XL0 | 0LXN | 72/8 | | | 0, /13/X0 1X:43 | 1 |
| o-Rylene | g D | | 1L0 | 0L16 | 72/8 | | | 0, /13/X0 1X:43 | 1 |
| Tol7ene | g D | | 1L0 | 0L31 | 72/8 | | | 0, /13/X0 1X:43 | 1 |
| Rylenes* Total | g D | | 3L0 | 0L44 | 72/8 | | | 0, /13/X0 1X:43 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *. 2* | | *09 - 129* | | *97/18/29 12:48* | *1* |
| *4-mrof obuorozenTene (Surr)* | *. .* | | *09 - 129* | | *97/18/29 12:48* | *1* |
| *Dizrof obuorof ethane (Surr)* | *. B* | | *09 - 129* | | *97/18/29 12:48* | *1* |
| *6oluene-d0 (Surr)* | *112* | | *09 - 129* | | *97/18/29 12:48* | *1* |

### Lab Sample ID: LCS 590-28153/1003
### Matrix: Water
### Analysis Batch: 28153

### Client Sample ID: Lab Control Sample
### Prep Type: Total/NA

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| . enuene | 10L0 | 9LX5 | | 72/8 | | 9X | N0 - 1X6 |
| Ethylbenuene | 10L0 | 10L, | | 72/8 | | 10, | N0 - 1X0 |
| m*p-Rylene | 10L0 | 10l9 | | 72/8 | | 109 | N0 - 1X0 |
| o-Rylene | 10L0 | 11LX | | 72/8 | | 11X | N0 - 1X0 |
| Tol7ene | 10L0 | 9L59 | | 72/8 | | 96 | N0 - 1X3 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *. 4* | | *09 - 129* |
| *4-mrof obuorozenTene (Surr)* | *. B* | | *09 - 129* |
| *Dizrof obuorof ethane (Surr)* | *. 8* | | *09 - 129* |
| *6oluene-d0 (Surr)* | *07* | | *09 - 129* |

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

**Lab Sample ID: LCSD 590-28153/9**
**Matrix: Water**
**Analysis Batch: 28153**

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| . enuene | | | 10L0 | 10L3 | | 72/8 | | 103 | N0 - 1X6 | 11 | 1N |
| Ethylbenuene | | | 10L0 | 11L4 | | 72/8 | | 114 | N0 - 1X0 | 6 | 1N |
| m*p-Rylene | | | 10L0 | 11L, | | 72/8 | | 11, | N0 - 1X0 | N | 1N |
| o-Rylene | | | 10L0 | 11L9 | | 72/8 | | 119 | N0 - 1X0 | 6 | 1, |
| Tol7ene | | | 10L0 | 1XLX | )1 | 72/8 | | 1XX | N0 - 1X3 | X4 | 1N |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *. 7* | | *09 - 129* |
| *4-mrof obuorozenTene (Surr)* | *. 1* | | *09 - 129* |
| *Dizrof obuorof ethane (Surr)* | *. 3* | | *09 - 129* |
| *6oluene-d0 (Surr)* | *192* | | *09 - 129* |

**Lab Sample ID: 590-13419-6MS**
**Matrix: Water**
**Analysis Batch: 28153**

**Client Sample ID: B-34**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| . enuene | 130 | k f Xf 1 | 100 | XN1 | k f 1 | 72/8 | | 149 | N0 - 1X6 |
| m*p-Rylene | g D | k f 1 | 100 | 1X6 | k f 1 | 72/8 | | 1X6 | N0 - 1X0 |
| o-Rylene | g D | k f Xf 1 | 100 | 130 | k f 1 | 72/8 | | 130 | N0 - 1X0 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *. B* | | *09 - 129* |
| *4-mrof obuorozenTene (Surr)* | *73* | *S1-* | *09 - 129* |
| *Dizrof obuorof ethane (Surr)* | *. 4* | | *09 - 129* |
| *6oluene-d0 (Surr)* | *. 9* | | *09 - 129* |

**Lab Sample ID: 590-13419-6MSD**
**Matrix: Water**
**Analysis Batch: 28153**

**Client Sample ID: B-34**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| . enuene | 130 | k f Xf 1 | 100 | X13 | k f X | 72/8 | | N1 | N0 - 1X6 | X, | 1N |
| m*p-Rylene | g D | k f 1 | 100 | 1XX | k f 1 | 72/8 | | 1XX | N0 - 1X0 | 4 | 1N |
| o-Rylene | g D | k f Xf 1 | 100 | 104 | k f X | 72/8 | | 104 | N0 - 1X0 | XX | 1, |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *0.* | | *09 - 129* |
| *4-mrof obuorozenTene (Surr)* | *. 9* | | *09 - 129* |
| *Dizrof obuorof ethane (Surr)* | *0.* | | *09 - 129* |
| *6oluene-d0 (Surr)* | *. 8* | | *09 - 129* |

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

**Lab Sample ID: MB 590-28055/13**
**Matrix: Water**
**Analysis Batch: 28055**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| z asoline | g D | | 150 | , 0 | 72/8 | | | 0, /06/X0 16:X5 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-mrof obuorozenTene (Surr)* | *192* | | *30N7 - 141* | | *97/93/29 13:2B* | *1* |

**Lab Sample ID: LCS 590-28055/1011**
**Matrix: Water**
**Analysis Batch: 28055**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| z asoline | | | 990 | 9, 4 | | 72/8 | | 9N | N0 - 1X0 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-mrof obuorozenTene (Surr)* | *. 3* | | *30N7 - 141* |

**Lab Sample ID: MB 590-28062/8**
**Matrix: Water**
**Analysis Batch: 28062**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| z asoline | g D | | 150 | , 0 | 72/8 | | | 0, /0, /X0 1X:4N | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-mrof obuorozenTene (Surr)* | *118* | | *30N7 - 141* | | *97/97/29 12:40* | *1* |

**Lab Sample ID: LCS 590-28062/1017**
**Matrix: Water**
**Analysis Batch: 28062**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| z asoline | | | 1000 | 10N0 | | 72/8 | | 10N | N0 - 1X0 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-mrof obuorozenTene (Surr)* | *. 9* | | *30N7 - 141* |

**Lab Sample ID: MB 590-28152/6**
**Matrix: Water**
**Analysis Batch: 28152**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| z asoline | g D | | 150 | , 0 | 72/8 | | | 0, /13/X0 1X:43 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-mrof obuorozenTene (Surr)* | *. .* | | *30N7 - 141* | | *97/18/29 12:48* | *1* |

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

**Lab Sample ID: LCS 590-28152/1004**
**Matrix: Water**
**Analysis Batch: 28152**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| z asoline | | | 1000 | N34 | | 72/8 | | N3 | N0 - 1X0 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-mrof obuorozenTene (Surr)* | *. 2* | | *30N7 - 141* |

**Lab Sample ID: 590-13419-6MS**
**Matrix: Water**
**Analysis Batch: 28152**

**Client Sample ID: B-34**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| z asoline | 1, 00 | k | 10000 | 11100 | k | 72/8 | | 94 | 55L6 - 1X6 | | |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-mrof obuorozenTene (Surr)* | *07* | | *30N7 - 141* |

**Lab Sample ID: 590-13419-6MSD**
**Matrix: Water**
**Analysis Batch: 28152**

**Client Sample ID: B-34**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| z asoline | 1, 00 | k | 10000 | 1X300 | k | 72/8 | | 105 | 55L6 - 1X6 | 10 | X0 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-mrof obuorozenTene (Surr)* | *77* | | *30N7 - 141* |

