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April 6, 2020

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 2019
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, 2019 through June 30, 2019). An evaluation of the second quarter 2019 data and natural attenuation processes will be presented in the 2019 Annual Progress Report, which is completed following the third quarter (September) 2019 monitoring event.

1.0 Site Description

The Site is an approximately 17 acres 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 2019 monitoring event included the following groundwater sampling activities conducted from June 17 through June 18, 2019 and July 22, 2019:

- Water Level and Free Product Gauging
  - AECOM personnel measured water levels and free product thickness, when present, in 29 upper sand unit monitoring wells, four sentinel wells, six lower sand unit monitoring wells, and six surface water compliance monitoring wells. Measurable free product was not observed in the monitoring wells sampled during this event.
  - The depths to groundwater and the calculated groundwater elevations based on the June 2019 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 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 8260C

- Gasoline-range total petroleum hydrocarbons (TPH-G) by Northwest total petroleum hydrocarbons Method NWTPH-Gx
- 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 8270D selected ion monitoring (SIM)

- Due to laboratory error, six samples (B-31, E-22, FW-13, HC-111, RR-5, and RW-5R) and one duplicate sample (HC-111-dup) collected during the second quarter monitoring event were spiked with diesel spiking solution. The TPH-Dx analysis were subsequently canceled and the wells were re-sampled for TPH-D on July 22, 2019. TPH-D results from the re-sampling event were used during the data validation review, as discussed in Section 3.0 and Appendix B.

- 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 2019 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 reports for this groundwater monitoring event is 100%. The data qualifiers assigned by the laboratory are shown on the laboratory reports. No additional data qualifiers were assigned based on the data validation review. 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 2019. 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) and two sentinel wells (E-22 and FW-5R). Well B-34 was in exceedance of the

surface water cleanup standard of 0.04 mg/L and the groundwater cleanup standard of 0.16 mg/L. Well HC-111 was in exceedance of the surface water cleanup standard but did not exceed the groundwater cleanup standard. Benzene was not detected in the surface water compliance wells or lower sand unit 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, HC-111, and RW-8) and two sentinel wells (E-22 and FW-5R). 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 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) and two sentinel wells (E-22 and FW-5R). 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 or the lower sand unit wells sampled during this event.
- Total xylenes were detected in five upper sand unit wells (B-25, B-31, HC-111, RW-5R, and RW-8). Total xylenes were not detected in the sentinel wells, 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 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-5), and two lower sand unit well (DMW-2 and 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), three sentinel wells (E-22, FW-5R, and T-2), three surface water compliance wells (RR-1, RR-4, and RR-5), and three lower sand unit wells (DMW-2, DMW-4, and 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), two sentinel wells (E-22 and FW-5R), two surface water compliance well (RR-4 and RR-5), and two lower sand unit wells (DMW-2 and FW-13). 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 2019 Annual Progress Report, which is completed following the third quarter (September) 2019 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-D and TPH-G were detected in three sentinel wells (E-22, FW-5R, and T-2). Benzene, toluene, ethylbenzene, and TPH-O were detected in two sentinel wells (E-22 and FW-5R). Naphthalene was detected in sentinel well FW-5R. Total xylenes 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-D was detected in three surface water compliance wells (RR-1, RR-4, and RR-5); TPH-O was detected in two surface water compliance wells (RR-4 and RR-5); and TPH-G was detected in one surface water compliance well (RR-5). 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 2019 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 two wells (DMW-2 and DMW-4), and TPH-O was detected in two wells (DMW-2 and FW-13). BTEX constituents were not detected in the lower sand unit wells.

8.0 Status of Recent and Upcoming Deliverables

- The First Quarter 2019 Progress Report was submitted in November 2019.
- The 2019 Annual Report is anticipated to be submitted in December 2019.

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

Sincerely,

AECOM

Tyler Hemry
Deputy Project Manager/ Technical Manager

Mike Edwards, PE, MBA
Vice President

cc: Andrea Wing – Shell Oil Company (electronic only)
Jennifer Sedlachek – ExxonMobil (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 2019
Figure 4 – TPH-G Concentrations in Groundwater, (Upper Sand Unit) June 2019
Figure 5 – TPH-D Concentrations in Groundwater, (Upper Sand Unit) June & July 2019
Table 1 – Groundwater Elevation Data, Second Quarter 2019
Table 2 – Summary of Groundwater Analytical Results, Second Quarter 2019
Table 3 – Summary of Field Parameters, Second Quarter 2019

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

FIGURES

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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VICINITY MAP

NOVEMBER 2019
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D STREET PETROLEUM SITE
TACOMA, WASHINGTON

FIGURE 1

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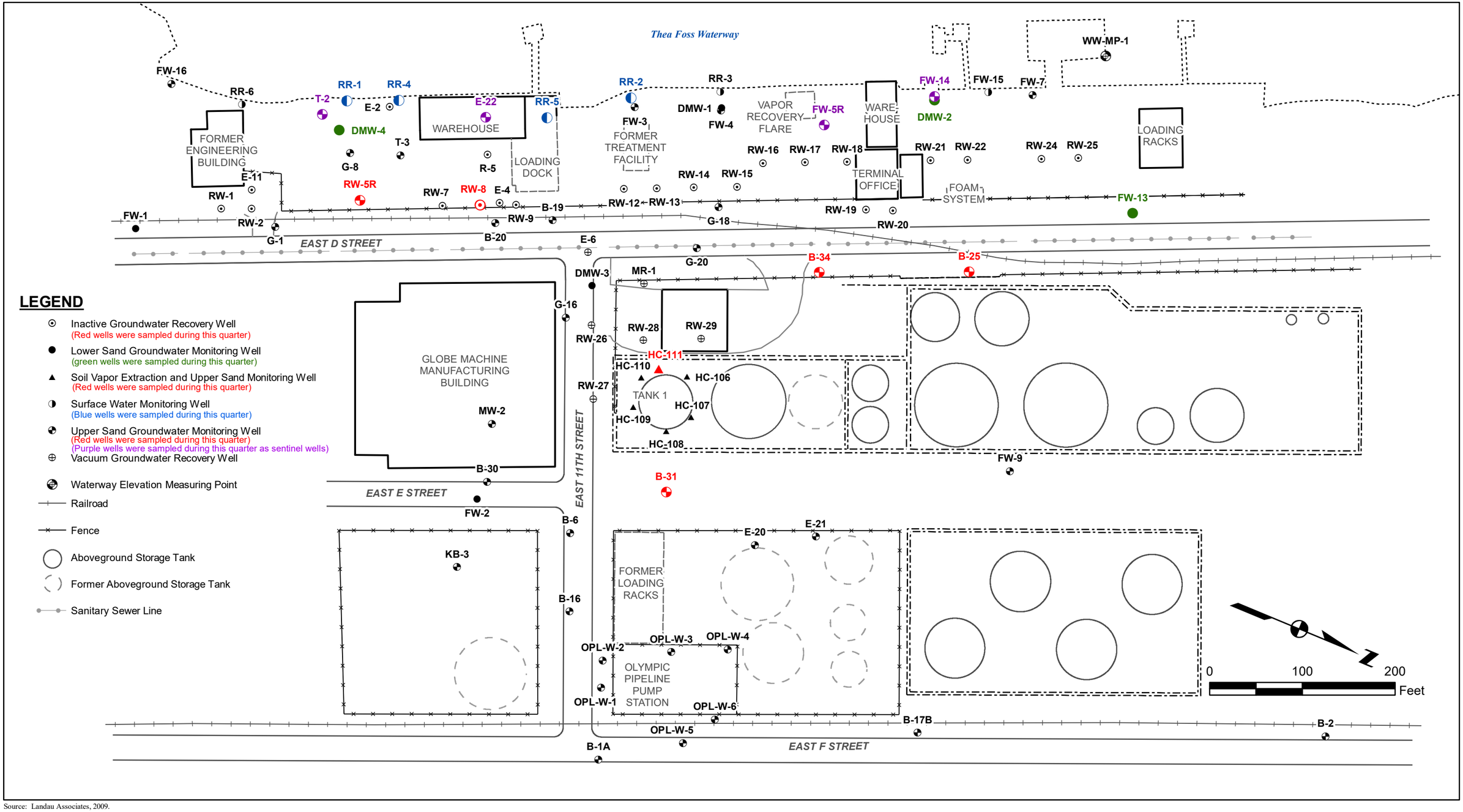

LEGEND

- 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.

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SITE MAP

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D STREET PETROLEUM SITE
TACOMA, WASHINGTON

FIGURE 2

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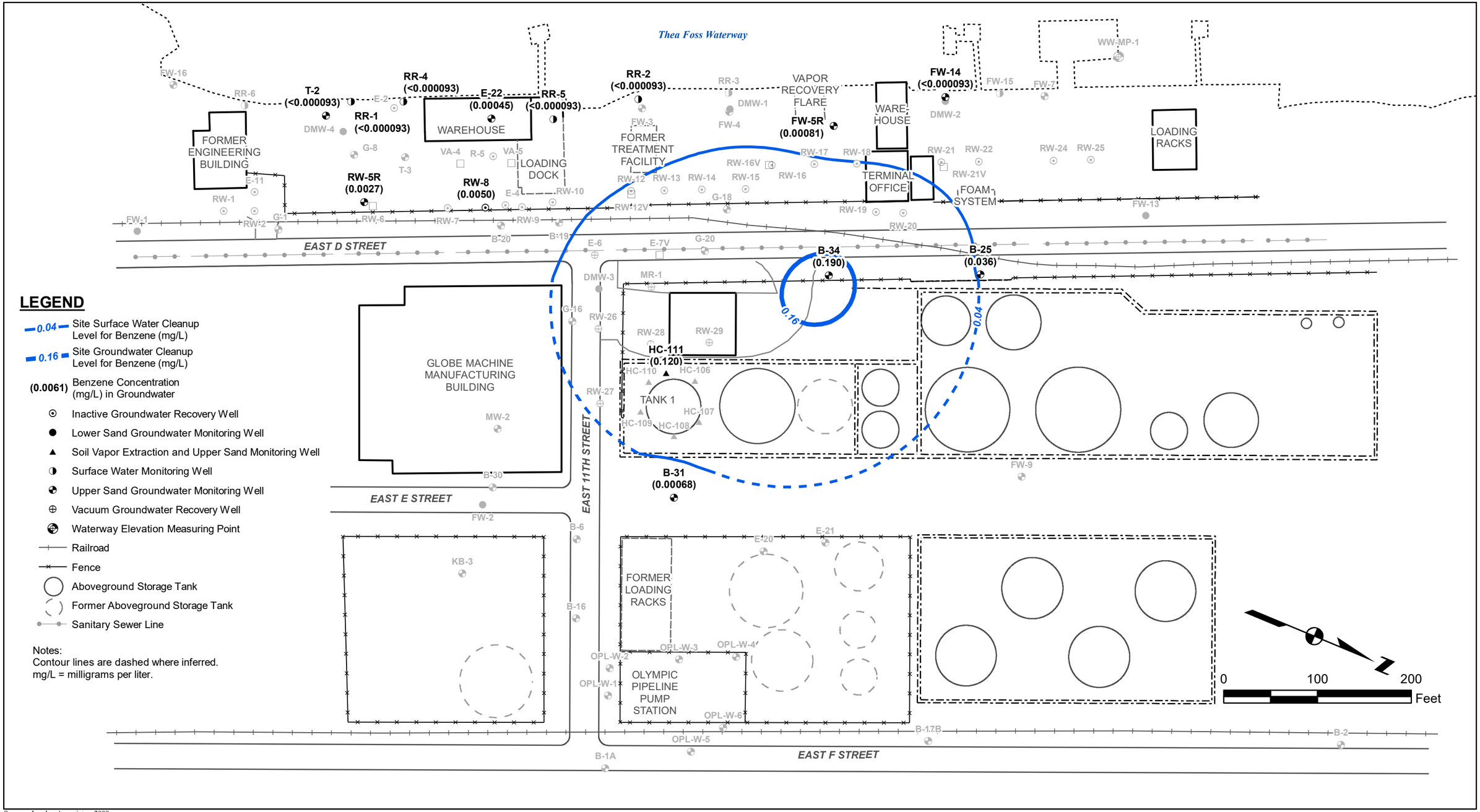

LEGEND

- 0.04 — Site Surface Water Cleanup Level for Benzene (mg/L)
- 0.16 — Site Groundwater Cleanup Level for Benzene (mg/L)
- (0.0061) 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
- Railroad
- Fence
- Aboveground Storage Tank
- Former Aboveground Storage Tank
- Sanitary Sewer Line

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

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

BENZENE CONCENTRATIONS IN GROUNDWATER (UPPER SAND UNIT) JUNE 2019

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D STREET PETROLEUM SITE
TACOMA, WASHINGTON

FIGURE 3

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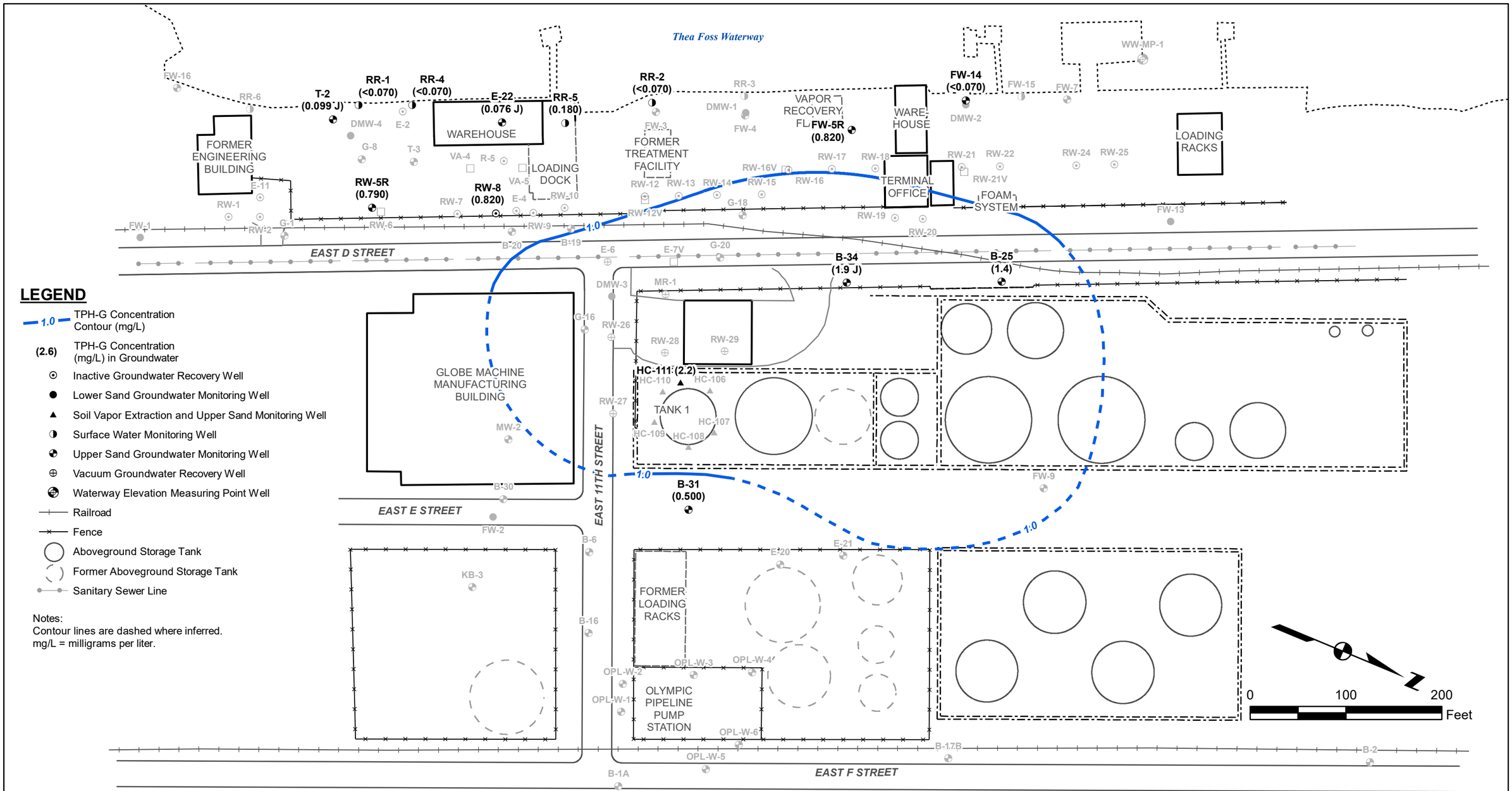

LEGEND

- 1.0 — TPH-G Concentration Contour (mg/L)
- (2.6) — 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
- Sanitary Sewer Line

