

Mr. Frank Winslow  
Washington State Department of Ecology – Central Regional Office  
1250 W. Alder Street  
Union Gap, Washington 98903

Arcadis U.S., Inc.  
1100 Olive Way  
Suite 800  
Seattle  
Washington 98101  
Tel 206 325 5254  
Fax 206 325 8218  
www.arcadis.com

Subject:

**Fourth Quarter 2020 Groundwater Monitoring Report**  
Chevron Site No. 9-8944  
Richland, Washington

ENVIRONMENT

Dear Mr. Winslow:

Date:  
January 6, 2021

On behalf of Chevron U.S.A. Inc. (CUSA) and Chevron Environmental Management Company (CEMC), Arcadis U.S., Inc. (Arcadis) has prepared this *Fourth Quarter 2020 Groundwater Monitoring Report* (Report) to document the sampling of three groundwater monitoring wells at Chevron Site No. 9-8944 (the site; Figures 1 and 2) located in Richland, Washington. The three onsite monitoring wells, MW-9, MW-10, and MW-11 were gauged and sampled during the monitoring event in November 2020.

Contact:  
Eric Epple

Phone:  
206.578.5812

Email:  
Eric.Epple@arcadis.com

## **SITE BACKGROUND**

The site is a former gasoline station located at 1323 Lee Boulevard, Richland, Benton County, Washington. The site was operated as a Standard Oil/Chevron gasoline service station from 1960 until approximately 1976. All station features were demolished, and the site has been redeveloped. Currently, the site is occupied by a Subway Sandwich franchise. Previous site investigations and site history is summarized in the 1Q 2020 Groundwater Monitoring Report (Arcadis 2020).

Our ref:  
30046041

## **SITE GEOLOGY/HYDROGEOLOGY**

The topography of the general site area slopes to the east and southeast (Figure 1). The Yakima and Columbia Rivers intersect south-southeast of the site. The topography to the west contains a high ridge running north-south.

The site is located in Pasco Basin. Regional geology consists of glaciofluvial and glaciolacustrine sediments deposited over basalt bedrock of the Columbia River Group (CRA 2007). Glacial flood sediments (cobbles, gravels, and sands) were deposited on top of this and reworked by local streams and rivers, chiefly the Columbia River in this region (CRA 2007).

The site geology consists of silt and sandy gravels to 20 feet bgs. The soil lithology observed in monitoring well borings (MW-9 through MW-11) were consistent with historical findings; silt was encountered at 5 to 5.5 feet bgs, silt and well graded gravel was encountered at 10 and 15 feet bgs, and poorly- and well-graded gravel was encountered at 17 to 20 feet bgs.

The general groundwater flow beneath the site appears to follow the local topography toward the east-southeast. This inferred groundwater flow direction is consistent with groundwater gradient maps produced for the site and upgradient properties, New City Cleaners and Richland School District Maintenance Facility, where previous site investigations have been conducted.

## **GROUNDWATER MONITORING AND SAMPLING**

Groundwater monitoring and sampling was completed at the site on November 5, 2020 by Blaine Tech Services, Inc. (Blaine Tech), an Arcadis subcontractor, including measuring depth to groundwater, collection of groundwater samples, and recording of groundwater quality parameters (recorded on field forms; Appendix A) from three monitoring wells, MW-9, MW-10 and MW-11.

### **Groundwater Elevation**

Blaine Tech gauged groundwater monitoring wells MW-9, MW-10 and MW-11 using a static water level indicator prior to groundwater sample collection on November 5, 2020. Depth to groundwater ranged from 13.34 to 13.75 feet below top of casing. Groundwater depth to water is summarized in Table 1.

### **Groundwater Sampling**

Monitoring wells MW-9, MW-10, and MW-11 were purged and sampled using a peristaltic pump and dedicated tubing per standard operating procedures. During the purging process, the pH, electrical conductivity, turbidity, dissolved oxygen, oxidation reduction potential, and temperature were monitored and recorded on the sampling field forms included as Attachment 1. Purging continued until these parameters were stabilized. Samples were labeled, packaged in ice-cooled chests, and shipped under chain-of-custody protocols to Eurofins Test America located in Tacoma, Washington. Laboratory analytical results and chain-of-custody documentation are included in Attachment 2.

Groundwater samples were analyzed for the following parameters:

- Total petroleum hydrocarbons in the gasoline range organics (TPH-GRO) by method NWTPH-Gx;
- Total petroleum hydrocarbons in the diesel and heavy oil range organics (TPH-DRO/HRO) by method NWTPH-Dx with and without silica-gel cleanup;
- Benzene, toluene, ethylbenzene, xylene (BTEX) and naphthalene by United States environmental Protection Agency (USEPA) method 8260D; and
- Total lead by USEPA method 6020B.

Additionally, samples were analyzed for select geochemical parameters for perspective biodegradation evaluation. Samples were analyzed for the following geochemical parameters: total and dissolved manganese and total and dissolved iron by USEPA method 6020B, nitrate, and sulfate.

## QUALITY ASSURANCE/QUALITY CONTROL

Trip blanks assess potential sample contamination resulting from the transportation and storing of samples. One trip blank was submitted to Eurofins Test America and was analyzed for BTEX and naphthalene by USEPA method 8260D. Analysis of the trip blank for the monitoring event did not indicate any detectable analyte concentrations at or above laboratory reporting limits.

Field duplicate samples help assess the reproducibility of the analyses. A field duplicate sample was collected from monitoring well MW-10 during the event and submitted to Eurofins Test America Laboratories for chemical analysis. The parent and duplicate sample results are considered comparable.

## DATA INTERPRETATION AND CONCLUSIONS

Groundwater depth to water and analytical results for current and historical data are summarized in Table 1 and geochemical parameters are summarized in Table 2. Future activities at the site will include surveying monitoring wells MW-9, MW-10, and MW-11 to establish top of casing elevations. Based on local topography and previous sampling events, groundwater flow direction is inferred to be generally to the east-southeast with some variation noted. Analytical results reported for the groundwater samples collected on November 5, 2020 are shown on Figure 2.

Concentrations of TPH-GRO and TPH-DRO exceeded the MTCA Method A cleanup levels in groundwater samples collected from monitoring wells MW-9, MW-10, and MW-11. The concentration of TPH-HRO in the groundwater sample collected from MW-10 also exceeded the applicable MTCA Method A cleanup level. Other Site specific COCs analyzed were either not detected above the laboratory's method detection limit or were not detected at concentration above their applicable MTCA Method A cleanup levels.

The next groundwater monitoring event is currently scheduled for first quarter 2021. As per verbal discussions with Ecology, potential biodegradation of dissolved site-related VOCs in groundwater will continue to be evaluated in subsequent sampling events.

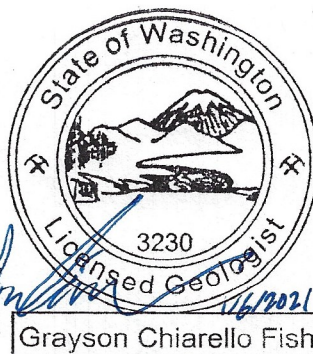
Please contact Eric Epple at 206.578.5812 if you should have any questions.

Sincerely,

Arcadis U.S., Inc.



Eric Epple  
Project Geologist



Grayson Chiarello Fish

Grayson Fish, L.G.  
Licensed Geologist

Copies:

Tim Bishop, CEMC

## REFERENCES

Arcadis, 2020. First Quarter 2020 Groundwater Monitoring Report, Chevron Ste No. 9-8944, 1323 Lee Boulevard, Richland, WA, March 17.

Conestoga, Rover, and Associates, 2007. Soil and Groundwater Assessment Report, Former Chevron Service Station No. 9-8944, 1323 Lee Boulevard, Richland, WA, December 11.

Enclosures:

### Table

- 1 Groundwater Monitoring Data and Analytical Results
- 2 Geochemical Analytical Results

### Figures

- 1 Topographic Map of Site Location and Vicinity
- 2 Groundwater Concentration Map – November 5, 2020

### Attachments

- 1 Field Data and Chain of Custody
- 2 Laboratory Analytical Report

# ATTACHMENTS



# TABLES



Table 1  
Groundwater Monitoring Data and Analytical Results  
Chevron Site No. 9-8944  
Richland, Washington