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

**Lab Sample ID: MB 590-28019/1-A**
**Matrix: Water**
**Analysis Batch: 28018**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 28019**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| g aphthalene | g D | | 0L090 | 0L053 | 72/8 | | 0, /01/X0 1X:56 | 0, /01/X0 14:19 | 1 |
| X-Methylnaphthalene | g D | | 0L090 | 0L044 | 72/8 | | 0, /01/X0 1X:56 | 0, /01/X0 14:19 | 1 |
| 1-Methylnaphthalene | g D | | 0L090 | 0L0X3 | 72/8 | | 0, /01/X0 1X:56 | 0, /01/X0 14:19 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *5itrozenTene-dB* | *03* | | *44 - 121* | *97/91/29 12:B3* | *97/91/29 14:1.* | *1* |

**Lab Sample ID: LCS 590-28019/2-A**
**Matrix: Water**
**Analysis Batch: 28018**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 28019**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| g aphthalene | | | 1L60 | 1L1N | | 72/8 | | , 4 | 5X - 1X0 | | |
| X-Methylnaphthalene | | | 1L60 | 1L16 | | 72/8 | | , X | 44 - 1X0 | | |
| 1-Methylnaphthalene | | | 1L60 | 1L14 | | 72/8 | | , 1 | 49 - 1X0 | | |

E7rodns TestAmerica* Spo( ane

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

**Lab Sample ID: LCS 590-28019/2-A**
**Matrix: Water**
**Analysis Batch: 28018**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 28019**

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *5itrozenTene-dB* | *. .* | | *44 - 121* |

**Lab Sample ID: LCSD 590-28019/3-A**
**Matrix: Water**
**Analysis Batch: 28018**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 28019**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| g aphthalene | | | 1L60 | 1LX, | | 72/8 | | N0 | 5X - 1X0 | , | X1 |
| X-Methylnaphthalene | | | 1L60 | 1LX4 | | 72/8 | | , N | 44 - 1X0 | , | X, |
| 1-Methylnaphthalene | | | 1L60 | 1LX3 | | 72/8 | | , , | 49 - 1X0 | N | X6 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *5itrozenTene-dB* | *193* | | *44 - 121* |

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

**Lab Sample ID: MB 590-28023/1-A**
**Matrix: Water**
**Analysis Batch: 28022**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 28023**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Gan2e Or2anics BDGOH BC10-CX5H | g D | | 0LX4 | 0L11 | m2/8 | | 0, /01/X0 14:X1 | 0, /01/X0 15:3X | 1 |
| GesiF7al Gan2e Or2anics BGGOH BCX5-C36H | g D | | 0L40 | 0L1X | m2/8 | | 0, /01/X0 14:X1 | 0, /01/X0 15:3X | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *o-6erphenyl* | *09* | | *B9 - 1B9* | *97/91/29 14:21* | *97/91/29 1B:82* | *1* |
| *n-6riacontane-d32* | *77* | | *B9 - 1B9* | *97/91/29 14:21* | *97/91/29 1B:82* | *1* |

**Lab Sample ID: LCS 590-28023/2-A**
**Matrix: Water**
**Analysis Batch: 28022**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 28023**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Gan2e Or2anics BDGOH BC10-CX5H | | | 1L60 | 1L3X | | m2/8 | | N3 | 50 - 150 | | |
| GesiF7al Gan2e Or2anics BGGOH BCX5-C36H | | | 1L60 | 1L6, | | m2/8 | | 105 | 50 - 150 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *o-6erphenyl* | *. 9* | | *B9 - 1B9* |
| *n-6riacontane-d32* | *. B* | | *B9 - 1B9* |

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

**Lab Sample ID: LCSD 590-28023/3-A**
**Matrix: Water**
**Analysis Batch: 28022**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 28023**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Gan2e Or2anics BDGOH BC10-CX5H | | | 1L60 | 1LX, | | m2/8 | | , 9 | 50 - 150 | 4 | X5 |
| GesiF7al Gan2e Or2anics BGGOH BCX5-C36H | | | 1L60 | 1L6, | | m2/8 | | 104 | 50 - 150 | 0 | X5 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *o-6erphenyl* | *0.* | | *B9 - 1B9* |
| *n-6riacontane-d32* | *. 7* | | *B9 - 1B9* |

**Lab Sample ID: 590-13419-6MS**
**Matrix: Water**
**Analysis Batch: 28022**

**Client Sample ID: B-34**
**Prep Type: Total/NA**
**Prep Batch: 28023**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Gan2e Or2anics BDGOH BC10-CX5H | 14 | | 1L65 | 14LN | 4 | m2/8 | | 3N | 54L5 - 136 | | |
| GesiF7al Gan2e Or2anics BGGOH BCX5-C36H | 1L6 | f 1 f X | 1L65 | 3L0X | | m2/8 | | N5 | 50 - 150 | | |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *o-6erphenyl* | *119* | | *B9 - 1B9* |
| *n-6riacontane-d32* | *191* | | *B9 - 1B9* |

**Lab Sample ID: 590-13419-6MSD**
**Matrix: Water**
**Analysis Batch: 28022**

**Client Sample ID: B-34**
**Prep Type: Total/NA**
**Prep Batch: 28023**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Gan2e Or2anics BDGOH BC10-CX5H | 14 | | 1L66 | 1NLN | 4 | m2/8 | | X, N | 54L5 - 136 | X4 | 3XL5 |
| GesiF7al Gan2e Or2anics BGGOH BCX5-C36H | 1L6 | f 1 f X | 1L66 | 4LX1 | f 1 f X | m2/8 | | 156 | 50 - 150 | 33 | X5 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *o-6erphenyl* | *187* | | *B9 - 1B9* |
| *n-6riacontane-d32* | *191* | | *B9 - 1B9* |

## GC/MS VOA

### Analysis Batch: 28055

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 590-13419-10 | RW-5R | Total/NA | Water | NWTPH-Gx | |
| 590-13419-11 | RR-5 | Total/NA | Water | NWTPH-Gx | |
| 590-13419-12 | RR-4 | Total/NA | Water | NWTPH-Gx | |
| 590-13419-13 | E-22 | Total/NA | Water | NWTPH-Gx | |
| 590-13419-14 | B-31 | Total/NA | Water | NWTPH-Gx | |
| 590-13419-15 | T-2 | Total/NA | Water | NWTPH-Gx | |
| 590-13419-16 | T-2-DUP | Total/NA | Water | NWTPH-Gx | |
| 590-13419-17 | RR-1 | Total/NA | Water | NWTPH-Gx | |
| 590-13419-18 | DMW-4 | Total/NA | Water | NWTPH-Gx | |
| 590-13419-19 | RW-8 | Total/NA | Water | NWTPH-Gx | |
| MB 590-28055/13 | Method Blank | Total/NA | Water | NWTPH-Gx | |
| LCS 590-28055/1011 | Lab Control Sample | Total/NA | Water | NWTPH-Gx | |