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

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

TPH-G CONCENTRATIONS IN GROUNDWATER (UPPER SAND UNIT) JUNE 2019

NOVEMBER 2019
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D STREET PETROLEUM SITE
TACOMA, WASHINGTON

FIGURE 4

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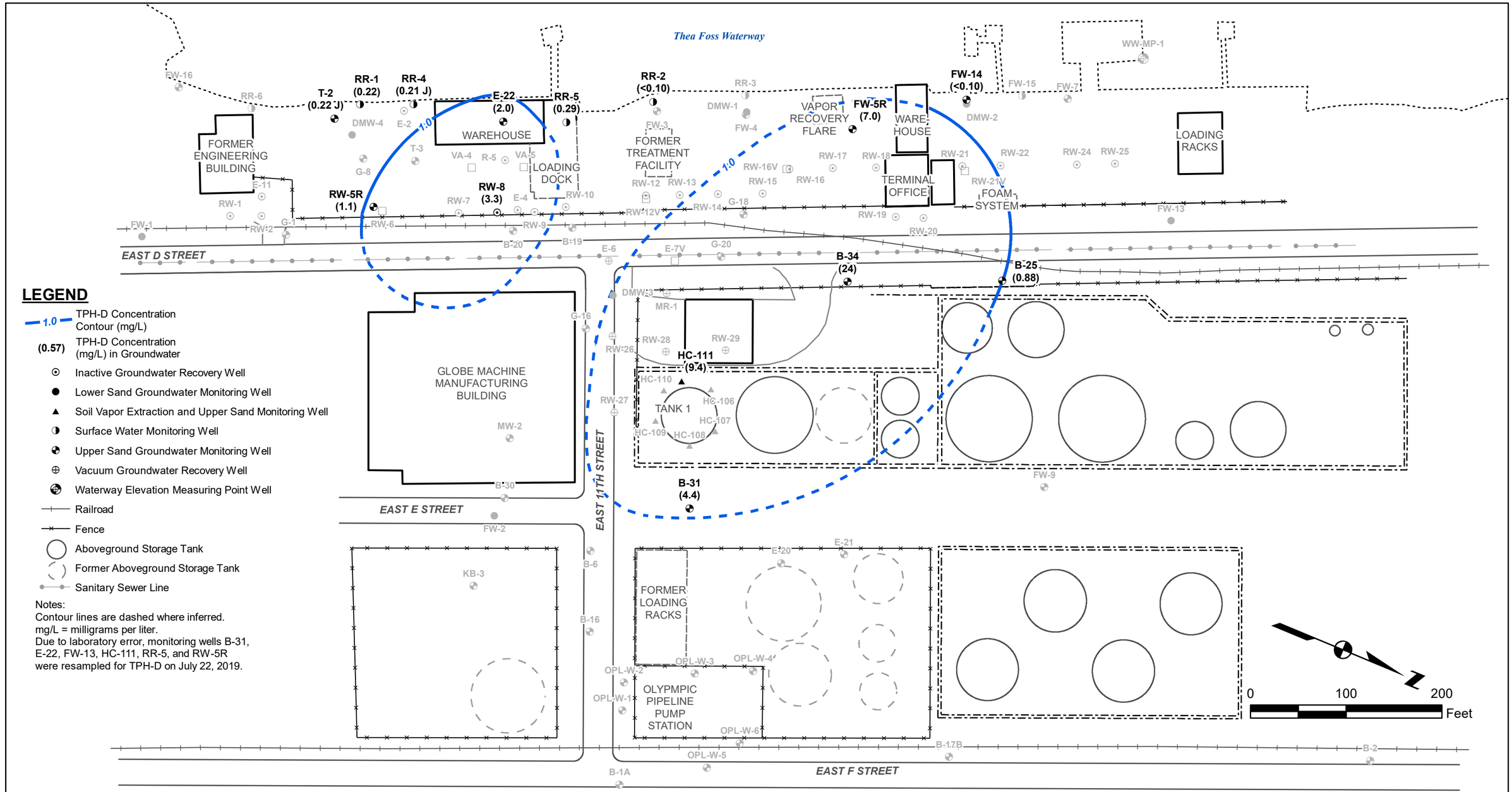

LEGEND

- 1.0 — TPH-D Concentration Contour (mg/L)
- (0.57) — 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
- Sanitary Sewer Line

Notes:
Contour lines are dashed where inferred.
mg/L = milligrams per liter.
Due to laboratory error, monitoring wells B-31, E-22, FW-13, HC-111, RR-5, and RW-5R were resampled for TPH-D on July 22, 2019.

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

TPH-D CONCENTRATIONS IN GROUNDWATER (UPPER SAND UNIT) JUNE & JULY 2019

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D STREET PETROLEUM SITE
TACOMA, WASHINGTON

FIGURE 5

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TABLES

Table 1
Groundwater Elevation Data
Second Quarter 2019
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	6/18/2019	NR	NR	--	NR	Could not locate
B-2	13.78	6/18/2019	12:26	7.47	--	6.31	
B-6	14.25	6/18/2019	NR	NR	--	NR	Located in street
B-16	14.40	6/18/2019	NR	NR	--	NR	Located in street
B-17B	14.16	6/18/2019	12:34	7.45	--	6.71	
B-19	13.31	6/18/2019	13:26	7.25	--	6.06	
B-20	13.48	6/18/2019	13:32	8.84	--	4.64	
B-25	13.96	6/18/2019	13:29	7.98	--	5.98	
B-30	14.46	6/18/2019	12:42	8.28	--	NR	Located in street
B-31	14.46	6/17/2019	13:14	8.25	--	6.21	
B-34	14.36	6/18/2019	14:28	8.21	--	6.15	
E-4	12.09	6/18/2019	NR	NR	--	NR	Vault lid stuck
E-6	12.14	6/18/2019	NR	NR	--	NR	Located in street
E-20	NS	6/17/2019	13:49	7.50	--	NS	
E-21	14.13	6/17/2019	13:51	7.79	--	6.34	
FW-3	14.11 (b)	6/18/2019	NR	NR	--	NR	
FW-4	14.21	6/18/2019	15:20	8.04	--	6.17	
FW-16	12.35	6/18/2019	13:10	8.77	--	3.58	
G-1	13.43 (b)	6/18/2019	13:17	7.75	--	5.68	
G-8	13.25	6/18/2019	NR	NR	--	NR	Trailer parked on top of vault
G-16	13.23	6/18/2019	13:44	7.27	--	5.96	
G-18	13.54	6/18/2019	13:50	7.46	--	6.08	
G-20	13.11	6/18/2019	NR	NR	--	NR	Located in Street
HC-108	15.30	6/17/2019	14:15	8.87	--	6.43	
HC-111	14.62	6/17/2019	14:09	8.38	--	6.24	
MR-1	14.26	6/18/2019	NR	NR	--	NR	
MW-2	NS	NR	NR	NR	--	NS	
R-5	11.69	6/18/2019	NR	NR	--	NR	Trailer parked on top of vault
RW-1	12.94	6/18/2019	12:56	8.63	--	4.31	
RW-2	12.76	6/18/2019	13:04	8.17	--	4.59	
RW-5R	13.76	6/18/2019	8:13	8.70	--	5.06	
RW-7	12.46	6/18/2019	NR	NR	--	NR	Steel beams on top
RW-8	12.71	6/18/2019	9:22	6.61	--	6.10	
RW-9	12.59	6/18/2019	NR	NR	--	NR	Gate on top
RW-12	13.21	6/18/2019	14:31	7.25	--	5.96	
RW-13	13.94	6/18/2019	14:29	7.91	--	6.03	
RW-14	13.52	6/18/2019	14:27	7.84	--	5.68	
RW-15	13.15	6/18/2019	14:26	7.75	--	5.40	
RW-17	12.29	6/18/2019	14:24	6.80	--	5.49	
RW-19	12.97	6/18/2019	14:13	7.09	--	5.88	
RW-20	12.80	6/18/2019	14:11	7.02	--	5.78	
RW-22	12.72	6/18/2019	NR	NR	--	NR	Slip cap glued on
RW-24	13.63	6/18/2019	NR	NR	--	NR	Vault lid stuck
RW-26	11.93	6/18/2019	NR	NR	--	NR	Located in loading rack entrance
RW-28	14.62	6/18/2019	NR	NR	--	NR	Truck in loading rack
RW-29	13.83	6/18/2019	NR	NR	--	NR	Truck in loading rack
T-3	13.03	6/18/2019	13:28	7.06	--	5.97	Under pressure
Upper Sand Unit - Sentinel							
E-22	16.74	6/17/2019	12:41	13.73	--	3.01	
FW-5R	12.78	6/18/2019	10:19	6.77	--	6.01	
FW-14	13.17	6/18/2019	8:09	7.04	--	6.13	
T-2	11.62	6/17/2019	10:10	5.66	--	5.96	

Table 1
Groundwater Elevation Data
Second Quarter 2019
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	6/18/2019	13:00	10.89	--	2.74	
FW-2	14.32	NR	NR	NR	--	NR	Could not locate
FW-13	13.13	6/17/2019	14:30	11.77	--	1.36	
DMW-1	13.72	6/18/2019	11:21	11.95	--	1.77	
DMW-2	12.97	6/18/2019	9:05	8.66	--	4.31	
DMW-3	12.83	6/18/2019	13:39	11.24	--	1.59	
DMW-4	11.72	6/17/2019	10:24	9.84	--	1.88	
Upper Sand Unit - Surface Water Compliance							
RR-1	14.79 (b)	6/17/2019	11:18	9.23		5.56	
RR-2	15.71 (b)	6/18/2019	12:19	10.23		5.48	
RR-3	15.78 (b)	NR	NR	NR		NR	
RR-4	13.19 (c)	6/17/2019	12:06	7.62		5.57	
RR-5	16.53	6/17/2019	11:48	11.42		5.11	
RR-6	11.31	6/18/2019	13:12	9.05		2.26	
FW-15	NS	6/18/2019	14:21	8.72		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

Table 2
Summary of Groundwater Analytical Results
Second Quarter 2019
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	590-11264-19	6/18/2019	1.4		0.88		0.11	U	0.036		0.00050	J	0.0020		0.00030	J	0.0014		0.0023	J	--		--		--	
	B-31	590-11264-7	6/17/2019 [a]	0.500		4.4		0.50		0.00068		0.0030		0.0043		0.00066	J	0.0016		0.0050		--		--		--	
	B-34	590-11264-20	6/18/2019	1.9	J	24		3.0		**0.190**		0.010	J	0.0056	U	0.0032	U	0.0062	U	0.0088	U	--		--		--	
	HC-111	590-11264-8	6/17/2019 [a]	2.2		9.2		0.87		**0.120**		0.096		0.0022		0.00066	J	0.0055		0.0028	J	--		--		--	
	HC-111-DUP	590-11264-11	6/17/2019 [a]	2.1		9.4		0.86		**0.100**		0.095		0.0018	J	0.00064	J	0.0056		0.0025	J						
	RW-5R	590-11264-12	6/18/2019	0.790		0.87		0.16	J	0.0027		0.018		0.00037	J	0.00024	J	0.00031	U	0.00061	J	--		--		--	
	RW-5R-DUP	590-11264-15	6/18/2019	0.790		1.1		0.27	J	0.0025		0.018		0.00047	J	0.00028	J	0.00031	U	0.00075	J	--		--		--	
	RW-8	590-11264-16	6/18/2019	0.820		3.3		1.1		0.0050		0.00057	J	0.00078	J	0.00060	J	0.00070	J	0.0014	J	--		--		--	
Upper Sand Unit - Sentinel	E-22	590-11264-6	6/17/2019 [a]	0.076	J	2.0		0.27	J	0.00045		0.0025		0.00055	J	0.00016	U	0.00045	J	0.00055	UJ	--		--		--	
	FW-5R	590-11264-17	6/18/2019 [a]	0.820		7.0		0.95		0.00081		0.00040	J	0.00028	U	0.00016	U	0.00050	J	0.00044	U	0.0023		0.240		0.280	
	FW-14	590-11264-13	6/18/2019	0.070	U	0.10	U	0.11	U	0.000093	U	0.00020	U	0.00028	U	0.00016	U	0.00031	U	0.00044	U	0.000050	U	0.000041	U	0.000022	U
	T-2	590-11264-1	6/17/2019	0.099	J	0.22	J	0.11	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	590-11264-3	6/17/2019	0.070	U	0.22		0.11	U	0.000093	U	0.00020	U	0.00028	U	0.00016	U	0.00031	U	0.00044	U	--		--		--	
	RR-2	590-11264-18	6/18/2019	0.070	U	0.10	U	0.11	U	0.000093	U	0.00020	U	0.00028	U	0.00016	U	0.00031	U	0.00044	U	0.000049	U	0.000041	U	0.000021	U
	RR-4	590-11264-5	6/17/2019 [a]	0.070	U	0.21	J	0.33	J	0.000093	U	0.00020	U	0.00028	U	0.00016	U	0.00031	U	0.00044	U	--		--		--	
	RR-5	590-11264-4	6/17/2019 [a]	0.180		0.29		0.16	J	0.000093	U	0.00020	U	0.00028	U	0.00016	U	0.00031	U	0.00044	U	--		--		--	
Lower Sand Unit	DMW-2	590-11264-14	6/18/2019	0.073	J	1.9		0.45		0.000093	U	0.00020	U	0.00028	U	0.00016	U	0.00031	U	0.00044	U	--		--		--	
	DMW-4	590-11264-2	6/17/2019	0.290		0.36		0.13	U	0.000093	U	0.00020	U	0.00028	U	0.00016	U	0.00031	U	0.00044	U	--		--		--	
	FW-13	590-11264-9	6/17/2019 [a]	0.070	U	0.37		0.12	J	0.000093	U	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.
a - Resampled on July 22, 2019 and analyzed for diesel-range and heavy oil-range hydrocarbons. Sample results were reported under TestAmerica laboratory group 590-11465-1.
BTEX = Benzene, toluene, ethylbenzene, and xylenes
DUP = Field duplicate
EPA = Environmental Protection Agency
ID = Identification
J = The analyte is present in the sample; the reported concentration is an estimate.
NWTPH-Dx w SGC = Northwest Analytical method, Northwest Total Petroleum Hydrocarbons as Diesel with Silica Gel Cleanup
NWTPH-Gx= Northwest Analytical method, Northwest Total Petroleum Hydrocarbons as Gasoline
SGC = Silica gel cleanup
SIM = Selected ion monitoring
TPH = Total Petroleum Hydrocarbons
TPH-D = Total Petroleum Hydrocarbons as Diesel
TPH-G = Total Petroleum Hydrocarbons as Gasoline
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 2019
D Street Petroleum Site

	Sample ID	Date Collected	Temperature (°C)	pH	Conductivity (mS/cm)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/L)
Upper Sand Unit	B-25	6/18/2019	17.99	6.72	0.396	-140	0.0
	B-31	6/17/2019	21.64	6.51	0.565	-102	0.0
	B-34	6/18/2019	17.93	6.45	1.19	-138	0.0
	HC-111	6/17/2019	21.21	6.26	0.697	-210	0.0
	RW-5R	6/18/2019	17.15	6.25	0.829	-126	0.0
	RW-8	6/18/2019	16.53	6.57	-157	--	--
Upper Sand Unit - Sentinel	E-22	6/17/2019	16.33	6.68	16.1	-357	0.0
	FW-5R	6/18/2019	15.82	7.00	0.698	-177	0.0
	FW-14	6/18/2019	15.41	6.88	30.5	106	0.0
	T-2	6/17/2019	16.75	6.22	31.3	-13	0.0
Upper Sand Unit - Surface Water Compliance	RR-1	6/17/2019	18.35	6.32	31.1	-64	0.0
	RR-2	6/18/2019	17.58	6.60	28.5	8	0.0
	RR-4	6/17/2019	19.25	6.60	29.6	-74	0.0
	RR-5	6/17/2019	16.64	6.15	30.3	-328	0.0
Lower Sand Unit	DMW-2	6/18/2019	14.07	7.29	12.3	-286	0.0
	DMW-4	6/17/2019	16.77	7.29	15.6	-322	0.0
	FW-13	6/17/2019	16.49	7.28	0.572	-177	0.0

Notes:

°C = degrees Celsius

mg/L = milligrams per liter

mS/m = millisiemens per meter

mV = millivolts

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 TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 590-11264-1
Client Project/Site: Tacoma D St Terminal-Phillips 66/Quarter

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

Attn: Mr. Tyler Hemry

Authorized for release by:
7/8/2019 4:05:19 PM

Randee Arrington, Project Manager II
(509)924-9200
randee.arrington@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Case Narrative

Client: AECOM
Job ID: 590-11264-1
Project/Site: Tacoma D St Terminal-Phillips 66/Quarter

Job ID: 590-11264-1

Laboratory: Eurofins TestAmerica, Spokane

Narrative

Receipt
The samples were received on 6/20/2019 1:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.5º C and 3.7º C.

Receipt Exceptions
One hydrochloric voa vial for the following sample was received broken: RR-1 (590-11264-3). Sufficient volume remains to proceed with analysis.

