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

ENVIRONMENT

Subject:
Second Quarter 2022 Groundwater Monitoring Report
Former Chevron Station No. 98944
1323 Lee Boulevard
Richland, Washington
Facility Site ID: 27223439
Cleanup Site ID: 5798

Date:
June 28, 2022

Contact:
Ada Hamilton

Phone:
206.413.6430

Email:
Ada.Hamilton@arcadis.com

Our ref:
30064311

Dear Mr. Winslow:

On behalf of Chevron Environmental Management Company (CEMC), Arcadis U.S., Inc. (Arcadis) has prepared this *Second Quarter 2022 Groundwater Monitoring Report* (Report) to document the second quarter groundwater monitoring activities at Former Chevron Station No. 98944 (the site; Figures 1 and 2) located at 1323 Lee Boulevard in Richland, Washington. The three remaining onsite monitoring wells (MW-9, MW-10, and MW-11) were gauged and sampled during the monitoring event on April 5, 2022.

SITE BACKGROUND

The site was operated as a Standard Oil/Chevron gasoline service station from 1960 until approximately 1976. All station features were subsequently demolished, and the site was redeveloped in 2003 with a commercial structure and associated parking areas. Currently, the site is occupied by a Subway restaurant. Previous site investigations and site history were summarized in the *First Quarter 2020 Groundwater Monitoring Report* (Arcadis 2020).

SITE GEOLOGY/HYDROGEOLOGY

The topography of the general site area slopes gently to the east and southeast (Figure 1). The confluence of the Yakima and Columbia Rivers is located south-southeast of the site. The topography to the west contains an alluvial terrace running north-south.

The site is located in Pasco Basin. Local geology consists of alluvial sediments deposited over basalt bedrock of the Columbia River Basalt Group (Reidel and Fecht, 1994). Glacial outburst flood deposits (cobbles, gravels, and sands) were deposited on top of this and reworked by local streams and rivers, chiefly the

Columbia River in this region (Reidel and Fecht, 1994).

Previous subsurface explorations at the site have generally encountered silt and sandy gravels to depths of approximately 20 feet below ground surface (bgs) (CRA 2007). The soil types 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.

Depth to groundwater beneath the site ranges from approximately 6 to 15 feet bgs. The general groundwater flow appears to follow the local topography toward the east-southeast.

GROUNDWATER MONITORING AND SAMPLING

Groundwater monitoring and sampling was completed at the site on April 5, 2022 by Blaine Tech Services, Inc. (Blaine Tech). The completed tasks included measuring depth to groundwater, collection of groundwater samples, and recording of groundwater quality parameters (recorded on field forms; Attachment 1) from 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 April 5, 2022. Depth to groundwater ranged from 13.35 to 13.69 feet below top of casing and groundwater elevations ranged from 345.52 to 345.61 feet above the North American Vertical Datum of 1988 (NAVD88). The measured groundwater depths and elevations are 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 via low-flow methods. During the purging process, the following parameters were monitored and recorded on the sampling field forms, included as Attachment 1.

- pH
- electrical conductivity
- turbidity
- dissolved oxygen
- oxidation reduction potential
- temperature

Purging continued until these parameters stabilized in accordance with United States Environmental Protection Agency procedures (USEPA 2017). Samples were then collected in laboratory-supplied containers, labeled, packaged in ice-cooled chests, and shipped under proper chain-of-custody protocols to Pace Analytical (National Center for Testing & Innovation) in Mount Juliet, Tennessee. Groundwater samples were analyzed for the following constituents:

- Total petroleum hydrocarbons – gasoline range organics (TPH-GRO) by Northwest method NWTPH-Gx;
- Total petroleum hydrocarbons – diesel and heavy oil range organics (TPH-DRO/HRO) by Northwest method NWTPH-Dx with and without silica-gel cleanup (SGC) sample preparation; and
- Benzene, toluene, ethylbenzene and xylene (BTEX) by USEPA method 8260D.

The laboratory analytical report and chain-of-custody documentation are included in Attachment 2.

QUALITY ASSURANCE/QUALITY CONTROL

Trip blanks assess potential sample contamination resulting from the transportation and storing of samples. One trip blank was submitted to Pace Analytical and was analyzed for BTEX by USEPA method 8260D. Analysis of the trip blank for the monitoring event indicated a concentration of total xylenes less than the laboratory reporting limit but greater than the method detection limit (0.242 J µg/L, J = the reported value is an estimate).

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 Pace Analytical for chemical analysis. The parent and duplicate sample results are considered comparable.

DATA INTERPRETATION AND CONCLUSIONS

Current and historical groundwater elevations and analytical results for site constituents of potential concern (COPCs) are summarized in Table 1; historical geochemical analytical results are summarized in Table 2; and groundwater field parameters are summarized in Table 3. Based on local topography and previous sampling events, the groundwater flow direction is inferred to be generally to the east-southeast with some variation noted. The groundwater flow direction for the current quarter was observed to be to the south-southeast. A groundwater contour map and the analytical results reported for the groundwater samples collected on April 5, 2022 are shown on Figure 2.

TPH-GRO, TPH-DRO and TPH-DRO w/SGC were detected in well MW-9 above the applicable Model Toxics Control Act (MTCA) Method A cleanup levels (CULs) at concentrations of 6,540 µg/L, 1,120 µg/L, and 729 µg/L, respectively. TPH-GRO was also detected in the well MW-10 duplicate sample above the MTCA Method A CUL at a concentration of 867 µg/L. Other COPCs were either not detected in the wells or were detected at concentrations below CULs.

Groundwater monitoring will continue on a quarterly basis. The next groundwater monitoring event is currently scheduled for third quarter of 2022. Potential biodegradation of dissolved site-related COPCs in groundwater will continue to be evaluated during sampling events in the first and third quarter of each year. Seasonal variation of geochemical parameters will be evaluated after third quarter data is collected.

A *Draft Monitoring Well Installation Work Plan* (work plan) was submitted to Ecology on March 29, 2022 proposing the installation of additional monitoring wells at the site to further evaluate the extent of petroleum hydrocarbons in groundwater and the occurrence of natural attenuation. We are awaiting a response from Ecology to the work plan.

Please contact Ada Hamilton at ada.hamilton@arcadis.com if you should have any questions.

Sincerely,

Arcadis U.S., Inc.

Ada Hamilton
Project Manager

Zackary Wall, L.G.
Licensed Geologist 3325

Copies:

James Kiernan, CEMC

REFERENCES

Arcadis, 2020. First Quarter 2020 Groundwater Monitoring Report, Chevron Ste No. 9-8944, 1323 Lee Boulevard, Richland, WA, March17.

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

Ecology. 2005. Version 1.0; Guidance on Remediation of Petroleum-Contaminated Ground Water By Natural Attenuation. July.

USEPA, 2017, Low Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells, United States Environmental Protection Agency, EQASOP-GW4. https://www.epa.gov/sites/production/files/2017-10/documents/eqasop-gw4.pdf

Reidel, S.P., and Fecht, K.R. 1994. Geologic Map of the Richland 1:100,000 Quadrangle. Washington Division of Geology and Earth Resources Open File Report 94-8. June.

