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August 12, 2024 Project No. TR0837I

Danielle Gibson
Site Manager
Washington Department of Ecology
Southwest Regional Office
300 Desmond Drive
Lacey, WA 98503

Dear Mrs. Gibson:

Re: Remedial Action Operation and Maintenance and Groundwater Monitoring Report –May 2024
Petarcik Site
Consent Order No. 87 S105

On behalf of Occidental Chemical Corporation, Geosyntec Consultants is submitting the enclosed "Groundwater Monitoring Report May 2024". This report summarizes the operation and maintenance (O&M) activities and groundwater monitoring results for the period of November 2023 through May 2024 and presents an overview of the effectiveness of the Site remedy. The next scheduled event is November 2024.

Based on the review of the Site remedy and Compliance Monitoring Program analytical data it is concluded that:

- The Remedial Action has been effective in addressing the concerns for protection of human health and the environment as laid forth in the Consent Decree.
- No further remedial action is required at the Site at this time.

Should you have any questions, require additional information, or wish to meet to discuss the performance of the Remedial Action, please do not hesitate to contact us.

Yours truly,

Geosyntec Consultants

Rick Bieber

cc: R. Bakemeier (Bakemeier PC)
C. Babcock (GSHI)
I. Richardson (Geosyntec)

Geosyntec consultants

engineers | scientists | innovators

Groundwater Monitoring Program Report – May 2024

Petarcik Site
Consent Order No. 87 S105

Prepared for

Occidental Chemical Corporation
605Alexander Ave E
Tacoma, WA 98421

Prepared by

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Project Number TR0837I

August 2024

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1. Introduction

Remedial action at the Occidental Chemical Corporation (OxyChem) Petarcik Site (Site) was completed in July 1991. This action consisted of excavation of waste material from the Virginia Avenue on-Site right-of-way, placement of the excavated waste in on-Site disposal cells within the original waste disposal area, and installation of a soil cap across the entire disposal area, along with a vegetative cover of the cap. The requirements of the remedial action were specified in the Consent Order No. 87-S105 (amended December 1988).

The amended Consent Order also requires continuing groundwater monitoring with data review to provide for the continued evaluation of groundwater conditions at the Site. If the results of the monitoring program show the deterioration of groundwater quality OxyChem will, as specified in the Consent Order and Addendum to Attachment 2, install and operate a groundwater collection and treatment system.

The first groundwater-monitoring event for the remedial action-monitoring program was conducted in November 1992. The monitoring data review and reporting requirements for this program are specified in the "Addendum to Attachment 2, Consent Order 87-S105, Petarcik Site, December 1988."

This report presents and evaluates data from the May 2024 monitoring event. This event was completed as a full biannual event.

2. Groundwater Monitoring Program

Groundwater monitoring has been conducted at the Site on a regular schedule since 1990. Monitoring of all wells was conducted quarterly between February 1990 and August 1992. The hydraulic and water quality data collected over this period comprise the baseline for the continuing evaluation of groundwater conditions.

Between November 1992 and November 1999, groundwater monitoring was conducted semi-annually as described in Addendum to Attachment 2, Consent Order 87-S105, Petarcik Site, December 1988, and briefly in the report "Data Review, Semi-Annual Groundwater Monitoring Program, Petarcik Site, February 1993." Following the November 1999 Data Review, OxyChem proposed that the monitoring program be modified. On March 15, 2000, the Washington Department of Ecology (Ecology) approved modification of the monitoring program as follows:

- Semi-annual water quality monitoring of wells B-3, B-3A/B-3AR, B-4, and B-12
- Biennial water quality monitoring of the remaining wells
- Biennial hydraulic monitoring of all wells

These modifications were effective immediately upon receipt of the approval letter from WDOE. The semi-annual monitoring events are conducted in May and November. The biennial water monitoring events are conducted in November.

In November 2011, monitoring well B-10A was removed from the monitoring program due to a stainless steel bailer that is stuck in the well preventing sampling. Concentrations of all analyzed parameters for samples collected from B-10A have been non-detect since 1998. Monitoring wells B-4 and B-4A are near well B-10A and are closer in proximity to the waste disposal area. Based on the locations of B-4 and B-4A and the historical analytical results, continued monitoring of B-10A is not warranted. Mr. Jason Cornetta (CRA) contacted Mr. Dom Reale by telephone on January 17, 2012 and confirmed that Ecology was in agreement with removing the well from the monitoring program.