The proper container for the following sample for NWTPH-Dx analysis was not received: RR-4 (590-11264-5). Only two hydrochloric voa vials were received. Analysis was canceled.

The proper container for the following sample for NWTPH-Dx analysis was not received: FW-5R (590-11264-17). Two unpresrved 250ml amber glass containers were recieved. Analysis can proceed with the provided volume.

GC/MS VOA
Method 8260C: The following sample was diluted to bring the concentration of target analytes within the calibration range: B-34 (590-11264-20). Elevated reporting limits (RLs) are provided.

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

GC/MS Semi VOA
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 oil range appear to be due diesel overlap in the following sample: FW-5R (590-11264-17).

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to heavily weathered diesel and/or biogenic interference in the following samples: T-2 (590-11264-1), DMW-4 (590-11264-2) and RR-1 (590-11264-3).

Method NWTPH-Dx: The following samples were spiked with diesel and oil spike (LCS standard) due to analyst oversight: RR-5 (590-11264-4), E-22 (590-11264-6), B-31 (590-11264-7), HC-111 (590-11264-8), FW-13 (590-11264-9), HC-11-DUP (590-11264-11) and RW-5R (590-11264-12). Samples were not re-extracted due to insufficient sample volume. Analysis was canceled.

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to weathered diesel in the following samples: DMW-2 (590-11264-14) and RW-8 (590-11264-16).

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to gasoline overlap as well as heavily weathered diesel and/or biogenic interference in the following samples: RW-5R-DUP (590-11264-15) and B-25 (590-11264-19).

Method NWTPH-Dx: Detected hydrocarbons appear to be due to weathered diesel in the following sample: B-34 (590-11264-20).

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
Job ID: 590-11264-1
Project/Site: Tacoma D St Terminal-Phillips 66/Quarter

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
590-11264-1	T-2	Water	06/17/19 10:55	06/20/19 13:30	
590-11264-2	DMW-4	Water	06/17/19 11:04	06/20/19 13:30	
590-11264-3	RR-1	Water	06/17/19 12:00	06/20/19 13:30	
590-11264-4	RR-5	Water	06/17/19 12:19	06/20/19 13:30	
590-11264-5	RR-4	Water	06/17/19 12:50	06/20/19 13:30	
590-11264-6	E-22	Water	06/17/19 13:13	06/20/19 13:30	
590-11264-7	B-31	Water	06/17/19 14:10	06/20/19 13:30	
590-11264-8	HC-111	Water	06/17/19 15:13	06/20/19 13:30	
590-11264-9	FW-13	Water	06/17/19 15:23	06/20/19 13:30	
590-11264-10	Trip Blank	Water	06/17/19 08:00	06/20/19 13:30	
590-11264-11	HC-11-DUP	Water	06/17/19 15:13	06/20/19 13:30	
590-11264-12	RW-5R	Water	06/18/19 08:53	06/20/19 13:30	
590-11264-13	FW-14	Water	06/18/19 08:55	06/20/19 13:30	
590-11264-14	DMW-2	Water	06/18/19 10:00	06/20/19 13:30	
590-11264-15	RW-5R-DUP	Water	06/18/19 08:53	06/20/19 13:30	
590-11264-16	RW-8	Water	06/18/19 10:41	06/20/19 13:30	
590-11264-17	FW-5R	Water	06/18/19 11:05	06/20/19 13:30	
590-11264-18	RR-2	Water	06/18/19 13:15	06/20/19 13:30	
590-11264-19	B-25	Water	06/18/19 14:20	06/20/19 13:30	
590-11264-20	B-34	Water	06/18/19 15:10	06/20/19 13:30	

Method Summary

Client: AECOM
Job ID: 590-11264-1
Project/Site: Tacoma D St Terminal-Phillips 66/Quarter

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL SPK
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	TAL SPK
8270D 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: 590-11264-1
Project/Site: Tacoma D St Terminal-Phillips 66/Quarter

Client Sample ID: T-2 — Lab Sample ID: 590-11264-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline	99	J F2	150	70	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	0.22	J	0.23	0.10	mg/L	1		NWTPH-Dx	Total/NA

Client Sample ID: DMW-4 — Lab Sample ID: 590-11264-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline	290		150	70	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	0.36		0.26	0.12	mg/L	1		NWTPH-Dx	Total/NA

Client Sample ID: RR-1 — Lab Sample ID: 590-11264-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics (DRO) (C10-C25)	0.22		0.22	0.10	mg/L	1		NWTPH-Dx	Total/NA

Client Sample ID: RR-5 — Lab Sample ID: 590-11264-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline	180		150	70	ug/L	1		NWTPH-Gx	Total/NA

Client Sample ID: RR-4 — Lab Sample ID: 590-11264-5

No Detections.

Client Sample ID: E-22 — Lab Sample ID: 590-11264-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.45		0.40	0.093	ug/L	1		8260C	Total/NA
Ethylbenzene	2.5		1.0	0.20	ug/L	1		8260C	Total/NA
m,p-Xylene	0.55	J	2.0	0.28	ug/L	1		8260C	Total/NA
Toluene	0.45	J	1.0	0.31	ug/L	1		8260C	Total/NA
Xylenes, Total	0.55	J	3.0	0.44	ug/L	1		8260C	Total/NA
Gasoline	76	J	150	70	ug/L	1		NWTPH-Gx	Total/NA

Client Sample ID: B-31 — Lab Sample ID: 590-11264-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.68		0.40	0.093	ug/L	1		8260C	Total/NA
Ethylbenzene	3.0		1.0	0.20	ug/L	1		8260C	Total/NA
m,p-Xylene	4.3		2.0	0.28	ug/L	1		8260C	Total/NA
o-Xylene	0.66	J	1.0	0.16	ug/L	1		8260C	Total/NA
Toluene	1.6		1.0	0.31	ug/L	1		8260C	Total/NA
Xylenes, Total	5.0		3.0	0.44	ug/L	1		8260C	Total/NA
Gasoline	500		150	70	ug/L	1		NWTPH-Gx	Total/NA

Client Sample ID: HC-111 — Lab Sample ID: 590-11264-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	120		4.0	0.93	ug/L	10		8260C	Total/NA
Ethylbenzene	96		1.0	0.20	ug/L	1		8260C	Total/NA
m,p-Xylene	2.2		2.0	0.28	ug/L	1		8260C	Total/NA
o-Xylene	0.66	J	1.0	0.16	ug/L	1		8260C	Total/NA
Toluene	5.5		1.0	0.31	ug/L	1		8260C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Spokane

Detection Summary

Client: AECOM
Job ID: 590-11264-1
Project/Site: Tacoma D St Terminal-Phillips 66/Quarter

Client Sample ID: HC-111 (Continued) — Lab Sample ID: 590-11264-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Xylenes, Total	2.8	J	3.0	0.44	ug/L	1		8260C	Total/NA
Gasoline	2200		150	70	ug/L	1		NWTPH-Gx	Total/NA

Client Sample ID: FW-13 — Lab Sample ID: 590-11264-9

No Detections.

Client Sample ID: Trip Blank — Lab Sample ID: 590-11264-10

No Detections.

Client Sample ID: HC-11-DUP — Lab Sample ID: 590-11264-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	100		0.40	0.093	ug/L	1		8260C	Total/NA
Ethylbenzene	95		1.0	0.20	ug/L	1		8260C	Total/NA
m,p-Xylene	1.8	J	2.0	0.28	ug/L	1		8260C	Total/NA
o-Xylene	0.64	J	1.0	0.16	ug/L	1		8260C	Total/NA
Toluene	5.6		1.0	0.31	ug/L	1		8260C	Total/NA
Xylenes, Total	2.5	J	3.0	0.44	ug/L	1		8260C	Total/NA
Gasoline	2100		150	70	ug/L	1		NWTPH-Gx	Total/NA

Client Sample ID: RW-5R — Lab Sample ID: 590-11264-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	2.7		0.40	0.093	ug/L	1		8260C	Total/NA
Ethylbenzene	18		1.0	0.20	ug/L	1		8260C	Total/NA
m,p-Xylene	0.37	J	2.0	0.28	ug/L	1		8260C	Total/NA
o-Xylene	0.24	J	1.0	0.16	ug/L	1		8260C	Total/NA
Xylenes, Total	0.61	J	3.0	0.44	ug/L	1		8260C	Total/NA
Gasoline	790		150	70	ug/L	1		NWTPH-Gx	Total/NA

Client Sample ID: FW-14 — Lab Sample ID: 590-11264-13

No Detections.

Client Sample ID: DMW-2 — Lab Sample ID: 590-11264-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline	73	J	150	70	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	1.9		0.23	0.10	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.45		0.38	0.11	mg/L	1		NWTPH-Dx	Total/NA

Client Sample ID: RW-5R-DUP — Lab Sample ID: 590-11264-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	2.5		0.40	0.093	ug/L	1		8260C	Total/NA
Ethylbenzene	18		1.0	0.20	ug/L	1		8260C	Total/NA
m,p-Xylene	0.47	J	2.0	0.28	ug/L	1		8260C	Total/NA
o-Xylene	0.28	J	1.0	0.16	ug/L	1		8260C	Total/NA
Xylenes, Total	0.75	J	3.0	0.44	ug/L	1		8260C	Total/NA
Gasoline	790		150	70	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	1.1		0.26	0.12	mg/L	1		NWTPH-Dx	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Spokane

Detection Summary

Client: AECOM
Job ID: 590-11264-1
Project/Site: Tacoma D St Terminal-Phillips 66/Quarter

Client Sample ID: RW-5R-DUP (Continued)
Lab Sample ID: 590-11264-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Residual Range Organics (RRO) (C25-C36)	0.27	J	0.44	0.13	mg/L	1		NWTPH-Dx	Total/NA

Client Sample ID: RW-8
Lab Sample ID: 590-11264-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	5.0		0.40	0.093	ug/L	1		8260C	Total/NA
Ethylbenzene	0.57	J	1.0	0.20	ug/L	1		8260C	Total/NA
m,p-Xylene	0.78	J	2.0	0.28	ug/L	1		8260C	Total/NA
o-Xylene	0.60	J	1.0	0.16	ug/L	1		8260C	Total/NA
Toluene	0.70	J	1.0	0.31	ug/L	1		8260C	Total/NA
Xylenes, Total	1.4	J	3.0	0.44	ug/L	1		8260C	Total/NA
Gasoline	820		150	70	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	3.3		0.27	0.12	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	1.1		0.45	0.14	mg/L	1		NWTPH-Dx	Total/NA

Client Sample ID: FW-5R
Lab Sample ID: 590-11264-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.81		0.40	0.093	ug/L	1		8260C	Total/NA
Ethylbenzene	0.40	J	1.0	0.20	ug/L	1		8260C	Total/NA
Toluene	0.50	J	1.0	0.31	ug/L	1		8260C	Total/NA
Gasoline	820		150	70	ug/L	1		NWTPH-Gx	Total/NA
Naphthalene	2.3		0.084	0.050	ug/L	1		8270D SIM	Total/NA
2-Methylnaphthalene	240		3.4	1.7	ug/L	40		8270D SIM	Total/NA
1-Methylnaphthalene	280		3.4	0.86	ug/L	40		8270D SIM	Total/NA
Diesel Range Organics (DRO) (C10-C25)	7.0		0.23	0.10	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.95		0.38	0.11	mg/L	1		NWTPH-Dx	Total/NA

Client Sample ID: RR-2
Lab Sample ID: 590-11264-18

No Detections.

Client Sample ID: B-25
Lab Sample ID: 590-11264-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	36		0.40	0.093	ug/L	1		8260C	Total/NA
Ethylbenzene	0.50	J	1.0	0.20	ug/L	1		8260C	Total/NA
m,p-Xylene	2.0		2.0	0.28	ug/L	1		8260C	Total/NA
o-Xylene	0.30	J	1.0	0.16	ug/L	1		8260C	Total/NA
Toluene	1.4		1.0	0.31	ug/L	1		8260C	Total/NA
Xylenes, Total	2.3	J	3.0	0.44	ug/L	1		8260C	Total/NA
Gasoline	1400		150	70	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	0.88		0.23	0.11	mg/L	1		NWTPH-Dx	Total/NA

Client Sample ID: B-34
Lab Sample ID: 590-11264-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	190		8.0	1.9	ug/L	20		8260C	Total/NA
Ethylbenzene	10	J	20	4.0	ug/L	20		8260C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: B-34 (Continued)
Lab Sample ID: 590-11264-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline	1900	J	3000	1400	ug/L	20		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	24		0.23	0.11	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	3.0		0.39	0.12	mg/L	1		NWTPH-Dx	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: T-2
Lab Sample ID: 590-11264-1
Date Collected: 06/17/19 10:55
Matrix: Water
Date Received: 06/20/19 13:30

Method: 8260C - 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			06/25/19 17:18	1
Ethylbenzene	ND		1.0	0.20	ug/L			06/25/19 17:18	1
m,p-Xylene	ND		2.0	0.28	ug/L			06/25/19 17:18	1
o-Xylene	ND		1.0	0.16	ug/L			06/25/19 17:18	1
Toluene	ND		1.0	0.31	ug/L			06/25/19 17:18	1
Xylenes, Total	ND		3.0	0.44	ug/L			06/25/19 17:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*06/25/19 17:18*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*06/25/19 17:18*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 120*		*06/25/19 17:18*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*06/25/19 17:18*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**99**	**J F2**	150	70	ug/L			06/25/19 17:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*68.7 - 141*		*06/25/19 17:18*	*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**	0.23	0.10	mg/L		06/28/19 12:56	06/28/19 22:07	1
Residual Range Organics (RRO) (C25-C36)	ND		0.38	0.11	mg/L		06/28/19 12:56	06/28/19 22:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*94*		*50 - 150*	*06/28/19 12:56*	*06/28/19 22:07*	*1*
n-Triacontane-d62	*90*		*50 - 150*	*06/28/19 12:56*	*06/28/19 22:07*	*1*

Client Sample ID: DMW-4
Lab Sample ID: 590-11264-2
Date Collected: 06/17/19 11:04
Matrix: Water
Date Received: 06/20/19 13:30

Method: 8260C - 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			06/25/19 19:11	1
Ethylbenzene	ND		1.0	0.20	ug/L			06/25/19 19:11	1
m,p-Xylene	ND		2.0	0.28	ug/L			06/25/19 19:11	1
o-Xylene	ND		1.0	0.16	ug/L			06/25/19 19:11	1
Toluene	ND		1.0	0.31	ug/L			06/25/19 19:11	1
Xylenes, Total	ND		3.0	0.44	ug/L			06/25/19 19:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*06/25/19 19:11*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*06/25/19 19:11*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*06/25/19 19:11*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*06/25/19 19:11*	*1*

Client Sample ID: DMW-4
Lab Sample ID: 590-11264-2
Date Collected: 06/17/19 11:04
Matrix: Water
Date Received: 06/20/19 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**290**		150	70	ug/L			06/25/19 19:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*68.7 - 141*		*06/25/19 19:11*	*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)	**0.36**		0.26	0.12	mg/L		06/28/19 12:56	06/28/19 23:26	1
Residual Range Organics (RRO) (C25-C36)	ND		0.43	0.13	mg/L		06/28/19 12:56	06/28/19 23:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*92*		*50 - 150*	*06/28/19 12:56*	*06/28/19 23:26*	*1*
n-Triacontane-d62	*86*		*50 - 150*	*06/28/19 12:56*	*06/28/19 23:26*	*1*

Client Sample ID: RR-1
Lab Sample ID: 590-11264-3
Date Collected: 06/17/19 12:00
Matrix: Water
Date Received: 06/20/19 13:30

Method: 8260C - 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			06/25/19 19:33	1
Ethylbenzene	ND		1.0	0.20	ug/L			06/25/19 19:33	1
m,p-Xylene	ND		2.0	0.28	ug/L			06/25/19 19:33	1
o-Xylene	ND		1.0	0.16	ug/L			06/25/19 19:33	1
Toluene	ND		1.0	0.31	ug/L			06/25/19 19:33	1
Xylenes, Total	ND		3.0	0.44	ug/L			06/25/19 19:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*06/25/19 19:33*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*06/25/19 19:33*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 120*		*06/25/19 19:33*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*06/25/19 19:33*	*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			06/25/19 19:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*68.7 - 141*		*06/25/19 19:33*	*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**		0.22	0.10	mg/L		06/28/19 12:56	06/28/19 23:46	1
Residual Range Organics (RRO) (C25-C36)	ND		0.37	0.11	mg/L		06/28/19 12:56	06/28/19 23:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*101*		*50 - 150*	*06/28/19 12:56*	*06/28/19 23:46*	*1*
n-Triacontane-d62	*94*		*50 - 150*	*06/28/19 12:56*	*06/28/19 23:46*	*1*

Client Sample ID: RR-5
Lab Sample ID: 590-11264-4
Date Collected: 06/17/19 12:19
Matrix: Water
Date Received: 06/20/19 13:30