### Analysis Batch: 28058

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 590-13419-10 | RW-5R | Total/NA | Water | 8260D | |
| 590-13419-11 | RR-5 | Total/NA | Water | 8260D | |
| 590-13419-12 | RR-4 | Total/NA | Water | 8260D | |
| 590-13419-13 | E-22 | Total/NA | Water | 8260D | |
| 590-13419-14 | B-31 | Total/NA | Water | 8260D | |
| 590-13419-15 | T-2 | Total/NA | Water | 8260D | |
| 590-13419-16 | T-2-DUP | Total/NA | Water | 8260D | |
| 590-13419-17 | RR-1 | Total/NA | Water | 8260D | |
| 590-13419-18 | DMW-4 | Total/NA | Water | 8260D | |
| 590-13419-19 | RW-8 | Total/NA | Water | 8260D | |
| MB 590-28058/13 | Method Blank | Total/NA | Water | 8260D | |
| LCS 590-28058/1012 | Lab Control Sample | Total/NA | Water | 8260D | |

### Analysis Batch: 28062

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 590-13419-1 | FW-5R | Total/NA | Water | NWTPH-Gx | |
| 590-13419-2 | B-25 | Total/NA | Water | NWTPH-Gx | |
| 590-13419-3 | FW-13 | Total/NA | Water | NWTPH-Gx | |
| 590-13419-4 | FW-14 | Total/NA | Water | NWTPH-Gx | |
| 590-13419-5 | RR-2 | Total/NA | Water | NWTPH-Gx | |
| 590-13419-6 | B-34 | Total/NA | Water | NWTPH-Gx | |
| 590-13419-7 | HC-111 | Total/NA | Water | NWTPH-Gx | |
| 590-13419-8 | DMW-2 | Total/NA | Water | NWTPH-Gx | |
| 590-13419-9 | DMW-2-DUP | Total/NA | Water | NWTPH-Gx | |
| MB 590-28062/8 | Method Blank | Total/NA | Water | NWTPH-Gx | |
| LCS 590-28062/1017 | Lab Control Sample | Total/NA | Water | NWTPH-Gx | |

### Analysis Batch: 28064

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 590-13419-1 | FW-5R | Total/NA | Water | 8260D | |
| 590-13419-2 | B-25 | Total/NA | Water | 8260D | |
| 590-13419-3 | FW-13 | Total/NA | Water | 8260D | |
| 590-13419-4 | FW-14 | Total/NA | Water | 8260D | |
| 590-13419-5 | RR-2 | Total/NA | Water | 8260D | |
| 590-13419-6 | B-34 | Total/NA | Water | 8260D | |
| 590-13419-7 | HC-111 | Total/NA | Water | 8260D | |

## GC/MS VOA (Continued)

### Analysis Batch: 28064 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 590-13419-8 | DMW-2 | Total/NA | Water | 8260D | |
| 590-13419-9 | DMW-2-DUP | Total/NA | Water | 8260D | |
| MB 590-28064/8 | Method Blank | Total/NA | Water | 8260D | |
| LCS 590-28064/1003 | Lab Control Sample | Total/NA | Water | 8260D | |
| LCSD 590-28064/6 | Lab Control Sample Dup | Total/NA | Water | 8260D | |
| 590-13419-6MS | B-34 | Total/NA | Water | 8260D | |
| 590-13419-6MSD | B-34 | Total/NA | Water | 8260D | |

### Analysis Batch: 28152

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| MB 590-28152/6 | Method Blank | Total/NA | Water | NWTPH-Gx | |
| LCS 590-28152/1004 | Lab Control Sample | Total/NA | Water | NWTPH-Gx | |
| 590-13419-6MS | B-34 | Total/NA | Water | NWTPH-Gx | |
| 590-13419-6MSD | B-34 | Total/NA | Water | NWTPH-Gx | |

### Analysis Batch: 28153

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 590-13419-2 | B-25 | Total/NA | Water | 8260D | |
| 590-13419-6 | B-34 | Total/NA | Water | 8260D | |
| 590-13419-7 | HC-111 | Total/NA | Water | 8260D | |
| MB 590-28153/6 | Method Blank | Total/NA | Water | 8260D | |
| LCS 590-28153/1003 | Lab Control Sample | Total/NA | Water | 8260D | |
| LCSD 590-28153/9 | Lab Control Sample Dup | Total/NA | Water | 8260D | |
| 590-13419-6MS | B-34 | Total/NA | Water | 8260D | |
| 590-13419-6MSD | B-34 | Total/NA | Water | 8260D | |

## GC/MS Semi VOA

### Analysis Batch: 28018

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 590-13419-1 | FW-5R | Total/NA | Water | 8270E SIM | 28019 |
| 590-13419-4 | FW-14 | Total/NA | Water | 8270E SIM | 28019 |
| 590-13419-5 | RR-2 | Total/NA | Water | 8270E SIM | 28019 |
| MB 590-28019/1-A | Method Blank | Total/NA | Water | 8270E SIM | 28019 |
| LCS 590-28019/2-A | Lab Control Sample | Total/NA | Water | 8270E SIM | 28019 |
| LCSD 590-28019/3-A | Lab Control Sample Dup | Total/NA | Water | 8270E SIM | 28019 |

### Prep Batch: 28019

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 590-13419-1 | FW-5R | Total/NA | Water | 3510C | |
| 590-13419-4 | FW-14 | Total/NA | Water | 3510C | |
| 590-13419-5 | RR-2 | Total/NA | Water | 3510C | |
| MB 590-28019/1-A | Method Blank | Total/NA | Water | 3510C | |
| LCS 590-28019/2-A | Lab Control Sample | Total/NA | Water | 3510C | |
| LCSD 590-28019/3-A | Lab Control Sample Dup | Total/NA | Water | 3510C | |

### Analysis Batch: 28049

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 590-13419-1 | FW-5R | Total/NA | Water | 8270E SIM | 28019 |

# QC Association Summary

Client: AECOM
Project/Site: Tacoma D St Terminal-Phillips 66

Job ID: 590-13419-1

## GC Semi VOA

### Analysis Batch: 28022

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 590-13419-1 | FW-5R | Total/NA | Water | NWTPH-Dx | 28023 |
| 590-13419-2 | B-25 | Total/NA | Water | NWTPH-Dx | 28023 |
| 590-13419-3 | FW-13 | Total/NA | Water | NWTPH-Dx | 28023 |
| 590-13419-4 | FW-14 | Total/NA | Water | NWTPH-Dx | 28023 |
| 590-13419-5 | RR-2 | Total/NA | Water | NWTPH-Dx | 28023 |
| 590-13419-6 | B-34 | Total/NA | Water | NWTPH-Dx | 28023 |
| 590-13419-7 | HC-111 | Total/NA | Water | NWTPH-Dx | 28023 |
| 590-13419-8 | DMW-2 | Total/NA | Water | NWTPH-Dx | 28023 |
| 590-13419-9 | DMW-2-DUP | Total/NA | Water | NWTPH-Dx | 28023 |
| 590-13419-10 | RW-5R | Total/NA | Water | NWTPH-Dx | 28023 |
| 590-13419-11 | RR-5 | Total/NA | Water | NWTPH-Dx | 28023 |
| 590-13419-12 | RR-4 | Total/NA | Water | NWTPH-Dx | 28023 |
| 590-13419-13 | E-22 | Total/NA | Water | NWTPH-Dx | 28023 |
| 590-13419-14 | B-31 | Total/NA | Water | NWTPH-Dx | 28023 |
| 590-13419-15 | T-2 | Total/NA | Water | NWTPH-Dx | 28023 |
| 590-13419-16 | T-2-DUP | Total/NA | Water | NWTPH-Dx | 28023 |
| 590-13419-17 | RR-1 | Total/NA | Water | NWTPH-Dx | 28023 |
| 590-13419-18 | DMW-4 | Total/NA | Water | NWTPH-Dx | 28023 |
| 590-13419-19 | RW-8 | Total/NA | Water | NWTPH-Dx | 28023 |
| MB 590-28023/1-A | Method Blank | Total/NA | Water | NWTPH-Dx | 28023 |
| LCS 590-28023/2-A | Lab Control Sample | Total/NA | Water | NWTPH-Dx | 28023 |
| LCSD 590-28023/3-A | Lab Control Sample Dup | Total/NA | Water | NWTPH-Dx | 28023 |
| 590-13419-6MS | B-34 | Total/NA | Water | NWTPH-Dx | 28023 |
| 590-13419-6MSD | B-34 | Total/NA | Water | NWTPH-Dx | 28023 |