Enclosures:

Tables

1 Groundwater Monitoring Data and Analytical Results
2 Geochemical Analytical Results
3 Groundwater Field Sampling Results

Figures

1 Site Location Map
2 Groundwater Elevation and Concentrations Map – April 5, 2022

Attachments

1 Field Data and Chain of Custody
2 Laboratory Analytical Report

Tables

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

					HYDROCARBONS					PRIMARY VOCs				LEAD		OXYGENATES		PAHs							
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
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[1]	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	<50.0	--	--	--	--	--	--	--	--
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[2]	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[1]	93.98	11.79	82.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	08/10/2004[1]	93.98	10.97	83.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	12/03/2004[1]	93.98	11.39	82.59	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	02/21/2006[3]	93.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	10/23/2007[4]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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[1]	93.21	11.52	81.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	10/23/2007[4]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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[1]	94.57	9.52	85.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	08/11/2001[5]	94.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	11/10/2001[2]	94.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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

					HYDROCARBONS					PRIMARY VOCs				LEAD		OXYGENATES		PAHs							
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
MW-3	02/04/2002[2]	94.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	08/24/2002[3]	94.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	02/20/2003[2]	94.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	08/21/2003[3]	94.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	02/19/2004[3]	94.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	08/10/2004[3]	94.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	12/03/2004[4]	94.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	02/21/2006[3]	94.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	10/23/2007[2]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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	**3,400**	**670**	--	<260	--	<0.10	<0.066	0.41	0.57	3.0	**27**	--	<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	**1,100**	**830**	--	<240	--	<1.0	<1.0	<1.0	<2.0	<2.0	**67**	--	<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	0.26	<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	**33**	--	<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	--	--	--	--	--	--	--	--	--	--

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

					HYDROCARBONS					PRIMARY VOCs				LEAD		OXYGENATES		PAHs							
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
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	**33,000**	**4,000**	--	270	--	0.12	16	**1,300**	**2,280**	<2.0	**22**	--	<0.14	**190**	<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	**13,000**	**3,000**	--	<240	--	<1.0	15	610	821	<2.0	**54**	--	<1.0	**320**	--	--	--	--	--	--	--	--
MW-8	5/12/2008	359.29	14.31	344.98	**18,000 J**	**4,600**	--	<970	--	<1	17	640	**1,100**	--	0.44	--	<1	**410**	--	--	--	--	--	--	--	--
MW-8	7/28/2008	359.29	13.13	346.16	**16,000**	**8,000**	--	<490	--	<0.5	9	**800**	**1,300**	--	1.2	--	<0.5	**500**	--	--	--	--	--	--	--	--
MW-8	11/3/2008	359.29	13.65	345.64	**15,000**	**6,900**	--	<670	--	<0.5	10	**760**	520	--	1.6	--	<0.5	**410**	--	--	--	--	--	--	--	--
MW-8	2/11/2009	359.29	13.92	345.37	**4,800**	**550**	--	<66	--	<0.5	0.8	200	70	--	0.24	--	--	110	--	--	--	--	--	--	--	--
MW-8	8/11/2010	359.29	13.74	345.55	**9,900**	**1,000**	--	<250	--	<2.0	2.9	620	973	--	--	--	--	**300**	--	--	--	--	--	--	--	--
MW-8	9/9/2011	359.29	13.85	345.44	**2,100 [2,200]**	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	**3,000 [2,900]**	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	**4,000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	10/9/2018	--	13.73	--	**7,800**	**960**	420	<100	<70	<1.0	2.0	240	19	<1.1	<1.1	--	--	--	--	--	--	--	--	--	--	--
MW-9	12/12/2018	--	14.07	--	**7,600**	**760**	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	--	**4,400**	**1,400**	--	160 J	--	<0.53	1.2J	28	11	--	<1.0	--	--	--	--	--	--	--	--	--	--	--
MW-9	5/20/2020	--	14.64	--	**2,600**	**1,300**	**1,200**	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	--	**3,700**	**1,400**	**1,200**	170 J	<92	<0.24	0.69 J	1. 6 J	1.9 J	--	<1.0	--	--	4.1 *	--	--	--	--	--	--	--	--
MW-9	2/24/2021	--	13.68	--	**4,200**	**1,400**	--	150 J	--	0.24	1.1 J	59	11	--	--	--	--	150 *+	--	--	--	--	--	--	--	--
MW-9	5/18/2021	--	14.19	--	**1,550**	464	257	<250	<250	<0.941	<0.278	0.631 J	0.490 J	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	8/18/2021	359.21	13.79	345.42	**1,080**	448	265	<250	<250	<1.00	<1.00	0.324 J	0.198 J	--	<6.00	--	--	--	--	--	--	--	--	--	--	--
MW-9	11/10/2021	359.21	13.30	345.91	455 B	229	153 J	<250	<250	<1.00	<1.00	<1.00	<3.00	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	1/18/2022	359.21	13.33	345.88	**3,550**	**1,090**	**580**	183 J	<250	<1.00	1.49	66.4	32.1	--	<6.00	--	--	--	--	--	--	--	--	--	--	--
MW-9	4/5/2022	359.21	13.69	345.52	**6,540**	**1,120**	**729**	<250	<250	<1.00	1.33	76.2	11.9	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	10/9/2018	--	13.47	--	**9,500 [9,400]**	**740 [680]**	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	--	**8,000 [7,900]**	**540 [540]**	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	--	**4,600 [4,500]**	**1,300 [1,200]**	--	150 J [150 J]	--	<0.53 [<0.53]	<0.39 [<0.39]	31 [33]	1.8J [2.0 J]	--	1.1 J	--	--	--	--	--	--	--	--	--	--	--
MW-10	5/20/2020	--	14.31	--	**4,900 [4,700]**	**2,100 [2,400]**	**1,500 [1,900]**	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	--	**1,100 [1,000]**	**810 [1000]**	--	**670 B [910 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	--	**3,300 [2,900]**	**1,100 [1,200]**	**760 [800]**	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-10	2/24/2021	--	13.37	--	**3,300 [3,400]**	**1,000 [1,200]**	--	220 J [240 J]	--	0.24 [0.24]	0.65 J [0.63 J]	27 [28]	1.7 J [1.6 J]	--	--	--	--	62 *+ [46 *+]	--	--	--	--	--	--	--	--
MW-10	5/18/2021	--	13.78	--	**3,200 [3,780]**	**771 [812]**	215 [343]	<250	<250	<0.941 [<0.0941]	<0.278 [<0.278]	15.1 [21.1]	0.875 J [1.40 J]	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	8/18/2021	358.96	12.44	346.52	**1,440 [996]**	**704 [599]**	233 [96.5 J]	428 **[523]**	<250 [<250]	<1.00 [<1.00]	0.394 J [0.327 J]	4.93 [3.51]	0.352 J [0.307 J]	--	<6.00 [<6.00]	--	--	--	--	--	--	--	--	--	--	--
MW-10	11/10/2021	358.96	13.00	345.96	263 B [233 B]	175 J [193 J]	-- [--]	<250 [<250]	<250 [<250]	<1.00 [<1.00]	<1.00 [<1.00]	0.174 J [<1.00]	<3.00 [<3.00]	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	1/18/2022	358.96	12.88	346.08	65.5 J [101]	135 J [165 J]	<200 [<200]	302 [296]	<250 [<250]	<1.00 [<1.00]	<1.00 [<1.00]	0.366 J [0.234 J]	<3.00 [<3.00]	--	<6.00 [<6.00]	--	--	--	--	--	--	--	--	--	--	--
MW-10	4/5/2022	358.96	13.35	345.61	604 **[867]**	277 [278]	78.1 J [82.4 J]	<250 [<250]	<250 [<250]	<1.00 [<1.00]	<1.00 [<1.00]	1.83 [2.20]	0.186 J [0.174 J]	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-11	10/9/2018	--	13.63	--	**7,800**	**740**	450	200	<69	<0.20	<0.20	2.0	<1.0	3.2	3.4	--	--	--	--	--	--	--	--	--	--	--
MW-11	12/12/2018	--	13.81	--	**4,100**	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	--	**2,100**	460	--	<110	--	<0.53	<0.39	<0.50	<0.39	--	1.4 J	--	--	--	--	--	--	--	--	--	--	--