In June 2017, monitoring well B-15A was removed from the monitoring program and scheduled for decommissioning due to a failing surface seal and monument. It was determined given the historical data trends and proximity of neighboring wells that the well could be removed without a degradation to the overall monitoring plan. Monitoring Well B-15A was decommissioned by a licensed driller on November 11, 2017.

In May 2022, well B16A was found to have been damaged by trespassers. With Ecology approval from Andrew Smith via email correspondence on March 29, 2022, well B16A was approved to be removed from the monitoring plan. The well is scheduled for decommissioning fall 2023 during the next sampling event.

Well locations are shown on Figure 2.1. For reference purposes, the water level database is presented in Appendix A, and a tabulation of water quality data is presented in Appendix B.

3. Field Activities – May 2024

Groundwater sampling was conducted at the Site on June 6, 2024. Groundwater samples were collected from the 4 monitoring wells monitored biennially. One duplicate sample were also collected.

Wells were sampled using well-dedicated equipment. Wells equipped with bladder pumps were purged using these pumps, and wells equipped with bailers were purged using the well-dedicated bailer or a disposable Teflon® bailer.

Measurements of pH, conductivity, and temperature were made after the removal of each well volume of purged water. Samples were collected after wells were purged to dryness or when stabilization of parameters occurred. Unless purged to dryness, a minimum of three well volumes were purged from each well prior to sample collection.

Groundwater samples were collected, placed on ice, and shipped via overnight courier under chain of custody to ALS Laboratories in Kelso, Washington. Samples were analyzed for

Tetrachloroethene (PCE), Trichloroethene (TCE), Vinyl Chloride, and Chloroform by EPA Method 8260B.

Sample collection summary logs are contained in Appendix C.

4. Data Review

The analytical data have been reviewed for quality assurance/quality control (QA/QC) (see Appendix D). The conclusion of the review is that the data are acceptable for their intended use without qualification. The data are presented in Table 4.1.

4.1 Data Evaluation

The data from the May 2024 monitoring event have been evaluated in accordance with the procedure in Section 2.3 of the Addendum to Attachment 2 of Consent Order No. 87-S105. The review consists of a step-wise comparison of the analytical data to specified water quality criteria and, if necessary, to the site-specific groundwater cleanup criteria. The water quality criteria applicable to the data review are presented in Table 4.2. The relevant steps required in the evaluation and the actual results of the evaluation are as follows:

Required: "The water quality for each of the remaining wells [that is, the Site monitoring wells excluding wells B7 and B8] will be compared with the criteria/level listed in Table 1 [Table 4.2 of this report]. If the water quality for each remaining well meets the criteria/level listed in Table 1, no further evaluation will be conducted."

Actual: Table 4.1 indicates that the above requirement was met for all analytes in all subject wells. Therefore, no further evaluation was conducted.

4.2 Action

Since the data obtained from the May 2023 event do not show an exceedance of the groundwater data evaluation criteria listed in Table 4.2, monitoring will continue in accordance with the current schedule.

5. Summary

The semi-annual groundwater monitoring event was conducted in May 2023. The analytical data obtained from this monitoring event are consistent with the historic data. The analytical results show that in May 2024, no analyte was reported at a concentration exceeding the evaluation criteria. Therefore, no increase in Site monitoring or review of remedial alternatives is required.

The next monitoring event will be a bi-annual event and will be conducted in November 2024.