Method: 8260C - 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			06/25/19 19:56	1
Ethylbenzene	ND		1.0	0.20	ug/L			06/25/19 19:56	1
m,p-Xylene	ND		2.0	0.28	ug/L			06/25/19 19:56	1
o-Xylene	ND		1.0	0.16	ug/L			06/25/19 19:56	1
Toluene	ND		1.0	0.31	ug/L			06/25/19 19:56	1
Xylenes, Total	ND		3.0	0.44	ug/L			06/25/19 19:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*06/25/19 19:56*	*1*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*		*06/25/19 19:56*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 120*		*06/25/19 19:56*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*06/25/19 19:56*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**180**		150	70	ug/L			06/25/19 19:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*68.7 - 141*		*06/25/19 19:56*	*1*

Client Sample ID: RR-4
Lab Sample ID: 590-11264-5
Date Collected: 06/17/19 12:50
Matrix: Water
Date Received: 06/20/19 13:30

Method: 8260C - 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			06/25/19 20:18	1
Ethylbenzene	ND		1.0	0.20	ug/L			06/25/19 20:18	1
m,p-Xylene	ND		2.0	0.28	ug/L			06/25/19 20:18	1
o-Xylene	ND		1.0	0.16	ug/L			06/25/19 20:18	1
Toluene	ND		1.0	0.31	ug/L			06/25/19 20:18	1
Xylenes, Total	ND		3.0	0.44	ug/L			06/25/19 20:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*06/25/19 20:18*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*06/25/19 20:18*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 120*		*06/25/19 20:18*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*06/25/19 20:18*	*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			06/25/19 20:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*68.7 - 141*		*06/25/19 20:18*	*1*

Client Sample ID: E-22
Lab Sample ID: 590-11264-6
Date Collected: 06/17/19 13:13
Matrix: Water
Date Received: 06/20/19 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.45**		0.40	0.093	ug/L			06/25/19 21:03	1
Ethylbenzene	**2.5**		1.0	0.20	ug/L			06/25/19 21:03	1
m,p-Xylene	**0.55**	**J**	2.0	0.28	ug/L			06/25/19 21:03	1
o-Xylene	ND		1.0	0.16	ug/L			06/25/19 21:03	1
Toluene	**0.45**	**J**	1.0	0.31	ug/L			06/25/19 21:03	1
Xylenes, Total	**0.55**	**J**	3.0	0.44	ug/L			06/25/19 21:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*06/25/19 21:03*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*06/25/19 21:03*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 120*		*06/25/19 21:03*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*06/25/19 21:03*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**76**	**J**	150	70	ug/L			06/25/19 21:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*68.7 - 141*		*06/25/19 21:03*	*1*

Client Sample ID: B-31
Lab Sample ID: 590-11264-7
Date Collected: 06/17/19 14:10
Matrix: Water
Date Received: 06/20/19 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.68**		0.40	0.093	ug/L			06/25/19 21:25	1
Ethylbenzene	**3.0**		1.0	0.20	ug/L			06/25/19 21:25	1
m,p-Xylene	**4.3**		2.0	0.28	ug/L			06/25/19 21:25	1
o-Xylene	**0.66**	**J**	1.0	0.16	ug/L			06/25/19 21:25	1
Toluene	**1.6**		1.0	0.31	ug/L			06/25/19 21:25	1
Xylenes, Total	**5.0**		3.0	0.44	ug/L			06/25/19 21:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*		*06/25/19 21:25*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*06/25/19 21:25*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 120*		*06/25/19 21:25*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*06/25/19 21:25*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**500**		150	70	ug/L			06/25/19 21:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*68.7 - 141*		*06/25/19 21:25*	*1*

Client Sample ID: HC-111
Lab Sample ID: 590-11264-8
Date Collected: 06/17/19 15:13
Matrix: Water
Date Received: 06/20/19 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	120		4.0	0.93	ug/L			06/26/19 16:31	10
Ethylbenzene	96		1.0	0.20	ug/L			06/25/19 21:47	1
m,p-Xylene	2.2		2.0	0.28	ug/L			06/25/19 21:47	1
o-Xylene	0.66	J	1.0	0.16	ug/L			06/25/19 21:47	1
Toluene	5.5		1.0	0.31	ug/L			06/25/19 21:47	1
Xylenes, Total	2.8	J	3.0	0.44	ug/L			06/25/19 21:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*06/25/19 21:47*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*06/26/19 16:31*	*10*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*06/25/19 21:47*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*06/26/19 16:31*	*10*
Dibromofluoromethane (Surr)	*108*		*80 - 120*		*06/25/19 21:47*	*1*
Dibromofluoromethane (Surr)	*109*		*80 - 120*		*06/26/19 16:31*	*10*
Toluene-d8 (Surr)	*100*		*80 - 120*		*06/25/19 21:47*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*06/26/19 16:31*	*10*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	2200		150	70	ug/L			06/25/19 21:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*68.7 - 141*		*06/25/19 21:47*	*1*

Client Sample ID: FW-13
Lab Sample ID: 590-11264-9
Date Collected: 06/17/19 15:23
Matrix: Water
Date Received: 06/20/19 13:30

Method: 8260C - 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			06/25/19 22:09	1
Ethylbenzene	ND		1.0	0.20	ug/L			06/25/19 22:09	1
m,p-Xylene	ND		2.0	0.28	ug/L			06/25/19 22:09	1
o-Xylene	ND		1.0	0.16	ug/L			06/25/19 22:09	1
Toluene	ND		1.0	0.31	ug/L			06/25/19 22:09	1
Xylenes, Total	ND		3.0	0.44	ug/L			06/25/19 22:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*06/25/19 22:09*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*06/25/19 22:09*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*06/25/19 22:09*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*06/25/19 22:09*	*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			06/25/19 22:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*68.7 - 141*		*06/25/19 22:09*	*1*

Client Sample ID: Trip Blank
Lab Sample ID: 590-11264-10
Date Collected: 06/17/19 08:00
Matrix: Water
Date Received: 06/20/19 13:30

Method: 8260C - 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			06/25/19 22:31	1
Ethylbenzene	ND		1.0	0.20	ug/L			06/25/19 22:31	1
m,p-Xylene	ND		2.0	0.28	ug/L			06/25/19 22:31	1
o-Xylene	ND		1.0	0.16	ug/L			06/25/19 22:31	1
Toluene	ND		1.0	0.31	ug/L			06/25/19 22:31	1
Xylenes, Total	ND		3.0	0.44	ug/L			06/25/19 22:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*06/25/19 22:31*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*06/25/19 22:31*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 120*		*06/25/19 22:31*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*06/25/19 22:31*	*1*

Client Sample ID: HC-11-DUP
Lab Sample ID: 590-11264-11
Date Collected: 06/17/19 15:13
Matrix: Water
Date Received: 06/20/19 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**100**		0.40	0.093	ug/L			06/25/19 22:54	1
Ethylbenzene	**95**		1.0	0.20	ug/L			06/25/19 22:54	1
m,p-Xylene	**1.8**	**J**	2.0	0.28	ug/L			06/25/19 22:54	1
o-Xylene	**0.64**	**J**	1.0	0.16	ug/L			06/25/19 22:54	1
Toluene	**5.6**		1.0	0.31	ug/L			06/25/19 22:54	1
Xylenes, Total	**2.5**	**J**	3.0	0.44	ug/L			06/25/19 22:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*06/25/19 22:54*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*06/25/19 22:54*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 120*		*06/25/19 22:54*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*06/25/19 22:54*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**2100**		150	70	ug/L			06/25/19 22:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*68.7 - 141*		*06/25/19 22:54*	*1*

Client Sample ID: RW-5R
Lab Sample ID: 590-11264-12
Date Collected: 06/18/19 08:53
Matrix: Water
Date Received: 06/20/19 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**2.7**		0.40	0.093	ug/L			06/25/19 23:16	1
Ethylbenzene	**18**		1.0	0.20	ug/L			06/25/19 23:16	1
m,p-Xylene	**0.37**	**J**	2.0	0.28	ug/L			06/25/19 23:16	1
o-Xylene	**0.24**	**J**	1.0	0.16	ug/L			06/25/19 23:16	1
Toluene	ND		1.0	0.31	ug/L			06/25/19 23:16	1
Xylenes, Total	**0.61**	**J**	3.0	0.44	ug/L			06/25/19 23:16	1

Client Sample ID: RW-5R
Lab Sample ID: 590-11264-12
Date Collected: 06/18/19 08:53
Matrix: Water
Date Received: 06/20/19 13:30

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*06/25/19 23:16*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*06/25/19 23:16*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 120*		*06/25/19 23:16*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*06/25/19 23:16*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**790**		150	70	ug/L			06/25/19 23:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*68.7 - 141*		*06/25/19 23:16*	*1*

Client Sample ID: FW-14
Lab Sample ID: 590-11264-13
Date Collected: 06/18/19 08:55
Matrix: Water
Date Received: 06/20/19 13:30

Method: 8260C - 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			06/25/19 23:38	1
Ethylbenzene	ND		1.0	0.20	ug/L			06/25/19 23:38	1
m,p-Xylene	ND		2.0	0.28	ug/L			06/25/19 23:38	1
o-Xylene	ND		1.0	0.16	ug/L			06/25/19 23:38	1
Toluene	ND		1.0	0.31	ug/L			06/25/19 23:38	1
Xylenes, Total	ND		3.0	0.44	ug/L			06/25/19 23:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*		*06/25/19 23:38*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*06/25/19 23:38*	*1*
Dibromofluoromethane (Surr)	*113*		*80 - 120*		*06/25/19 23:38*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*06/25/19 23:38*	*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			06/25/19 23:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*68.7 - 141*		*06/25/19 23:38*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.085	0.050	ug/L		06/25/19 10:22	06/25/19 12:58	1
2-Methylnaphthalene	ND		0.085	0.041	ug/L		06/25/19 10:22	06/25/19 12:58	1
1-Methylnaphthalene	ND		0.085	0.022	ug/L		06/25/19 10:22	06/25/19 12:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*82*		*36 - 126*	*06/25/19 10:22*	*06/25/19 12:58*	*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)	ND		0.22	0.10	mg/L		06/28/19 12:56	06/29/19 03:05	1
Residual Range Organics (RRO) (C25-C36)	ND		0.36	0.11	mg/L		06/28/19 12:56	06/29/19 03:05	1

Client Sample ID: FW-14
Lab Sample ID: 590-11264-13
Date Collected: 06/18/19 08:55
Matrix: Water
Date Received: 06/20/19 13:30

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	*88*		*50 - 150*	*06/28/19 12:56*	*06/29/19 03:05*	*1*
n-Triacontane-d62	*81*		*50 - 150*	*06/28/19 12:56*	*06/29/19 03:05*	*1*

Client Sample ID: DMW-2
Lab Sample ID: 590-11264-14
Date Collected: 06/18/19 10:00
Matrix: Water
Date Received: 06/20/19 13:30

Method: 8260C - 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			06/26/19 12:21	1
Ethylbenzene	ND		1.0	0.20	ug/L			06/26/19 12:21	1
m,p-Xylene	ND		2.0	0.28	ug/L			06/26/19 12:21	1
o-Xylene	ND		1.0	0.16	ug/L			06/26/19 12:21	1
Toluene	ND		1.0	0.31	ug/L			06/26/19 12:21	1
Xylenes, Total	ND		3.0	0.44	ug/L			06/26/19 12:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*		*06/26/19 12:21*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*06/26/19 12:21*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 120*		*06/26/19 12:21*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*		*06/26/19 12:21*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**73**	**J**	150	70	ug/L			06/26/19 00:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*99*		*68.7 - 141*		*06/26/19 00:01*	*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)	**1.9**		0.23	0.10	mg/L		06/28/19 12:56	06/29/19 03:24	1
Residual Range Organics (RRO) (C25-C36)	**0.45**		0.38	0.11	mg/L		06/28/19 12:56	06/29/19 03:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	*93*		*50 - 150*	*06/28/19 12:56*	*06/29/19 03:24*	*1*
n-Triacontane-d62	*86*		*50 - 150*	*06/28/19 12:56*	*06/29/19 03:24*	*1*

Client Sample ID: RW-5R-DUP
Lab Sample ID: 590-11264-15
Date Collected: 06/18/19 08:53
Matrix: Water
Date Received: 06/20/19 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**2.5**		0.40	0.093	ug/L			06/26/19 12:43	1
Ethylbenzene	**18**		1.0	0.20	ug/L			06/26/19 12:43	1
m,p-Xylene	**0.47**	**J**	2.0	0.28	ug/L			06/26/19 12:43	1
o-Xylene	**0.28**	**J**	1.0	0.16	ug/L			06/26/19 12:43	1
Toluene	ND		1.0	0.31	ug/L			06/26/19 12:43	1
Xylenes, Total	**0.75**	**J**	3.0	0.44	ug/L			06/26/19 12:43	1

Client Sample ID: RW-5R-DUP
Lab Sample ID: 590-11264-15
Date Collected: 06/18/19 08:53
Matrix: Water
Date Received: 06/20/19 13:30

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		80 - 120		06/26/19 12:43	1
4-Bromofluorobenzene (Surr)	95		80 - 120		06/26/19 12:43	1
Dibromofluoromethane (Surr)	104		80 - 120		06/26/19 12:43	1
Toluene-d8 (Surr)	101		80 - 120		06/26/19 12:43	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	790		150	70	ug/L			06/26/19 12:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		68.7 - 141		06/26/19 12:43	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)	1.1		0.26	0.12	mg/L		06/28/19 12:56	06/29/19 03:44	1
Residual Range Organics (RRO) (C25-C36)	0.27	J	0.44	0.13	mg/L		06/28/19 12:56	06/29/19 03:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	94		50 - 150	06/28/19 12:56	06/29/19 03:44	1
n-Triacontane-d62	91		50 - 150	06/28/19 12:56	06/29/19 03:44	1

Client Sample ID: RW-8
Lab Sample ID: 590-11264-16
Date Collected: 06/18/19 10:41
Matrix: Water
Date Received: 06/20/19 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	5.0		0.40	0.093	ug/L			06/26/19 13:06	1
Ethylbenzene	0.57	J	1.0	0.20	ug/L			06/26/19 13:06	1
m,p-Xylene	0.78	J	2.0	0.28	ug/L			06/26/19 13:06	1
o-Xylene	0.60	J	1.0	0.16	ug/L			06/26/19 13:06	1
Toluene	0.70	J	1.0	0.31	ug/L			06/26/19 13:06	1
Xylenes, Total	1.4	J	3.0	0.44	ug/L			06/26/19 13:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		80 - 120		06/26/19 13:06	1
4-Bromofluorobenzene (Surr)	96		80 - 120		06/26/19 13:06	1
Dibromofluoromethane (Surr)	100		80 - 120		06/26/19 13:06	1
Toluene-d8 (Surr)	98		80 - 120		06/26/19 13:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	820		150	70	ug/L			06/26/19 13:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		68.7 - 141		06/26/19 13:06	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)	3.3		0.27	0.12	mg/L		06/28/19 12:56	06/29/19 04:04	1

Client Sample ID: RW-8
Lab Sample ID: 590-11264-16
Date Collected: 06/18/19 10:41
Matrix: Water
Date Received: 06/20/19 13:30

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)	1.1		0.45	0.14	mg/L		06/28/19 12:56	06/29/19 04:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*96*		*50 - 150*	*06/28/19 12:56*	*06/29/19 04:04*	*1*
n-Triacontane-d62	*94*		*50 - 150*	*06/28/19 12:56*	*06/29/19 04:04*	*1*

Client Sample ID: FW-5R
Lab Sample ID: 590-11264-17
Date Collected: 06/18/19 11:05
Matrix: Water
Date Received: 06/20/19 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.81		0.40	0.093	ug/L			06/26/19 13:28	1
Ethylbenzene	0.40	J	1.0	0.20	ug/L			06/26/19 13:28	1
m,p-Xylene	ND		2.0	0.28	ug/L			06/26/19 13:28	1
o-Xylene	ND		1.0	0.16	ug/L			06/26/19 13:28	1
Toluene	0.50	J	1.0	0.31	ug/L			06/26/19 13:28	1
Xylenes, Total	ND		3.0	0.44	ug/L			06/26/19 13:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*06/26/19 13:28*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*06/26/19 13:28*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 120*		*06/26/19 13:28*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*06/26/19 13:28*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	820		150	70	ug/L			06/26/19 13:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*68.7 - 141*		*06/26/19 13:28*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	2.3		0.084	0.050	ug/L		06/25/19 10:22	06/25/19 13:24	1
2-Methylnaphthalene	240		3.4	1.7	ug/L		06/25/19 10:22	06/25/19 15:16	40
1-Methylnaphthalene	280		3.4	0.86	ug/L		06/25/19 10:22	06/25/19 15:16	40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*78*		*36 - 126*	*06/25/19 10:22*	*06/25/19 13:24*	*1*
Nitrobenzene-d5	*120*		*36 - 126*	*06/25/19 10:22*	*06/25/19 15:16*	*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)	7.0		0.23	0.10	mg/L		06/26/19 14:24	06/29/19 02:25	1
Residual Range Organics (RRO) (C25-C36)	0.95		0.38	0.11	mg/L		06/26/19 14:24	06/29/19 02:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*113*		*50 - 150*	*06/26/19 14:24*	*06/29/19 02:25*	*1*
n-Triacontane-d62	*105*		*50 - 150*	*06/26/19 14:24*	*06/29/19 02:25*	*1*