### Prep Batch: 28023

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 590-13419-1 | FW-5R | Total/NA | Water | 3510C | |
| 590-13419-2 | B-25 | Total/NA | Water | 3510C | |
| 590-13419-3 | FW-13 | Total/NA | Water | 3510C | |
| 590-13419-4 | FW-14 | Total/NA | Water | 3510C | |
| 590-13419-5 | RR-2 | Total/NA | Water | 3510C | |
| 590-13419-6 | B-34 | Total/NA | Water | 3510C | |
| 590-13419-7 | HC-111 | Total/NA | Water | 3510C | |
| 590-13419-8 | DMW-2 | Total/NA | Water | 3510C | |
| 590-13419-9 | DMW-2-DUP | Total/NA | Water | 3510C | |
| 590-13419-10 | RW-5R | Total/NA | Water | 3510C | |
| 590-13419-11 | RR-5 | Total/NA | Water | 3510C | |
| 590-13419-12 | RR-4 | Total/NA | Water | 3510C | |
| 590-13419-13 | E-22 | Total/NA | Water | 3510C | |
| 590-13419-14 | B-31 | Total/NA | Water | 3510C | |
| 590-13419-15 | T-2 | Total/NA | Water | 3510C | |
| 590-13419-16 | T-2-DUP | Total/NA | Water | 3510C | |
| 590-13419-17 | RR-1 | Total/NA | Water | 3510C | |
| 590-13419-18 | DMW-4 | Total/NA | Water | 3510C | |
| 590-13419-19 | RW-8 | Total/NA | Water | 3510C | |
| MB 590-28023/1-A | Method Blank | Total/NA | Water | 3510C | |
| LCS 590-28023/2-A | Lab Control Sample | Total/NA | Water | 3510C | |
| LCSD 590-28023/3-A | Lab Control Sample Dup | Total/NA | Water | 3510C | |
| 590-13419-6MS | B-34 | Total/NA | Water | 3510C | |
| 590-13419-6MSD | B-34 | Total/NA | Water | 3510C | |

# Lab Chronicle

Client: AECOM
Job ID: 590-13419-1
Project/Site: Tacoma D St Terminal-Phillips 66

## Client Sample ID: FW-5R
**Lab Sample ID: 590-13419-1**
**Date Collected: 06/24/20 14:00**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260D | | 1 | 43 mL | 43 mL | 28064 | 07/07/20 13:28 | JSP | TAL SPK |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 43 mL | 43 mL | 28062 | 07/07/20 13:28 | JSP | TAL SPK |
| Total/NA | Prep | 3510C | | | 224 mL | 2 mL | 28019 | 07/01/20 12:56 | NMI | TAL SPK |
| Total/NA | Analysis | 8270E SIM | | 1 | | | 28018 | 07/01/20 15:29 | NMI | TAL SPK |
| Total/NA | Prep | 3510C | | | 224 mL | 2 mL | 28019 | 07/01/20 12:56 | NMI | TAL SPK |
| Total/NA | Analysis | 8270E SIM | | 10 | | | 28049 | 07/06/20 12:10 | NMI | TAL SPK |
| Total/NA | Prep | 3510C | | | 206.3 mL | 2 mL | 28023 | 07/01/20 14:21 | NMI | TAL SPK |
| Total/NA | Analysis | NWTPH-Dx | | 1 | | | 28022 | 07/01/20 16:35 | NMI | TAL SPK |

## Client Sample ID: B-25
**Lab Sample ID: 590-13419-2**
**Date Collected: 06/24/20 12:55**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260D | | 1 | 43 mL | 43 mL | 28064 | 07/07/20 13:49 | JSP | TAL SPK |
| Total/NA | Analysis | 8260D | | 1 | 43 mL | 43 mL | 28153 | 07/13/20 13:25 | JSP | TAL SPK |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 43 mL | 43 mL | 28062 | 07/07/20 13:49 | JSP | TAL SPK |
| Total/NA | Prep | 3510C | | | 226.5 mL | 2 mL | 28023 | 07/01/20 14:21 | NMI | TAL SPK |
| Total/NA | Analysis | NWTPH-Dx | | 1 | | | 28022 | 07/01/20 16:57 | NMI | TAL SPK |

## Client Sample ID: FW-13
**Lab Sample ID: 590-13419-3**
**Date Collected: 06/24/20 11:45**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260D | | 1 | 43 mL | 43 mL | 28064 | 07/07/20 14:09 | JSP | TAL SPK |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 43 mL | 43 mL | 28062 | 07/07/20 14:09 | JSP | TAL SPK |
| Total/NA | Prep | 3510C | | | 229.6 mL | 2 mL | 28023 | 07/01/20 14:21 | NMI | TAL SPK |
| Total/NA | Analysis | NWTPH-Dx | | 1 | | | 28022 | 07/01/20 17:18 | NMI | TAL SPK |

## Client Sample ID: FW-14
**Lab Sample ID: 590-13419-4**
**Date Collected: 06/24/20 10:38**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260D | | 1 | 43 mL | 43 mL | 28064 | 07/07/20 14:29 | JSP | TAL SPK |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 43 mL | 43 mL | 28062 | 07/07/20 14:29 | JSP | TAL SPK |
| Total/NA | Prep | 3510C | | | 227.6 mL | 2 mL | 28019 | 07/01/20 12:56 | NMI | TAL SPK |
| Total/NA | Analysis | 8270E SIM | | 1 | | | 28018 | 07/01/20 15:52 | NMI | TAL SPK |
| Total/NA | Prep | 3510C | | | 229.5 mL | 2 mL | 28023 | 07/01/20 14:21 | NMI | TAL SPK |
| Total/NA | Analysis | NWTPH-Dx | | 1 | | | 28022 | 07/01/20 17:39 | NMI | TAL SPK |

## Client Sample ID: RR-2
**Lab Sample ID: 590-13419-5**
**Date Collected: 06/24/20 14:10**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260D | | 1 | 43 mL | 43 mL | 28064 | 07/07/20 14:50 | JSP | TAL SPK |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 43 mL | 43 mL | 28062 | 07/07/20 14:50 | JSP | TAL SPK |
| Total/NA | Prep | 3510C | | | 224.1 mL | 2 mL | 28019 | 07/01/20 12:56 | NMI | TAL SPK |
| Total/NA | Analysis | 8270E SIM | | 1 | | | 28018 | 07/01/20 16:15 | NMI | TAL SPK |
| Total/NA | Prep | 3510C | | | 229.4 mL | 2 mL | 28023 | 07/01/20 14:21 | NMI | TAL SPK |
| Total/NA | Analysis | NWTPH-Dx | | 1 | | | 28022 | 07/01/20 18:00 | NMI | TAL SPK |