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

					HYDROCARBONS					PRIMARY VOCs				LEAD		OXYGENATES		PAHs							
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
MW-11	5/20/2020	--	14.33	--	**2,100**	**1,600**	**1,400**	130 J *	130 J *	<0.24	0.77 J	<0.50	<0.39	--	<1.0	--	--	--	--	--	--	--	--	--	--
MW-11	8/27/2020	--	13.59	--	**1,600**	**1,100**	--	400 B	--	<0.24	0.88 J	<0.50	<0.39	--	<1.0	--	--	1.9 J	--	--	--	--	--	--	--
MW-11	11/5/2020	--	13.34	--	**1,800**	**920**	**740**	370	140 J	<0.24	0.71 J	<0.50	<0.39	--	<1.0	--	--	<0.93 *	--	--	--	--	--	--	--
MW-11	2/24/2021	--	13.45	--	**1,000**	430	--	120 J	--	0.24	0.39	0.50	0.39	--	--	--	--	6.9 *+	--	--	--	--	--	--	--
MW-11	5/18/2021	--	13.91	--	**1,540**	490	425	<250	<250	<0.0941	<0.278	0.154 J	0.330 J	--	--	--	--	--	--	--	--	--	--	--	--
MW-11	8/18/2021	359.06	13.43	345.63	**1,190**	445	187 J	161 J	<250	<1.00	<1.00	<1.00	<3.00	--	<6.00	--	--	--	--	--	--	--	--	--	--
MW-11	11/10/2021	359.06	13.10	345.96	573 B	338	92.4 J	<250	<250	<1.00	<1.00	<1.00	<3.00	--	--	--	--	--	--	--	--	--	--	--	--
MW-11	1/18/2022	359.06	13.05	346.01	515	210	114 J	168 J	<250	<1.00	<1.00	<1.00	<3.00	--	<6.00	--	--	--	--	--	--	--	--	--	--
MW-11	4/5/2022	359.06	13.45	345.61	773	272	113 J	<250	<250	<1.00	<1.00	<1.00	<3.00	--	--	--	--	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--
Trip Blank	02/24/2021	--	--	--	--	--	--	--	--	0.24	0.39	0.50	0.39	--	--	--	--	0.93	--	--	--	--	--	--	--
Trip Blank	5/18/2021	--	--	--	--	--	--	--	--	<0.0941	<0.278	<0.137	0.222 J	--	--	--	--	--	--	--	--	--	--	--	--
Trip Blank	8/18/2021	--	--	--	--	--	--	--	--	<1.00	<1.00	<1.00	<3.00	--	--	--	--	--	--	--	--	--	--	--	--
Trip Blank	11/10/2021	--	--	--	--	--	--	--	--	<1.00	<1.00	<1.00	<3.00	--	--	--	--	--	--	--	--	--	--	--	--
Trip Blank	1/18/2022	--	--	--	--	--	--	--	--	<1.00	<1.00	<1.00	<3.00	--	--	--	--	--	--	--	--	--	--	--	--
Trip Blank	4/5/2022	--	--	--	--	--	--	--	--	<1.00	<1.00	<1.00	0.242 J	--	--	--	--	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--

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

					HYDROCARBONS					PRIMARY VOCs				LEAD		OXYGENATES		PAHs							
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

LEGEND:

ID = Identification
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 (till 5/18/2021). Not detected above REPORTED detection limit (from 8/18/2021)
J = The identification of the analyte is acceptable; the reported value is an estimate.
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
[ ] = Duplicate sample results
[1] = Not sampled due to insufficient water
[2] = Inaccessible
[3] = Dry
[4] = Destroyed
[5] = Inaccessible - Paved over
+ = LCS and/or LCSD is outside acceptance limits, high biased.

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	560	580	1,300	1000
MW-9	11/5/2020	--	13.75	--	1,200	<20	1,000 J	1,600	1,700	2,200	2,000
MW-9	2/24/2021	--	13.68	--	3,200	560	830 J	1,200	1,300	1,400 J	1,600 J
MW-9	5/18/2021	--	14.19	--	--	--	--	--	--	--	--
MW-9	8/18/2021	359.21	13.79	345.42	38.7	54.4 J	11,400	829	873	1,020	--
MW-9	11/10/2021	359.21	13.30	345.91	--	--	--	--	--	--	--
MW-9	1/18/2022	359.21	13.33	345.88	1,980	<100	<5,000	2,100	2,080	2,260	--
MW-9	4/5/2022	359.21	13.69	345.52	--	--	--	--	--	--	--
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-10	2/24/2021	--	13.37	--	520 [470]	1,100 [1,100]	56,000 [56,000]	920 [970]	1,000 [1,100]	2,500 [2,600]	2,800 [2,700]
MW-10	5/18/2021	--	13.78	--	--	--	--	--	--	--	--
MW-10	8/18/2021	358.96	12.44	346.52	289 [182]	3,940 [3,840]	107,000 [105,000]	413 [428]	517 [500]	1,040 [961]	--
MW-10	11/10/2021	358.96	13.00	345.96	--	--	--	--	--	--	--
MW-10	1/18/2022	358.96	12.88	346.08	11 [10.9]	2,170 [2,150]	59,500 [61,100]	108 [103]	73.6 [77]	104 [96.7 J]	--
MW-10	4/5/2022	358.96	13.35	345.61	--	--	--	--	--	--	--
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
MW-11	2/24/2021	--	13.45	--	390	790	18,000	1,500	1,500	2,200 J	2,000 J
MW-11	5/18/2021	--	13.91	--	--	--	--	--	--	--	--
MW-11	8/18/2021	359.06	13.43	345.63	532	90.5 J	37,000	992	1,050	2,190	--
MW-11	11/10/2021	359.06	13.10	345.96	--	--	--	--	--	--	--
MW-11	1/18/2022	359.06	13.05	346.01	66	55.5 J	21,700	986	948	1,960	--
MW-11	4/5/2022	359.06	13.45	345.61	--	--	--	--	--	--	--

LEGEND:

ID = Identification
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 (till 5/18/2021). Not detected above REPORTED detection limit (8/18/2021)
J = The identification of the analyte is acceptable; the reported value is an estimate.
H = Sample was prepped or analyzed beyond the specified holding time
[ ] = Duplicate sample results

Table 3
Groundwater Field Sampling Results
Chevron Site No. 9-8944
Richland, Washington

Well ID	Date	pH	Conductivity	Dissolved Oxygen	ORP	Turbidity	Ferrous Iron
		--	mS/cm	mg/L	mV	NTU	mg/L
MW-9	2/19/2020	6.76	0.665	3.16	83.9	9	--
MW-9	5/20/2020	7.04	0.939	0.58	-74.9	7	0.0
MW-9	8/27/2020	7.17	0.579	1.02	7.5	16	0.0
MW-9	11/5/2020	7.23	0.929	0.51	-80.9	16	--
MW-9	2/24/2021	7.30	0.56	0.63	-105.7	14	0.8
MW-9	5/18/2021	7.12	0.702	0.35	-120.7	16	--
MW-9	8/18/2021	7.91	0.694	0.50	148.9	9.0	--
MW-9	11/10/2021	7.37	0.643	1.63	0.2	11.0	--
MW-9	1/18/2022	6.40	0.969	1.49	56.2	6.0	--
MW-9	4/5/2022	6.34	1.77	0.38	140	18.0	--
MW-10	2/19/2020	4.30	0.824	2.56	158.3	11	--
MW-10	5/20/2020	6.85	1.925	0.3	-90.1	17	0.0
MW-10	8/27/2020	7.16	1.62	0.27	12.5	8	0.0
MW-10	11/5/2020	7.11	1.91	0.44	-103.4	10	--
MW-10	2/24/2021	7.05	0.814	0.9	-67.6	48	2.4
MW-10	5/18/2021	7.04	1.39	0.36	-112.9	32	--
MW-10	8/18/2021	7.17	1.64	1.83	140.7	14	--
MW-10	11/10/2021	7.35	1.33	1.62	-17.2	6.0	--
MW-10	1/18/2022	6.35	0.917	0.52	99.1	12.0	
MW-10	4/5/2022	6.29	1.68	0.49	76.1	13.0	--
MW-11	2/19/2020	4.60	0.946	2.63	168.1	31	--
MW-11	5/20/2020	6.94	1.48	0.31	-90.9	61	0.0
MW-11	8/27/2020	7.09	1.45	0.22	-83.2	10	0.0
MW-11	11/5/2020	7.19	1.40	0.49	-56.7	11	--
MW-11	2/24/2021	7.07	0.743	0.69	-90	14	0.6
MW-11	5/18/2021	6.80	1.08	0.37	-117	60	--
MW-11	8/18/2021	7.00	1.179	1.68	101.5	60	--
MW-11	11/10/2021	7.44	1.25	0.41	-0.8	46.0	--
MW-11	1/18/2022	6.27	0.944	0.88	104.2	12.0	--
MW-11	4/5/2022	6.19	1.29	0.15	49.1	30.0	--

Table 3
Groundwater Field Sampling Results
Chevron Site No. 9-8944
Richland, Washington

Well ID	Date	pH	Conductivity	Dissolved Oxygen	ORP	Turbidity	Ferrous Iron
		--	mS/cm	mg/L	mV	NTU	mg/L

Notes:

ID = Identification

mg/L = Milligrams per liter

mS/cm = milliSiemens per centimeter

mV = millivolts

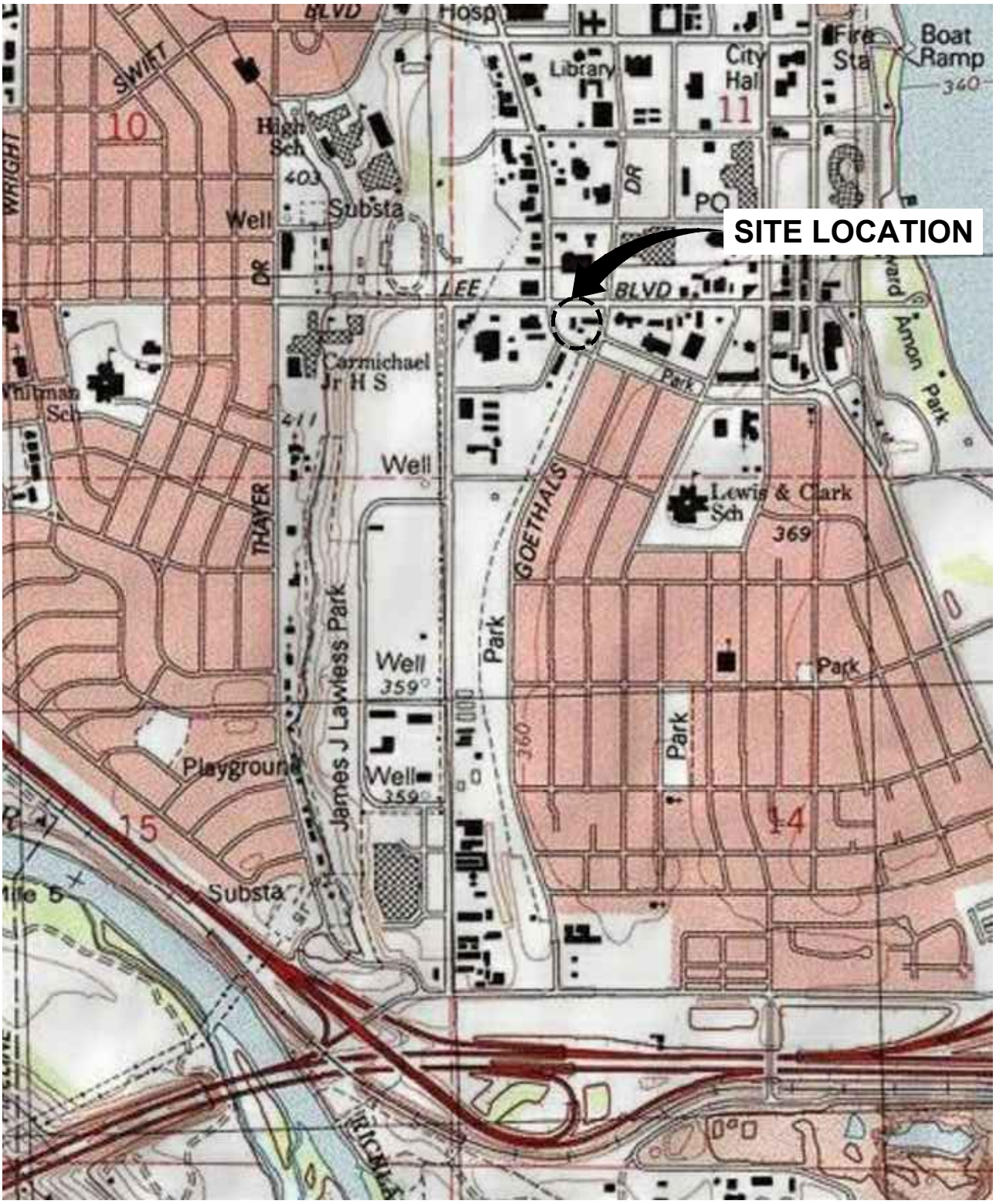
NTU = Nephelometric Turbidity Unit

pH = potential of hydrogen

ORP = oxygen reduction potential

-- = not analyzed/not available

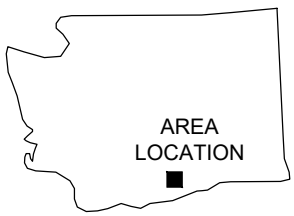
Figures



REFERENCE: BASE MAP CREATED WITH TOPO! - RICHLAND, US TOPO.

0 1,500' 3,000'

Approximate Scale: 1 in. = 1,500 ft.



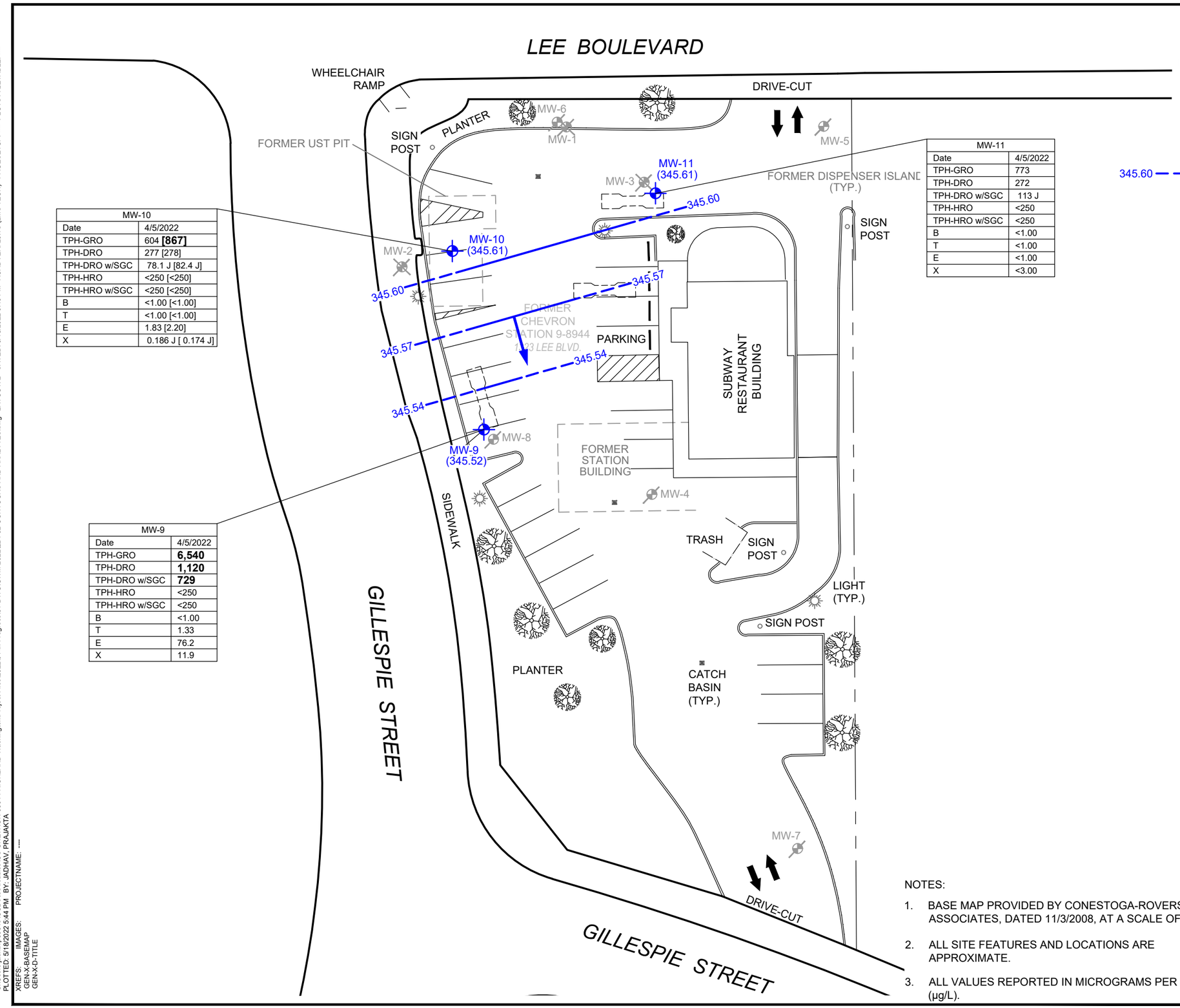
CHEVRON SERVICE SITE 9-8944
RICHLAND, WASHINGTON

SITE LOCATION MAP

ARCADIS

FIGURE
1

CITY:IRVINE DIV/GROUP:ENVCAD DB:E.MURESAN PIC: K. ABBOTT PM: A. JUST TM: J. NEWMAN
C:\Users\ymb2640\ACCDocs\Arcadis\AUS-CHEVRON-98944-RICHLAND Washington\Project Files\2021\01-In Progress\01-DWG\GWM-2021Q2-F01-SITE LOCATION MAP.dwg LAYOUT: 1 SAVED: 7/7/2021 5:01 PM ACADVER: 24.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB
PLOTTED: 9/24/2021 4:23 PM BY: Y M. BABU