Tables

Table 4.1

Groundwater Analytical Data
Biennial Groundwater Monitoring
Petarcik Site - November 2019
Occidental Chemical Corporation
Tacoma, Washington

	Sample Location:	B-3	B-3	B-3AR	B-4	B-12R	Trip Blank
	Sample ID:	GW-06062024RB-B-3	GW-06062024RB-Dup	GW-06062024RB-B-3AR	GW-06062024RB-B-4	GW-06062024RB-B-12	TB-01
	Sample Date:	6/6/2024	6/6/2024	6/6/2024	6/6/2024	6/6/2024	6/6/2024
Parameters	**Units**						
Volatile Organic Compounds							
Chloroform (Trichloromethane)	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.25 J
Trichloroethene	µg/L	0.50 U	0.50 U	0.27 J	0.50 U	0.50 U	0.50 U
Vinyl chloride	µg/L	0.17 J	0.15 J	0.50 U	0.50 U	0.50 U	0.50 U

Table 4.1

Groundwater Analytical Data
Biennial Groundwater Monitoring
Petarcik Site - November 2019
Occidental Chemical Corporation
Tacoma, Washington

Sample Location:	**B-3**	**B-3**	**B-3AR**	**B-4**	**B-12R**	**Trip Blank**
Sample ID:	**GW-06062024RB-B-3**	**GW-06062024RB-Dup**	**GW-06062024RB-B-3AR**	**GW-06062024RB-B-4**	**GW-06062024RB-B-12**	**TB-01**
Sample Date:	**6/6/2024**	**6/6/2024**	**6/6/2024**	**6/6/2024**	**6/6/2024**	**6/6/2024**

Parameters	**Units**

Notes:

J = Estimated Concentration
U = Not present at or above the associated value.
µg/L = Micrograms per liter
Concentration exceeds the water quality criteria presented in Table 4.2.

Table 4.2

Groundwater Data Evaluation Criteria
Biennial Groundwater Monitoring
Occidental Chemical Corporation
Petarcik Site - November 2019
Tacoma, Washington

Chemical	Level/Criteria	
Chloroform (Trichloromethane)	MCL	100 µg/L*
Tetrachloroethene	WQC	8 µg/L**
Trichloroethene	MCL	5 µg/L
Vinyl chloride	MCL	2 µg/L

Notes:

* Total trihalomethanes (the sum of bromodichloromethane, dibromochloromethane, bromoform, and chloroform).
** Protection of human health from carcinogen effects due to exposure through ingestion of contaminated water and contaminated aquatic organisms 10-5 risk = 8 µg/L.
MCL Maximum Contaminant Level (Dec. 1988).
WQC Water Quality Criteria (Dec. 1988).

Figures

LEGEND

- SITE BOUNDARY
- LOTLINE
- MONITORING WELL LOCATION
- DECOMMISSIONED WELL LOCATION

IMAGERY SOURCE: NEARMAP, DATE OF PHOTOGRAPHY JULY 21, 2022.

SITE LAYOUT
PETARCIK SITE

OCCIDENTAL CHEMICAL COMPANY
TACOMA, WASHINGTON

Geosyntec consultants

FIGURE
1

PROJECT NO: TR0837 | APRIL 2023

\\WATERLOO-01\DATA\PRJPROJECTS\TR0837_OCC TACOMA\CAD\PETARCIK\01-BASE\DRAWINGS\SHEETS\TR0837-01-BASE-001 - Last Saved By: MJerome on 4/10/23

Appendix A
Water Level Elevation Database

Appendix A
Water Level Elevation Database
Biennial Groundwater Monitoring
Petarcik Site - May 2024
Occidental Chemical Corporation
Tacoma, Washington