## Client Sample ID: B-34
**Lab Sample ID: 590-13419-6**
**Date Collected: 06/24/20 12:45**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260D | | 1 | 43 mL | 43 mL | 28064 | 07/07/20 15:10 | JSP | TAL SPK |
| Total/NA | Analysis | 8260D | | 10 | 43 mL | 43 mL | 28153 | 07/13/20 14:29 | JSP | TAL SPK |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 43 mL | 43 mL | 28062 | 07/07/20 15:10 | JSP | TAL SPK |
| Total/NA | Prep | 3510C | | | 263 mL | 2 mL | 28023 | 07/01/20 14:21 | NMI | TAL SPK |
| Total/NA | Analysis | NWTPH-Dx | | 1 | | | 28022 | 07/01/20 18:22 | NMI | TAL SPK |

## Client Sample ID: HC-111
**Lab Sample ID: 590-13419-7**
**Date Collected: 06/24/20 11:45**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260D | | 1 | 43 mL | 43 mL | 28064 | 07/07/20 16:32 | JSP | TAL SPK |
| Total/NA | Analysis | 8260D | | 1 | 43 mL | 43 mL | 28153 | 07/13/20 16:35 | JSP | TAL SPK |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 43 mL | 43 mL | 28062 | 07/07/20 16:32 | JSP | TAL SPK |
| Total/NA | Prep | 3510C | | | 225 mL | 2 mL | 28023 | 07/01/20 14:21 | NMI | TAL SPK |
| Total/NA | Analysis | NWTPH-Dx | | 1 | | | 28022 | 07/01/20 19:47 | NMI | TAL SPK |

## Client Sample ID: DMW-2
**Lab Sample ID: 590-13419-8**
**Date Collected: 06/24/20 10:35**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260D | | 1 | 43 mL | 43 mL | 28064 | 07/07/20 16:52 | JSP | TAL SPK |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 43 mL | 43 mL | 28062 | 07/07/20 16:52 | JSP | TAL SPK |
| Total/NA | Prep | 3510C | | | 263.8 mL | 2 mL | 28023 | 07/01/20 14:21 | NMI | TAL SPK |
| Total/NA | Analysis | NWTPH-Dx | | 1 | | | 28022 | 07/01/20 20:08 | NMI | TAL SPK |

## Client Sample ID: DMW-2-DUP
**Lab Sample ID: 590-13419-9**
**Date Collected: 06/24/20 10:35**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260D | | 1 | 43 mL | 43 mL | 28064 | 07/07/20 17:13 | JSP | TAL SPK |

# Lab Chronicle

Client: AECOM
Job ID: 590-13419-1
Project/Site: Tacoma D St Terminal-Phillips 66

## Client Sample ID: DMW-2-DUP
**Lab Sample ID: 590-13419-9**
**Date Collected: 06/24/20 10:35**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | NWTPH-Gx | | 1 | 43 mL | 43 mL | 28062 | 07/07/20 17:13 | JSP | TAL SPK |
| Total/NA | Prep | 3510C | | | 262.9 mL | 2 mL | 28023 | 07/01/20 14:21 | NMI | TAL SPK |
| Total/NA | Analysis | NWTPH-Dx | | 1 | | | 28022 | 07/01/20 20:30 | NMI | TAL SPK |

## Client Sample ID: RW-5R
**Lab Sample ID: 590-13419-10**
**Date Collected: 06/23/20 15:25**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260D | | 1 | 43 mL | 43 mL | 28058 | 07/06/20 17:28 | JSP | TAL SPK |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 43 mL | 43 mL | 28055 | 07/06/20 17:28 | JSP | TAL SPK |
| Total/NA | Prep | 3510C | | | 250.1 mL | 2 mL | 28023 | 07/01/20 14:21 | NMI | TAL SPK |
| Total/NA | Analysis | NWTPH-Dx | | 1 | | | 28022 | 07/01/20 20:51 | NMI | TAL SPK |

## Client Sample ID: RR-5
**Lab Sample ID: 590-13419-11**
**Date Collected: 06/23/20 14:25**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260D | | 1 | 43 mL | 43 mL | 28058 | 07/06/20 17:50 | JSP | TAL SPK |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 43 mL | 43 mL | 28055 | 07/06/20 17:50 | JSP | TAL SPK |
| Total/NA | Prep | 3510C | | | 229.8 mL | 2 mL | 28023 | 07/01/20 14:21 | NMI | TAL SPK |
| Total/NA | Analysis | NWTPH-Dx | | 1 | | | 28022 | 07/01/20 21:12 | NMI | TAL SPK |

## Client Sample ID: RR-4
**Lab Sample ID: 590-13419-12**
**Date Collected: 06/23/20 13:25**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260D | | 1 | 43 mL | 43 mL | 28058 | 07/06/20 18:11 | JSP | TAL SPK |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 43 mL | 43 mL | 28055 | 07/06/20 18:11 | JSP | TAL SPK |
| Total/NA | Prep | 3510C | | | 251.3 mL | 2 mL | 28023 | 07/01/20 14:21 | NMI | TAL SPK |
| Total/NA | Analysis | NWTPH-Dx | | 1 | | | 28022 | 07/01/20 21:34 | NMI | TAL SPK |

## Client Sample ID: E-22
**Lab Sample ID: 590-13419-13**
**Date Collected: 06/23/20 12:10**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260D | | 1 | 43 mL | 43 mL | 28058 | 07/06/20 18:32 | JSP | TAL SPK |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 43 mL | 43 mL | 28055 | 07/06/20 18:32 | JSP | TAL SPK |
| Total/NA | Prep | 3510C | | | 223.5 mL | 2 mL | 28023 | 07/01/20 14:21 | NMI | TAL SPK |
| Total/NA | Analysis | NWTPH-Dx | | 1 | | | 28022 | 07/01/20 21:55 | NMI | TAL SPK |

## Client Sample ID: B-31
**Lab Sample ID: 590-13419-14**
**Date Collected: 06/23/20 10:30**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260D | | 1 | 43 mL | 43 mL | 28058 | 07/06/20 18:53 | JSP | TAL SPK |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 43 mL | 43 mL | 28055 | 07/06/20 18:53 | JSP | TAL SPK |
| Total/NA | Prep | 3510C | | | 212.8 mL | 2 mL | 28023 | 07/01/20 14:21 | NMI | TAL SPK |
| Total/NA | Analysis | NWTPH-Dx | | 1 | | | 28022 | 07/01/20 22:16 | NMI | TAL SPK |

## Client Sample ID: T-2
**Lab Sample ID: 590-13419-15**
**Date Collected: 06/23/20 11:40**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260D | | 1 | 43 mL | 43 mL | 28058 | 07/06/20 19:15 | JSP | TAL SPK |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 43 mL | 43 mL | 28055 | 07/06/20 19:15 | JSP | TAL SPK |
| Total/NA | Prep | 3510C | | | 233.7 mL | 2 mL | 28023 | 07/01/20 14:21 | NMI | TAL SPK |
| Total/NA | Analysis | NWTPH-Dx | | 1 | | | 28022 | 07/01/20 22:38 | NMI | TAL SPK |

## Client Sample ID: T-2-DUP
**Lab Sample ID: 590-13419-16**
**Date Collected: 06/23/20 11:40**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260D | | 1 | 43 mL | 43 mL | 28058 | 07/06/20 19:56 | JSP | TAL SPK |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 43 mL | 43 mL | 28055 | 07/06/20 19:56 | JSP | TAL SPK |
| Total/NA | Prep | 3510C | | | 225.4 mL | 2 mL | 28023 | 07/01/20 14:21 | NMI | TAL SPK |
| Total/NA | Analysis | NWTPH-Dx | | 1 | | | 28022 | 07/01/20 23:20 | NMI | TAL SPK |