Well ID	Date	TOC	DTW	GWE	TPH GRO	TPH DRO	TPH DRO w/SGC	TPH HRO	TPH HRO w/SGC	B	T	E	X	Dissolved Lead	Total Lead	MTBE by SW8020	MTBE by SW8260B	Naphthalene	Benzo(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene																							
																										MTCA Method A Cleanup Levels				800/1000	500	500	500	5	1,000	700	1,000	NA	15	NA	20	160	NA	NA	NA	NA	NA	NA
																										Units	ft	ft	ft elev.	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-1	8/11/1994	93.98	7.03	86.95	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-1	8/25/1994	93.98	7.00	86.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-1	9/23/1994	93.98	7.00	86.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-1	8/12/1996	93.98	7.29	86.69	14,400	--	--	--	--	94.4	15.5	325	978	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-1	2/27/2000	93.98	8.58	85.40	16,200	--	--	--	--	11.7	<8.00	439	504	--	--	<25.0	--	--	--	--	--	--	--	--	--																							
MW-1	2/21/2001	93.98	8.66	85.32	6,320	--	--	--	--	38.3	9.30	194	64.1	--	--	15.4	<4.00	--	--	--	--	--	--	--	--																							
MW-1	05/22/2001 <sup>1</sup>	93.98	9.95	84.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-1	8/11/2001	93.98	9.14	84.84	8,450	--	--	--	--	48.4	11.8	410	356	--	--	<50.0	<5.00	--	--	--	--	--	--	--	--																							
MW-1	11/10/2001	93.98	9.85	84.13	6,650	--	--	--	--	49.2	11.0	340	97.9	--	--	16.8	<5.00	--	--	--	--	--	--	--	--																							
MW-1	2/4/2002	93.98	10.71	83.27	1,480	--	--	--	--	1.81	<1.00	71.6	3.81	--	--	<5.00	--	--	--	--	--	--	--	--	--																							
MW-1	08/24/2002 <sup>2</sup>	93.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-1	2/20/2003	93.98	10.55	83.43	91	--	--	--	--	<0.50	<0.50	<1.0	<3.0	--	--	<2.5	--	--	--	--	--	--	--	--	--																							
MW-1	8/21/2003	93.98	11.26	82.72	78	--	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	<2.5	--	--	--	--	--	--	--	--	--																							
MW-1	02/19/2004	93.98	11.79	82.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-1	08/10/2004 <sup>1</sup>	93.98	10.97	83.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-1	12/03/2004 <sup>1</sup>	93.98	11.39	82.59	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-1	02/21/2006 <sup>3</sup>	93.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-1	10/23/2007 <sup>1</sup>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-2	8/11/1994	93.21	6.10	87.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-2	8/25/1994	93.21	6.11	87.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-2	9/23/1994	93.21	6.11	87.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-2	8/12/1996	93.21	6.40	86.81	17,400	--	--	--	--	152	39.2	306	1,120	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-2	2/27/2000	93.21	7.77	85.44	7,500	--	--	--	--	99.8	13.0	175	453	--	--	<10.0	--	--	--	--	--	--	--	--	--																							
MW-2	2/21/2001	93.21	7.84	85.37	1,510	--	--	--	--	20.1	5.43	31.9	67.2	--	--	<5.00	<2.00	--	--	--	--	--	--	--	--																							
MW-2	5/22/2001	93.21	8.14	85.07	4,310	--	--	--	--	34.9	7.91	109	211	--	--	11.6	<5.00	--	--	--	--	--	--	--	--																							
MW-2	8/11/2001	93.21	8.35	84.86	1,870	--	--	--	--	14.6	2.90	16.6	20.5	--	--	<25.0	<5.00	--	--	--	--	--	--	--	--																							
MW-2	11/10/2001	93.21	9.10	84.11	4,320	--	--	--	--	51.0	6.44	53.0	91.5	--	--	25.1	<5.00	--	--	--	--	--	--	--	--																							
MW-2	2/4/2002	93.21	9.96	83.25	4,500	--	--	--	--	33.3	2.80	74.5	97.6	--	--	<5.00	--	--	--	--	--	--	--	--	--																							
MW-2	8/24/2002	93.21	9.18	84.03	3,400	--	--	--	--	17	2.10	25	56	--	--	<2.5	--	--	--	--	--	--	--	--	--																							
MW-2	2/20/2003	93.21	9.78	83.43	2,600	--	--	--	--	7.3	1.80	47	32	--	--	<2.5	--	--	--	--	--	--	--	--	--																							
MW-2	8/21/2003	93.21	10.52	82.69	840	--	--	--	--	2.1	<2.0	2.9	<3.0	--	--	<2.5	--	--	--	--	--	--	--	--	--																							
MW-2	2/19/2004	93.21	11.06	82.15	950	--	--	--	--	<5.0	<0.5	3.0	<5.0	--	--	<2.5	--	--	--	--	--	--	--	--	--																							
MW-2	8/10/2004	93.21	10.16	83.05	<50	--	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	<2.5	--	--	--	--	--	--	--	--	--																							
MW-2	12/3/2004	93.21	10.68	82.53	<48	--	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	<2.5	--	--	--	--	--	--	--	--	--																							
MW-2	02/21/2006 <sup>1</sup>	93.21	11.52	81.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-2	10/23/2007 <sup>1</sup>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-3	8/11/1994	94.57	7.63	86.94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-3	8/25/1994	94.57	7.59	86.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-3	9/23/1994	94.57	7.59	86.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-3	8/12/1996	94.57	7.89	86.68	37,700	--	--	--	--	84.6	77.1	1,190	3,800	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-3	2/27/2000	94.57	9.18	85.39	30,700	--	--	--	--	42.4	60.1	1,160	3,250	--	--	<25.0	--	--	--	--	--	--	--	--	--																							
MW-3	2/21/2001	94.57	9.23	85.34	6,090	--	--	--	--	29.9	6.07	182	293	--	--	8.75	<4.00	--	--	--	--	--	--	--	--																							
MW-3	05/22/2001 <sup>1</sup>	94.57	9.52	85.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-3	08/11/2001 <sup>5</sup>	94.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-3	11/10/2001 <sup>2</sup>	94.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-3	02/04/2002 <sup>2</sup>	94.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-3	08/24/2002 <sup>3</sup>	94.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-3	02/20/2003 <sup>2</sup>	94.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-3	08/21/2003 <sup>3</sup>	94.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-3	02/19/2004 <sup>3</sup>	94.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-3	08/10/2004 <sup>3</sup>	94.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-3	12/03/2004 <sup>4</sup>	94.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-3	02/21/2006 <sup>3</sup>	94.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-3	10/23/2007 <sup>2</sup>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-4	10/23/2007	359.19	12.69	346.50	2,800	610	--	<250	--	0.17	0.48	78	17.1	<2.0	20	--	<0.14	2.3	<0.010	<0.010	<0.010	<0.010	<0.021	<0.010	<0.010																							
MW-4	3/24/2008	359.19	14.00	345.19	1,700	560	--	<240	--	<1.0	<1.0	89	28.9	<2.0	24	--	<1.0	--	--	--	--	--	--	--	--																							
MW-4	5/12/2008	359.19	14.21	344.98	570	110	--	<95	--	<0.5	<0.5	46	<0.5	--	0.21	--	<0.5	--	--	--	--	--	--	--	--																							
MW-4	7/28/2008	359.19	13.02	346.17	460	570	--	<96	--	<0.5	<0.5	5	<0.5	--	0.16	--	<0.5	--	--	--	--	--	--	--	--																							
MW-4	11/3/2008	359.19	13.54	345.65	63	48	--	<74	--	<0.5	<0.5	<0.5	<0.5	--	0.18 J	--	<0.5	--	--	--	--	--	--	--	--																							
MW-4	2/11/2009	359.19	13.91	345.28	2,600 J	2,600	--	<150	--	--	--	--	--	--	0.18	--	--	--	--	--	--	--	--	--	--																							
MW-4	8/11/2010	359.19	13.67	345.52	200	<130	--	<250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-4	9/9/2011	359.19	13.78	345.41	180	<29	--	<67	--	--	--	--	--	--	0.15	--	--	--	--	--	--	--	--	--	--																							
MW-4	8/27/2012	359.19	13.72	345.47	<50	<30	--	<70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							
MW-4	9/23/2013	359.19	13.69	345.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--																							

Table 1  
Groundwater Monitoring Data and Analytical Results  
Chevron Site No. 9-8944  
Richland, Washington