Client Sample ID: RR-2
Lab Sample ID: 590-11264-18
Date Collected: 06/18/19 13:15
Matrix: Water
Date Received: 06/20/19 13:30

Method: 8260C - 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			06/26/19 13:51	1
Ethylbenzene	ND		1.0	0.20	ug/L			06/26/19 13:51	1
m,p-Xylene	ND		2.0	0.28	ug/L			06/26/19 13:51	1
o-Xylene	ND		1.0	0.16	ug/L			06/26/19 13:51	1
Toluene	ND		1.0	0.31	ug/L			06/26/19 13:51	1
Xylenes, Total	ND		3.0	0.44	ug/L			06/26/19 13:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*06/26/19 13:51*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*06/26/19 13:51*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 120*		*06/26/19 13:51*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*06/26/19 13:51*	*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			06/26/19 13:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*68.7 - 141*		*06/26/19 13:51*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.084	0.049	ug/L		06/25/19 10:22	06/25/19 13:51	1
2-Methylnaphthalene	ND		0.084	0.041	ug/L		06/25/19 10:22	06/25/19 13:51	1
1-Methylnaphthalene	ND		0.084	0.021	ug/L		06/25/19 10:22	06/25/19 13:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*82*		*36 - 126*	*06/25/19 10:22*	*06/25/19 13:51*	*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		0.22	0.10	mg/L		06/28/19 12:56	06/29/19 04:24	1
Residual Range Organics (RRO) (C25-C36)	ND		0.37	0.11	mg/L		06/28/19 12:56	06/29/19 04:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*89*		*50 - 150*	*06/28/19 12:56*	*06/29/19 04:24*	*1*
n-Triacontane-d62	*82*		*50 - 150*	*06/28/19 12:56*	*06/29/19 04:24*	*1*

Client Sample ID: B-25
Lab Sample ID: 590-11264-19
Date Collected: 06/18/19 14:20
Matrix: Water
Date Received: 06/20/19 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**36**		0.40	0.093	ug/L			06/26/19 14:14	1
Ethylbenzene	**0.50**	**J**	1.0	0.20	ug/L			06/26/19 14:14	1
m,p-Xylene	**2.0**		2.0	0.28	ug/L			06/26/19 14:14	1
o-Xylene	**0.30**	**J**	1.0	0.16	ug/L			06/26/19 14:14	1
Toluene	**1.4**		1.0	0.31	ug/L			06/26/19 14:14	1
Xylenes, Total	**2.3**	**J**	3.0	0.44	ug/L			06/26/19 14:14	1

Client Sample ID: B-25
Lab Sample ID: 590-11264-19
Date Collected: 06/18/19 14:20
Matrix: Water
Date Received: 06/20/19 13:30

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*06/26/19 14:14*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*06/26/19 14:14*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 120*		*06/26/19 14:14*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*06/26/19 14:14*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**1400**		150	70	ug/L			06/26/19 14:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*68.7 - 141*		*06/26/19 14:14*	*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)	**0.88**		0.23	0.11	mg/L		06/28/19 12:56	06/29/19 04:43	1
Residual Range Organics (RRO) (C25-C36)	ND		0.38	0.11	mg/L		06/28/19 12:56	06/29/19 04:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*97*		*50 - 150*	*06/28/19 12:56*	*06/29/19 04:43*	*1*
n-Triacontane-d62	*88*		*50 - 150*	*06/28/19 12:56*	*06/29/19 04:43*	*1*

Client Sample ID: B-34
Lab Sample ID: 590-11264-20
Date Collected: 06/18/19 15:10
Matrix: Water
Date Received: 06/20/19 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**190**		8.0	1.9	ug/L			06/26/19 14:37	20
Ethylbenzene	**10**	**J**	20	4.0	ug/L			06/26/19 14:37	20
m,p-Xylene	ND		40	5.6	ug/L			06/26/19 14:37	20
o-Xylene	ND		20	3.2	ug/L			06/26/19 14:37	20
Toluene	ND		20	6.2	ug/L			06/26/19 14:37	20
Xylenes, Total	ND		60	8.8	ug/L			06/26/19 14:37	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*06/26/19 14:37*	*20*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*06/26/19 14:37*	*20*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*06/26/19 14:37*	*20*
Toluene-d8 (Surr)	*102*		*80 - 120*		*06/26/19 14:37*	*20*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**1900**	**J**	3000	1400	ug/L			06/26/19 14:37	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*68.7 - 141*		*06/26/19 14:37*	*20*

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)	**24**		0.23	0.11	mg/L		06/28/19 12:56	06/29/19 05:03	1

Client: AECOM
Job ID: 590-11264-1
Project/Site: Tacoma D St Terminal-Phillips 66/Quarter

Client Sample ID: B-34
Lab Sample ID: 590-11264-20
Date Collected: 06/18/19 15:10
Matrix: Water
Date Received: 06/20/19 13:30

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)	3.0		0.39	0.12	mg/L		06/28/19 12:56	06/29/19 05:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*129*		*50 - 150*	*06/28/19 12:56*	*06/29/19 05:03*	*1*
n-Triacontane-d62	*108*		*50 - 150*	*06/28/19 12:56*	*06/29/19 05:03*	*1*

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

Lab Sample ID: MB 590-22737/5
Matrix: Water
Analysis Batch: 22737

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40	0.093	ug/L			06/25/19 13:27	1
Ethylbenzene	ND		1.0	0.20	ug/L			06/25/19 13:27	1
m,p-Xylene	ND		2.0	0.28	ug/L			06/25/19 13:27	1
o-Xylene	ND		1.0	0.16	ug/L			06/25/19 13:27	1
Toluene	ND		1.0	0.31	ug/L			06/25/19 13:27	1
Xylenes, Total	ND		3.0	0.44	ug/L			06/25/19 13:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*06/25/19 13:27*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*06/25/19 13:27*	*1*
Dibromofluoromethane (Surr)	*111*		*80 - 120*		*06/25/19 13:27*	*1*
Toluene-d8 (Surr)	*108*		*80 - 120*		*06/25/19 13:27*	*1*

Lab Sample ID: LCS 590-22737/1003
Matrix: Water
Analysis Batch: 22737

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	9.96		ug/L		100	80 - 126
Ethylbenzene	10.0	9.87		ug/L		99	80 - 120
m,p-Xylene	10.0	9.72		ug/L		97	80 - 120
o-Xylene	10.0	8.92		ug/L		89	80 - 120
Toluene	10.0	10.1		ug/L		101	80 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: LCSD 590-22737/6
Matrix: Water
Analysis Batch: 22737

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	10.0	9.96		ug/L		100	80 - 126	0	25
Ethylbenzene	10.0	10.1		ug/L		101	80 - 120	2	25
m,p-Xylene	10.0	10.1		ug/L		101	80 - 120	4	25
o-Xylene	10.0	9.66		ug/L		97	80 - 120	8	25
Toluene	10.0	10.4		ug/L		104	80 - 123	3	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

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

Lab Sample ID: 590-11264-1 MS
Matrix: Water
Analysis Batch: 22737

Client Sample ID: T-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	ND		10.0	11.2		ug/L		112	80 - 126
Ethylbenzene	ND		10.0	11.2		ug/L		112	80 - 120
m,p-Xylene	ND		10.0	11.7		ug/L		117	80 - 120
o-Xylene	ND		10.0	10.5		ug/L		105	80 - 120
Toluene	ND		10.0	11.8		ug/L		118	80 - 123

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*106*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: 590-11264-1 MSD
Matrix: Water
Analysis Batch: 22737

Client Sample ID: T-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	ND		10.0	11.1		ug/L		111	80 - 126	1	25
Ethylbenzene	ND		10.0	10.8		ug/L		108	80 - 120	3	25
m,p-Xylene	ND		10.0	10.7		ug/L		107	80 - 120	8	25
o-Xylene	ND		10.0	10.4		ug/L		104	80 - 120	1	25
Toluene	ND		10.0	11.0		ug/L		110	80 - 123	7	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*107*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: MB 590-22751/5
Matrix: Water
Analysis Batch: 22751

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40	0.093	ug/L			06/26/19 11:36	1
Ethylbenzene	ND		1.0	0.20	ug/L			06/26/19 11:36	1
m,p-Xylene	ND		2.0	0.28	ug/L			06/26/19 11:36	1
o-Xylene	ND		1.0	0.16	ug/L			06/26/19 11:36	1
Toluene	ND		1.0	0.31	ug/L			06/26/19 11:36	1
Xylenes, Total	ND		3.0	0.44	ug/L			06/26/19 11:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*06/26/19 11:36*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*06/26/19 11:36*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*06/26/19 11:36*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*06/26/19 11:36*	*1*

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

Lab Sample ID: LCS 590-22751/1003
Matrix: Water
Analysis Batch: 22751

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			10.0	9.59		ug/L		96	80 - 126		
Ethylbenzene			10.0	9.34		ug/L		93	80 - 120		
m,p-Xylene			10.0	9.27		ug/L		93	80 - 120		
o-Xylene			10.0	8.97		ug/L		90	80 - 120		
Toluene			10.0	9.62		ug/L		96	80 - 123		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Dibromofluoromethane (Surr)	*107*		*80 - 120*
Toluene-d8 (Surr)	*97*		*80 - 120*

Lab Sample ID: LCSD 590-22751/6
Matrix: Water
Analysis Batch: 22751

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			10.0	10.2		ug/L		102	80 - 126	6	25
Ethylbenzene			10.0	9.80		ug/L		98	80 - 120	5	25
m,p-Xylene			10.0	9.75		ug/L		98	80 - 120	5	25
o-Xylene			10.0	9.31		ug/L		93	80 - 120	4	25
Toluene			10.0	10.1		ug/L		101	80 - 123	5	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*
Dibromofluoromethane (Surr)	*105*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

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

Lab Sample ID: MB 590-22738/5
Matrix: Water
Analysis Batch: 22738

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70	ug/L			06/25/19 13:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*68.7 - 141*		*06/25/19 13:27*	*1*

Lab Sample ID: LCS 590-22738/1004
Matrix: Water
Analysis Batch: 22738

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			1000	874		ug/L		87	80 - 120		

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

Lab Sample ID: LCS 590-22738/1004
Matrix: Water
Analysis Batch: 22738

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

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*68.7 - 141*

Lab Sample ID: LCSD 590-22738/1013
Matrix: Water
Analysis Batch: 22738

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			1000	936		ug/L		94	80 - 120	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*68.7 - 141*

Lab Sample ID: 590-11264-1 MS
Matrix: Water
Analysis Batch: 22738

Client Sample ID: T-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	99	J F2	1000	784		ug/L		69	55.6 - 126

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*68.7 - 141*

Lab Sample ID: 590-11264-1 MSD
Matrix: Water
Analysis Batch: 22738

Client Sample ID: T-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	99	J F2	1000	984	F2	ug/L		88	55.6 - 126	23	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*68.7 - 141*

Lab Sample ID: MB 590-22752/5
Matrix: Water
Analysis Batch: 22752

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70	ug/L			06/26/19 11:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*68.7 - 141*		*06/26/19 11:36*	*1*

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

Lab Sample ID: LCS 590-22752/1004
Matrix: Water
Analysis Batch: 22752

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			1000	920		ug/L		92	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*68.7 - 141*

Lab Sample ID: LCSD 590-22752/1014
Matrix: Water
Analysis Batch: 22752

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			1000	879		ug/L		88	80 - 120	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*68.7 - 141*

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

Lab Sample ID: MB 590-22730/1-A
Matrix: Water
Analysis Batch: 22729

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 22730

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.090	0.053	ug/L		06/25/19 10:22	06/25/19 11:38	1
2-Methylnaphthalene	ND		0.090	0.044	ug/L		06/25/19 10:22	06/25/19 11:38	1
1-Methylnaphthalene	ND		0.090	0.023	ug/L		06/25/19 10:22	06/25/19 11:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*78*		*36 - 126*	*06/25/19 10:22*	*06/25/19 11:38*	*1*

Lab Sample ID: LCS 590-22730/2-A
Matrix: Water
Analysis Batch: 22729

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 22730

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Naphthalene			1.60	1.03		ug/L		64	52 - 120		
2-Methylnaphthalene			1.60	1.02		ug/L		64	44 - 120		
1-Methylnaphthalene			1.60	1.09		ug/L		68	49 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5	*79*		*36 - 126*

Lab Sample ID: LCSD 590-22730/3-A
Matrix: Water
Analysis Batch: 22729

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 22730

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Naphthalene			1.60	0.936		ug/L		58	52 - 120	9	30
2-Methylnaphthalene			1.60	0.954		ug/L		60	44 - 120	7	35

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

Lab Sample ID: LCSD 590-22730/3-A
Matrix: Water
Analysis Batch: 22729

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 22730

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1-Methylnaphthalene			1.60	0.970		ug/L		61	49 - 120	12	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Nitrobenzene-d5	*76*		*36 - 126*

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

Lab Sample ID: MB 590-22762/1-A
Matrix: Water
Analysis Batch: 22764

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 22762

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.24	0.11	mg/L		06/26/19 14:24	06/26/19 15:42	1
Residual Range Organics (RRO) (C25-C36)	ND		0.40	0.12	mg/L		06/26/19 14:24	06/26/19 15:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*85*		*50 - 150*	*06/26/19 14:24*	*06/26/19 15:42*	*1*
n-Triacontane-d62	*82*		*50 - 150*	*06/26/19 14:24*	*06/26/19 15:42*	*1*

Lab Sample ID: LCS 590-22762/2-A
Matrix: Water
Analysis Batch: 22764

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 22762

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel Range Organics (DRO) (C10-C25)			1.60	1.24		mg/L		78	50 - 150		
Residual Range Organics (RRO) (C25-C36)			1.60	1.50		mg/L		94	50 - 150		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*95*		*50 - 150*
n-Triacontane-d62	*95*		*50 - 150*

Lab Sample ID: LCSD 590-22762/3-A
Matrix: Water
Analysis Batch: 22764

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 22762

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics (DRO) (C10-C25)			1.60	1.23		mg/L		77	50 - 150	1	25
Residual Range Organics (RRO) (C25-C36)			1.60	1.53		mg/L		96	50 - 150	2	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*96*		*50 - 150*
n-Triacontane-d62	*95*		*50 - 150*

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

Lab Sample ID: MB 590-22809/1-A
Matrix: Water
Analysis Batch: 22794

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 22809

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.24	0.11	mg/L		06/28/19 12:56	06/28/19 21:08	1
Residual Range Organics (RRO) (C25-C36)	ND		0.40	0.12	mg/L		06/28/19 12:56	06/28/19 21:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*90*		*50 - 150*	*06/28/19 12:56*	*06/28/19 21:08*	*1*
n-Triacontane-d62	*90*		*50 - 150*	*06/28/19 12:56*	*06/28/19 21:08*	*1*

Lab Sample ID: LCS 590-22809/2-A
Matrix: Water
Analysis Batch: 22794

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 22809

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics (DRO) (C10-C25)	1.60	1.35		mg/L		84	50 - 150
Residual Range Organics (RRO) (C25-C36)	1.60	1.64		mg/L		103	50 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*101*		*50 - 150*
n-Triacontane-d62	*104*		*50 - 150*

Lab Sample ID: LCSD 590-22809/3-A
Matrix: Water
Analysis Batch: 22794

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 22809

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics (DRO) (C10-C25)	1.60	1.24		mg/L		77	50 - 150	8	25
Residual Range Organics (RRO) (C25-C36)	1.60	1.62		mg/L		101	50 - 150	2	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*99*		*50 - 150*
n-Triacontane-d62	*101*		*50 - 150*

Lab Sample ID: 590-11264-1 MS
Matrix: Water
Analysis Batch: 22794

Client Sample ID: T-2
Prep Type: Total/NA
Prep Batch: 22809

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics (DRO) (C10-C25)	0.22	J	1.49	1.53		mg/L		88	54.5 - 136
Residual Range Organics (RRO) (C25-C36)	ND		1.49	1.56		mg/L		104	50 - 150

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
o-Terphenyl	*101*		*50 - 150*