MW-10	
Date	4/5/2022
TPH-GRO	604 **[867]**
TPH-DRO	277 [278]
TPH-DRO w/SGC	78.1 J [82.4 J]
TPH-HRO	<250 [<250]
TPH-HRO w/SGC	<250 [<250]
B	<1.00 [<1.00]
T	<1.00 [<1.00]
E	1.83 [2.20]
X	0.186 J [0.174 J]

MW-9	
Date	4/5/2022
TPH-GRO	**6,540**
TPH-DRO	**1,120**
TPH-DRO w/SGC	**729**
TPH-HRO	<250
TPH-HRO w/SGC	<250
B	<1.00
T	1.33
E	76.2
X	11.9

MW-11	
Date	4/5/2022
TPH-GRO	773
TPH-DRO	272
TPH-DRO w/SGC	113 J
TPH-HRO	<250
TPH-HRO w/SGC	<250
B	<1.00
T	<1.00
E	<1.00
X	<3.00

LEGEND:

- MW-10 — GROUNDWATER MONITORING WELL LOCATION
- MW-3 — ABANDONED WELL LOCATIONS
- MW-2 — DESTROYED MONITORING WELL LOCATION
- (345.61) — GROUNDWATER ELEVATION IN FEET
- 345.60 — GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- APPROXIMATE DIRECTION OF GROUNDWATER FLOW
- **BOLD** — BOLD VALUES ARE GREATER THAN THEIR RESPECTIVE MTCA METHOD A CLEANUP LEVEL
- <1.00 — NOT DETECTED AT OR ABOVE THE REPORTED DETECTION LIMIT
- J — THE IDENTIFICATION OF THE ANALYTE IS ACCEPTABLE; THE REPORTED VALUE IS AN ESTIMATE
- * — 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
- [ ] — DUPLICATE SAMPLE RESULTS

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

0 30' 60'

GRAPHIC SCALE

NOTES:

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

CHEVRON SERVICE STATION 9-8944
RICHLAND, WASHINGTON

GROUNDWATER ELEVATION AND CONCENTRATIONS MAP APRIL 5, 2022

ARCADIS

FIGURE 2

C:\Users\jadhavp8954\ACCDocs\Arcadis\AUS-CHEVRON-98944-RICHLAND Washington\Project Files\2022\01-In Progress\01-DWG\GWM-2022Q2-F02-CONTOURS AND ANALYTES.dwg LAYOUT: 2 SAVED: 5/18/2022 5:43 PM ACADVER: 23.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: ---
PLOTTED: 5/18/2022 5:44 PM BY: JADHAV, PRAJAKTA
XREFS: IMAGES: PROJECTNAME: ---
GEN-X-BASEMAP
GEN-X-D-TITLE

Attachment 1

Field Data and Chain of Custody

Groundwater Gauging Log

Project Number	30064311
Client:	Chevron
Site ID:	98944
Site Location:	Kennewick, Washington
Measuring Point:	Top of Casing
Date(s):	04/05/2022
Sampler(s):	Lee Bures
Gauging Equipment:	Water Level Meter

Well ID	Date	Gauging Time	Static Water Level (ft bmp)	Depth to Product (ft bmp)	Total Depth (ft bmp)	PID Reading (ppm)	LNAPL Removed (gal)	Comments
MW-9	04/05/2022	10:07	13.69	ND	18.30	--	--	--
MW-10	04/05/2022	10:04	13.35	ND	18.00	--	--	--
MW-11	04/05/2022	10:12	13.45	ND	17.85	--	--	--

ft-bmp = feet below measuring point ND = Not Detected PID = Photoionization Detector Reading

ppm = parts per million -- = Not Recorded

Chevron Groundwater Sampling Form

ARCADIS

Project Number	30064311	**Well ID**	MW-9	**Date**	4/5/2022		
Site Location	Kennewick, Washington	**Site ID**	98944	**Weather (°F)**	Clear	**Sampled by**	Lee Bures
Measuring Point Description	Top of Casing	**Screen Depth Interval (ft-bmp)**	8 to 18	**Casing Diameter (in.)**	2	**Well Casing Material**	--
Static Water Level (ft-bmp)	13.69	**Total Depth (ft-bmp)**	18.3	**Water Column (ft)**	4.61	**Gallons in Well**	0.75
Water Quality Meter Make/Model	Hach 2100Q,YSI 556 MP5	**Purge Method**	Low-Flow	**Sample Method**			Grab
Sample Time	11:55	**Well Volumes Purged**	1.06	**Sample ID**	MW-9-220405	**Evacuation Equipment**	Peristaltic
Purge Start	11:37	**Gallons Purged**	0.79	**Duplicate ID**	--		
Purge End	11:52	**Total Purge Time (h:m)**	0:15				

Time	Rate (ml/min)	Depth to Water (ft)	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
									Color	Odor
11:40	200	13.69	6.34	1.83	21.0	0.60	16.11	161.2	Clear	--
11:43	200	13.69	6.34	1.75	20.0	0.33	16.01	154.2	Clear	--
11:46	200	13.69	6.34	1.76	18.0	0.40	16.39	141	Clear	--
11:49	200	13.69	6.34	1.76	18.0	0.39	16.43	140.2	Clear	--
11:52	200	13.69	6.34	1.77	18.0	0.38	16.45	140	Clear	--

Comments: None

Well Casing Volume Conversion

Well diameter (in.) = gallons per foot
1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Sample Information

Sample ID: MW-9-220405 Sample Time: 11:55 Sample Depth (ft-bmp): 16

Analytes and Methods: See Chain-of-Custody.

ft-bmp = feet below measuring point
in. = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
PVC = Polyvinyl Chloride

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius
-- = Not Recorded

Chevron Groundwater Sampling Form

ARCADIS

Project Number	30064311	**Well ID**	MW-10	**Date**	4/5/2022		
Site Location	Kennewick, Washington	**Site ID**	98944	**Weather (°F)**	Clear	**Sampled by**	Lee Bures
Measuring Point Description	Top of Casing	**Screen Depth Interval (ft-bmp)**	8 to 18	**Casing Diameter (in.)**	2	**Well Casing Material**	--
Static Water Level (ft-bmp)	13.35	**Total Depth (ft-bmp)**	18	**Water Column (ft)**	4.65	**Gallons in Well**	0.76
Water Quality Meter Make/Model	Hach 2100Q,YSI 556 MP5	**Purge Method**	Low-Flow	**Sample Method**			Grab
Sample Time	11:23	**Well Volumes Purged**	1.04	**Sample ID**	MW-10-220405	**Evacuation Equipment**	Peristaltic
Purge Start	11:05	**Gallons Purged**	0.79	**Duplicate ID**	Duplicate-1-181210		
Purge End	11:20	**Total Purge Time (h:m)**	0:15				

Time	Rate (ml/min)	Depth to Water (ft)	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
									Color	Odor
11:08	200	13.35	6.27	1.55	19.0	0.82	15.06	69.4	Clear	--
11:11	200	13.35	6.27	1.64	23.0	0.63	15.36	72.7	Clear	--
11:14	200	23.35	6.27	1.67	13.0	0.45	15.41	73.8	Clear	--
11:17	200	13.35	6.28	1.68	13.0	0.48	15.50	75.2	Clear	--
11:20	200	13.35	6.29	1.68	13.0	0.49	15.51	76.1	Clear	--

Comments: None

Well Casing Volume Conversion

Well diameter (in.) = gallons per foot
1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Sample Information

Sample ID: MW-10-220405 Sample Time: 11:23 Sample Depth (ft-bmp): 16

Analytes and Methods: See Chain-of-Custody.