Well ID	Date	TOC	DTW	GWE	TPH GRO	TPH DRO	TPH DRO w/SGC	TPH HRO	TPH HRO w/SGC	B	T	E	X	Dissolved Lead	Total Lead	MTBE by SW8020	MTBE by SW8260B	Naphthalene	Benzo(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene
MTCA Method A Cleanup Levels					800/1000	500	500	500	500	5	1,000	700	1,000	NA	15	NA	20	160	NA	NA	NA	NA	NA	NA	NA
	Units	ft	ft	ft elev.	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
MW-5	10/23/2007	359.07	12.42	346.65	51	<120	--	<250	--	<0.10	<0.066	0.49	0.799	<2.0	6.9	--	<0.14	0.020	<0.010	<0.010	<0.010	<0.010	<0.020	<0.010	<0.010
MW-5	3/24/2008	359.07	13.73	345.34	<50	<120	--	<240	--	<1.0	<1.0	<1.0	<2.0	<2.0	27	--	<1.0	--	--	--	--	--	--	--	--
MW-5	5/12/2008	359.07	13.93	345.14	110	<77	--	<96	--	<0.5	<0.5	<0.5	<0.5	--	0.11	--	<0.5	--	--	--	--	--	--	--	--
MW-5	7/28/2008	359.07	12.78	333.51	<50	<76	--	<95	--	<0.5	<0.5	<0.5	<0.5	--	0.34	--	<0.5	--	--	--	--	--	--	--	--
MW-5	11/3/2008	359.07	13.30	345.77	<50	<29	--	<67	--	<0.5	<0.5	<0.5	<0.5	--	0.18 J	--	<0.5	--	--	--	--	--	--	--	--
MW-5	2/10/2009	359.07	13.61	345.46	--	--	--	--	--	--	--	--	--	--	0.44	--	--	--	--	--	--	--	--	--	--
MW-5	8/11/2010	359.07	13.35	345.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	9/9/2011	359.07	13.35	345.72	--	--	--	--	--	--	--	--	--	--	0.16	--	--	--	--	--	--	--	--	--	--
MW-5	9/23/2013	359.07	13.31	345.76	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	10/23/2007	358.85	12.14	346.71	<b>3,400</b>	<b>670</b>	--	<260	--	<0.10	<0.066	0.41	0.57	3.0	<b>27</b>	--	<0.14	2.8	<0.010	<0.010	<0.010	<0.010	<0.020	<0.010	<0.010
MW-6	3/24/2008	358.85	13.42	345.43	<b>1,100</b>	<b>830</b>	--	<240	--	<1.0	<1.0	<1.0	<2.0	<2.0	<b>67</b>	--	<1.0	--	--	--	--	--	--	--	--
MW-6	5/12/2008	358.85	13.69	345.16	500	330	--	<96	--	<0.5	<0.5	<0.5	<0.5	--	2.0	--	<0.5	--	--	--	--	--	--	--	--
MW-6	7/28/2008	358.85	12.53	333.79	700	170	--	<96	--	<0.5	<0.5	<0.5	<0.5	--	1.5	--	<0.5	--	--	--	--	--	--	--	--
MW-6	11/3/2008	358.85	13.03	345.82	790	150	--	<67	--	<0.5	<0.5	<0.5	<0.5	--	0.92	--	<0.5	--	--	--	--	--	--	--	--
MW-6	2/11/2009	358.85	13.34	345.51	470	100	--	<65	--	--	--	--	--	--	0.76	--	--	--	--	--	--	--	--	--	--
MW-6	8/11/2010	358.85	13.20	345.65	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	9/9/2011	358.85	13.18	345.67	610	44	--	<68	--	--	--	--	--	--	0.77	--	--	--	--	--	--	--	--	--	--
MW-6	9/23/2013	358.85	13.06	345.79	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	10/23/2007	359.01	12.63	346.38	73	<130	--	<260	--	<0.10	<0.066	0.14	.26	<2.0	13	--	<0.14	0.031	<0.010	<0.010	<0.010	<0.010	<0.021	<0.010	<0.010
MW-7	3/24/2008	359.01	14.00	345.01	<50	<120	--	<240	--	<1.0	<1.0	<1.0	<2.0	<2.0	<b>33</b>	--	<1.0	--	--	--	--	--	--	--	--
MW-7	5/12/2008	359.01	14.19	344.82	<50	<76	--	<95	--	<0.5	<0.5	<0.5	<0.5	--	0.070	--	<0.5	--	--	--	--	--	--	--	--
MW-7	7/28/2008	359.01		333.15	<50	<78	--	<97	--	<0.5	<0.5	<0.5	<0.5	--	11.2	--	<0.5	--	--	--	--	--	--	--	--
MW-7	11/3/2008	359.01	13.54	345.47	<50	<29	--	<67	--	<0.5	<0.5	<0.5	<0.5	--	1.3	--	<0.5	--	--	--	--	--	--	--	--
MW-7	2/10/2009	359.01	13.89	345.12	--	--	--	--	--	--	--	--	--	--	0.49	--	--	--	--	--	--	--	--	--	--
MW-7	8/11/2010	359.01	13.61	345.40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	9/9/2011	359.01	13.71	345.30	--	--	--	--	--	--	--	--	--	--	0.60	--	--	--	--	--	--	--	--	--	--
MW-7	9/23/2013	359.01	13.70	345.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	10/23/2007	359.29	12.79	346.50	<b>33,000</b>	<b>4,000</b>	--	270	--	0.12	16	<b>1,300</b>	<b>2,280</b>	<2.0	<b>22</b>	--	<0.14	<b>190</b>	<0.010	<0.010	<0.010	<0.010	<0.021	<0.010	<0.010
MW-8	3/24/2008	359.29	14.01	345.28	<b>13,000</b>	<b>3,000</b>	--	<240	--	<1.0	15	610	821	<2.0	<b>54</b>	--	<1.0	<b>320</b>	--	--	--	--	--	--	--
MW-8	5/12/2008	359.29	14.31	344.98	<b>18,000 J</b>	<b>4,600</b>	--	<970	--	<1	17	640	<b>1,100</b>	--	0.44	--	<1	<b>410</b>	--	--	--	--	--	--	--
MW-8	7/28/2008	359.29	13.13	346.16	<b>16,000</b>	<b>8,000</b>	--	<490	--	<0.5	9	<b>800</b>	<b>1,300</b>	--	1.2	--	<0.5	<b>500</b>	--	--	--	--	--	--	--
MW-8	11/3/2008	359.29	13.65	345.64	<b>15,000</b>	<b>6,900</b>	--	<670	--	<0.5	10	<b>760</b>	520	--	1.6	--	<0.5	<b>410</b>	--	--	--	--	--	--	--
MW-8	2/11/2009	359.29	13.92	345.37	<b>4,800</b>	<b>550</b>	--	<66	--	<0.5	0.8	200	70	--	0.24	--	--	110	--	--	--	--	--	--	--
MW-8	8/11/2010	359.29	13.74	345.55	<b>9,900</b>	<b>1,000</b>	--	<250	--	<2.0	2.9	620	973	--	--	--	--	<b>300</b>	--	--	--	--	--	--	--
MW-8	9/9/2011	359.29	13.85	345.44	<b>2,100 [2,200]</b>	130 [120]	--	<67 [-67]	--	<0.5 [-0.5]	0.5 [0.6]	45 [46]	4 [4]	--	0.29 [0.31]	--	--	24 [24]	--	--	--	--	--	--	--
MW-8	8/27/2012	359.29	13.83	345.46	<b>3,000 [2,900]</b>	200 [360]	--	<67 [-69]	--	<0.5 [-0.5]	<0.5 [0.5]	39 [34]	24 [23]	--	--	--	--	31 [29]	--	--	--	--	--	--	--
MW-8	9/23/2013	359.29	13.60	345.69	<b>4,000</b>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	10/9/2018	--	13.73	--	<b>7,800</b>	<b>960</b>	420	<100	<70	<1.0	2.0	240	19	<1.1	<1.1	--	--	--	--	--	--	--	--	--	--
MW-9	12/12/2018	--	14.07	--	<b>7,600</b>	<b>760</b>	330	<100	<67	<0.20	3.0	59	21	<1.1	<1.1	--	--	--	--	--	--	--	--	--	--
MW-9	9/19/2019	--	13.28	--	620	370	--	<350	--	--	--	--	--	--	<4.0	--	--	--	--	--	--	--	--	--	--
MW-9	2/19/2020	--	14.33	--	<b>4,400</b>	<b>1,400</b>	--	160 J	--	<0.53	1.2 J	28	11	--	<1.0	--	--	--	--	--	--	--	--	--	--
MW-9	5/20/2020	--	14.64	--	<b>2,600</b>	<b>1,300</b>	<b>1,200</b>	160 J *	<98 *	<0.24	<0.39	1.5 J	<0.39	--	<1.0	--	--	--	--	--	--	--	--	--	--
MW-9	8/27/2020	--	13.78	--	770	450	--	280 J B	--	<0.24	<0.39	<0.50	<0.39	--	<1.0	--	--	<0.93	--	--	--	--	--	--	--
MW-9	11/5/2020	--	13.75	--	<b>3,700</b>	<b>1,400</b>	<b>1,200</b>	170 J	<92	<0.24	0.69 J	1.6 J	1.9 J	--	<1.0	--	--	4.1 *	--	--	--	--	--	--	--
MW-10	10/9/2018	--	13.47	--	<b>9,500 [9,400]</b>	<b>740 [680]</b>	430 [430]	<110 [-100]	<69 [-68]	<1.0 [-1.0]	<1.0 [-1.0]	91 [86]	<5.0 [-5.0]	8.3 [8.6]	7.6 [8.2]	--	--	--	--	--	--	--	--	--	--
MW-10	12/12/2018	--	13.72	--	<b>8,000 [7,900]</b>	<b>540 [540]</b>	350 [400]	<100 [-100]	<66 [-66]	<0.20 [-0.20]	0.40 [0.50]	81 [85]	4.0 [4.0]	2.0 [1.8]	2.2 [2.1]	--	--	--	--	--	--	--	--	--	--
MW-10	9/19/2019	--	12.88	--	190 J [250]	290 J [290 J]	--	290 J [320 J]	--	--	--	--	--	--	<1.4 J [1.3 J]	--	--	--	--	--	--	--	--	--	--
MW-10	2/19/2020	--	13.98	--	<b>4,600 [4,500]</b>	<b>1,300 [1,200]</b>	--	150 J [150 J]	--	<0.53 [-0.53]	<0.39 [-0.39]	31 [33]	1.8 J [2.0 J]	--	1.1 J	--	--	--	--	--	--	--	--	--	--
MW-10	5/20/2020	--	14.31	--	<b>4,900 [4,700]</b>	<b>2,100 [2,400]</b>	<b>1,500 [1,900]</b>	270 J * [280 J *]	<89 * [98 J *]	<0.24 [-0.24]	0.45 J [0.46 J]	47 [49]	2.5 J [2.4 J]	--	2.0 J [1.9 J]	--	--	--	--	--	--	--	--	--	--
MW-10	8/27/2020	--	13.32	--	<b>1,100 [1,000]</b>	<b>810 [1000]</b>	--	<b>670 B [910 B]</b>	--	<0.24 [-0.24]	<0.39 [0.42 J]	5.4 [6.0]	<0.39 [-0.39]	--	2.0 J [1.7 J]	--	--	12 [13]	--	--	--	--	--	--	--
MW-10	11/5/2020	--	13.46	--	<b>3,300 [2,900]</b>	<b>1,100 [1,200]</b>	<b>760 [800]</b>	500 [540]	<89 [90 J]	<0.24 [-0.24]	0.88 J [0.88 J]	21 [21]	1.2 J [1.2 J]	--	<1.0 [-1.0]	--	--	27 * [28 *]	--	--	--	--	--	--	--
MW-11	10/9/2018	--	13.63	--	<b>7,800</b>	<b>740</b>	450	200	<69	<0.20	<0.20	2.0	<1.0	3.2	3.4	--	--	--	--	--	--	--	--	--	--
MW-11	12/12/2018	--	13.81	--	<b>4,100</b>	270	300	<100	<66	<0.20	<0.20	0.70	<1.0	<1.1	<1.1	--	--	--	--	--	--	--	--	--	--
MW-11	9/19/2019	--	12.95	--	470	310	--	120 J	--	--	--	--	--	--	<4.0	--	--	--	--	--	--	--	--	--	--
MW-11	2/19/2020	--	14.09	--	<b>2,100</b>	460	--	<110	--	<0.53	<0.39	<0.50	<0.39	--	1.4 J	--	--	--	--	--	--	--	--	--	--
MW-11	5/20/2020	--	14.33	--	<b>2,100</b>	<b>1,600</b>	<b>1,400</b>	130 J *	130 J *	<0.24	0.77 J	<0.50	<0.39	--	<1										



Table 1  
Groundwater Monitoring Data and Analytical Results  
Chevron Site No. 9-8944  
Richland, Washington

Well ID	Date	TOC	DTW	GWE	TPH GRO	TPH DRO	TPH DRO w/SGC	TPH HRO	TPH HRO w/SGC	B	T	E	X	Dissolved Lead	Total Lead	MTBE by SW8020	MTBE by SW8260B	Naphthalene	Benzo(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene
MTCA Method A Cleanup Levels					800/1000	500	500	500	500	5	1,000	700	1,000	NA	15	NA	20	160	NA	NA	NA	NA	NA	NA	NA
	Units	ft	ft	ft elev.	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Trip Blank	2/27/2000	--	--	--	<50.0	--	--	--	--	<0.500	<0.500	<0.500	<1.00	--	--	<5.00	--	--	--	--	--	--	--	--	--
Trip Blank	2/21/2001	--	--	--	<50.0	--	--	--	--	<0.500	<0.500	<0.500	<1.00	--	--	<5.00	--	--	--	--	--	--	--	--	--
Trip Blank	5/22/2001	--	--	--	<50.0	--	--	--	--	<0.500	<0.500	<0.500	<1.00	--	--	<5.00	--	--	--	--	--	--	--	--	--
Trip Blank	8/11/2001	--	--	--	<50.0	--	--	--	--	<0.500	<0.500	<0.500	<1.50	--	--	<5.00	--	--	--	--	--	--	--	--	--
Trip Blank	11/10/2001	--	--	--	<100	--	--	--	--	<0.500	<2.00	<1.00	<1.50	--	--	<5.00	--	--	--	--	--	--	--	--	--
Trip Blank	2/4/2002	--	--	--	<50.0	--	--	--	--	<0.500	<0.500	<0.500	<1.00	--	--	<5.00	--	--	--	--	--	--	--	--	--
Trip Blank	8/24/2002	--	--	--	<50	--	--	--	--	<0.50	<0.50	<0.50	<1.5	--	--	<2.5	--	--	--	--	--	--	--	--	--
Trip Blank	2/20/2003	--	--	--	<50	--	--	--	--	<0.50	<0.50	<0.50	<1.5	--	--	<2.5	--	--	--	--	--	--	--	--	--
Trip Blank	8/21/2003	--	--	--	<50	--	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	<2.5	--	--	--	--	--	--	--	--	--
Trip Blank	2/19/2004	--	--	--	<50	--	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	<2.5	--	--	--	--	--	--	--	--	--
Trip Blank	8/10/2004	--	--	--	<50	--	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	<2.5	--	--	--	--	--	--	--	--	--
Trip Blank	12/3/2004	--	--	--	<48	--	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	<2.5	--	--	--	--	--	--	--	--	--
Trip Blank	10/23/2007	--	--	--	<50	--	--	--	--	<1.0	<1.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--	--	--
Trip Blank	3/24/2008	--	--	--	<50	--	--	--	--	<1.0	<1.0	<1.0	<2.0	--	--	--	--	--	--	--	--	--	--	--	--
Trip Blank	5/12/2008	--	--	--	<50	--	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--	--	--	--	--
Trip Blank	7/28/2008	--	--	--	<50	--	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--	--	--	--	--
Trip Blank	11/3/2008	--	--	--	<50	--	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--	--	--	--	--
Trip Blank	2/10/2009	--	--	--	<50	--	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--	--	--	--	--
Trip Blank	8/11/2010	--	--	--	<50	--	--	--	--	<2.0	<2.0	<2.0	-	--	--	--	--	--	--	--	--	--	--	--	--
Trip Blank	9/9/2011	--	--	--	<50	--	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--	--	--	--	--
Trip Blank	8/27/2012	--	--	--	<50	--	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--	--	--	--	--
Trip Blank	8/27/2012	--	--	--	<50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Trip Blank	9/23/2013	--	--	--	<50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Trip Blank	10/9/2018	--	--	--	--	--	--	--	--	<0.20	<0.20	<0.40	<1.0	--	--	--	--	--	--	--	--	--	--	--	--
Trip Blank	9/19/2019	--	--	--	<100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Trip Blank	8/27/2020	--	--	--	--	--	--	--	--	<0.24	<0.39	<0.50	<0.39	--	--	--	--	0.93	--	--	--	--	--	--	--
Trip Blank	11/5/2020	--	--	--	<70	--	--	--	--	<0.24	<0.39	<0.50	<0.39	--	--	--	--	0.93	--	--	--	--	--	--	--
Equipment Blank	9/9/2011	--	--	--	<50	<29	--	<68	--	<0.5	<0.5	<0.5	<0.5	--	<0.080	--	--	<1	--	--	--	--	--	--	--
Equipment Blank	8/27/2012	--	--	--	<50	<29	--	<68	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	<1	--	--	--	--	--	--	--