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

Lab Sample ID: 590-11264-1 MS
Matrix: Water
Analysis Batch: 22794

Client Sample ID: T-2
Prep Type: Total/NA
Prep Batch: 22809

Surrogate	MS %Recovery	MS Qualifier	Limits
n-Triacontane-d62	*101*		*50 - 150*

Lab Sample ID: 590-11264-1 MSD
Matrix: Water
Analysis Batch: 22794

Client Sample ID: T-2
Prep Type: Total/NA
Prep Batch: 22809

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics (DRO) (C10-C25)	0.22	J	1.49	1.56		mg/L		89	54.5 - 136	2	32.5
Residual Range Organics (RRO) (C25-C36)	ND		1.49	1.58		mg/L		106	50 - 150	2	25

Surrogate	MSD %Recovery	MSD Qualifier	Limits
o-Terphenyl	*103*		*50 - 150*
n-Triacontane-d62	*102*		*50 - 150*

GC/MS VOA

Analysis Batch: 22737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11264-1	T-2	Total/NA	Water	8260C	
590-11264-2	DMW-4	Total/NA	Water	8260C	
590-11264-3	RR-1	Total/NA	Water	8260C	
590-11264-4	RR-5	Total/NA	Water	8260C	
590-11264-5	RR-4	Total/NA	Water	8260C	
590-11264-6	E-22	Total/NA	Water	8260C	
590-11264-7	B-31	Total/NA	Water	8260C	
590-11264-8	HC-111	Total/NA	Water	8260C	
590-11264-9	FW-13	Total/NA	Water	8260C	
590-11264-10	Trip Blank	Total/NA	Water	8260C	
590-11264-11	HC-11-DUP	Total/NA	Water	8260C	
590-11264-12	RW-5R	Total/NA	Water	8260C	
590-11264-13	FW-14	Total/NA	Water	8260C	
MB 590-22737/5	Method Blank	Total/NA	Water	8260C	
LCS 590-22737/1003	Lab Control Sample	Total/NA	Water	8260C	
LCSD 590-22737/6	Lab Control Sample Dup	Total/NA	Water	8260C	
590-11264-1 MS	T-2	Total/NA	Water	8260C	
590-11264-1 MSD	T-2	Total/NA	Water	8260C	

Analysis Batch: 22738

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11264-1	T-2	Total/NA	Water	NWTPH-Gx	
590-11264-2	DMW-4	Total/NA	Water	NWTPH-Gx	
590-11264-3	RR-1	Total/NA	Water	NWTPH-Gx	
590-11264-4	RR-5	Total/NA	Water	NWTPH-Gx	
590-11264-5	RR-4	Total/NA	Water	NWTPH-Gx	
590-11264-6	E-22	Total/NA	Water	NWTPH-Gx	
590-11264-7	B-31	Total/NA	Water	NWTPH-Gx	
590-11264-8	HC-111	Total/NA	Water	NWTPH-Gx	
590-11264-9	FW-13	Total/NA	Water	NWTPH-Gx	
590-11264-11	HC-11-DUP	Total/NA	Water	NWTPH-Gx	
590-11264-12	RW-5R	Total/NA	Water	NWTPH-Gx	
590-11264-13	FW-14	Total/NA	Water	NWTPH-Gx	
590-11264-14	DMW-2	Total/NA	Water	NWTPH-Gx	
MB 590-22738/5	Method Blank	Total/NA	Water	NWTPH-Gx	
LCS 590-22738/1004	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
LCSD 590-22738/1013	Lab Control Sample Dup	Total/NA	Water	NWTPH-Gx	
590-11264-1 MS	T-2	Total/NA	Water	NWTPH-Gx	
590-11264-1 MSD	T-2	Total/NA	Water	NWTPH-Gx	

Analysis Batch: 22751

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11264-8	HC-111	Total/NA	Water	8260C	
590-11264-14	DMW-2	Total/NA	Water	8260C	
590-11264-15	RW-5R-DUP	Total/NA	Water	8260C	
590-11264-16	RW-8	Total/NA	Water	8260C	
590-11264-17	FW-5R	Total/NA	Water	8260C	
590-11264-18	RR-2	Total/NA	Water	8260C	
590-11264-19	B-25	Total/NA	Water	8260C	
590-11264-20	B-34	Total/NA	Water	8260C	
MB 590-22751/5	Method Blank	Total/NA	Water	8260C	

GC/MS VOA (Continued)

Analysis Batch: 22751 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 590-22751/1003	Lab Control Sample	Total/NA	Water	8260C	
LCSD 590-22751/6	Lab Control Sample Dup	Total/NA	Water	8260C	

Analysis Batch: 22752

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11264-15	RW-5R-DUP	Total/NA	Water	NWTPH-Gx	
590-11264-16	RW-8	Total/NA	Water	NWTPH-Gx	
590-11264-17	FW-5R	Total/NA	Water	NWTPH-Gx	
590-11264-18	RR-2	Total/NA	Water	NWTPH-Gx	
590-11264-19	B-25	Total/NA	Water	NWTPH-Gx	
590-11264-20	B-34	Total/NA	Water	NWTPH-Gx	
MB 590-22752/5	Method Blank	Total/NA	Water	NWTPH-Gx	
LCS 590-22752/1004	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
LCSD 590-22752/1014	Lab Control Sample Dup	Total/NA	Water	NWTPH-Gx	

GC/MS Semi VOA

Analysis Batch: 22729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11264-13	FW-14	Total/NA	Water	8270D SIM	22730
590-11264-17	FW-5R	Total/NA	Water	8270D SIM	22730
590-11264-17	FW-5R	Total/NA	Water	8270D SIM	22730
590-11264-18	RR-2	Total/NA	Water	8270D SIM	22730
MB 590-22730/1-A	Method Blank	Total/NA	Water	8270D SIM	22730
LCS 590-22730/2-A	Lab Control Sample	Total/NA	Water	8270D SIM	22730
LCSD 590-22730/3-A	Lab Control Sample Dup	Total/NA	Water	8270D SIM	22730

Prep Batch: 22730

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11264-13	FW-14	Total/NA	Water	3510C	
590-11264-17	FW-5R	Total/NA	Water	3510C	
590-11264-18	RR-2	Total/NA	Water	3510C	
MB 590-22730/1-A	Method Blank	Total/NA	Water	3510C	
LCS 590-22730/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 590-22730/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

GC Semi VOA

Prep Batch: 22762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11264-17	FW-5R	Total/NA	Water	3510C	
MB 590-22762/1-A	Method Blank	Total/NA	Water	3510C	
LCS 590-22762/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 590-22762/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 22764

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 590-22762/1-A	Method Blank	Total/NA	Water	NWTPH-Dx	22762
LCS 590-22762/2-A	Lab Control Sample	Total/NA	Water	NWTPH-Dx	22762
LCSD 590-22762/3-A	Lab Control Sample Dup	Total/NA	Water	NWTPH-Dx	22762

QC Association Summary

Client: AECOM
Job ID: 590-11264-1
Project/Site: Tacoma D St Terminal-Phillips 66/Quarter

GC Semi VOA

Analysis Batch: 22794

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11264-1	T-2	Total/NA	Water	NWTPH-Dx	22809
590-11264-2	DMW-4	Total/NA	Water	NWTPH-Dx	22809
590-11264-3	RR-1	Total/NA	Water	NWTPH-Dx	22809
590-11264-13	FW-14	Total/NA	Water	NWTPH-Dx	22809
590-11264-14	DMW-2	Total/NA	Water	NWTPH-Dx	22809
590-11264-15	RW-5R-DUP	Total/NA	Water	NWTPH-Dx	22809
590-11264-16	RW-8	Total/NA	Water	NWTPH-Dx	22809
590-11264-17	FW-5R	Total/NA	Water	NWTPH-Dx	22762
590-11264-18	RR-2	Total/NA	Water	NWTPH-Dx	22809
590-11264-19	B-25	Total/NA	Water	NWTPH-Dx	22809
590-11264-20	B-34	Total/NA	Water	NWTPH-Dx	22809
MB 590-22809/1-A	Method Blank	Total/NA	Water	NWTPH-Dx	22809
LCS 590-22809/2-A	Lab Control Sample	Total/NA	Water	NWTPH-Dx	22809
LCSD 590-22809/3-A	Lab Control Sample Dup	Total/NA	Water	NWTPH-Dx	22809
590-11264-1 MS	T-2	Total/NA	Water	NWTPH-Dx	22809
590-11264-1 MSD	T-2	Total/NA	Water	NWTPH-Dx	22809

Prep Batch: 22809

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11264-1	T-2	Total/NA	Water	3510C	
590-11264-2	DMW-4	Total/NA	Water	3510C	
590-11264-3	RR-1	Total/NA	Water	3510C	
590-11264-13	FW-14	Total/NA	Water	3510C	
590-11264-14	DMW-2	Total/NA	Water	3510C	
590-11264-15	RW-5R-DUP	Total/NA	Water	3510C	
590-11264-16	RW-8	Total/NA	Water	3510C	
590-11264-18	RR-2	Total/NA	Water	3510C	
590-11264-19	B-25	Total/NA	Water	3510C	
590-11264-20	B-34	Total/NA	Water	3510C	
MB 590-22809/1-A	Method Blank	Total/NA	Water	3510C	
LCS 590-22809/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 590-22809/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
590-11264-1 MS	T-2	Total/NA	Water	3510C	
590-11264-1 MSD	T-2	Total/NA	Water	3510C	

Lab Chronicle

Client: AECOM
Job ID: 590-11264-1
Project/Site: Tacoma D St Terminal-Phillips 66/Quarter

Client Sample ID: T-2
Lab Sample ID: 590-11264-1
Date Collected: 06/17/19 10:55
Matrix: Water
Date Received: 06/20/19 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	22737	06/25/19 17:18	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	22738	06/25/19 17:18	MRS	TAL SPK
Total/NA	Prep	3510C			264.2 mL	2 mL	22809	06/28/19 12:56	CWD	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			22794	06/28/19 22:07	NMI	TAL SPK

Client Sample ID: DMW-4
Lab Sample ID: 590-11264-2
Date Collected: 06/17/19 11:04
Matrix: Water
Date Received: 06/20/19 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	22737	06/25/19 19:11	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	22738	06/25/19 19:11	MRS	TAL SPK
Total/NA	Prep	3510C			230.7 mL	2 mL	22809	06/28/19 12:56	CWD	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			22794	06/28/19 23:26	NMI	TAL SPK

Client Sample ID: RR-1
Lab Sample ID: 590-11264-3
Date Collected: 06/17/19 12:00
Matrix: Water
Date Received: 06/20/19 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	22737	06/25/19 19:33	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	22738	06/25/19 19:33	MRS	TAL SPK
Total/NA	Prep	3510C			272.9 mL	2 mL	22809	06/28/19 12:56	CWD	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			22794	06/28/19 23:46	NMI	TAL SPK

Client Sample ID: RR-5
Lab Sample ID: 590-11264-4
Date Collected: 06/17/19 12:19
Matrix: Water
Date Received: 06/20/19 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	22737	06/25/19 19:56	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	22738	06/25/19 19:56	MRS	TAL SPK

Client Sample ID: RR-4
Lab Sample ID: 590-11264-5
Date Collected: 06/17/19 12:50
Matrix: Water
Date Received: 06/20/19 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	22737	06/25/19 20:18	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	22738	06/25/19 20:18	MRS	TAL SPK

Lab Chronicle

Client: AECOM
Job ID: 590-11264-1
Project/Site: Tacoma D St Terminal-Phillips 66/Quarter

Client Sample ID: E-22
Lab Sample ID: 590-11264-6
Date Collected: 06/17/19 13:13
Matrix: Water
Date Received: 06/20/19 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	22737	06/25/19 21:03	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	22738	06/25/19 21:03	MRS	TAL SPK

Client Sample ID: B-31
Lab Sample ID: 590-11264-7
Date Collected: 06/17/19 14:10
Matrix: Water
Date Received: 06/20/19 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	22737	06/25/19 21:25	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	22738	06/25/19 21:25	MRS	TAL SPK

Client Sample ID: HC-111
Lab Sample ID: 590-11264-8
Date Collected: 06/17/19 15:13
Matrix: Water
Date Received: 06/20/19 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	22737	06/25/19 21:47	MRS	TAL SPK
Total/NA	Analysis	8260C		10	43 mL	43 mL	22751	06/26/19 16:31	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	22738	06/25/19 21:47	MRS	TAL SPK

Client Sample ID: FW-13
Lab Sample ID: 590-11264-9
Date Collected: 06/17/19 15:23
Matrix: Water
Date Received: 06/20/19 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	22737	06/25/19 22:09	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	22738	06/25/19 22:09	MRS	TAL SPK

Client Sample ID: Trip Blank
Lab Sample ID: 590-11264-10
Date Collected: 06/17/19 08:00
Matrix: Water
Date Received: 06/20/19 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	22737	06/25/19 22:31	MRS	TAL SPK

Client Sample ID: HC-11-DUP
Lab Sample ID: 590-11264-11
Date Collected: 06/17/19 15:13
Matrix: Water
Date Received: 06/20/19 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	22737	06/25/19 22:54	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	22738	06/25/19 22:54	MRS	TAL SPK

Lab Chronicle

Client: AECOM
Job ID: 590-11264-1
Project/Site: Tacoma D St Terminal-Phillips 66/Quarter

Client Sample ID: RW-5R
Lab Sample ID: 590-11264-12
Date Collected: 06/18/19 08:53
Matrix: Water
Date Received: 06/20/19 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	22737	06/25/19 23:16	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	22738	06/25/19 23:16	MRS	TAL SPK

Client Sample ID: FW-14
Lab Sample ID: 590-11264-13
Date Collected: 06/18/19 08:55
Matrix: Water
Date Received: 06/20/19 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	22737	06/25/19 23:38	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	22738	06/25/19 23:38	MRS	TAL SPK
Total/NA	Prep	3510C			265.2 mL	2 mL	22730	06/25/19 10:22	NMI	TAL SPK
Total/NA	Analysis	8270D SIM		1			22729	06/25/19 12:58	NMI	TAL SPK
Total/NA	Prep	3510C			274.6 mL	2 mL	22809	06/28/19 12:56	CWD	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			22794	06/29/19 03:05	NMI	TAL SPK

Client Sample ID: DMW-2
Lab Sample ID: 590-11264-14
Date Collected: 06/18/19 10:00
Matrix: Water
Date Received: 06/20/19 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	22751	06/26/19 12:21	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	22738	06/26/19 00:01	MRS	TAL SPK
Total/NA	Prep	3510C			263.8 mL	2 mL	22809	06/28/19 12:56	CWD	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			22794	06/29/19 03:24	NMI	TAL SPK

Client Sample ID: RW-5R-DUP
Lab Sample ID: 590-11264-15
Date Collected: 06/18/19 08:53
Matrix: Water
Date Received: 06/20/19 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	22751	06/26/19 12:43	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	22752	06/26/19 12:43	MRS	TAL SPK
Total/NA	Prep	3510C			227.7 mL	2 mL	22809	06/28/19 12:56	CWD	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			22794	06/29/19 03:44	NMI	TAL SPK

Client Sample ID: RW-8
Lab Sample ID: 590-11264-16
Date Collected: 06/18/19 10:41
Matrix: Water
Date Received: 06/20/19 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	22751	06/26/19 13:06	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	22752	06/26/19 13:06	MRS	TAL SPK
Total/NA	Prep	3510C			221.8 mL	2 mL	22809	06/28/19 12:56	CWD	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			22794	06/29/19 04:04	NMI	TAL SPK

Lab Chronicle

Client: AECOM
Job ID: 590-11264-1
Project/Site: Tacoma D St Terminal-Phillips 66/Quarter

Client Sample ID: FW-5R
Lab Sample ID: 590-11264-17
Date Collected: 06/18/19 11:05
Matrix: Water
Date Received: 06/20/19 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	22751	06/26/19 13:28	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	22752	06/26/19 13:28	MRS	TAL SPK
Total/NA	Prep	3510C			266.3 mL	2 mL	22730	06/25/19 10:22	NMI	TAL SPK
Total/NA	Analysis	8270D SIM		1			22729	06/25/19 13:24	NMI	TAL SPK
Total/NA	Prep	3510C			266.3 mL	2 mL	22730	06/25/19 10:22	NMI	TAL SPK
Total/NA	Analysis	8270D SIM		40			22729	06/25/19 15:16	NMI	TAL SPK
Total/NA	Prep	3510C			264.9 mL	2 mL	22762	06/26/19 14:24	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			22794	06/29/19 02:25	NMI	TAL SPK

Client Sample ID: RR-2
Lab Sample ID: 590-11264-18
Date Collected: 06/18/19 13:15
Matrix: Water
Date Received: 06/20/19 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	22751	06/26/19 13:51	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	22752	06/26/19 13:51	MRS	TAL SPK
Total/NA	Prep	3510C			268.5 mL	2 mL	22730	06/25/19 10:22	NMI	TAL SPK
Total/NA	Analysis	8270D SIM		1			22729	06/25/19 13:51	NMI	TAL SPK
Total/NA	Prep	3510C			271.1 mL	2 mL	22809	06/28/19 12:56	CWD	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			22794	06/29/19 04:24	NMI	TAL SPK

Client Sample ID: B-25
Lab Sample ID: 590-11264-19
Date Collected: 06/18/19 14:20
Matrix: Water
Date Received: 06/20/19 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	22751	06/26/19 14:14	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	22752	06/26/19 14:14	MRS	TAL SPK
Total/NA	Prep	3510C			261.7 mL	2 mL	22809	06/28/19 12:56	CWD	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			22794	06/29/19 04:43	NMI	TAL SPK

Client Sample ID: B-34
Lab Sample ID: 590-11264-20
Date Collected: 06/18/19 15:10
Matrix: Water
Date Received: 06/20/19 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		20	43 mL	43 mL	22751	06/26/19 14:37	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		20	43 mL	43 mL	22752	06/26/19 14:37	MRS	TAL SPK
Total/NA	Prep	3510C			255.8 mL	2 mL	22809	06/28/19 12:56	CWD	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			22794	06/29/19 05:03	NMI	TAL SPK

Laboratory References:

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

Definitions/Glossary

Client: AECOM
Job ID: 590-11264-1
Project/Site: Tacoma D St Terminal-Phillips 66/Quarter

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
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.