Well Number		TOC Elevation	Feb-90	May-90	Aug-90	Feb-91	May-91	Aug-91	Nov-91	Feb-92	May-92	Aug-92	Nov-92	May-93	Aug-93
B3		10.08	3.70	2.60	1.31	3.51	2.52	1.48	2.28	3.79	1.55	1.22	1.92	3.54	1.74
B3A/B3AR	**	10.80	5.21	2.22	1.32	5.72	NM	2.10	3.10	5.67	2.90	1.60	2.62	4.65	2.22
B4		6.40	3.56	2.17	1.39	3.11	2.32	4.50	5.21	6.51	1.87	1.20	2.17	3.38	1.70
B4A		6.61	3.25	1.38	2.24	2.79	1.35	1.15	1.93	3.18	1.48	1.21	1.98	2.86	1.32
B5		7.38	2.83	1.78	1.71	2.15	1.33	1.24	1.69	2.37	1.41	1.24	2.10	2.36	1.41
B5A/B5AR	**	6.21	2.71	1.78	1.73	2.29	1.24	NM	1.75	1.53	0.58	0.38	0.27	1.51	0.56
B6		8.55	3.80	2.52	1.52	3.37	2.31	1.84	2.30	3.41	2.08	1.68	2.62	3.33	2.11
B6A		8.61	4.48	2.24	1.82	4.87	2.06	1.61	2.52	3.86	1.88	1.62	2.78	3.79	2.01
B7		6.05	2.95	1.13	0.66	NM	0.25	-0.31	0.33	1.25	-0.15	-0.35	0.31	0.90	-0.38
B8		8.45	3.65	1.85	0.98	2.74	1.97	1.91	2.32	3.28	1.87	1.55	2.22	2.80	1.65
B9		9.49	3.56	2.21	1.32	B A N D O N E D ----									
B10A		7.03	4.50	NM	-0.31	3.92	2.86	0.12	1.83	4.51	1.35	-0.47	1.49	3.55	0.80
B12/B12R	**	8.25	3.71	2.95	1.23	3.49	2.52	1.39	2.19	3.68	1.94	1.11	2.11	3.53	1.69
B13 (artesian)		7.19	10.22	9.50	8.30	10.37	9.79	8.63	9.79	10.66	9.42	8.69	9.07	10.42	9.78
B13A		6.22	3.78	2.54	1.65	2.49	1.91	-0.48	2.37	3.49	2.19	-0.17	2.54	3.37	2.15
B13B		7.45	2.67	1.71	1.66	2.14	1.25	1.25	1.82	2.57	1.50	1.31	2.17	1.95	1.50
B14		7.12	2.81	1.82	1.74	2.56	1.35	1.29	1.89	2.77	1.71	1.30	2.19	2.55	1.62
B14A		7.20	3.02	2.03	1.74	2.58	1.51	1.28	1.82	2.67	1.53	1.33	2.24	2.45	1.45
B15A*	**	7.96						1.23	1.72	2.61	1.47	1.03	2.11	2.41	1.29
B16A*	**	6.71						1.29	1.79	2.47	1.46	0.45	2.16	2.33	1.56
B17A*	**	7.73						1.13	1.61	2.26	1.25	1.06	2.11	2.33	1.30

Notes:

Elevations are based on USC&GS datum
Well installed July 1991
Elevation of replacement well TOC
NM - Not Measured
R - Replacement well
TOC - Top of Casing

Appendix A
Water Level Elevation Database
Biennial Groundwater Monitoring
Petarcik Site - May 2024
Occidental Chemical Corporation
Tacoma, Washington

Well Number		Nov-93	May-94	Nov-94	May-95	Nov-95	May-96	Nov-96	May-97	Nov-97	May-98	Nov-98	May-99	Jul-99
B3		1.73	2.77	2.54	2.60	2.38	3.94	4.37	3.84	4.04	3.00	2.20	2.38	1.55
B3A/B3AR	**	1.95	3.66	3.51	3.46	3.49	5.54	5.94	5.12	5.35	3.86	2.28	3.44	2.11
B4		1.73	2.52	2.70	2.44	2.65	3.64	4.16	3.69	3.9	2.88	2.22	1.98	1.30
B4A		1.58	2.11	2.44	2.15	2.53	3.30	3.96	3.45	3.62	2.59	2.06	1.89	1.08
B5		1.48	1.76	2.16	1.73	2.21	2.66	3.53	2.73	2.96	2.45	2.07	1.11	0.79
B5A/B5AR	**	0.63	0.93	1.31	0.89	1.35	1.81	2.70	1.91	2.12	0.97	1.21	0.26	-0.04
B6		1.73	2.67	2.75	2.25	2.65	3.49	3.94	3.67	3.77	2.83	2.07	1.85	NM
B6A		1.90	2.45	3.40	2.20	2.60	3.3.7	5.31	3.63	3.99	2.69	2.37	1.9	NM
B7		-0.33	0.01	0.34	-0.16	0.20	1.24	1.87	1.24	1.25	0.52	0.19	-0.40	NM
B8		1.49	2.17	2.42	2.02	2.41	3.42	3.52	3.33	3.6	2.47	2.00	1.7	1.35
B9		----A B A N D O N E D ----												
B10A		1.01	2.95	2.08	2.11	3.17	4.75	4.93	4.71	4.88	3.00	1.35	2.98	0.89
B12/B12R	**	1.68	2.68	2.75	2.53	2.70	3.88	4.31	3.80	4.06	2.95	2.16	2.28	NM
B13 (artesian)		9.07	10.23	9.08	10.89	8.83	10.21	9.96	10.36	10.65	10.65	8.92	8.35	NM
B13A		1.90	2.63	2.68	2.17	2.60	3.55	3.67	3.67	3.8	2.84	2.36	1.74	1.81
B13B		1.55	1.90	2.29	1.82	2.28	2.78	3.64	2.93	3.13	2.25	2.10	1.2	0.86
B14		1.49	1.98	2.23	1.93	2.12	2.65	3.59	2.90	3.07	2.30	2.13	1.65	1.18
B14A		1.50	1.86	2.34	1.70	2.25	2.80	3.61	2.75	3.01	2.16	2.07	1.42	1.00
B15A*	**	1.55	1.88	2.24	1.68	2.23	2.69	3.54	2.85	3.03	2.18	2.06	1.11	0.81
B16A*	**	1.50	1.91	2.10	1.75	2.25	2.67	3.56	2.70	1.92	2.11	2.07	1.22	0.85
B17A*	**	1.37	1.61	2.23	1.63	2.15	2.48	3.41	2.46	2.74	1.91	2.01	1.04	NM