## Client Sample ID: RR-1
**Lab Sample ID: 590-13419-17**
**Date Collected: 06/23/20 13:18**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260D | | 1 | 43 mL | 43 mL | 28058 | 07/06/20 20:17 | JSP | TAL SPK |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 43 mL | 43 mL | 28055 | 07/06/20 20:17 | JSP | TAL SPK |
| Total/NA | Prep | 3510C | | | 238.4 mL | 2 mL | 28023 | 07/01/20 14:21 | NMI | TAL SPK |
| Total/NA | Analysis | NWTPH-Dx | | 1 | | | 28022 | 07/01/20 23:42 | NMI | TAL SPK |

## Client Sample ID: DMW-4
**Lab Sample ID: 590-13419-18**
**Date Collected: 06/23/20 14:05**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260D | | 1 | 43 mL | 43 mL | 28058 | 07/06/20 20:37 | JSP | TAL SPK |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 43 mL | 43 mL | 28055 | 07/06/20 20:37 | JSP | TAL SPK |
| Total/NA | Prep | 3510C | | | 216.5 mL | 2 mL | 28023 | 07/01/20 14:21 | NMI | TAL SPK |
| Total/NA | Analysis | NWTPH-Dx | | 1 | | | 28022 | 07/02/20 00:03 | NMI | TAL SPK |

# Lab Chronicle

Client: AECOM
Job ID: 590-13419-1
Project/Site: Tacoma D St Terminal-Phillips 66

## Client Sample ID: RW-8
**Lab Sample ID: 590-13419-19**
**Date Collected: 06/23/20 15:05**
**Matrix: Water**
**Date Received: 06/26/20 13:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260D | | 1 | 43 mL | 43 mL | 28058 | 07/06/20 20:58 | JSP | TAL SPK |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 43 mL | 43 mL | 28055 | 07/06/20 20:58 | JSP | TAL SPK |
| Total/NA | Prep | 3510C | | | 234.1 mL | 2 mL | 28023 | 07/01/20 14:21 | NMI | TAL SPK |
| Total/NA | Analysis | NWTPH-Dx | | 1 | | | 28022 | 07/02/20 00:24 | NMI | TAL SPK |

**Laboratory References:**

TAL SPK = Eurofins TestAmerica, Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description |
|---|---|
| * | LCS or LCSD is outside acceptance limits. |
| *1 | LCS/LCSD RPD exceeds control limits. |
| F1 | MS and/or MSD recovery exceeds control limits. |
| F2 | MS/MSD RPD exceeds control limits |
| H | Sample was prepped or analyzed beyond the specified holding time |
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
| S1- | Surrogate recovery exceeds control limits, low biased. |

### 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 |
|---|---|
| 4 | MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable. |
| F1 | MS and/or MSD recovery exceeds control limits. |
| F2 | MS/MSD RPD 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. |

## 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) |

## Glossary (Continued)

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| TNTC | Too Numerous To Count |

# Accreditation/Certification Summary

Client: AECOM
Job ID: 590-13419-1
Project/Site: Tacoma D St Terminal-Phillips 66

## Laboratory: Eurofins TestAmerica, Spokane

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| Washington | State | C569 | 01-06-21 |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte |
|---|---|---|---|
| NWTPH-Dx | 3510C | Water | Residual Range Organics (RRO) (C25-C36) |

**Eurofins TestAmerica, Spokane**
11922 East 1st Ave
Spokane, WA 99206
Phone (509) 924-9200 Fax (509) 924-9290

# Chain of Custody Record

eurofins | Environment Testing America

| Client Information | Sampler: Nate Gwyn & Sarah Kinnick | Lab PM: Arrington, Randee E | Carrier Tracking No(s): | COC No: 590-5667-1360.1 |
|---|---|---|---|---|
| Client Contact: Clifford Pearson | Phone: 828.390.4740 | E-Mail: randee.arrington@testamericainc.com | | Page: Page 1 of 3 |
| Company: AECOM | | | | Job #: |

| Address: 111 SW Columbia Street, Suite 1500 | Due Date Requested: |
|---|---|
| City: Portland | TAT Requested (days): |
| State, Zip: OR, 97201 | |
| Phone: 913-344-1000(Tel) 913-344-1011(Fax) | PO #: 60626737 |
| Email: clifford.pearson@aecom.com | WO #: 60626737 |
| Project Name: Tacoma D St Terminal-Phillips 66/6053745 | Project #: 59000882 |
| Site: | SSOW#: |

**Analysis Requested**

**Preservation Codes:**

| | |
|---|---|
| A - HCL | M - Hexane |
| B - NaOH | N - None |
| C - Zn Acetate | O - AsNaO2 |
| D - Nitric Acid | P - Na2O4S |
| E - NaHSO4 | Q - Na2SO3 |
| F - MeOH | R - Na2S2O3 |
| G - Amchlor | S - H2SO4 |
| H - Ascorbic Acid | T - TSP Dodecahydrate |
| I - Ice | U - Acetone |
| J - DI Water | V - MCAA |
| K - EDTA | W - pH 4-5 |
| L - EDA | Z - other (specify) |

Other:

| Sample Identification | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | NWTPH-Dx - DRO and RRO | NWTPH-Gx - GRO | 8270E SIM - Naphthalenes | 8260D - BTEX | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | A | A | N | A | | |
| FW-5R | 6.24.20 | 1400 | G | Water | | | X | X | X | X | | |
| B-25 | 6.24.20 | 1255 | G | Water | | | X | X | | X | | |
| FW-13 | 6.24.20 | 1145 | G | Water | | | X | X | | X | | |
| FW-14 | 6.24.20 | 1038 | G | Water | | | X | X | X | X | | |
| RR-2 | 6.24.20 | 1410 | G | Water | | | X | X | X | X | | |
| B-34 | 6.24.20 | 1245 | G | Water | | | X | X | | X | | |
| B-34-MS | 6.24.20 | 1245 | G | Water | | X | X | X | | X | | |
| B-34-MSD | 6.24.20 | 1245 | G | Water | | X | X | X | | X | | |
| HC-111 | 6.24.20 | 1145 | G | Water | | | X | X | | X | | |
| DMW-2 | 6.24.20 | 1035 | G | Water | | | X | X | | X | | |
| DMW-2-DUP | 6.24.20 | 1035 | G | Water | | | X | X | | X | | |

590-13419 Chain of Custody

***Possible Hazard Identification***
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

***Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)***
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

| Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: |
|---|---|---|---|

| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
|---|---|---|---|---|---|
| Nate Gwyn | 6/24/20 1500 | Team | Tom Blanton | 6/24/20 1550 | TA-Sea |
| Relinquished by: Tom Blanton | Date/Time: 6/25/20 1300 | Company TA-Sea | Received by: Maria Crooke | Date/Time: 6/26/20 13:40 | Company TAL-SPO |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |

| Custody Seals Intact: ∆ Yes ∆ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 1.2 → 1.1 °C |
|---|---|---|