GC Semi VOA

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

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Accreditation/Certification Summary

Client: AECOM
Job ID: 590-11264-1
Project/Site: Tacoma D St Terminal-Phillips 66/Quarter

Laboratory: Eurofins TestAmerica, Spokane

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C569	01-06-20

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

Shell Oil Products US Chain Of Custody Record

AECOM

LAB (LOCATION)
☐ ACCUTEST (_____)
☐ CALSCIENCE (_____)
☐ TESTAMERICA (_____)
☐ Other (_____)
Lab Vendor # Dropdown

Please Check Appropriate Box:
☐ SGW FDG ☐ PIPELINE ☐ RETAIL
☐ CHEMICALS ☐ CONSULTANT ☐ LUBES
☐ TRANSPORTATION ☐ OTHER

Print Bill To Contact Name: Tyler Henry
PO #
PlaNet Site or Project ID
GSAP Project ID
☐ CHECK IF NO INCIDENT # APPLIES
DATE: 6/18/2019
PAGE: 1 of 2

SAMPLING COMPANY: AECOM
LOG CODE:
SITE ADDRESS: Street and City: 520 D Street, Tacoma WA
State: WA
AECOM Project / Task Number:
ADDRESS: 111 SW Columbia Ste 1500 Portland, OR
EDF DELIVERABLE TO (Name, Company, Office Location):
PHONE NO.: (503) 222-7200
E-MAIL: Tyler.Henry@aecom.com
AECOM Other ID:
PROJECT CONTACT (Hardcopy or PDF Report to): Tyler Henry
TELEPHONE: (503) 222-7200
FAX:
Bill To Contact E-MAIL: Tyler.Henry@AECOM.com
SAMPLER NAME(S) (Print): R. Tortorello + M. Tauscher
LAB USE ONLY

TURNAROUND TIME (CALENDAR DAYS):
☑ STANDARD (14 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:

DELIVERABLES: ☐ LEVEL 1 ☐ LEVEL 2 ☐ LEVEL 3 ☐ LEVEL 4 ☐ OTHER (SPECIFY) _____

TEMPERATURE ON RECEIPT C° Cooler #1 Cooler #2 Cooler #3

SPECIAL INSTRUCTIONS OR NOTES :
☐ SHELL CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☐ RECEIPT VERIFICATION REQUESTED
☐ PROVIDE LEDD DISK

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	UNIT COST 8260B	NWTPH-Gx	NWTPH-Dx	NON-UNIT COST 8270SIM	FIELD NOTES:
	T-2	6/17	1055	W	X					9	X	X	X		MS/MSD on T2
	DMW-4		1104	W	X					3	X	X	X		
	RR-1		1200	W	X					3	X	X	X		MS/MSD
	RR-5		1219	W	X					3	X	X	X		
	RR-4		1250	W	X					3	X	X	X		
	E-22		13.13	W	X					3	X	X	X		
	B-31		14.10	W	X					3	X	X	X		
	HC-111		15.13	W	X					3	X	X	X		
	FW-13	↓	1525	W	X					3	X	X	X		
	Trip blank	—	—	W	X					2	X				

Therm. ID: 4 Cor: 5.7 ° Unc: 6.0 °
Cooler Dsc: LB
Packing: Bub
Cust. Seal: Yes ___ No X
Blue Ice, Wet, Dry, None
FedEx: ___
UPS: ___
Lab Cour: ___
Other: CD

Therm. ID: 5 Cor: 4.3 ° Unc: 4.3 °
Cooler Dsc: LB
Packing: Bub
Cust. Seal: Yes ___ No X
Blue Ice, Wet, Dry, None
FedEx: ___
UPS: ___
Lab Cour: ___
Other: CD

TEMPERATURE ON RECEIPT C°
Container PID Readings or Laboratory Notes

590-11264 Chain of Custody

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
[signature]	[signature]	6/18/2019	16:05
	[signature]	6.18.19	1607
	Maria O'Toole	6/20/19	13:30

Version: 14Dec15

2.5°C 3.7°C

Shell Oil Products US Chain Of Custody Record

AECOM

LAB (LOCATION)
- ☐ ACCUTEST (_____)
- ☐ CALSCIENCE (_____)
- ☐ TESTAMERICA (_____)
- ☐ Other (_____)

Lab Vendor # Dropdown

Please Check Appropriate Box:
- ☐ SGW FDG ☐ PIPELINE ☐ RETAIL
- ☐ CHEMICALS ☐ CONSULTANT ☐ LUBES
- ☐ TRANSPORTATION ☐ OTHER

Print Bill To Contact Name:

PlaNet Site or Project ID

PO #

GSAP Project ID

☐ CHECK IF NO INCIDENT # APPLIES

DATE: 6/18/2019

PAGE: 2 of 2

SAMPLING COMPANY: AECOM

LOG CODE:

SITE ADDRESS: Street and City: 520 D Street, Tacoma

State: WA

AECOM Project / Task Number:

ADDRESS: 111 SW Columbia Ste 1500

EDF DELIVERABLE TO (Name, Company, Office Location):

PHONE NO.: (503) 222-7200

E-MAIL: Tyler.Hemry@AECOM.com

AECOM Other ID:

PROJECT CONTACT (Hardcopy or PDF Report to): Tyler Hemry

SAMPLER NAME(S) (Print): R. Torturello + M. Tauscher

LAB USE ONLY

TELEPHONE: (503) 222-7200

FAX:

Bill To Contact E-MAIL: TYLER.HEMRY@AECOM.COM

TURNAROUND TIME (CALENDAR DAYS):
☐ STANDARD (14 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:

DELIVERABLES: ☐ LEVEL 1 ☐ LEVEL 2 ☐ LEVEL 3 ☐ LEVEL 4 ☐ OTHER (SPECIFY) _____

TEMPERATURE ON RECEIPT C° Cooler #1 Cooler #2 Cooler #3

SPECIAL INSTRUCTIONS OR NOTES:
- ☐ SHELL CONTRACT RATE APPLIES
- ☐ STATE REIMBURSEMENT RATE APPLIES
- ☒ EDD NOT NEEDED
- ☐ RECEIPT VERIFICATION REQUESTED
- ☐ PROVIDE LEDD DISK

REQUESTED ANALYSIS

UNIT COST: 8260B; NWTPH-Gx; NWTPH-Dx; 8270 SIM

NON-UNIT COST

FIELD NOTES:

TEMPERATURE ON RECEIPT C°

Container PID Readings or Laboratory Notes

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	8260B	NWTPH-Gx	NWTPH-Dx	8270 SIM
	HC-111-DUP	6/17	15:13	W	X					3	X	X	X	
	RW-5R	6/18	08:53		X					3	X	X	X	
	FW-14		08:55		X					5	X	X	X	X
	DMW-2		10:00		X					3	X	X	X	
	RW-5R-DUP		08:55		X					3	X	X	X	
	RW-8		10:41		X					3	X	X	X	
	FW-5R		11:05		X					5	X	X	X	X
	RR-2		1315		X					5	X	X	X	X
	B-25		1420		X					3	X	X	X	
	B-34		1510		X					3	X	X	X	

Relinquished by: (Signature) 6/18/2019 1605	Received by: (Signature)	Date: 6-18-19	Time: 1605
Relinquished by: (Signature)	Received by: (Signature) Maria Lydon	Date: 6/20/19	Time: 15:30
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

Version: 14Dec15

2.5°C 3.7°C

Login Sample Receipt Checklist

Client: AECOM

Job Number: 590-11264-1

Login Number: 11264
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.	N/A	Not present
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.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	False	Refer to Job Narrative for details.
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.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 590-11465-1
Client Project/Site: Tacoma D St Terminal-Phillips 66

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

Attn: Mr. Tyler Hemry

Authorized for release by:
7/30/2019 9:27:26 AM

Randee Arrington, Project Manager II
(509)924-9200
randee.arrington@testamericainc.com

Table of Contents

Case Narrative

Client: AECOM
Job ID: 590-11465-1
Project/Site: Tacoma D St Terminal-Phillips 66

Job ID: 590-11465-1

Laboratory: Eurofins TestAmerica, Spokane

Narrative

Receipt
The samples were received on 7/24/2019 9:38 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.4º C.

GC Semi VOA
Method NWTPH-Dx: Detected hydrocarbons appear to be due to weathered diesel in the following samples: FW-13 (590-11465-3) and E-22 (590-11465-4).

Method NWTPH-Dx: Detected hydrocarbons appear to be due to gasoline overlap as well as heavily weathered diesel in the following samples: RW-5R (590-11465-1), HC-111 (590-11465-2), B-31 (590-11465-5), RR-5 (590-11465-7) and HC-111-DUP (590-11465-8).

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.

Sample Summary

Client: AECOM
Job ID: 590-11465-1
Project/Site: Tacoma D St Terminal-Phillips 66

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
590-11465-1	RW-5R	Water	07/22/19 10:20	07/24/19 09:48	
590-11465-2	HC-111	Water	07/22/19 10:43	07/24/19 09:48	
590-11465-3	FW-13	Water	07/22/19 11:25	07/24/19 09:48	
590-11465-4	E-22	Water	07/22/19 12:35	07/24/19 09:48	
590-11465-5	B-31	Water	07/22/19 13:14	07/24/19 09:48	
590-11465-6	RR-4	Water	07/22/19 15:00	07/24/19 09:48	
590-11465-7	RR-5	Water	07/22/19 15:30	07/24/19 09:48	
590-11465-8	HC-111-DUP	Water	07/22/19 10:45	07/24/19 09:48	

Method Summary

Client: AECOM
Job ID: 590-11465-1
Project/Site: Tacoma D St Terminal-Phillips 66

Method	Method Description	Protocol	Laboratory
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	TAL SPK
3510C	Liquid-Liquid Extraction (Separatory Funnel)	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: 590-11465-1
Project/Site: Tacoma D St Terminal-Phillips 66

Client Sample ID: RW-5R — Lab Sample ID: 590-11465-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics (DRO) (C10-C25)	0.87		0.25	0.11	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.16	J	0.42	0.12	mg/L	1		NWTPH-Dx	Total/NA

Client Sample ID: HC-111 — Lab Sample ID: 590-11465-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics (DRO) (C10-C25)	9.2		0.26	0.12	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.87		0.43	0.13	mg/L	1		NWTPH-Dx	Total/NA

Client Sample ID: FW-13 — Lab Sample ID: 590-11465-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics (DRO) (C10-C25)	0.37		0.24	0.11	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.12	J	0.41	0.12	mg/L	1		NWTPH-Dx	Total/NA

Client Sample ID: E-22 — Lab Sample ID: 590-11465-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics (DRO) (C10-C25)	2.0		0.25	0.11	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.27	J	0.41	0.12	mg/L	1		NWTPH-Dx	Total/NA

Client Sample ID: B-31 — Lab Sample ID: 590-11465-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics (DRO) (C10-C25)	4.4		0.27	0.12	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.50		0.45	0.14	mg/L	1		NWTPH-Dx	Total/NA

Client Sample ID: RR-4 — Lab Sample ID: 590-11465-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics (DRO) (C10-C25)	0.21	J	0.26	0.12	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.33	J	0.43	0.13	mg/L	1		NWTPH-Dx	Total/NA

Client Sample ID: RR-5 — Lab Sample ID: 590-11465-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics (DRO) (C10-C25)	0.29		0.24	0.11	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.16	J	0.41	0.12	mg/L	1		NWTPH-Dx	Total/NA

Client Sample ID: HC-111-DUP — Lab Sample ID: 590-11465-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics (DRO) (C10-C25)	9.4		0.26	0.12	mg/L	1		NWTPH-Dx	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Spokane

Detection Summary

Client: AECOM
Job ID: 590-11465-1
Project/Site: Tacoma D St Terminal-Phillips 66

Client Sample ID: HC-111-DUP (Continued)
Lab Sample ID: 590-11465-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Residual Range Organics (RRO) (C25-C36)	0.86		0.43	0.13	mg/L	1		NWTPH-Dx	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: RW-5R
Lab Sample ID: 590-11465-1
Date Collected: 07/22/19 10:20
Matrix: Water
Date Received: 07/24/19 09:48

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)	0.87		0.25	0.11	mg/L		07/26/19 09:00	07/26/19 12:42	1
Residual Range Organics (RRO) (C25-C36)	0.16	J	0.42	0.12	mg/L		07/26/19 09:00	07/26/19 12:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*90*		*50 - 150*	*07/26/19 09:00*	*07/26/19 12:42*	*1*
n-Triacontane-d62	*89*		*50 - 150*	*07/26/19 09:00*	*07/26/19 12:42*	*1*

Client Sample ID: HC-111
Lab Sample ID: 590-11465-2
Date Collected: 07/22/19 10:43
Matrix: Water
Date Received: 07/24/19 09:48

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)	9.2		0.26	0.12	mg/L		07/26/19 09:00	07/26/19 13:03	1
Residual Range Organics (RRO) (C25-C36)	0.87		0.43	0.13	mg/L		07/26/19 09:00	07/26/19 13:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*108*		*50 - 150*	*07/26/19 09:00*	*07/26/19 13:03*	*1*
n-Triacontane-d62	*98*		*50 - 150*	*07/26/19 09:00*	*07/26/19 13:03*	*1*

Client Sample ID: FW-13
Lab Sample ID: 590-11465-3
Date Collected: 07/22/19 11:25
Matrix: Water
Date Received: 07/24/19 09:48

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)	0.37		0.24	0.11	mg/L		07/26/19 09:00	07/26/19 13:23	1
Residual Range Organics (RRO) (C25-C36)	0.12	J	0.41	0.12	mg/L		07/26/19 09:00	07/26/19 13:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*96*		*50 - 150*	*07/26/19 09:00*	*07/26/19 13:23*	*1*
n-Triacontane-d62	*97*		*50 - 150*	*07/26/19 09:00*	*07/26/19 13:23*	*1*

Client Sample ID: E-22
Lab Sample ID: 590-11465-4
Date Collected: 07/22/19 12:35
Matrix: Water
Date Received: 07/24/19 09:48

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)	2.0		0.25	0.11	mg/L		07/26/19 09:00	07/26/19 13:44	1
Residual Range Organics (RRO) (C25-C36)	0.27	J	0.41	0.12	mg/L		07/26/19 09:00	07/26/19 13:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*110*		*50 - 150*	*07/26/19 09:00*	*07/26/19 13:44*	*1*
n-Triacontane-d62	*108*		*50 - 150*	*07/26/19 09:00*	*07/26/19 13:44*	*1*

Client Sample ID: B-31
Lab Sample ID: 590-11465-5
Date Collected: 07/22/19 13:14
Matrix: Water
Date Received: 07/24/19 09:48

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)	4.4		0.27	0.12	mg/L		07/26/19 09:00	07/26/19 14:04	1
Residual Range Organics (RRO) (C25-C36)	0.50		0.45	0.14	mg/L		07/26/19 09:00	07/26/19 14:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*104*		*50 - 150*	*07/26/19 09:00*	*07/26/19 14:04*	*1*
n-Triacontane-d62	*96*		*50 - 150*	*07/26/19 09:00*	*07/26/19 14:04*	*1*

Client Sample ID: RR-4
Lab Sample ID: 590-11465-6
Date Collected: 07/22/19 15:00
Matrix: Water
Date Received: 07/24/19 09:48

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)	0.21	J	0.26	0.12	mg/L		07/26/19 09:00	07/26/19 14:25	1
Residual Range Organics (RRO) (C25-C36)	0.33	J	0.43	0.13	mg/L		07/26/19 09:00	07/26/19 14:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*97*		*50 - 150*	*07/26/19 09:00*	*07/26/19 14:25*	*1*
n-Triacontane-d62	*109*		*50 - 150*	*07/26/19 09:00*	*07/26/19 14:25*	*1*