Notes:

Elevations are based on USC&GS datum
Well installed July 1991
Elevation of replacement well TOC
NM - Not Measured
R - Replacement well
TOC - Top of Casing

Appendix A
Water Level Elevation Database
Biennial Groundwater Monitoring
Petarcik Site - May 2024
Occidental Chemical Corporation
Tacoma, Washington

Well Number		Nov-99	May-00	Nov-00	May-01	Nov-01	May-02	Nov-02	May-03	Nov-03	May-04	Nov-04	May-05
B3		1.72	2.85	2.04	2.76	2.25	2.54	1.87	3.30	3.46	1.47	4.03	2.48
B3A/B3AR	**	1.72	3.88	2.50	3.80	3.43	4.25	1.72	3.15	4.18	2.76	3.54	4.18
B4		1.50	2.52	1.81	2.36	1.92	2.11	1.73	2.04	2.27	1.59	2.40	2.10
B4A		1.42	NM	NM	NM	1.93	NM	NM	NM	2.36	NM	NM	NM
B5		1.31	NM	NM	NM	1.67	NM	NM	NM	2.21	NM	NM	NM
B5A/B5AR	**	0.45	NM	NM	NM	NM	NM	NM	NM	0.98	NM	NM	NM
B6		1.30	NM	NM	NM	2.25	NM	NM	NM	3.11	NM	NM	NM
B6A		1.51	NM	NM	NM	2.41	NM	NM	NM	2.96	NM	NM	NM
B7		-0.60	NM	NM	NM	-0.19	NM	NM	NM	0.05	NM	NM	NM
B8		1.42	NM	NM	NM	2.04	NM	NM	NM	2.42	NM	NM	NM
B9		----A B A N D O N E D ----											----A B A N D C
B10A		0.90	2.75	1.95	2.65	2.99	NM	NM	NM	3.32	NM	NM	NM
B12/B12R	**	1.59	NM	NM	NM	2.57	3.51	2.82	3.35	4.76	2.76	3.74	3.40
B13 (artesian)		8.55	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
B13A		1.80	NM	NM	NM	2.37	NM	NM	NM	2.66	NM	NM	NM
B13B		1.31	NM	NM	NM	1.7	NM	NM	NM	2.27	NM	NM	NM
B14		1.56	NM	NM	NM	1.97	NM	NM	NM	2.45	NM	NM	NM
B14A		1.54	NM	NM	NM	1.79	NM	NM	NM	2.42	NM	NM	NM
B15A*	**	1.25	NM	NM	NM	1.6	NM	NM	NM	2.22	NM	NM	NM
B16A*	**	1.38	NM	NM	NM	1.72	NM	NM	NM	2.27	NM	NM	NM
B17A*	**	1.29	NM	NM	NM	1.66	NM	NM	NM	2.27	NM	NM	NM