**LEGEND:**

MTCA = Model Toxics Control Act Cleanup Regulations [WAC 173-340-720(2)(a)(1), as amended February 2001]  
 NA = No applicable MTCA Method A cleanup level  
 TOC = Top of Casing  
 DTW = Depth to Water  
 GWE = Groundwater elevation  
 (ft-elev) = Feet Above Elevation  
 ft = Feet  
 µg/L = Micrograms per Liter  
 TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics  
 TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics  
 TPH-HRO = Total Petroleum Hydrocarbons - Oil Range Organics  
 BTEX = Benzene, toluene, ethylbenzene, xylenes  
 VOCs = Volatile organic compounds  
 MTBE = Methyl tertiary butyl ether  
 PAHs = Polycyclic aromatic hydrocarbons  
 -- = Not available / not applicable  
 < = Not detected above laboratory method detection limit  
 J = Result is < RL but ≥ to the MDL and the concentration is an approximate value  
 B = Compound was found in the blank and sample  
 H = Sample was prepped or analyzed beyond the specified holding time  
 w/SGC = with Silica Gel Cleanup  
 1 = Not sampled due to insufficient water  
 2 = Inaccessible  
 3 = Dry  
 4 = Destroyed  
 5 = Inaccessible - Paved over

**NOTES:**

Monitoring wells MW-9, MW-10 and MW-11 have not been surveyed.  
 Concentrations in bold exceed MTCA Method A Cleanup Levels

**Table 2**  
**Geochemical Analytical Results**  
**Chevron Site No. 9-8944**  
**Richland, Washington**

Well ID	Date	TOC	DTW	GWE	Methane	Nitrate	Sulfate	Total Manganese	Dissolved Manganese	Total Iron	Dissolved Iron
	Units	ft	ft	ft elev.	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-9	5/20/2020	--	14.64	--	51	570	79,000	1,600	--	--	--
MW-9	8/27/2020	--	13.78	--	--	<20	19,000 F1	560	580	1,300	1000
MW-9	11/5/2020	--	13.75	--	1,200	<20	1,000 J	1,600.0	1,700	2,200	2,000
MW-10	5/20/2020	--	14.31	--	980 [1,200]	600 [640 H]	410,000 [380,000]	3,500 [3,400]	--	--	--
MW-10	8/27/2020	--	13.32	--	--	4,800 [4,600]	170,000 [160,000]	520 [780]	950 [890]	560 J [810 J]	760 J [670 J]
MW-10	11/5/2020	--	13.46	--	280[280]	2,100[2,200]	79,000[80,000]	760[740]	790[760]	1,200[1,200]	1,300[1,200]
MW-11	5/20/2020	--	14.33	--	1400	740	97,000	2,900	--	--	--
MW-11	8/27/2020	--	13.59	--	--	1,100	52,000	1,900	2,000	4,500	3,900
MW-11	11/5/2020	--	13.34	--	460	<20	23,000	2,000	1,900	3,200	2,900

**LEGEND:**

TOC = Top of Casing  
 DTW = Depth to Water  
 GWE = Groundwater elevation  
 (ft-elev) = Feet Above Elevation  
 ft = Feet  
 µg/L = Micrograms per Liter  
 -- = Not available / not applicable  
 < = Not detected above laboratory method detection limit  
 J = Result is < RL but ≥ to the MDL and the concentration is an approximate value

**NOTES:**

Monitoring wells MW-9, MW-10 and MW-11 have not been surveyed.

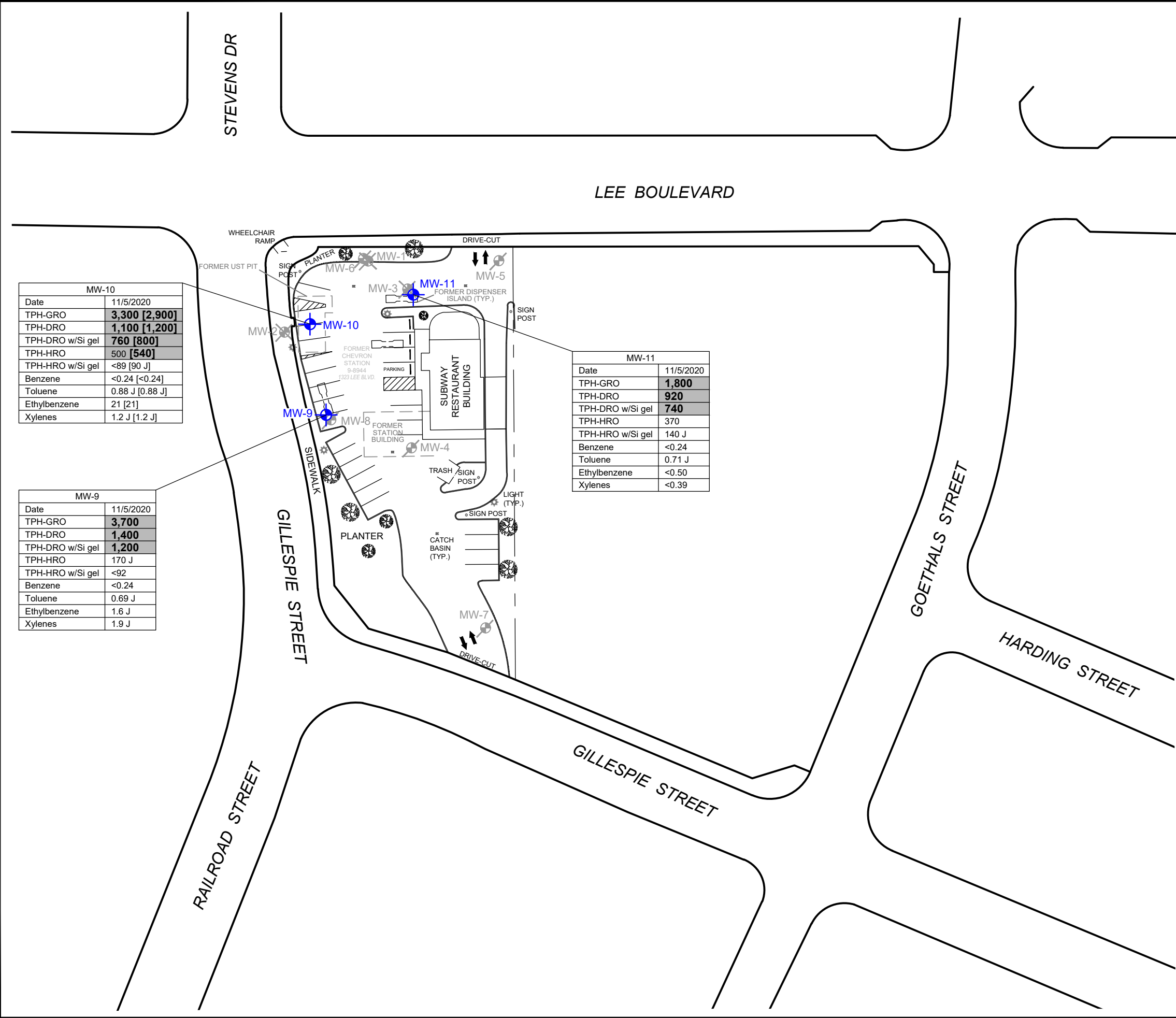
# FIGURES







CITY: IRVINE DIV: GROUP: ENV: CAD DE: E: MURESAN PIC: K: ABBOTT PM: A: JUST TM: J: NEWMAN  
 C:\Users\pab0104\1\BIM\360\Acad\Acad\ANA-CHEVRON\CORPORATION\IP\Project Files\9894\Richland WA\2020\3004604\101-DWG\GWMON-4Q20-FIG03-GWA.dwg LAYOUT: 3 SAVED: 12/21/2020 3:14 PM ACADVER: 23.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB  
 PLOTTED: 12/21/2020 3:17 PM BY: ANJANEYAKUMAR, PAVAN KUMAR



- LEGEND:**
- MW-10 GROUNDWATER MONITORING WELL LOCATION
  - MW-3 ABANDONED WELL LOCATIONS
  - MW-2 DESTROYED MONITORING WELL LOCATION
  - [21] DUPLICATE SAMPLE CONCENTRATIONS (µg/L)
  - <92 CONCENTRATIONS NOT DETECTED ABOVE LABORATORY METHOD DETECTION LIMIT
  - J ESTIMATED VALUE
  - BOLD** BOLD AND HIGHLIGHTED VALUES ARE GREATER THAN THEIR RESPECTIVE MTCA METHOD A CLEANUP LEVEL
  - 1 ECOLOGY MODEL TOXICS CONTROL ACT (MTCA) METHOD A CLEANUP LEVELS (CULS) FOR GROUNDWATER, WAC CHAPTER 173-340-900, TABLE 720-1
  - 800/1,000 GRO MTCA METHOD A CUL WITH B PRESENT IS 800 (µg/L) AND WITHOUT IS 1,000 (µg/L)
  - TPH TOTAL PETROLEUM HYDROCARBONS

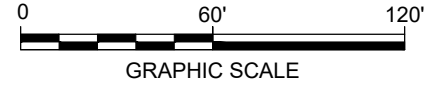
MW-10	
Date	11/5/2020
TPH-GRO	<b>3,300 [2,900]</b>
TPH-DRO	<b>1,100 [1,200]</b>
TPH-DRO w/Si gel	<b>760 [800]</b>
TPH-HRO	500 [540]
TPH-HRO w/Si gel	<89 [90 J]
Benzene	<0.24 [<0.24]
Toluene	0.88 J [0.88 J]
Ethylbenzene	21 [21]
Xylenes	1.2 J [1.2 J]

MW-11	
Date	11/5/2020
TPH-GRO	<b>1,800</b>
TPH-DRO	<b>920</b>
TPH-DRO w/Si gel	<b>740</b>
TPH-HRO	370
TPH-HRO w/Si gel	140 J
Benzene	<0.24
Toluene	0.71 J
Ethylbenzene	<0.50
Xylenes	<0.39

MW-9	
Date	11/5/2020
TPH-GRO	<b>3,700</b>
TPH-DRO	<b>1,400</b>
TPH-DRO w/Si gel	<b>1,200</b>
TPH-HRO	170 J
TPH-HRO w/Si gel	<92
Benzene	<0.24
Toluene	0.69 J
Ethylbenzene	1.6 J
Xylenes	1.9 J

Well ID		
Constituent	MTCA CULs <sup>1</sup>	
TPH-GRO	TPH as gasoline	<b>800/1,000</b>
TPH-DRO	TPH as diesel	<b>500</b>
TPH-DRO w/Si gel	TPH as diesel with silica gel cleanup	<b>500</b>
TPH-HRO	TPH as motor oil	<b>500</b>
TPH-HRO w/Si gel	TPH as motor oil with silica gel cleanup	<b>500</b>
B	Benzene	<b>5</b>
T	Toluene	<b>1,000</b>
E	Ethylbenzene	<b>700</b>
X	Xylenes (total)	<b>1,000</b>

- NOTES:**
- BASE MAP PROVIDED BY CONESTOGA-ROVERS & ASSOCIATES, DATED 11/3/2008, AT A SCALE OF 1"=30'.
  - ALL SITE FEATURES AND LOCATIONS ARE APPROXIMATE.
  - ALL VALUES REPORTED IN MICROGRAMS PER LITER (µg/L).