ft-bmp = feet below measuring point
in. = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
PVC = Polyvinyl Chloride

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius
-- = Not Recorded

Chevron Groundwater Sampling Form

ARCADIS

Project Number	30064311	**Well ID**	MW-11	**Date**	4/5/2022		
Site Location	Kennewick, Washington	**Site ID**	98944	**Weather (°F)**	Clear	**Sampled by**	Lee Bures
Measuring Point Description	Top of Casing	**Screen Depth Interval (ft-bmp)**	8 to 18	**Casing Diameter (in.)**	2	**Well Casing Material**	--
Static Water Level (ft-bmp)	13.45	**Total Depth (ft-bmp)**	17.85	**Water Column (ft)**	4.40	**Gallons in Well**	0.71
Water Quality Meter Make/Model	Hach 2100Q,YSI 556 MP5	**Purge Method**	Low-Flow	**Sample Method**			Grab
Sample Time	10:38	**Well Volumes Purged**	1.12	**Sample ID**	MW-11-220405	**Evacuation Equipment**	Peristaltic
Purge Start	10:20	**Gallons Purged**	0.79	**Duplicate ID**	--		
Purge End	10:35	**Total Purge Time (h:m)**	0:15				

Time	Rate (ml/min)	Depth to Water (ft)	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
									Color	Odor
10:23	200	13.45	6.12	1.08	57.0	0.32	12.99	65.7	Clear	--
10:26	200	13.45	6.15	1.22	40.0	0.21	13.41	56.2	Clear	--
10:29	200	13.45	6.17	1.28	31.0	0.18	13.51	51.7	Clear	--
10:32	200	13.45	6.18	1.29	30.0	0.17	13.39	50.2	Clear	--
10:35	200	13.45	6.19	1.29	30.0	0.15	13.50	49.1	Clear	--

Comments: None

Well Casing Volume Conversion

Well diameter (in.) = gallons per foot
1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Sample Information

Sample ID: MW-11-220405 Sample Time: 10:38 Sample Depth (ft-bmp): 15

Analytes and Methods: See Chain-of-Custody.

ft-bmp = feet below measuring point
in. = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
PVC = Polyvinyl Chloride

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius
-- = Not Recorded

WELLHEAD INSPECTION FORM

Client: Arcwest Site: 1323 Lee Blvd, Richland, WA Date: 4/5/22

Job #: 220405-AW1 Technician: Andrew Lauser Page 1 of 1

Well ID	Well Inspected - No Corrective Action Required	Check indicates deficiency: Cap non-functional	Lock non-functional	Lock missing	Bolts missing (list qty)	Tabs stripped (list qty)	Tabs broken (list qty)	Annular seal incomplete	Apron damaged	Rim / Lid broken	Trip Hazard	Below Grade	Other (explain in notes)	Well Not Inspected (explain in notes)	Notes (list if cap or lick replaced, if there are access issues associated with repairs, if traffic control is required, if stand pipe damaged, or any specific details not covered by checklist)
MW-9				X											
MW-10				X											
MW-11				X											

NOTES:

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME 1323 Lee Blvd, Richland, WA				PROJECT NUMBER 22049OS-AW1			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
YSI 556	07C0203	4/5/22 0630	DO 100% pH 4.00 7.00 10.00 ORP 237.5 Cond 3K	98.1% 4.01 7.11 10.07 241.8 3921	V V	20°C 20°C	AW AW

CHEVRON-WASHINGTON/OREGON TYPE **A** BILL OF LADING

SOURCE RECORD **BILL OF LADING**

FOR PURGEWATER RECOVERED FROM GROUNDWATER WELLS AT CHEVRON FACILITIES IN THE STATE OF WASHINGTON AND OREGON. THE PURGE- WATER WHICH HAS BEEN RECOVERED FROM GROUND- WATER WELLS IS COLLECTED BY THE CONTRACTOR AND HAULED TO THEIR FACILITY IN KENT, WASHINGTON FOR TEMPORARILY HOLDING PENDING TRANSPORT BY OTHERS TO FINAL DESTINATION.

The contractor performing this work is BLAINE TECH SERVICES, INC. (BLAINE TECH), 22727 72ND Ave South, Suite D – 102, Kent, WA 98032. BLAINE TECH. is authorized by Chevron Environmental Management Company (CHEVRON EMC) to recover, collect, apportion into loads, and haul the purgewater that is drawn from wells at the CHEVRON EMC facility indicated below and to deliver that purgewater to BLAINE TECH for temporarily holding. Transport routing of the purgewater may be direct from one CHEVRON EMC facility to BLAINE TECH; from one CHEVRON EMC facility to BLAINE TECH via another CHEVRON EMC facility; or any combination thereof. The well purgewater is and remains the property of CHEVRON EMC.

This **Source Record BILL OF LADING** was initiated to cover the recovery of Non-Hazardous Well Purgewater from wells at the Chevron facility described below:

98944	Ada Hamilton
CHEVRON #	Chevron Project Manager

1323	Lee Blvd	Richland	WA
Street number	street name	city	state

WELL I.D.	GALS.	WELL I.D.	GALS.
MW-9	1		
MW-10	1		
MW-11	1		

added equip. rinse water / 0.25

any other adjustments /

TOTAL GALS. RECOVERED 3.25

loaded onto BTS vehicle # 90

BTS event #	time	date
220405-AW1	1415	4/5/22

signature _____

Blaine Tech Services, Inc.

Permit To Work

for Chevron EMC Sites

Client: Arcus Date 4/5/22

Site Address: 1323 Lee Blvd, Richland, WA

Job Number: 220405-AW1 Technician(s): Andrew Wise

Pre-Job Safety Review

1. JMP reviewed, site restrictions and parking/access issues addressed. Reviewed: ☒

2. Special Permit Required Task Review

Are there any conditions or tasks that would require:	Yes	No
Confined space entry	☐	☒
Working at height	☐	☒
Lock-out/Tag-out	☐	☒
Excavations greater than 4 feet deep	☐	☒
Excavations within 3 feet of a buried active electrical line or product piping or within 10 feet of a high pressure gas line.	☐	☒
Use of overhead equipment within 15 feet of an overhead electrical power line or pole supporting one	☐	☒
Hot work	☐	☒

If "Yes" was the answer to any of the Special Permit Required Tasks above, the Project Manager will contact the client and arrange to modify the Scope of Work so that the Special Permit Required Tasks are not required to be performed by Blaine Tech Services employees.

	Yes	No
3. Is a Traffic Control Permit required for today's work?	☐	☒
If so is it in the folder?	☐	☐
Is it current?	☐	☐
Do you understand the Traffic Control Plan and what equipment you will need?	☐	☐

On site Pre-Job Safety Review

1. Reviewed and signed the site specific HASP.	☒
2. Route to hospital understood.	☒
3. Reviewed "Groundwater Monitoring Well Sampling General Job Safety Analysis included in the HASP.	☒
4. Exceptional circumstances today that are not covered by the HASP, JSA or JMP have been addressed and mitigated.	☒
5. Understands procedure to follow, if site circumstances change, to address new site hazards.	☒
6. There are no unexpected conditions which would make your task a Special Permit Required Task. If there is, contact your Project Manager.	☒
7. All site hazards have been communicated to all necessary onsite personnel during tailgate safety meeting.	☒
8. After lunch tailgate safety meeting refresher conducted.	☒

If Checklist Task cannot be completed, explain:

Permit To Work Authority: Andrew Wise — Field Tech — 4/5/22 — 0800

Name — Title — Date — Time

Attachment 2

Laboratory Analytical Report

ANALYTICAL REPORT

April 12, 2022

Arcadis - Chevron - WA

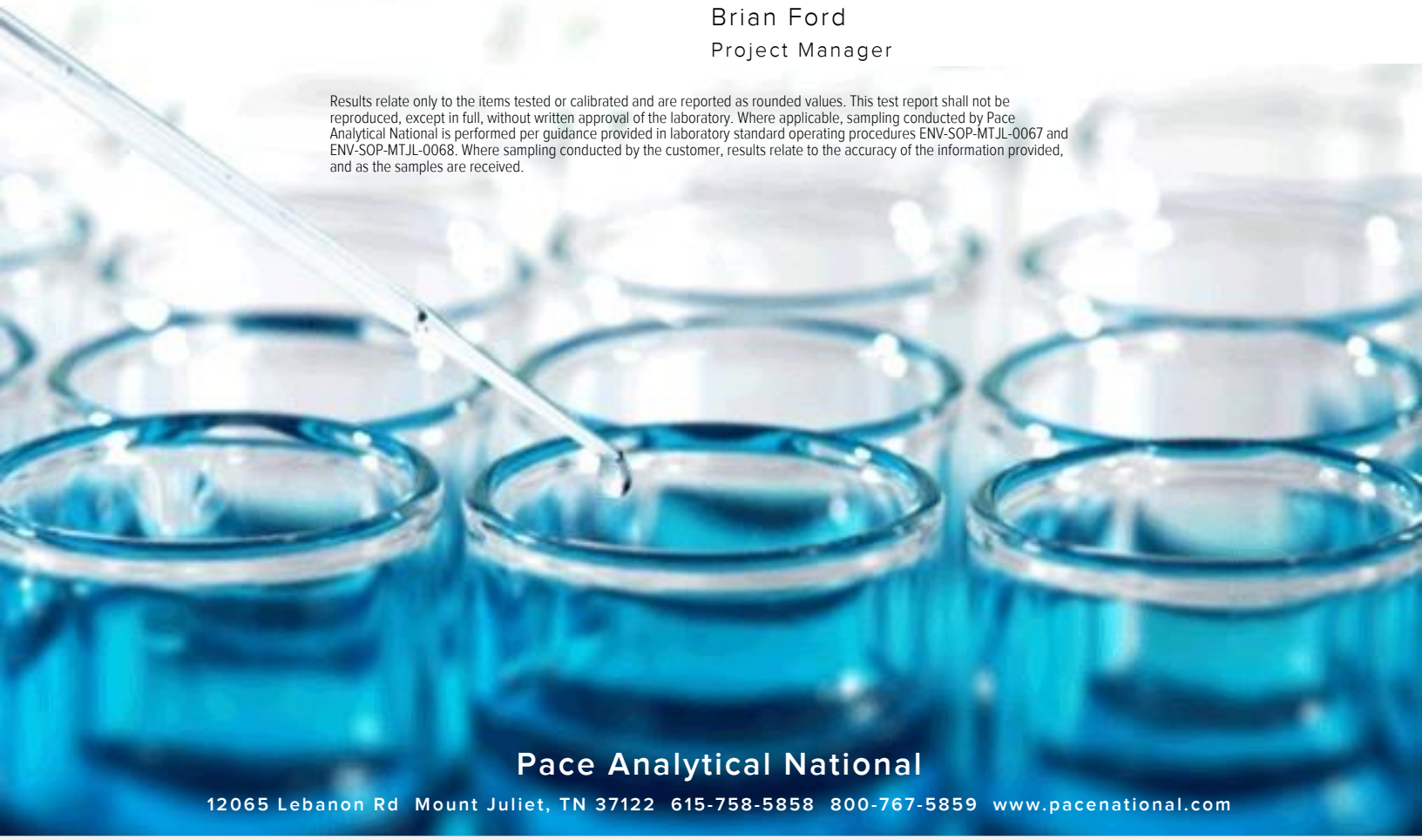
Sample Delivery Group:	L1479088
Samples Received:	04/06/2022
Project Number:	30064311
Description:	98944
Site:	1323 LEE BLVD. RICHLAND WA
Report To:	Ada Hamilton 1100 Olive Way Suite 800 Seattle, WA 98101

Entire Report Reviewed By:

Brian Ford

Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

MW-9-220405 L1479088-01 GW

Collected by: Andrew Waser | Collected date/time: 04/05/22 11:55 | Received date/time: 04/06/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1844430	1	04/07/22 07:18	04/07/22 07:18	CAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1845203	1	04/09/22 09:49	04/09/22 09:49	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1845404	1	04/09/22 13:24	04/10/22 11:08	TJD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1845406	1	04/09/22 13:28	04/10/22 17:33	TJD	Mt. Juliet, TN

MW-10-220405 L1479088-02 GW

Collected by: Andrew Waser | Collected date/time: 04/05/22 11:23 | Received date/time: 04/06/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1845523	1	04/08/22 19:01	04/08/22 19:01	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1845203	1	04/09/22 10:09	04/09/22 10:09	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1845404	1	04/09/22 13:24	04/10/22 12:52	TJD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1845406	1	04/09/22 13:28	04/10/22 17:53	TJD	Mt. Juliet, TN

MW-11-220405 L1479088-03 GW

Collected by: Andrew Waser | Collected date/time: 04/05/22 10:38 | Received date/time: 04/06/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1845523	1	04/08/22 19:22	04/08/22 19:22	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1845203	1	04/09/22 10:29	04/09/22 10:29	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1845404	1	04/09/22 13:24	04/10/22 13:13	TJD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1845406	1	04/09/22 13:28	04/10/22 18:13	TJD	Mt. Juliet, TN

DUPLICATE-1-181210 L1479088-04 GW

Collected by: Andrew Waser | Collected date/time: 04/05/22 12:00 | Received date/time: 04/06/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1845523	1	04/08/22 19:44	04/08/22 19:44	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1845203	1	04/09/22 10:50	04/09/22 10:50	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1845404	1	04/09/22 13:24	04/10/22 13:33	TJD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1845406	1	04/09/22 13:28	04/10/22 18:34	TJD	Mt. Juliet, TN

TRIP BLANK-1-180626 L1479088-05 GW

Collected by: Andrew Waser | Collected date/time: 04/05/22 09:00 | Received date/time: 04/06/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1845203	1	04/09/22 09:08	04/09/22 09:08	JAH	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	6540		31.6	100	1	04/07/2022 07:18	WG1844430
(S) a,a,a-Trifluorotoluene(FID)	*116*			*78.0-120*		*04/07/2022 07:18*	WG1844430

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

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	04/09/2022 09:49	WG1845203
Toluene	1.33		0.278	1.00	1	04/09/2022 09:49	WG1845203
Ethylbenzene	76.2		0.137	1.00	1	04/09/2022 09:49	WG1845203
Total Xylenes	11.9		0.174	3.00	1	04/09/2022 09:49	WG1845203
(S) Toluene-d8	*97.8*			*80.0-120*		*04/09/2022 09:49*	WG1845203
(S) 4-Bromofluorobenzene	*102*			*77.0-126*		*04/09/2022 09:49*	WG1845203
(S) 1,2-Dichloroethane-d4	*135*	J1		*70.0-130*		*04/09/2022 09:49*	WG1845203

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	1120		66.7	200	1	04/10/2022 11:08	WG1845404
Residual Range Organics (RRO)	U		83.3	250	1	04/10/2022 11:08	WG1845404
(S) o-Terphenyl	*95.5*			*52.0-156*		*04/10/2022 11:08*	WG1845404

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	729		66.7	200	1	04/10/2022 17:33	WG1845406
Residual Range Organics (RRO)	U		83.3	250	1	04/10/2022 17:33	WG1845406
(S) o-Terphenyl	*95.5*			*52.0-156*		*04/10/2022 17:33*	WG1845406

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	604		31.6	100	1	04/08/2022 19:01	WG1845523
(S) a,a,a-Trifluorotoluene(FID)	*103*			*78.0-120*		*04/08/2022 19:01*	WG1845523

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.0941	1.00	1	04/09/2022 10:09	WG1845203
Toluene	U		0.278	1.00	1	04/09/2022 10:09	WG1845203
Ethylbenzene	1.83		0.137	1.00	1	04/09/2022 10:09	WG1845203
Total Xylenes	0.186	J	0.174	3.00	1	04/09/2022 10:09	WG1845203
(S) Toluene-d8	*100*			*80.0-120*		*04/09/2022 10:09*	WG1845203
(S) 4-Bromofluorobenzene	*98.6*			*77.0-126*		*04/09/2022 10:09*	WG1845203
(S) 1,2-Dichloroethane-d4	*109*			*70.0-130*		*04/09/2022 10:09*	WG1845203

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	277		66.7	200	1	04/10/2022 12:52	WG1845404
Residual Range Organics (RRO)	U		83.3	250	1	04/10/2022 12:52	WG1845404
(S) o-Terphenyl	*91.5*			*52.0-156*		*04/10/2022 12:52*	WG1845404