Notes:

Elevations are based on USC&GS datum
Well installed July 1991
Elevation of replacement well TOC
NM - Not Measured
R - Replacement well
TOC - Top of Casing

Appendix A
Water Level Elevation Database
Biennial Groundwater Monitoring
Petarcik Site - May 2024
Occidental Chemical Corporation
Tacoma, Washington

Well Number		Nov-05	May-06	Nov-06	May-07	Nov-07	May-08	Nov-08	May-09	Nov-09	Nov-11	May-12	Nov-12
B3		2.38	1.82	0.89	1.81	2.36	3.69	2.63	2.40	3.44	1.82	2.36	3.52
B3A/B3AR	**	3.50	2.75	1.11	3.04	3.71	4.59	4.98	4.34	5.75	2.10	3.47	5.30
B4		1.85	1.55	1.75	1.50	1.99	1.75	2.97	1.02	1.93	2.19	2.09	3.05
B4A		1.88	NM	4.41	1.53	2.27	1.83	3.28	1.07	2.27	2.32	2.19	3.10
B5		1.58	NM	2.48	1.37	1.71	1.44	3.05	1.83	1.71	2.40	2.16	2.94
B5A/B5AR	**	0.21	NM	1.21	0.10	0.47	0.39	1.80	0.59	3.07	1.20	0.88	1.67
B6		2.56	NM	4.00	2.40	3.06	2.72	3.48	2.78	3.56	2.17	2.24	3.47
B6A		2.82	NM	5.11	2.06	2.18	2.90	4.15	2.00	3.49	2.00	2.89	2.56
B7		-0.1	NM	2.62	-0.35	0.26	0.08	1.15	0.10	1.16	-0.15	0.33	1.36
B8		2.4	NM	1.46	1.77	2.77	2.41	4.64	3.01	4.37	2.54	2.42	4.41
B9		) N E D ----						----A B A N D O N E D ----					
B10A		2.63	NM	5.28	2.66	2.19	0.87	4.70	1.55	3.18	NM	1.71	4.72
B12/B12R	**	3.15	2.70	5.00	2.70	NM	2.83	4.17	3.49	4.33	3.21	3.23	4.65
B13 (artesian)		11.34	NM	NM	NM	10.42	NM	NM	NM	11.35	7.19	11.12	11.81
B13A		3.12	NM	3.34	2.32	2.95	3.54	3.09	3.01	2.49	0.90	2.87	3.92
B13B		1.67	NM	4.31	1.43	2.00	2.02	3.19	1.94	3.02	2.48	2.18	3.04
B14		1.82	NM	2.43	1.65	2.17	2.04	3.19	2.17	3.39	2.55	2.29	3.18
B14A		1.8	NM	2.53	1.54	2.11	2.03	3.23	2.00	3.36	2.48	2.22	3.11
B15A*	**	1.56	NM	4.26	1.36	1.74	1.75	3.05	1.85	3.22	2.45	2.14	2.91
B16A*	**	1.66	NM	2.32	1.41	1.98	2.39	3.12	1.90	3.34	2.44	2.19	2.96
B17A*	**	1.63	NM	4.37	1.37	2.09	1.96	3.12	1.84	3.36	2.46	2.08	2.90

Notes:

Elevations are based on USC&GS datum
Well installed July 1991
Elevation of replacement well TOC
NM - Not Measured
R - Replacement well
TOC - Top of Casing

Appendix A
Water Level Elevation Database
Biennial Groundwater Monitoring
Petarcik Site - May 2024
Occidental Chemical Corporation
Tacoma, Washington