CHEVRON SERVICE STATION 9-8944  
 RICHLAND, WASHINGTON

GROUNDWATER CONCENTRATIONS MAP  
 NOVEMBER 5, 2020

Design & Consultancy  
 for natural and built assets

FIGURE  
**2**

# ATTACHMENT A

Sampling Logs – November 2020



## WELL GAUGING DATA

Project # 201105-LB1 Date 11/5/20 Client CHEVRON

Site 1323 LEE BLVD, RICHLAND, WA

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	Notes
MW-9	1020	2					13.75	18.32		
MW-10	1015	2				13.46	17.87			
MW-11	1008	2				13.34	17.85			

## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>201105-LB1</u>	Client: <u>CHEVRON</u>
Sampler: <u>LB</u>	Gauging Date: <u>11/5/20</u>
Well I.D.: <u>MW-9</u>	Well Diameter (in.): <u>2</u> 3 4 6 8 _____
Total Well Depth (ft.): <u>1832</u>	Depth to Water (ft.): <u>13.75</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVO</u> Grade	Flow Cell Type: <u>YSE Pro DSS</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1028      Flow Rate: 200 ML/MIN      Pump Depth: 6'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or <del>µS/cm</del> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <del>mls</del> )	Depth to Water (ft.)
1031	20.1	7.18	918	108	0.86	-64.3	600	13.79
1034	20.1	7.21	924	26	0.61	-70.8	1200	13.79
1037	19.8	7.23	926	18	0.56	-74.6	1800	13.79
1040	19.9	7.23	928	17	0.52	-79.6	2400	13.79
1043	19.9	7.24	929	17	0.51	-80.1	3000	13.79
1046	19.9	7.23	929	16	0.51	-80.9	3600	13.79

Did well dewater? Yes <input checked="" type="checkbox"/>	Amount actually evacuated: <u>3.6L</u>
Sampling Time: <u>1049</u>	Sampling Date: <u>11/5/20</u>
Sample I.D.: <u>MW-9-201105</u>	Laboratory: <u>TA</u>
Analyzed for: <u>TPH-G BTEX MTBE TPH-D</u>	Other: <u>SEE LOC</u>
Equipment Blank I.D.: _____ @ _____ Time	Duplicate I.D.: _____



## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>201105-LB1</u>	Client: <u>CHEVRON</u>
Sampler: <u>LB</u>	Gauging Date: <u>11/5/20</u>
Well I.D.: <u>MW-10</u>	Well Diameter (in.): <u>Ø 3 4 6 8</u>
Total Well Depth (ft.): <u>17.87</u>	Depth to Water (ft.): <u>13.46</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>RVD</u> Grade	Flow Cell Type: <u>YSE PRO DS</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump       Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1124      Flow Rate: 200 mL / MIN      Pump Depth: 16'

Time	Temp. ( <del>°C</del> or °F)	pH	Cond. (mS/cm or <del>µS/cm</del> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1127	19.8	7.28	1938	13	0.59	-98.6	600	13.51
1130	19.8	7.16	1916	13	0.47	-100.4	1200	13.51
1133	19.9	7.14	1913	10	0.46	-101.3	1800	13.51
1136	19.8	7.12	1911	10	0.45	-102.6	2400	13.51
1139	19.8	7.11	1910	10	0.44	-103.4	3000	13.51

Did well dewater? Yes  No       Amount actually evacuated: 3L

Sampling Time: 1140      Sampling Date: 11/5/20

Sample I.D.: MW-10-201105      Laboratory: ETA

Analyzed for:      TPH-G    BTEX    MTBE    TPH-D      Other SEE COL

Equipment Blank I.D.:      @      Duplicate I.D.: DUPLICATE - 1 - 201105

## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>201105-LB1</u>	Client: <u>CHEVRON</u>
Sampler: <u>LB</u>	Gauging Date: <u>11/5/20</u>
Well I.D.: <u>MW-11</u>	Well Diameter (in.): <u>3</u> 3 4 6 8 _____
Total Well Depth (ft.): <u>17.85</u>	Depth to Water (ft.): <u>13.34</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>YSE Pro DS</u>

Purge Method: 2" Grundfos Pump      Peristaltic  Pump      Bladder Pump  
 Sampling Method: Dedicated  Piping      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1215      Flow Rate: 200 mL / MIN      Pump Depth: 16'

Time	Temp. ( <u>C</u> or °F)	pH	Cond. ( <del>mg/L</del> or <u>µS/cm</u> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>mL</u> )	Depth to Water (ft.)
1213	20.3	7.39	1.572	13	0.66	-35.0	600	13.37
1221	20.4	7.33	1.500	12	0.56	-45.5	1200	13.37
1224	20.3	7.23	1.403	12	0.51	-54.9	1800	13.37
1227	20.3	7.20	1.408	11	0.50	-55.4	2400	13.37
1230	20.3	7.19	1.406	11	0.49	-56.1	3000	13.37
1233	20.3	7.19	1.404	11	0.49	-56.7	3600	13.37

Did well dewater? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Amount actually evacuated: <u>3.6L</u>
Sampling Time: <u>1224</u>	Sampling Date: <u>11/5/20</u>
Sample I.D.: <u>MW-11-201105</u>	Laboratory: <u>TA</u>
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: <u>SEE COL</u>
Equipment Blank I.D.: @ _____	Duplicate I.D.: _____







# ATTACHMENT B

Laboratory Analytical Report – November 2020



## ANALYTICAL REPORT

Eurofins TestAmerica, Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-98839-1  
Client Project/Site: 9-8944 Richland, WA

For:  
ARCADIS U.S. Inc  
1100 Olive Way  
Suite 800  
Seattle, Washington 98101

Attn: Eric Epple



Authorized for release by:  
11/23/2020 3:27:50 PM

Nathan Lewis, Project Manager I  
(253)922-2310  
[Nathan.Lewis@Eurofinset.com](mailto:Nathan.Lewis@Eurofinset.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*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

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	14
Chronicle . . . . .	20
Certification Summary . . . . .	22
Sample Summary . . . . .	24
Chain of Custody . . . . .	25
Receipt Checklists . . . . .	28



# Case Narrative

Client: ARCADIS U.S. Inc  
Project/Site: 9-8944 Richland, WA

Job ID: 580-98839-1

---

## Job ID: 580-98839-1

---

Laboratory: Eurofins TestAmerica, Seattle

### Narrative

#### Job Narrative 580-98839-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 11/6/2020 9:30 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.7° C.

#### Receipt Exceptions

Client requested to add NWTPH-Dx with silica gel cleanup in addition to without silica gel cleanup.

#### GC/MS VOA

Method 8260D: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for analytical batch 580-343438 recovered outside control limits for the following analyte(s): Naphthalene. Naphthalene has been identified as a poor performing analyte when analyzed using this method; therefore, re-analysis was not performed.

Method 8260D: The CCV for analytical batch 580-343438 recovered outside control limits for the following analyte(s): Naphthalene. Naphthalene has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

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

#### GC VOA

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

#### GC Semi VOA

Method NWTPH-Dx: The Diesel Range Organics (DRO) concentration reported for the following samples is due to the presence of discrete peaks: MW-9-201105 (580-98839-1), MW-10-201105 (580-98839-2), MW-11-201105 (580-98839-3) and DUPLICATE-1-201105 (580-98839-4). C10-C24

Method NWTPH-Dx: The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern was earlier than the typical diesel fuel pattern used by the laboratory for quantitative purposes: MW-9-201105 (580-98839-1), MW-10-201105 (580-98839-2), MW-11-201105 (580-98839-3) and DUPLICATE-1-201105 (580-98839-4).

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

#### Metals

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

#### General Chemistry

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

#### Organic Prep

Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 580-343462. A LCS/LCSD were used instead.

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

#### VOA Prep

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

# Definitions/Glossary

Client: ARCADIS U.S. Inc  
Project/Site: 9-8944 Richland, WA

Job ID: 580-98839-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance 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.

### General Chemistry

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

## Glossary

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

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: 9-8944 Richland, WA

Job ID: 580-98839-1

**Client Sample ID: MW-9-201105**

**Lab Sample ID: 580-98839-1**

Date Collected: 11/05/20 10:49

Matrix: Water

Date Received: 11/06/20 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0	0.24	ug/L			11/18/20 07:24	1
<b>Toluene</b>	<b>0.69</b>	<b>J</b>	2.0	0.39	ug/L			11/18/20 07:24	1
<b>Ethylbenzene</b>	<b>1.6</b>	<b>J</b>	3.0	0.50	ug/L			11/18/20 07:24	1
<b>m-Xylene &amp; p-Xylene</b>	<b>1.9</b>	<b>J</b>	3.0	0.75	ug/L			11/18/20 07:24	1
o-Xylene	ND		2.0	0.39	ug/L			11/18/20 07:24	1
<b>Naphthalene</b>	<b>4.1</b>	<b>*</b>	4.0	0.93	ug/L			11/18/20 07:24	1
<b>Xylenes, Total</b>	<b>1.9</b>	<b>J</b>	3.0	0.39	ug/L			11/18/20 07:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		11/18/20 07:24	1
1,2-Dichloroethane-d4 (Surr)	93		80 - 126		11/18/20 07:24	1
4-Bromofluorobenzene (Surr)	117		80 - 120		11/18/20 07:24	1
Dibromofluoromethane (Surr)	92		80 - 120		11/18/20 07:24	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>3700</b>		150	70	ug/L			11/17/20 15:35	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>	<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>			
4-Bromofluorobenzene (Surr)	100		68.7 - 141		11/17/20 15:35	1			

## Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Methane</b>	<b>1200</b>		5.0	0.63	ug/L			11/12/20 13:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>1.4</b>		0.11	0.062	mg/L		11/18/20 11:12	11/19/20 18:53	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>0.17</b>	<b>J</b>	0.33	0.092	mg/L		11/18/20 11:12	11/19/20 18:53	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>	<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>			
o-Terphenyl	90		50 - 150		11/18/20 11:12	11/19/20 18:53	1		

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>1.2</b>		0.11	0.062	mg/L		11/18/20 11:12	11/20/20 03:16	1
Motor Oil (>C24-C36)	ND		0.33	0.092	mg/L		11/18/20 11:12	11/20/20 03:16	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>	<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>			
o-Terphenyl	89		50 - 150		11/18/20 11:12	11/20/20 03:16	1		

## Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Iron</b>	<b>2.2</b>		1.0	0.18	mg/L		11/13/20 10:01	11/16/20 14:32	5
Lead	ND		0.0040	0.0010	mg/L		11/13/20 10:01	11/16/20 14:32	5
<b>Manganese</b>	<b>1.6</b>		0.010	0.0023	mg/L		11/13/20 10:01	11/16/20 14:32	5

## Method: 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Iron</b>	<b>2.0</b>		1.0	0.18	mg/L		11/16/20 13:51	11/18/20 21:59	5
<b>Manganese</b>	<b>1.7</b>		0.010	0.0023	mg/L		11/16/20 13:51	11/18/20 21:59	5

Eurofins TestAmerica, Seattle

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: 9-8944 Richland, WA

Job ID: 580-98839-1

**Client Sample ID: MW-9-201105**

**Lab Sample ID: 580-98839-1**

**Date Collected: 11/05/20 10:49**

**Matrix: Water**

**Date Received: 11/06/20 09:30**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.20	0.020	mg/L			11/06/20 17:49	1
Sulfate	1.0	J	1.2	0.26	mg/L			11/19/20 14:08	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: 9-8944 Richland, WA