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	78.1	J	66.7	200	1	04/10/2022 17:53	WG1845406
Residual Range Organics (RRO)	U		83.3	250	1	04/10/2022 17:53	WG1845406
(S) o-Terphenyl	*95.5*			*52.0-156*		*04/10/2022 17:53*	WG1845406

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	773		31.6	100	1	04/08/2022 19:22	WG1845523
(S) a,a,a-Trifluorotoluene(FID)	*101*			*78.0-120*		*04/08/2022 19:22*	WG1845523

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.0941	1.00	1	04/09/2022 10:29	WG1845203
Toluene	U		0.278	1.00	1	04/09/2022 10:29	WG1845203
Ethylbenzene	U		0.137	1.00	1	04/09/2022 10:29	WG1845203
Total Xylenes	U		0.174	3.00	1	04/09/2022 10:29	WG1845203
(S) Toluene-d8	*99.2*			*80.0-120*		*04/09/2022 10:29*	WG1845203
(S) 4-Bromofluorobenzene	*88.9*			*77.0-126*		*04/09/2022 10:29*	WG1845203
(S) 1,2-Dichloroethane-d4	*107*			*70.0-130*		*04/09/2022 10:29*	WG1845203

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	272		66.7	200	1	04/10/2022 13:13	WG1845404
Residual Range Organics (RRO)	U		83.3	250	1	04/10/2022 13:13	WG1845404
(S) o-Terphenyl	*97.5*			*52.0-156*		*04/10/2022 13:13*	WG1845404

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	113	J	66.7	200	1	04/10/2022 18:13	WG1845406
Residual Range Organics (RRO)	U		83.3	250	1	04/10/2022 18:13	WG1845406
(S) o-Terphenyl	*81.5*			*52.0-156*		*04/10/2022 18:13*	WG1845406

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	867		31.6	100	1	04/08/2022 19:44	WG1845523
(S) a,a,a-Trifluorotoluene(FID)	*105*			*78.0-120*		*04/08/2022 19:44*	WG1845523

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.0941	1.00	1	04/09/2022 10:50	WG1845203
Toluene	U		0.278	1.00	1	04/09/2022 10:50	WG1845203
Ethylbenzene	2.20		0.137	1.00	1	04/09/2022 10:50	WG1845203
Total Xylenes	0.174	J	0.174	3.00	1	04/09/2022 10:50	WG1845203
(S) Toluene-d8	*98.3*			*80.0-120*		*04/09/2022 10:50*	WG1845203
(S) 4-Bromofluorobenzene	*98.1*			*77.0-126*		*04/09/2022 10:50*	WG1845203
(S) 1,2-Dichloroethane-d4	*112*			*70.0-130*		*04/09/2022 10:50*	WG1845203

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	278		66.7	200	1	04/10/2022 13:33	WG1845404
Residual Range Organics (RRO)	U		83.3	250	1	04/10/2022 13:33	WG1845404
(S) o-Terphenyl	*87.0*			*52.0-156*		*04/10/2022 13:33*	WG1845404

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	82.4	J	66.7	200	1	04/10/2022 18:34	WG1845406
Residual Range Organics (RRO)	U		83.3	250	1	04/10/2022 18:34	WG1845406
(S) o-Terphenyl	*97.0*			*52.0-156*		*04/10/2022 18:34*	WG1845406

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.0941	1.00	1	04/09/2022 09:08	WG1845203
Toluene	U		0.278	1.00	1	04/09/2022 09:08	WG1845203
Ethylbenzene	U		0.137	1.00	1	04/09/2022 09:08	WG1845203
Total Xylenes	0.242	J	0.174	3.00	1	04/09/2022 09:08	WG1845203
(S) Toluene-d8	*102*			*80.0-120*		*04/09/2022 09:08*	WG1845203
(S) 4-Bromofluorobenzene	*97.1*			*77.0-126*		*04/09/2022 09:08*	WG1845203
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*		*04/09/2022 09:08*	WG1845203

Method Blank (MB)

(MB) R3778671-2 04/07/22 01:05

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	56.0	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*96.1*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3778671-1 04/07/22 00:13

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5730	104	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*108*	*78.0-120*	

Method Blank (MB)

(MB) R3779700-2 04/08/22 15:09

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	52.8	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*96.8*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3779700-1 04/08/22 14:01

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5660	103	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*106*	*78.0-120*	

Method Blank (MB)

(MB) R3779705-2 04/09/22 08:19

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.0941	1.00
Toluene	U		0.278	1.00
Ethylbenzene	U		0.137	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	*104*			*80.0-120*
(S) 4-Bromofluorobenzene	*102*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*109*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3779705-1 04/09/22 07:18

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	5.29	106	70.0-123	
Toluene	5.00	4.90	98.0	79.0-120	
Ethylbenzene	5.00	4.86	97.2	79.0-123	
Xylenes, Total	15.0	14.3	95.3	79.0-123	
(S) Toluene-d8			*103*	*80.0-120*	
(S) 4-Bromofluorobenzene			*97.1*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*111*	*70.0-130*	

Method Blank (MB)

(MB) R3779472-1 04/10/22 08:07

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Diesel Range Organics (DRO)	U		66.7	200
Residual Range Organics (RRO)	U		83.3	250
(S) o-Terphenyl	*90.0*			*52.0-156*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3779472-2 04/10/22 08:27 • (LCSD) R3779472-3 04/10/22 08:47

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	1500	1660	1670	111	111	50.0-150			0.601	20
(S) o-Terphenyl				*119*	*135*	*52.0-156*				

Method Blank (MB)

(MB) R3779473-1 04/10/22 14:32

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Diesel Range Organics (DRO)	U		66.7	200
Residual Range Organics (RRO)	U		83.3	250
(S) o-Terphenyl	*87.5*			*52.0-156*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3779473-2 04/10/22 14:52 • (LCSD) R3779473-3 04/10/22 15:12

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	1500	1670	1690	111	113	50.0-150			1.19	20
(S) o-Terphenyl				*130*	*127*	*52.0-156*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
Arcadis - Chevron - WA

1100 Olive Way
Suite 800
Seattle. WA 98101

Billing Information:
Attn: Accounts Payable
630 Plaza Dr., Ste. 600
Highlands Ranch, CO 80129

Pres Chk

Report to:
Ada Hamilton

Email To:
ada.hamilton@arcadis.com;Sydney.Clark@arca

Project Description:
98944

City/State Collected:

Please Circle: PT MT CT ET

Phone: **206-325-5254**

Client Project #
30064311

Lab Project #
CHEVARCWA-98944

Collected by (print):
Andrew Wusc

Site/Facility ID #
1323 LEE BLVD. RICHLAND WA

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Immediately
Packed on Ice N ___ Y X

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEX 8260D 40mlAmb-HCl	NWTPHDX no silica 40mlAmb-HCl-BT	NWTPHDX w/ silica 40mlAmb-HCl-BT	NWTPHGX 40mlAmb HCl							
MW-9-220405	Grab	GW	—	4/5/22	1155	10	X	X	X	X							-01
MW-10-220405	Grab	GW	—	4/5/22	1123	10	X	X	X	X							-02
MW-11-220405	Grab	GW	—	4/5/22	1038	10	X	X	X	X							-03
Duplicate-1-181210	Grab	GW	—	4/5/22	1200	10	X	X	X	X							-04
Trip Blank-1-180626	Grab	GW	—	4/5/22	0900	2 TM	X										-05

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1479088

Ta E169

Acctnum: CHEVARCWA

Template:**T206519**

Prelogin: **P915551**

PM: **110 - Brian Ford**

PB:

Shipped Via:

Remarks | Sample # (lab only)

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS / FedEx __ Courier _____

Tracking # 5671 5380 4269

Sample Receipt Checklist
COC Seal Present/Intact: __NP / Y __N
COC Signed/Accurate: / Y __N
Bottles arrive intact: / Y __N
Correct bottles used: / Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: / Y __N
Preservation Correct/Checked: / Y __N
RAD Screen <0.5 mR/hr: / Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: (Yes) / No HCL / MeoH TBR	If preservation required by Login: Date/Time
	4/5/22		Shipped via FedEx	2	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: DRA 7.6+0=.6 40	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 4/6/22 Time: 0900	Hold: / Condition: NCF / (OK)