Ver: 01/16/2019

**Eurofins TestAmerica, Spokane**
11922 East 1st Ave
Spokane, WA 99206
Phone (509) 924-9200 Fax (509) 924-9290

# Chain of Custody Record

eurofins | Environment Testing America

| Client Information | Sampler: Nate Gwyn + Sarah Kinmer | Lab PM: Arrington, Randee E | Carrier Tracking No(s): | COC No: 590-5667-1360.2 |
|---|---|---|---|---|
| Client Contact: Clifford Pearson | Phone: 828.390.4740 | E-Mail: randee.arrington@testamericainc.com | | Page: Page 2 of 3 |
| Company: AECOM | | | | Job #: |

| Address: 111 SW Columbia Street, Suite 1500 | Due Date Requested: |
|---|---|
| City: Portland | TAT Requested (days): |
| State, Zip: OR, 97201 | |
| Phone: 913-344-1000(Tel) 913-344-1011(Fax) | PO #: 60626737 |
| Email: clifford.pearson@aecom.com | WO #: 60626737 |
| Project Name: Tacoma D St Terminal-Phillips 66/6053745 | Project #: 59000882 |
| Site: | SSOW#: |

**Analysis Requested**

Preservation Codes:

| | |
|---|---|
| A - HCL | M - Hexane |
| B - NaOH | N - None |
| C - Zn Acetate | O - AsNaO2 |
| D - Nitric Acid | P - Na2O4S |
| E - NaHSO4 | Q - Na2SO3 |
| F - MeOH | R - Na2S2O3 |
| G - Amchlor | S - H2SO4 |
| H - Ascorbic Acid | T - TSP Dodecahydrate |
| I - Ice | U - Acetone |
| J - DI Water | V - MCAA |
| K - EDTA | W - pH 4-5 |
| L - EDA | Z - other (specify) |

Other:

| Sample Identification | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | NWTPH-Dx - DRO and RRO | NWTPH-Gx - GRO | 8270E SIM - Naphthalenes | 8260D - BTEX | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | A | A | N | A | | |
| RW-5R | 6.23.20 | 1525 | G | Water | | | X | X | | X | | |
| RR-5 | 6.23.20 | 1425 | G | Water | | | X | X | | X | | |
| RR-4 | 6.23.20 | 1325 | G | Water | | | X | X | | X | | |
| E-22 | 6.23.20 | 1210 | G | Water | | | X | X | | X | | |
| B-31 | 6.23.20 | 1030 | G | Water | | | X | X | | X | | |
| T-2 | 6.23.20 | 1140 | G | Water | | | X | X | | X | | |
| T-2-DUP | 6.23.20 | 1140 | G | Water | | | X | X | | X | | |
| RR-1 | 6.23.20 | 1318 | G | Water | | | X | X | | X | | |
| DMW-4 | 6.23.20 | 1405 | G | Water | | | X | X | | X | | |
| RW-8 | 6.23.20 | 1505 | G | Water | | | X | X | | X | | |
| TB-1 | 6.23.20 | 1030 | G | Water | | | | | | X | | |

**Possible Hazard Identification**
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

**Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)**
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

| Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: |
|---|---|---|---|

| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
|---|---|---|---|---|---|
| Nate Gwyn | 6/24/20 1500 | Aecom | Tom B | 6/24/20 1550 | |
| Relinquished by: Tom B | Date/Time: 6/25/20 1300 | Company | Received by: | Date/Time: | Company |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

# Login Sample Receipt Checklist

Client: AECOM

Job Number: 590-13419-1

**Login Number: 13419**
**List Number: 1**
**Creator: O'Toole, Maria C**

**List Source: Eurofins TestAmerica, Spokane**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | N/A | Lab does not accept radioactive samples. |
| The cooler's custody seal, if present, is intact. | True | 131181 |
| Sample custody seals, if present, are intact. | N/A | |
| 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? | True | |
| 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. | N/A | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | No analysis requiring residual chlorine check assigned. |

# APPENDIX B
# Summary Data Quality Review

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# Memorandum

| | | | |
|---|---|---|---|
| To | Renee Knecht, Project Manager | Info | FINAL |
| Subject | Summary Data Quality Review<br>D Street Terminal, Tacoma Washington<br>2020 Second Quarter Groundwater Sampling | | |
| From | Lucy Panteleeff, Chemist<br>Jennifer B. Garner, Chemist | | |
| Date | May 19, 2021 | | |

The summary data quality review of 19 groundwater samples and 1 trip blank collected on June 23 and June 24, 2020, has been completed. The samples were analyzed at TestAmerica Laboratories, Incorporated (TA) located in Spokane, Washington for benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8260D; total petroleum hydrocarbons (TPHs) by Washington State Department of Ecology (Ecology) Methods NWTPH-Gx (gasoline-range TPH) and NWTPH-Dx (diesel-range and residual-range TPH); and/or naphthalenes by EPA Method 8270E modified by selected ion monitoring (SIM). The laboratory provided a summary report containing sample results and associated quality assurance (QA) and quality control (QC) data for all samples. The following samples are associated with TA laboratory group 590-13419-1:

| Sample ID | Laboratory ID | Requested Analyses |
|---|---|---|
| FW-5R | 590-13419-1 | BTEX, TPH-Gx, TPH-Dx, Naphthalenes |
| B-25 | 590-13419-2 | BTEX, TPH-Gx, TPH-Dx |
| FW-13 | 590-13419-3 | BTEX, TPH-Gx, TPH-Dx |
| FW-14 | 590-13419-4 | BTEX, TPH-Gx, TPH-Dx, Naphthalenes |
| RR-2 | 590-13419-5 | BTEX, TPH-Gx, TPH-Dx, Naphthalenes |
| B-34 | 590-13419-6 | BTEX, TPH-Gx, TPH-Dx |
| HC-111 | 590-13419-7 | BTEX, TPH-Gx, TPH-Dx |
| DMW-2 | 590-13419-8 | BTEX, TPH-Gx, TPH-Dx |
| DMW-2-DUP (Field duplicate of DMW-2) | 590-13419-9 | BTEX, TPH-Gx, TPH-Dx |
| RW-5R | 590-13419-10 | BTEX, TPH-Gx, TPH-Dx |
| RR-5 | 590-13419-11 | BTEX, TPH-Gx, TPH-Dx |
| RR-4 | 590-13419-12 | BTEX, TPH-Gx, TPH-Dx |
| E-22 | 590-13419-13 | BTEX, TPH-Gx, TPH-Dx |
| B-31 | 590-13419-14 | BTEX, TPH-Gx, TPH-Dx |
| T-2 | 590-13419-15 | BTEX, TPH-Gx, TPH-Dx |
| T-2-DUP (Field duplicate of T-2) | 590-13419-16 | BTEX, TPH-Gx, TPH-Dx |
| RR-1 | 590-13419-17 | BTEX, TPH-Gx, TPH-Dx |
| DMW-4 | 590-13419-18 | BTEX, TPH-Gx, TPH-Dx |
| RW-8 | 590-13419-19 | BTEX, TPH-Gx, TPH-Dx |

Data were evaluated based on validation criteria established in the *National Functional Guidelines for Organic Superfund Methods Data Review*, dated January 2017, 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, field/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 this laboratory group 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 sample jar information was compared to the chain-of-custody (COC) and the cooler temperature was recorded. No discrepancies related to sample identifications were noted by the laboratory and the cooler was received at a temperature within the EPA recommended temperature limits of greater than 0°C and less than or equal to 6°C. The laboratory noted that a trip blank was not received.

**Organic Analyses**

Samples were analyzed for BTEX, TPHs, and/or naphthalenes by the methods identified in the introduction of this report.

1. Holding Times – Acceptable except as noted below:

   BTEX by Method 8260D – The diluted analysis for B-34 was analyzed 5 days past the method-recommended holding time of 14 days. The results for benzene, m,p-xylene, o-xylene, and total xylenes were qualified as estimated and flagged 'J' or 'UJ' based on holding time exceedance.