Job ID: 580-98839-1

**Client Sample ID: MW-10-201105**

**Lab Sample ID: 580-98839-2**

Date Collected: 11/05/20 11:40

Matrix: Water

Date Received: 11/06/20 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0	0.24	ug/L			11/18/20 07:50	1
<b>Toluene</b>	<b>0.88</b>	<b>J</b>	2.0	0.39	ug/L			11/18/20 07:50	1
<b>Ethylbenzene</b>	<b>21</b>		3.0	0.50	ug/L			11/18/20 07:50	1
<b>m-Xylene &amp; p-Xylene</b>	<b>1.2</b>	<b>J</b>	3.0	0.75	ug/L			11/18/20 07:50	1
o-Xylene	ND		2.0	0.39	ug/L			11/18/20 07:50	1
<b>Naphthalene</b>	<b>27</b>	<b>*</b>	4.0	0.93	ug/L			11/18/20 07:50	1
<b>Xylenes, Total</b>	<b>1.2</b>	<b>J</b>	3.0	0.39	ug/L			11/18/20 07:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		11/18/20 07:50	1
1,2-Dichloroethane-d4 (Surr)	97		80 - 126		11/18/20 07:50	1
4-Bromofluorobenzene (Surr)	111		80 - 120		11/18/20 07:50	1
Dibromofluoromethane (Surr)	95		80 - 120		11/18/20 07:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>3300</b>		150	70	ug/L			11/17/20 16:18	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>	<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>			
4-Bromofluorobenzene (Surr)	93		68.7 - 141		11/17/20 16:18	1			

## Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Methane</b>	<b>280</b>		5.0	0.63	ug/L			11/12/20 13:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>1.1</b>		0.10	0.060	mg/L		11/18/20 11:12	11/19/20 19:13	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>0.50</b>		0.32	0.089	mg/L		11/18/20 11:12	11/19/20 19:13	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>	<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>			
o-Terphenyl	70		50 - 150		11/18/20 11:12	11/19/20 19:13	1		

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.76</b>		0.10	0.060	mg/L		11/18/20 11:12	11/20/20 03:36	1
Motor Oil (>C24-C36)	ND		0.32	0.089	mg/L		11/18/20 11:12	11/20/20 03:36	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>	<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>			
o-Terphenyl	87		50 - 150		11/18/20 11:12	11/20/20 03:36	1		

## Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Iron</b>	<b>1.2</b>		1.0	0.18	mg/L		11/13/20 10:01	11/16/20 14:36	5
Lead	ND		0.0040	0.0010	mg/L		11/13/20 10:01	11/16/20 14:36	5
<b>Manganese</b>	<b>0.76</b>		0.010	0.0023	mg/L		11/13/20 10:01	11/16/20 14:36	5

## Method: 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Iron</b>	<b>1.3</b>		1.0	0.18	mg/L		11/16/20 13:51	11/18/20 20:43	5
<b>Manganese</b>	<b>0.79</b>		0.010	0.0023	mg/L		11/16/20 13:51	11/18/20 20:43	5

Eurofins TestAmerica, Seattle

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: 9-8944 Richland, WA

Job ID: 580-98839-1

**Client Sample ID: MW-10-201105**

**Lab Sample ID: 580-98839-2**

Date Collected: 11/05/20 11:40

Matrix: Water

Date Received: 11/06/20 09:30

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	2.1		0.20	0.020	mg/L			11/06/20 18:01	1
Sulfate	79		1.2	0.26	mg/L			11/19/20 14:20	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: 9-8944 Richland, WA

Job ID: 580-98839-1

**Client Sample ID: MW-11-201105**

**Lab Sample ID: 580-98839-3**

Date Collected: 11/05/20 12:24

Matrix: Water

Date Received: 11/06/20 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0	0.24	ug/L			11/18/20 08:14	1
<b>Toluene</b>	<b>0.71</b>	<b>J</b>	2.0	0.39	ug/L			11/18/20 08:14	1
Ethylbenzene	ND		3.0	0.50	ug/L			11/18/20 08:14	1
m-Xylene & p-Xylene	ND		3.0	0.75	ug/L			11/18/20 08:14	1
o-Xylene	ND		2.0	0.39	ug/L			11/18/20 08:14	1
Naphthalene	ND *		4.0	0.93	ug/L			11/18/20 08:14	1
Xylenes, Total	ND		3.0	0.39	ug/L			11/18/20 08:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 120		11/18/20 08:14	1
1,2-Dichloroethane-d4 (Surr)	95		80 - 126		11/18/20 08:14	1
4-Bromofluorobenzene (Surr)	117		80 - 120		11/18/20 08:14	1
Dibromofluoromethane (Surr)	95		80 - 120		11/18/20 08:14	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>1800</b>		150	70	ug/L			11/17/20 16:40	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>	<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>			
4-Bromofluorobenzene (Surr)	100		68.7 - 141		11/17/20 16:40	1			

## Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Methane</b>	<b>460</b>		5.0	0.63	ug/L			11/12/20 13:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.92</b>		0.11	0.064	mg/L		11/18/20 11:12	11/19/20 19:34	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>0.37</b>		0.34	0.094	mg/L		11/18/20 11:12	11/19/20 19:34	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>	<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>			
o-Terphenyl	84		50 - 150		11/18/20 11:12	11/19/20 19:34	1		

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.74</b>		0.11	0.064	mg/L		11/18/20 11:12	11/20/20 03:56	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>0.14</b>	<b>J</b>	0.34	0.094	mg/L		11/18/20 11:12	11/20/20 03:56	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>	<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>			
o-Terphenyl	89		50 - 150		11/18/20 11:12	11/20/20 03:56	1		

## Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Iron</b>	<b>3.2</b>		1.0	0.18	mg/L		11/13/20 10:01	11/16/20 14:40	5
Lead	ND		0.0040	0.0010	mg/L		11/13/20 10:01	11/16/20 14:40	5
<b>Manganese</b>	<b>2.0</b>		0.010	0.0023	mg/L		11/13/20 10:01	11/16/20 14:40	5

## Method: 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Iron</b>	<b>2.9</b>		1.0	0.18	mg/L		11/16/20 13:51	11/18/20 22:03	5
<b>Manganese</b>	<b>1.9</b>		0.010	0.0023	mg/L		11/16/20 13:51	11/18/20 22:03	5

Eurofins TestAmerica, Seattle

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: 9-8944 Richland, WA

Job ID: 580-98839-1

**Client Sample ID: MW-11-201105**

**Lab Sample ID: 580-98839-3**

**Date Collected: 11/05/20 12:24**

**Matrix: Water**

**Date Received: 11/06/20 09:30**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.20	0.020	mg/L			11/06/20 18:13	1
Sulfate	23		1.2	0.26	mg/L			11/19/20 14:55	1



# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: 9-8944 Richland, WA

Job ID: 580-98839-1

**Client Sample ID: DUPLICATE-1-201105**

**Lab Sample ID: 580-98839-4**

Date Collected: 11/05/20 00:01

Matrix: Water

Date Received: 11/06/20 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0	0.24	ug/L			11/18/20 08:40	1
<b>Toluene</b>	<b>0.88</b>	<b>J</b>	2.0	0.39	ug/L			11/18/20 08:40	1
<b>Ethylbenzene</b>	<b>21</b>		3.0	0.50	ug/L			11/18/20 08:40	1
<b>m-Xylene &amp; p-Xylene</b>	<b>1.2</b>	<b>J</b>	3.0	0.75	ug/L			11/18/20 08:40	1
o-Xylene	ND		2.0	0.39	ug/L			11/18/20 08:40	1
<b>Naphthalene</b>	<b>28</b>	<b>*</b>	4.0	0.93	ug/L			11/18/20 08:40	1
<b>Xylenes, Total</b>	<b>1.2</b>	<b>J</b>	3.0	0.39	ug/L			11/18/20 08:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		11/18/20 08:40	1
1,2-Dichloroethane-d4 (Surr)	96		80 - 126		11/18/20 08:40	1
4-Bromofluorobenzene (Surr)	107		80 - 120		11/18/20 08:40	1
Dibromofluoromethane (Surr)	93		80 - 120		11/18/20 08:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>2900</b>		150	70	ug/L			11/17/20 17:03	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>	<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>			
4-Bromofluorobenzene (Surr)	96		68.7 - 141		11/17/20 17:03	1			

## Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Methane</b>	<b>280</b>		5.0	0.63	ug/L			11/12/20 13:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>1.2</b>		0.10	0.061	mg/L		11/18/20 11:12	11/19/20 19:54	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>0.54</b>		0.33	0.090	mg/L		11/18/20 11:12	11/19/20 19:54	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>	<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>			
o-Terphenyl	84		50 - 150		11/18/20 11:12	11/19/20 19:54	1		

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.80</b>		0.10	0.061	mg/L		11/18/20 11:12	11/20/20 04:16	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>0.090</b>	<b>J</b>	0.33	0.090	mg/L		11/18/20 11:12	11/20/20 04:16	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>	<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>			
o-Terphenyl	93		50 - 150		11/18/20 11:12	11/20/20 04:16	1		

## Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Iron</b>	<b>1.2</b>		1.0	0.18	mg/L		11/13/20 10:01	11/16/20 14:44	5
Lead	ND		0.0040	0.0010	mg/L		11/13/20 10:01	11/16/20 14:44	5
<b>Manganese</b>	<b>0.74</b>		0.010	0.0023	mg/L		11/13/20 10:01	11/16/20 14:44	5

## Method: 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Iron</b>	<b>1.2</b>		1.0	0.18	mg/L		11/16/20 13:51	11/18/20 22:23	5
<b>Manganese</b>	<b>0.76</b>		0.010	0.0023	mg/L		11/16/20 13:51	11/18/20 22:23	5

Eurofins TestAmerica, Seattle

# Client Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: 9-8944 Richland, WA

Job ID: 580-98839-1

**Client Sample ID: DUPLICATE-1-201105**

**Lab Sample ID: 580-98839-4**

Date Collected: 11/05/20 00:01

Matrix: Water

Date Received: 11/06/20 09:30

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	2.2		0.20	0.020	mg/L			11/06/20 18:24	1
Sulfate	80		1.2	0.26	mg/L			11/19/20 15:07	1

# Client Sample Results

Client: ARCADIS U.S. Inc  
 Project/Site: 9-8944 Richland, WA

Job ID: 580-98839-1

**Client Sample ID: TRIP BLANK-1-201105**

**Lab Sample ID: 580-98839-5**

Date Collected: 11/05/20 10:15

Matrix: Water

Date Received: 11/06/20 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0	0.24	ug/L			11/18/20 09:04	1
Toluene	ND		2.0	0.39	ug/L			11/18/20 09:04	1
Ethylbenzene	ND		3.0	0.50	ug/L			11/18/20 09:04	1
m-Xylene & p-Xylene	ND		3.0	0.75	ug/L			11/18/20 09:04	1
o-Xylene	ND		2.0	0.39	ug/L			11/18/20 09:04	1
Naphthalene	ND *		4.0	0.93	ug/L			11/18/20 09:04	1
Xylenes, Total	ND		3.0	0.39	ug/L			11/18/20 09:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		11/18/20 09:04	1
1,2-Dichloroethane-d4 (Surr)	93		80 - 126		11/18/20 09:04	1
4-Bromofluorobenzene (Surr)	103		80 - 120		11/18/20 09:04	1
Dibromofluoromethane (Surr)	94		80 - 120		11/18/20 09:04	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			11/17/20 17:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		68.7 - 141		11/17/20 17:24	1