Client Sample ID: RR-5
Lab Sample ID: 590-11465-7
Date Collected: 07/22/19 15:30
Matrix: Water
Date Received: 07/24/19 09:48

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)	0.29		0.24	0.11	mg/L		07/26/19 09:00	07/26/19 14:45	1
Residual Range Organics (RRO) (C25-C36)	0.16	J	0.41	0.12	mg/L		07/26/19 09:00	07/26/19 14:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*98*		*50 - 150*	*07/26/19 09:00*	*07/26/19 14:45*	*1*
n-Triacontane-d62	*98*		*50 - 150*	*07/26/19 09:00*	*07/26/19 14:45*	*1*

Client Sample ID: HC-111-DUP
Lab Sample ID: 590-11465-8
Date Collected: 07/22/19 10:45
Matrix: Water
Date Received: 07/24/19 09:48

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)	9.4		0.26	0.12	mg/L		07/26/19 09:00	07/26/19 15:06	1
Residual Range Organics (RRO) (C25-C36)	0.86		0.43	0.13	mg/L		07/26/19 09:00	07/26/19 15:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*117*		*50 - 150*	*07/26/19 09:00*	*07/26/19 15:06*	*1*
n-Triacontane-d62	*103*		*50 - 150*	*07/26/19 09:00*	*07/26/19 15:06*	*1*

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

Lab Sample ID: MB 590-23232/1-A
Matrix: Water
Analysis Batch: 23237

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 23232

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.24	0.11	mg/L		07/26/19 09:00	07/26/19 11:00	1
Residual Range Organics (RRO) (C25-C36)	ND		0.40	0.12	mg/L		07/26/19 09:00	07/26/19 11:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*78*		*50 - 150*	*07/26/19 09:00*	*07/26/19 11:00*	*1*
n-Triacontane-d62	*76*		*50 - 150*	*07/26/19 09:00*	*07/26/19 11:00*	*1*

Lab Sample ID: LCS 590-23232/2-A
Matrix: Water
Analysis Batch: 23237

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 23232

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics (DRO) (C10-C25)	1.60	1.42		mg/L		88	50 - 150
Residual Range Organics (RRO) (C25-C36)	1.60	1.66		mg/L		104	50 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*94*		*50 - 150*
n-Triacontane-d62	*96*		*50 - 150*

Lab Sample ID: LCSD 590-23232/3-A
Matrix: Water
Analysis Batch: 23237

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 23232

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics (DRO) (C10-C25)	1.60	1.51		mg/L		95	50 - 150	7	25
Residual Range Organics (RRO) (C25-C36)	1.60	1.71		mg/L		107	50 - 150	3	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*103*		*50 - 150*
n-Triacontane-d62	*100*		*50 - 150*

QC Association Summary

Client: AECOM
Job ID: 590-11465-1
Project/Site: Tacoma D St Terminal-Phillips 66

GC Semi VOA

Prep Batch: 23232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11465-1	RW-5R	Total/NA	Water	3510C	
590-11465-2	HC-111	Total/NA	Water	3510C	
590-11465-3	FW-13	Total/NA	Water	3510C	
590-11465-4	E-22	Total/NA	Water	3510C	
590-11465-5	B-31	Total/NA	Water	3510C	
590-11465-6	RR-4	Total/NA	Water	3510C	
590-11465-7	RR-5	Total/NA	Water	3510C	
590-11465-8	HC-111-DUP	Total/NA	Water	3510C	
MB 590-23232/1-A	Method Blank	Total/NA	Water	3510C	
LCS 590-23232/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 590-23232/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 23237

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11465-1	RW-5R	Total/NA	Water	NWTPH-Dx	23232
590-11465-2	HC-111	Total/NA	Water	NWTPH-Dx	23232
590-11465-3	FW-13	Total/NA	Water	NWTPH-Dx	23232
590-11465-4	E-22	Total/NA	Water	NWTPH-Dx	23232
590-11465-5	B-31	Total/NA	Water	NWTPH-Dx	23232
590-11465-6	RR-4	Total/NA	Water	NWTPH-Dx	23232
590-11465-7	RR-5	Total/NA	Water	NWTPH-Dx	23232
590-11465-8	HC-111-DUP	Total/NA	Water	NWTPH-Dx	23232
MB 590-23232/1-A	Method Blank	Total/NA	Water	NWTPH-Dx	23232
LCS 590-23232/2-A	Lab Control Sample	Total/NA	Water	NWTPH-Dx	23232
LCSD 590-23232/3-A	Lab Control Sample Dup	Total/NA	Water	NWTPH-Dx	23232

Lab Chronicle

Client: AECOM
Job ID: 590-11465-1
Project/Site: Tacoma D St Terminal-Phillips 66

Client Sample ID: RW-5R
Lab Sample ID: 590-11465-1
Date Collected: 07/22/19 10:20
Matrix: Water
Date Received: 07/24/19 09:48

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			240.3 mL	2 mL	23232	07/26/19 09:00	AMB	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			23237	07/26/19 12:42	NMI	TAL SPK

Client Sample ID: HC-111
Lab Sample ID: 590-11465-2
Date Collected: 07/22/19 10:43
Matrix: Water
Date Received: 07/24/19 09:48

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			230.9 mL	2 mL	23232	07/26/19 09:00	AMB	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			23237	07/26/19 13:03	NMI	TAL SPK

Client Sample ID: FW-13
Lab Sample ID: 590-11465-3
Date Collected: 07/22/19 11:25
Matrix: Water
Date Received: 07/24/19 09:48

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			245.9 mL	2 mL	23232	07/26/19 09:00	AMB	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			23237	07/26/19 13:23	NMI	TAL SPK

Client Sample ID: E-22
Lab Sample ID: 590-11465-4
Date Collected: 07/22/19 12:35
Matrix: Water
Date Received: 07/24/19 09:48

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			243.6 mL	2 mL	23232	07/26/19 09:00	AMB	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			23237	07/26/19 13:44	NMI	TAL SPK

Client Sample ID: B-31
Lab Sample ID: 590-11465-5
Date Collected: 07/22/19 13:14
Matrix: Water
Date Received: 07/24/19 09:48

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			221.1 mL	2 mL	23232	07/26/19 09:00	AMB	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			23237	07/26/19 14:04	NMI	TAL SPK

Client Sample ID: RR-4
Lab Sample ID: 590-11465-6
Date Collected: 07/22/19 15:00
Matrix: Water
Date Received: 07/24/19 09:48

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			234.5 mL	2 mL	23232	07/26/19 09:00	AMB	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			23237	07/26/19 14:25	NMI	TAL SPK

Lab Chronicle

Client: AECOM
Job ID: 590-11465-1
Project/Site: Tacoma D St Terminal-Phillips 66

Client Sample ID: RR-5
Lab Sample ID: 590-11465-7
Date Collected: 07/22/19 15:30
Matrix: Water
Date Received: 07/24/19 09:48

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			245.3 mL	2 mL	23232	07/26/19 09:00	AMB	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			23237	07/26/19 14:45	NMI	TAL SPK

Client Sample ID: HC-111-DUP
Lab Sample ID: 590-11465-8
Date Collected: 07/22/19 10:45
Matrix: Water
Date Received: 07/24/19 09:48

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			231 mL	2 mL	23232	07/26/19 09:00	AMB	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			23237	07/26/19 15:06	NMI	TAL SPK

Laboratory References:

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

Definitions/Glossary

Client: AECOM
Job ID: 590-11465-1
Project/Site: Tacoma D St Terminal-Phillips 66

Qualifiers

GC Semi VOA

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

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
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

Accreditation/Certification Summary

Client: AECOM
Job ID: 590-11465-1
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	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C569	01-06-20

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

TestAmerica Spokane
11922 E. 1st Ave.
Spokane, WA 99206
phone 509.924.9200 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

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

Client Contact	Project Manager: ~~Craig Riley~~ Tyler Henay	Site Contact: Mark Tauscher	Date: 7/22/2019	COC No:
AECOM	Tel/Fax: 503-478-2766	Lab Contact: Randee Arrington	Carrier: Fedex	1 of 1 COCs
111 SW Columbia, Suite 1500	**Analysis Turnaround Time**			Sampler:
Portland, Oregon 97201	☐ CALENDAR DAYS ☑ WORKING DAYS			**For Lab Use Only:**
503-222-7200 Phone	TAT if different from Below _____			Walk-in Client:
Email: craig.riley@aecom.com	☑ 2 weeks			Lab Sampling:
Project Name: D Street Terminal Tacoma, WA	☐ 1 week			Job / SDG No.:
Site: P66 Terminal	☐ 2 days			
P O # 60483190	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	8260B BTEX	NWTPH-Gx	NWTPH-Dx	300.0 Sulfate	300.0 Nitrate (48 Hr. Hold Time)	6020 Dissolved Lead and Mn- Lab Fi	310.1 Alkalinity	6020 Total Lead	Naphalenes SIMPAH8270	Sample Specific Notes:
RW-5R	7/22/19	10:20	G	W	1	N	N			X							
HC-111		10:43	G	W	1	N	N			X							
FW-13		11:25	G	W	1	N	N			X							
E-22		12:35	G	W	1	N	N			X							
B-31		13:14	G	W	1	N	N			X							
RR-4		15:00	G	W	1	N	N			X							
RR-5		15:30	G	W	1	N	N			X							
HC-111-DUP		10:45	G	W	1	N	N			X							duplicate

590-11465 Chain of Custody

Therm. ID: A2 Cor: 5.4° Unc: 5.7°
Cooler Dsc: Med Blue
Packing: bub
Cust. Seal: Yes ___ No X
Blue Ice, Wet, Dry, None
FedEx: ___
UPS: ___
Lab Cour: ___
Other: Clidre

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: Please Contact ~~Craig Riley~~ with questions
Tyler Henay

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: 2.4/4°C | Therm ID No.: _____

	Company	Date/Time		Company	Date/Time
Relinquished by: Rebecca Digiustino	AECOM	7/22/19 1610	Received by:	TA-Sea	7/22/19 1610
Relinquished by:	TASEA	7-23-19 1106	Received by: Maria Grocce	TASEA	7/24/19 9:38
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

Login Sample Receipt Checklist

Client: AECOM

Job Number: 590-11465-1

Login Number: 11465
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.	N/A	Not present
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?	N/A	Not listed on COC
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

AECOM
1111 3rd Ave
Suite 1600
Seattle, WA 98101
www.aecom.com

206 438 2700 tel
866 495 5288 fax

Memorandum

To	Rebecca Tortorello, Project Manager	Info	FINAL
Subject	Summary Data Quality Review Phillips 66 – D Street Terminal, Tacoma Washington 2019 Second Quarter Groundwater Sampling		
From	Lucy Panteleeff, Chemist Jennifer B. Garner, Chemist		
Date	September 19, 2019		

The summary data quality review of 19 groundwater samples and 1 trip blank collected on June 17, 2019, June18, 2019, and July 22, 2019, 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 8260C; total petroleum hydrocarbons (TPHs) by Washington State Department of Ecology (Ecology) Methods NWTPH-Gx (gasoline-range TPH) and NWTPH-Dx (diesel-range and heavy oil-range TPH); and/or naphthalenes by EPA Method 8270D modified by selected ion monitoring (SIM). The laboratory provided summary reports containing sample results and associated quality assurance (QA) and quality control (QC) data for all samples. The following samples are associated with TA laboratory groups 590-11264-1 and 580-11465-1:

Sample ID	Laboratory ID	Requested Analyses
T-2	590-11264-1	BTEX, TPH-Gx, TPH-Dx
DMW-4	590-11264-2	BTEX, TPH-Gx, TPH-Dx
RR-1	590-11264-3	BTEX, TPH-Gx, TPH-Dx
RR-5	590-11264-4	BTEX, TPH-Gx, TPH-Dx
RR-4	590-11264-5	BTEX, TPH-Gx, TPH-Dx
E-22	590-11264-6	BTEX, TPH-Gx, TPH-Dx
B-31	590-11264-7	BTEX, TPH-Gx, TPH-Dx
HC-111	590-11264-8	BTEX, TPH-Gx, TPH-Dx
FW-13	590-11264-9	BTEX, TPH-Gx, TPH-Dx
Trip Blank	590-11264-10	BTEX, TPH-Gx, TPH-Dx
HC-11-DUP (Duplicate of HC-111)	590-11264-11	BTEX, TPH-Gx, TPH-Dx
RW-5R	590-11264-12	BTEX, TPH-Gx, TPH-Dx
FW-14	590-11264-13	BTEX, TPH-Gx, TPH-Dx, Naphthalenes
DMW-2	590-11264-14	BTEX, TPH-Gx, TPH-Dx
RW-5R-DUP (Duplicate of RW-5R)	590-11264-15	BTEX, TPH-Gx, TPH-Dx
RW-8	590-11264-16	BTEX, TPH-Gx, TPH-Dx
FW-5R	590-11264-17	BTEX, TPH-Gx, TPH-Dx, Naphthalenes
RR-2	590-11264-18	BTEX, TPH-Gx, TPH-Dx, Naphthalenes
B-25	590-11264-19	BTEX, TPH-Gx, TPH-Dx
B-34	590-11264-20	BTEX, TPH-Gx, TPH-Dx
RW-5R	590-11465-1	TPH-Dx
HC-111	590-11465-2	TPH-Dx
FW-13	590-11465-3	TPH-Dx
E-22	590-11465-4	TPH-Dx
B-31	590-11465-5	TPH-Dx
RR-4	590-11465-6	TPH-Dx
RR-5	590-11465-7	TPH-Dx

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Summary Data Quality Review
Phillips 66 - D Street Terminal, Tacoma, Washington
2019 Second Quarter Groundwater Sampling
Laboratory Groups: 590-11264-1 and 590-11465-1

Sample ID	Laboratory ID	Requested Analyses
HC-111-DUP	590-11465-8	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 temperatures were recorded. No discrepancies related to sample identifications were noted by the laboratory and the coolers were received at temperatures within the EPA recommended temperature limits of greater than 0°C and less than or equal to 6°C.

One vial submitted for BTEX and Gx analysis for RR-1 was received broken. Sufficient volume remained in the two alternate vials submitted for these analyses allowing analysis to proceed. A proper sample container for TPH-Dx analysis for RR-4 was not received by the laboratory. This analysis was cancelled, and the sample was re-collected and submitted under laboratory group 590-11465-1.

Unpreserved sample containers for TPH-Dx analysis were submitted for sample FW-5R. The laboratory proceeded with analysis.

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Summary Data Quality Review
Phillips 66 - D Street Terminal, Tacoma, Washington
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Due to laboratory error, samples RR-5, E-22, B-31, HC-111, FW-13, HC-11-DUP, and RW-5R were spiked with diesel spiking solution. The TPH-Dx analyses for these samples were cancelled. These samples and RR-4 were resampled on July 19, 2019. Results for diesel-range TPH in these samples were reported in laboratory group 590-11465-1.

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

2. Blanks – Acceptable

3. Surrogates – Acceptable

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

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

   General – MS/MSDs were performed using T-2 for BTEX and TPHs. Results were acceptable except as follows.

   Gasoline-range TPH by NWTPH-Gx – The relative percent difference (RPD) for gasoline-range TPH (23%) for the MS/MSD performed using T-2 exceeded the control limit of 20%. The recoveries for gasoline-range TPH in the MS and MSD were acceptable; therefore, data were not qualified based on this RPD result.

   Naphthalenes by EPA Method 8270D-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 HC-111 and FW-5R and identified as HC-11-DUP (laboratory group 590-11264-1), HC-111-DUP (laboratory group 590-11465-1), and FW-5R-DUP, respectively. Results 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 8260C – The MDLs and reporting limits for m,p-xylene, o-xylene, toluene, and total xylenes were elevated in sample B-34 due to dilution. The elevated MDLs do not exceed the applicable cleanup standards.

8. Other Items of Note:

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

- Detected hydrocarbons in the oil range appear to be due diesel overlap in FW-5R.
- Detected hydrocarbons in the diesel range appear to be due to heavily weathered diesel and/or biogenic interference in T-2, DMW-4, and RR-1.
- Detected hydrocarbons in the diesel range appear to be due to weathered diesel in DMW-2, RW-8, FW-13, and E-22.
- Detected hydrocarbons appear to be due to weathered diesel in B-34.
- Detected hydrocarbons in the diesel range appear to be due to gasoline overlap, heavily weathered diesel, and/or biogenic interference in RW-5R-DUP, B-25, RW-5R, HC-111, B-31, RR-5, and HC-111-DUP.

Overall Assessment of Data

The data reported in this laboratory group, as reported, are considered to be usable for meeting project objectives. The completeness for TestAmerica laboratory groups 590-11264-1 and 590-11465-1 is 100%.

Table 1 - Summary of Qualified Data

Sample ID	Laboratory ID	Analyte	Laboratory Result	Units	Final Result	Reason
No data qualifiers were assigned based on this data validation.						