2. Blanks – Acceptable

3. Surrogates – Acceptable except as noted below:

   BTEX by Method 8260D – The percent recovery of 4-bromofluorobenzene for the matrix spike performed using B-34 (76%) was below the control limits of 80-120%. Data were not qualified based on surrogate percent recoveries in QC samples.

4. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) – Acceptable except as noted below:

   BTEX by Method 8260D – The following percent recoveries were outside the control limits in the following LCS/LCSDs.

| Batch | Analyte | LCS | LCSD | RPD | Control Limits (MS/MSD / RPD) |
|---|---|---|---|---|---|
| 28064 | m,p-Xylene | ok | 122% | ok | 80-120%/18% |
| | o-Xylene | ok | 124% | ok | 80-120%/17% |
| 28153 | Toluene | ok | 122% | 24% | 80-123%018% |

ok – acceptable result
RPD – relative percent difference

   The percent recoveries for m,p-xylene and o-xylene in the LCS and the RPDs for the LCS/LCSD pair were acceptable for batch 28064; therefore, data associated with this batch were not qualified based on the LCSD recoveries. Toluene was not reported from the sample associated with batch 28153; therefore, no data were qualified based on these LCS/LCSD results.

5. Matrix Spike/Matrix Spike Duplicate (MS/MSD) – Acceptable except as noted below:

   BTEX by Method 8260D – An MS/MSD was performed using B-34. The following percent recoveries were outside control limits.

| Analyte | MS | MSD | RPD | Control Limits (MS/MSD / RPD) |
|---|---|---|---|---|
| Benzene | 149% | ok | 27% | 80-126%/18% |
| Toluene | ok | 124% | 24% | 80-123%/18% |
| Ethylbenzene | 64% | ok | ok | 80-120%/18% |
| m,p-Xylene | 126% | 122% | ok | 80-120%/18% |
| o-Xylene | 130% | ok | 22% | 80-120%/17% |

ok – acceptable result

   The percent recovery for ethylbenzene in the MSD and the RPD for the MS/MSD pair were acceptable; therefore, data were not qualified for ethylbenzene based on the MS result. The results for benzene, m,p-xylene, and o-xylene in B-34 were qualified based on holding time exceedance; therefore, no further qualifications based on the MS/MSD results were necessary. The result for toluene in B-34 was qualified as estimated and flagged 'J' based on this MS/MSD result.

   Gasoline-range TPH by NWTPH-Gx – An MS/MSD was performed using B-34. Results were acceptable.

   NWTPH-Dx – An MS/MSD was performed using B-34. The following percent recoveries were outside control limits.

| Analyte | MS | MSD | RPD | Control Limits |
|---|---|---|---|---|
| Diesel-range TPH | 38% | 278% | ok | 54.5-136%/32.5% |
| Residual-range TPH | ok | 156% | 33% | 50-150%/25% |

The concentration of diesel-range TPH in B-34 was greater than four times the spike concentration; therefore, data were not qualified for diesel-range TPH based on the MS/MSD recoveries. The result for and residual-range TPH in B-34 was qualified as estimated and flagged 'J' based on these MS/MSD results.

Naphthalenes by EPA Method 8270E-SIM – An MS/MSD was not performed in association with this analysis. Precision and accuracy were assessed using the LCS/LCSD results.

6. Field Duplicate (applicable to BTEX and TPH analyses only) – Acceptable

General – Field duplicates were submitted for DMW-2 and T-2 and identified as DMW-2-DUP T-2-DUP, respectively. Results reported at concentrations greater than five times the reporting limits were comparable.

7. Reporting Limits – Acceptable except as noted below:

General – One or more results were flagged 'J' by the laboratory to indicate a concentration that was less than the reporting limit, but above the method detection limit (MDL). Laboratory 'J'-flagged results are considered estimated. As the result is between the MDL and the reporting limit, there is a greater level of uncertainty associated with the numerical result.

BTEX by EPA Method 8260D – The reporting limits for m,p-xylene, o-xylenes, and total xylenes were elevated in B-34 due to the dilution required for high concentrations of target analytes present in the sample. The elevated reporting limits do not impact the use of the data for regulatory comparison.

8. Other Items of Note:

Gasoline-range TPH by NWTPH-Gx – The laboratory noted that the following percent differences for gasoline-range TPH in continuing calibration verifications (CCVs) were outside the control limit of ±20%.

| Batch | Analyte | Percent Difference |
|---|---|---|
| 28062 | Gasoline-range TPH | high |
| 28152 | Gasoline-range TPH | low |

The samples associated with batch 28152 were QC samples (MB, LCS, MS and MSD); therefore, data are not qualified. The results for gasoline-range TPH in FW-5R, B-25, B-34, and HC-111 were qualified as estimated and flagged 'J' based on the batch 28062 CCV result.

Diesel-range TPH by NWTPH-Dx – The laboratory noted the following:

AECOM

**Summary Data Quality Review**
**D Street Terminal, Tacoma, Washington**
**2020 Second Quarter Groundwater Sampling**
**Laboratory Group: 590-13419-1**

- Detected hydrocarbons in the diesel range appear to be due to heavily weathered diesel in B-34, DMW-2, DMW-2-DUP, RR-5, E-22, and DMW-4.
- Detected hydrocarbons in the diesel range appear to be due to gasoline overlap in B-25.
- Detected hydrocarbons in the diesel range appear to be due to individual peaks in FW-5R.
- Detected hydrocarbons diesel range appear to be due to gasoline overlap as well as heavily weathered diesel in HC-111, RW-5R, B-31, and RW-8.
- Detected hydrocarbons in the diesel range appear to be due to heavily weathered diesel and/or possible biogenic interference in FW-13.

**Overall Assessment of Data**

The data reported in this laboratory group, as qualified, are considered to be usable for meeting project objectives. The completeness for TestAmerica laboratory group 590-13419-1 is 100%.

**Table 1 - Summary of Qualified Data**

| Sample ID | Laboratory ID | Analyte | Laboratory Result | Units | Final Result | Reason |
|---|---|---|---|---|---|---|
| FW-5R | 590-13419-1 | Gasoline | 1,100 | ug/L | 1,100 J | CCV |
| B-25 | 590-13419-2 | Gasoline | 1,300 | ug/L | 1,300 J | CCV |
| B-34 | 590-13419-6 | Benzene | 130 | ug/L | 130 J | Holding Time |
| B-34 | 590-13419-6 | m, p-Xylene | 2.8 U | ug/L | 2.8 UJ | Holding Time |
| B-34 | 590-13419-6 | o-Xylene | 1.6 U | ug/L | 1.6 UJ | Holding Time |
| B-34 | 590-13419-6 | Total Xylenes | 4.4 U | ug/L | 4.4 UJ | Holding Time |
| B-34 | 590-13419-6 | Toluene | 5.5 | ug/L | 5.5 J | MS/MSD |
| B-34 | 590-13419-6 | Gasoline | 2,500 | ug/L | 2,500 J | CCV |
| B-34 | 590-13419-6 | Residual Range Organics | 1.6 | mg/L | 1.6 J | MS/MSD |
| HC-111 | 590-13419-7 | Gasoline | 1,900 | ug/L | 1,900 J | CCV |

**Notes:**
CCV – continuing calibration verification
J – estimated value
MS – matrix spike
MSD – matrix spike duplicate
ug/L – microgram per liter
mg/L – milligram per liter
U – not detected above limit shown