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: 9-8944 Richland, WA

Job ID: 580-98839-1

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

**Lab Sample ID: MB 580-343438/5**  
**Matrix: Water**  
**Analysis Batch: 343438**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	ND		3.0	0.24	ug/L			11/18/20 01:33	1
Toluene	ND		2.0	0.39	ug/L			11/18/20 01:33	1
Ethylbenzene	ND		3.0	0.50	ug/L			11/18/20 01:33	1
m-Xylene & p-Xylene	ND		3.0	0.75	ug/L			11/18/20 01:33	1
o-Xylene	ND		2.0	0.39	ug/L			11/18/20 01:33	1
Naphthalene	ND		4.0	0.93	ug/L			11/18/20 01:33	1
Xylenes, Total	ND		3.0	0.39	ug/L			11/18/20 01:33	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	101		80 - 120		11/18/20 01:33	1
1,2-Dichloroethane-d4 (Surr)	95		80 - 126		11/18/20 01:33	1
4-Bromofluorobenzene (Surr)	99		80 - 120		11/18/20 01:33	1
Dibromofluoromethane (Surr)	99		80 - 120		11/18/20 01:33	1

**Lab Sample ID: LCS 580-343438/6**  
**Matrix: Water**  
**Analysis Batch: 343438**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	10.0	10.8		ug/L		108	80 - 120
Ethylbenzene	10.0	10.5		ug/L		105	80 - 120
m-Xylene & p-Xylene	10.0	10.0		ug/L		100	80 - 120
o-Xylene	10.0	10.7		ug/L		107	80 - 125
Naphthalene	10.0	8.29		ug/L		83	75 - 134
Xylenes, Total	20.0	20.7		ug/L		104	80 - 120

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	101		80 - 120
1,2-Dichloroethane-d4 (Surr)	97		80 - 126
4-Bromofluorobenzene (Surr)	108		80 - 120
Dibromofluoromethane (Surr)	101		80 - 120

**Lab Sample ID: LCSD 580-343438/7**  
**Matrix: Water**  
**Analysis Batch: 343438**

**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	10.1		ug/L		101	82 - 122	13	14
Toluene	10.0	9.66		ug/L		97	80 - 120	12	13
Ethylbenzene	10.0	10.0		ug/L		100	80 - 120	5	14
m-Xylene & p-Xylene	10.0	9.57		ug/L		96	80 - 120	5	14
o-Xylene	10.0	9.54		ug/L		95	80 - 125	11	16
Naphthalene	10.0	7.05 *		ug/L		71	75 - 134	16	23
Xylenes, Total	20.0	19.1		ug/L		96	80 - 120	8	16

Eurofins TestAmerica, Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: 9-8944 Richland, WA

Job ID: 580-98839-1

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

**Lab Sample ID: LCSD 580-343438/7**  
**Matrix: Water**  
**Analysis Batch: 343438**

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

Surrogate	LCS D %Recovery	LCS D Qualifier	Limits
Toluene-d8 (Surr)	102		80 - 120
1,2-Dichloroethane-d4 (Surr)	95		80 - 126
4-Bromofluorobenzene (Surr)	106		80 - 120
Dibromofluoromethane (Surr)	102		80 - 120

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

**Lab Sample ID: MB 590-29707/6**  
**Matrix: Water**  
**Analysis Batch: 29707**

**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			11/17/20 15:14	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		68.7 - 141		11/17/20 15:14	1

**Lab Sample ID: LCS 590-29707/1005**  
**Matrix: Water**  
**Analysis Batch: 29707**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1000	1070		ug/L		107	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	93		68.7 - 141

**Lab Sample ID: 580-98839-1 DU**  
**Matrix: Water**  
**Analysis Batch: 29707**

**Client Sample ID: MW-9-201105**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Gasoline	3700		3510		ug/L		5	35

Surrogate	DU %Recovery	DU Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		68.7 - 141

## Method: RSK-175 - Dissolved Gases (GC)

**Lab Sample ID: MB 280-516425/7**  
**Matrix: Water**  
**Analysis Batch: 516425**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			11/12/20 11:00	1

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: 9-8944 Richland, WA

Job ID: 580-98839-1

## Method: RSK-175 - Dissolved Gases (GC) (Continued)

**Lab Sample ID: LCS 280-516425/6**  
**Matrix: Water**  
**Analysis Batch: 516425**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane	73.0	69.1		ug/L		95	75 - 125

**Lab Sample ID: LCSD 280-516425/55**  
**Matrix: Water**  
**Analysis Batch: 516425**

**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
Methane	73.0	56.4		ug/L		77	75 - 125	20	20
Methane	73.0	56.6		ug/L		78	75 - 125	20	20

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

**Lab Sample ID: MB 580-343462/1-A**  
**Matrix: Water**  
**Analysis Batch: 343639**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 343462**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.11	0.065	mg/L		11/18/20 11:12	11/19/20 17:53	1
Motor Oil (>C24-C36)	ND		0.35	0.096	mg/L		11/18/20 11:12	11/19/20 17:53	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	65		50 - 150	11/18/20 11:12	11/19/20 17:53	1

**Lab Sample ID: LCS 580-343462/2-A**  
**Matrix: Water**  
**Analysis Batch: 343639**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 343462**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	2.00	1.59		mg/L		79	50 - 120
Motor Oil (>C24-C36)	2.00	1.98		mg/L		99	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	73		50 - 150

**Lab Sample ID: LCSD 580-343462/3-A**  
**Matrix: Water**  
**Analysis Batch: 343639**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 343462**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	2.00	1.56		mg/L		78	50 - 120	2	26
Motor Oil (>C24-C36)	2.00	2.05		mg/L		102	64 - 120	4	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
o-Terphenyl	83		50 - 150

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: 9-8944 Richland, WA

Job ID: 580-98839-1

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

**Lab Sample ID: MB 580-343462/1-B**  
**Matrix: Water**  
**Analysis Batch: 343639**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 343462**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
#2 Diesel (C10-C24)	ND		0.11	0.065	mg/L		11/18/20 11:12	11/20/20 02:16	1
Motor Oil (>C24-C36)	ND		0.35	0.096	mg/L		11/18/20 11:12	11/20/20 02:16	1
Surrogate	MB MB		Limits			D	Prepared	Analyzed	Dil Fac
%Recovery	Qualifier								
o-Terphenyl	68		50 - 150				11/18/20 11:12	11/20/20 02:16	1

**Lab Sample ID: LCS 580-343462/2-B**  
**Matrix: Water**  
**Analysis Batch: 343639**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 343462**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits	%Rec.	
									#2 Diesel (C10-C24)
Motor Oil (>C24-C36)	2.00	2.09		mg/L		104	64 - 120		
Surrogate	LCS LCS		Limits			D	Prepared	Analyzed	Dil Fac
%Recovery	Qualifier								
o-Terphenyl	76		50 - 150						

**Lab Sample ID: LCSD 580-343462/3-B**  
**Matrix: Water**  
**Analysis Batch: 343639**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 343462**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Motor Oil (>C24-C36)	2.00	2.17		mg/L		109	64 - 120	4	24
Surrogate	LCSD LCSD		Limits			D	Prepared	Analyzed	Dil Fac
%Recovery	Qualifier								
o-Terphenyl	83		50 - 150						

## Method: 6020B - Metals (ICP/MS)

**Lab Sample ID: MB 580-343135/22-A**  
**Matrix: Water**  
**Analysis Batch: 343294**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 343135**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Iron	ND		0.20	0.036	mg/L		11/13/20 10:03	11/16/20 13:28	1
Lead	ND		0.00080	0.00020	mg/L		11/13/20 10:03	11/16/20 13:28	1
Manganese	ND		0.0020	0.00046	mg/L		11/13/20 10:03	11/16/20 13:28	1

**Lab Sample ID: LCS 580-343135/23-A**  
**Matrix: Water**  
**Analysis Batch: 343294**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 343135**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits	%Rec.
Lead	1.00	0.961		mg/L		96	80 - 120	
Manganese	1.00	0.994		mg/L		99	80 - 120	

Eurofins TestAmerica, Seattle

# QC Sample Results

Client: ARCADIS U.S. Inc  
Project/Site: 9-8944 Richland, WA

Job ID: 580-98839-1

## Method: 6020B - Metals (ICP/MS) (Continued)

**Lab Sample ID: LCSD 580-343135/24-A**  
**Matrix: Water**  
**Analysis Batch: 343294**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total Recoverable**  
**Prep Batch: 343135**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
							Limits	RPD		
Iron	20.0	20.2		mg/L		101	80 - 120	0	20	
Lead	1.00	0.968		mg/L		97	80 - 120	1	20	
Manganese	1.00	0.994		mg/L		99	80 - 120	0	20	

**Lab Sample ID: MB 580-343284/23-A**  
**Matrix: Water**  
**Analysis Batch: 343563**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 343284**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		0.010	0.0023	mg/L		11/16/20 13:51	11/18/20 20:39	5

**Lab Sample ID: LCS 580-343284/24-A**  
**Matrix: Water**  
**Analysis Batch: 343563**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 343284**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	
							Limits	RPD
Iron	20.0	20.9		mg/L		104	80 - 120	
Manganese	1.00	1.03		mg/L		103	80 - 120	

**Lab Sample ID: LCSD 580-343284/25-A**  
**Matrix: Water**  
**Analysis Batch: 343563**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total Recoverable**  
**Prep Batch: 343284**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
							Limits	RPD		
Iron	20.0	20.7		mg/L		103	80 - 120	1	20	
Manganese	1.00	1.03		mg/L		103	80 - 120	1	20	

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 580-342679/9**  
**Matrix: Water**  
**Analysis Batch: 342679**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

**Lab Sample ID: LCS 580-342679/10**  
**Matrix: Water**  
**Analysis Batch: 342679**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	
							Limits	RPD
Nitrate as N	5.00	4.81		mg/L		96	90 - 110	

**Lab Sample ID: LCSD 580-342679/11**  
**Matrix: Water**  
**Analysis Batch: 342679**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
							Limits	RPD		
Nitrate as N	5.00	4.81		mg/L		96	90 - 110	0	15	

Eurofins TestAmerica, Seattle



# QC Sample Results

Client: ARCADIS U.S. Inc  
 Project/Site: 9-8944 Richland, WA

Job ID: 580-98839-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: MB 580-343659/33**  
**Matrix: Water**  
**Analysis Batch: 343659**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.2	0.26	mg/L			11/19/20 18:38	1

**Lab Sample ID: LCS 580-343659/34**  
**Matrix: Water**  
**Analysis Batch: 343659**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	50.0	52.3		mg/L		105	90 - 110

**Lab Sample ID: LCSD 580-343659/35**  
**Matrix: Water**  
**Analysis Batch: 343659**

**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
Sulfate	50.0	52.5		mg/L		105	90 - 110	0	15

# Lab Chronicle

Client: ARCADIS U.S. Inc  
Project/Site: 9-8944 Richland, WA

Job ID: 580-98839-1

**Client Sample ID: MW-9-201105**

**Lab Sample ID: 580-98839-1**

**Date Collected: 11/05/20 10:49**

**Matrix: Water**

**Date Received: 11/06/20 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	343438	11/18/20 07:24	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	29707	11/17/20 15:35	JSP	TAL SPK
Total/NA	Analysis	RSK-175		1	516425	11/12/20 13:15	CAS	TAL DEN
Total/NA	Prep	3510C			343462	11/18/20 11:12	JBT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	343639	11/19/20 18:53	TL1	TAL SEA
Total/NA	Prep	3510C			343462	11/18/20 11:12	JBT	TAL SEA
Total/NA	Cleanup	3630C			343522	11/18/20 16:57	JBT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	343639	11/20/20 03:16	TL1	TAL SEA
Dissolved	Prep	3005A			343284	11/16/20 13:51	ART	TAL SEA
Dissolved	Analysis	6020B		5	343563	11/18/20 21:59	FCW	TAL SEA
Total Recoverable	Prep	3005A			343135	11/13/20 10:01	ART	TAL SEA
Total Recoverable	Analysis	6020B		5	343294	11/16/20 14:32	FCW	TAL SEA
Total/NA	Analysis	300.0		1	342679	11/06/20 17:49	AAC	TAL SEA
Total/NA	Analysis	300.0		1	343659	11/19/20 14:08	AAC	TAL SEA

**Client Sample ID: MW-10-201105**

**Lab Sample ID: 580-98839-2**

**Date Collected: 11/05/20 11:40**

**Matrix: Water**

**Date Received: 11/06/20 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	343438	11/18/20 07:50	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	29707	11/17/20 16:18	JSP	TAL SPK
Total/NA	Analysis	RSK-175		1	516425	11/12/20 13:28	CAS	TAL DEN
Total/NA	Prep	3510C			343462	11/18/20 11:12	JBT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	343639	11/19/20 19:13	TL1	TAL SEA
Total/NA	Prep	3510C			343462	11/18/20 11:12	JBT	TAL SEA
Total/NA	Cleanup	3630C			343522	11/18/20 16:57	JBT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	343639	11/20/20 03:36	TL1	TAL SEA
Dissolved	Prep	3005A			343284	11/16/20 13:51	ART	TAL SEA
Dissolved	Analysis	6020B		5	343563	11/18/20 20:43	FCW	TAL SEA
Total Recoverable	Prep	3005A			343135	11/13/20 10:01	ART	TAL SEA
Total Recoverable	Analysis	6020B		5	343294	11/16/20 14:36	FCW	TAL SEA
Total/NA	Analysis	300.0		1	342679	11/06/20 18:01	AAC	TAL SEA
Total/NA	Analysis	300.0		1	343659	11/19/20 14:20	AAC	TAL SEA

**Client Sample ID: MW-11-201105**

**Lab Sample ID: 580-98839-3**

**Date Collected: 11/05/20 12:24**

**Matrix: Water**

**Date Received: 11/06/20 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	343438	11/18/20 08:14	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	29707	11/17/20 16:40	JSP	TAL SPK
Total/NA	Analysis	RSK-175		1	516425	11/12/20 13:40	CAS	TAL DEN

Eurofins TestAmerica, Seattle

# Lab Chronicle

Client: ARCADIS U.S. Inc  
 Project/Site: 9-8944 Richland, WA

Job ID: 580-98839-1

**Client Sample ID: MW-11-201105**

**Lab Sample ID: 580-98839-3**

**Date Collected: 11/05/20 12:24**

**Matrix: Water**

**Date Received: 11/06/20 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			343462	11/18/20 11:12	JBT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	343639	11/19/20 19:34	TL1	TAL SEA
Total/NA	Prep	3510C			343462	11/18/20 11:12	JBT	TAL SEA
Total/NA	Cleanup	3630C			343522	11/18/20 16:57	JBT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	343639	11/20/20 03:56	TL1	TAL SEA
Dissolved	Prep	3005A			343284	11/16/20 13:51	ART	TAL SEA
Dissolved	Analysis	6020B		5	343563	11/18/20 22:03	FCW	TAL SEA
Total Recoverable	Prep	3005A			343135	11/13/20 10:01	ART	TAL SEA
Total Recoverable	Analysis	6020B		5	343294	11/16/20 14:40	FCW	TAL SEA
Total/NA	Analysis	300.0		1	342679	11/06/20 18:13	AAC	TAL SEA
Total/NA	Analysis	300.0		1	343659	11/19/20 14:55	AAC	TAL SEA

**Client Sample ID: DUPLICATE-1-201105**

**Lab Sample ID: 580-98839-4**

**Date Collected: 11/05/20 00:01**

**Matrix: Water**

**Date Received: 11/06/20 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	343438	11/18/20 08:40	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	29707	11/17/20 17:03	JSP	TAL SPK
Total/NA	Analysis	RSK-175		1	516425	11/12/20 13:52	CAS	TAL DEN
Total/NA	Prep	3510C			343462	11/18/20 11:12	JBT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	343639	11/19/20 19:54	TL1	TAL SEA
Total/NA	Prep	3510C			343462	11/18/20 11:12	JBT	TAL SEA
Total/NA	Cleanup	3630C			343522	11/18/20 16:57	JBT	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	343639	11/20/20 04:16	TL1	TAL SEA
Dissolved	Prep	3005A			343284	11/16/20 13:51	ART	TAL SEA
Dissolved	Analysis	6020B		5	343563	11/18/20 22:23	FCW	TAL SEA
Total Recoverable	Prep	3005A			343135	11/13/20 10:01	ART	TAL SEA
Total Recoverable	Analysis	6020B		5	343294	11/16/20 14:44	FCW	TAL SEA
Total/NA	Analysis	300.0		1	342679	11/06/20 18:24	AAC	TAL SEA
Total/NA	Analysis	300.0		1	343659	11/19/20 15:07	AAC	TAL SEA

**Client Sample ID: TRIP BLANK-1-201105**

**Lab Sample ID: 580-98839-5**

**Date Collected: 11/05/20 10:15**

**Matrix: Water**

**Date Received: 11/06/20 09:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	343438	11/18/20 09:04	JSM	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	29707	11/17/20 17:24	JSP	TAL SPK

**Laboratory References:**

- TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
- TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310
- TAL SPK = Eurofins TestAmerica, Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

# Accreditation/Certification Summary

Client: ARCADIS U.S. Inc  
 Project/Site: 9-8944 Richland, WA

Job ID: 580-98839-1

## Laboratory: Eurofins TestAmerica, Seattle

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

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	WA100007	11-05-21

## Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-21
A2LA	ISO/IEC 17025	2907.01	10-31-21
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-08-21
Arizona	State	AZ0713	12-20-20
Arkansas DEQ	State	19-047-0	06-01-21
California	State	2513	01-08-21
Connecticut	State	PH-0686	09-30-20 *
Florida	NELAP	E87667-57	07-01-21
Georgia	State	4025-011	01-09-21
Illinois	NELAP	2000172019-1	04-30-21
Iowa	State	IA#370	12-01-20
Kansas	NELAP	E-10166	04-30-21
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-21
Maine	State	2019011 (231)	03-03-21
Minnesota	NELAP	1788752	12-31-20
Nevada	State	CO000262020-1	07-31-21
New Hampshire	NELAP	205319	04-29-21
New Jersey	NELAP	190002	06-30-21
New York	NELAP	59923	04-01-21
North Carolina (WW/SW)	State	358	12-31-20
North Dakota	State	R-034	01-08-21
Oklahoma	State	2018-006	09-01-21
Oregon	NELAP	4025-011	01-08-21
Pennsylvania	NELAP	013	07-31-21
South Carolina	State	72002001	01-08-21
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-20-18	09-30-21
US Fish & Wildlife	US Federal Programs	058448	08-01-21
USDA	US Federal Programs	P330-18-00099	03-26-21
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-21
Virginia	NELAP	10490	06-14-21
Washington	State	C583-19	08-03-21
West Virginia DEP	State	354	11-30-20
Wisconsin	State	999615430	08-31-21
Wyoming (UST)	A2LA	2907.01	10-31-21

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Accreditation/Certification Summary

Client: ARCADIS U.S. Inc  
Project/Site: 9-8944 Richland, WA

Job ID: 580-98839-1

## Laboratory: Eurofins TestAmerica, Spokane

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-025	01-07-21
Oregon	NELAP	4137	12-08-20
Washington	State	C569	01-06-21

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

# Sample Summary

Client: ARCADIS U.S. Inc  
Project/Site: 9-8944 Richland, WA

Job ID: 580-98839-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
580-98839-1	MW-9-201105	Water	11/05/20 10:49	11/06/20 09:30	
580-98839-2	MW-10-201105	Water	11/05/20 11:40	11/06/20 09:30	
580-98839-3	MW-11-201105	Water	11/05/20 12:24	11/06/20 09:30	
580-98839-4	DUPLICATE-1-201105	Water	11/05/20 00:01	11/06/20 09:30	
580-98839-5	TRIP BLANK-1-201105	Water	11/05/20 10:15	11/06/20 09:30	

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









**Eurofins TestAmerica, Seattle**

5755 8th Street East  
Tacoma, WA 98424  
Phone: 253-922-2310 Fax: 253-922-5047

**Chain of Custody Record**



Environment Testing  
America

<b>Client Information (Sub Contract Lab)</b>		Sampler:		Lab PM: Lewis, Nathan A		Carrier Tracking No(s):		COC No: 580-83859.1		
Client Contact: Shipping/Receiving		Phone:		E-Mail: Nathan.Lewis@Eurofinset.com		State of Origin: Washington		Page: Page 1 of 1		
Company: TestAmerica Laboratories, Inc				Accreditations Required (See note): NELAP - Oregon				Job #: 580-98839-1		
Address: 11922 East 1st Ave,		Due Date Requested: 11/18/2020		<b>Analysis Requested</b>				<b>Preservation Codes:</b> A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify)		
City: Spokane		TAT Requested (days):								
State, Zip: WA, 99206		PO #:		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) NWTPH_Ox_MS/MS/30C Gx by GCMS		Total Number of containers		Other:		
Phone: 509-924-9200(Tel) 509-924-9290(Fax)		WO #:								
Email:		Project #: 58014870		SSOW#:						
Project Name: 9-8944 Richland, WA										
Site:										
<b>Sample Identification - Client ID (Lab ID)</b>		<b>Sample Date</b>	<b>Sample Time</b>	<b>Sample Type (C=comp, G=grab)</b>	<b>Matrix (W=water, S=solid, O=wastefluid, BT=Tissue, A=Air)</b>	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	NWTPH_Ox_MS/MS/30C Gx by GCMS	Total Number of containers	<b>Special Instructions/Note:</b>
				Preservation Code:						
MW-9-201105 (580-98839-1)		11/5/20	10:49 Pacific	Water	Water		X		3	
MW-10-201105 (580-98839-2)		11/5/20	11:40 Pacific	Water	Water		X		3	
MW-11-201105 (580-98839-3)		11/5/20	12:24 Pacific	Water	Water		X		3	
DUPLICATE-1-201105 (580-98839-4)		11/5/20	00:01 Pacific	Water	Water		X		3	
TRIP BLANK-1-201105 (580-98839-5)		11/5/20	10:15 Pacific	Water	Water		X		1	
<p>Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte &amp; accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.</p>										
<b>Possible Hazard Identification</b>						<b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b>				
Unconfirmed						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months				
Deliverable Requested: I, II, III, IV, Other (specify)			Primary Deliverable Rank: 2			Special Instructions/QC Requirements:				
Empty Kit Relinquished by:			Date:		Time:		Method of Shipment:			
Relinquished by: <i>Tom Blante</i>		Date/Time: 11/16/20		Company: TA-Sea		Received by:		Date/Time:		Company:
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks:				

# Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-98839-1

**Login Number: 98839**

**List Source: Eurofins TestAmerica, Seattle**

**List Number: 1**

**Creator: Blankinship, Tom X**

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

## Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-98839-1

**Login Number: 98839**

**List Number: 2**

**Creator: Pottruff, Reed W**

**List Source: Eurofins TestAmerica, Denver**

**List Creation: 11/10/20 10:07 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-98839-1

**Login Number: 98839**  
**List Number: 3**  
**Creator: O'Toole, Maria C**

**List Source: Eurofins TestAmerica, Spokane**  
**List Creation: 11/17/20 11:54 AM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	145366
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	1.9
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	Received project as a subcontract.
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 <math><6\text{mm}</math> (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.