Well Number		May-13	Nov-13	May-14	Nov-14	May-15	Nov-15	May-16	Nov-16	May-17	Nov-17	May-18	Nov-18	May-19	Nov-19	######	#####
B3		2.18	3.49	4.32	2.47	0.69	2.35	1.55	3.65	0.59	0.59	1.84	-0.14	1.23	0.63	2.3	1.23
B3A/B3AR	**	3.12	5.10	4.14	4.26	2.14	2.8	2.48	5.15	3.3	NM	3.02	0.34	0.85	0.6	2.9	1.15
B4		2.15	3.25	3.10	2.44	1.95	2.11	1.65	3.35	1.89	1.89	2.1	0.59	1.61	2.3	2.21	2.7
B4A		2.09	3.52	3.15	2.47	0.09	2.29	1.80	3.41	-1.2	-1.2	0.34	-1.04	-0.25	0.66	1.42	1.1
B5		2.09	3.63	3.33	2.2	1.89	2.07	1.65	3.17	1.46	1.46	2.26	2.05	1.55	2.62	2.33	3.23
B5A/B5AR	**	0.72	2.29	2.06	0.96	0.64	0.8	0.44	1.83	0.21	0.21	1.08	0.84	0.81	1.31	1.11	1.93
B6		2.93	3.44	3.44	2.94	0.99	2.65	2.42	3.68	1.07	1.07	2.02	0.61	0.53	1.4	1.9	2.5
B6A		2.72	3.27	2.76	2.76	1.05	1.91	1.85	3.07	2.22	2.22	2.06	1.57	1.4	1.96	2.56	5.38
B7		0.29	1.65	1.23	0.68	0.29	0.28	-0.10	1.23	-0.08	-0.08	-1.29	-1.76	-1.46	0.23	0.29	-0.55
B8		2.04	3.61	3.64	2.956	0.69	3.31	1.85	4.46	3.32	3.32	0.99	3.32	0.36	2.57	2.09	1.82
B9																	
B10A		--	4.74	4.23	3.98	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
B12/B12R	**	3.11	4.39	4.33	4.62	3.09	3.2	2.68	4.54	2.94	2.94	3.19	2.62	2.82	3.3	3.33	4.5
B13 (artesian)		3.73	11.81	12.97	8.345	12.96	12.98	12.36	13.20	13.2	13.2	10.0	13.88	1.42	0.5	13.88	0.5
B13A		2.86	3.11	3.65	4.32	0.51	0.44	2.19	1.02	2.13	2.13	2.49	0.42	1.64	1.67	1.12	2.99
B13B		2.04	3.58	3.34	2.32	1.56	2.13	1.72	2.55	1.02	1.02	1.94	0.87	1.46	2.55	2.4	2.6
B14		2.22	3.68	3.40	2.39	1.23	2.31	1.88	3.11	0.69	0.69	0.41	0.85	1.1	1.37	1.87	2.97
B14A		2.07	3.53	3.34	2.4	1.74	2.26	1.81	3.18	1.22	1.22	2.36	1.66	0.84	1.95	2.5	3.29
B15A*	**	1.98	3.56	3.32	2.22	0.89	2.02	1.66	3.95	NM	NM	0.76	NM	NM	NM	NM	NM
B16A*	**	1.95	3.52	3.31	2.27	0.8	2.1	1.70	2.93	0.15	0.15	1.37	0.73	0.56	2.58	2.36	3
B17A*	**	1.93	3.60	3.36	2.2	2.09	2.08	1.73	3.01	1.13	1.13	2.27	1.91	-0.95	2.25	2.5	1.81

Notes:

Elevations are based on USC&GS datum
Well installed July 1991
Elevation of replacement well TOC
NM - Not Measured
R - Replacement well
TOC - Top of Casing

Appendix A
Water Level Elevation Database
Biennial Groundwater Monitoring
Petarcik Site - May 2024
Occidental Chemical Corporation
Tacoma, Washington

Well Number		May-21	May-22	Nov-22	May-23	Nov-24	May-24
B3		0.62	2.58	1.03	2.78	2.56	1.74
B3A/B3AR	**	1.76	4.45	2.5	4.8	3.48	3.02
B4		0.8	2.74	1.88	2.6	3.26	1.6
B4A		1.4	2.16	2.12	2.91	2.66	2.01
B5		2.15	2.59	2.18	3.18	2.68	2.03
B5A/B5AR	**	0.81	1.29	1.01	1.61	1.31	0.76
B6		1.64	2.1	2.55	3.01	2.97	2.27
B6A		2.27	1.46	1.85	1.97	1.95	1.27
B7		-0.8	-0.4	0.15	0.57	0.53	0.03
B8		1.83	2.85	2.07	2.61	7.32	6.55
B9					NM		NM
B10A		NM	NM	NM	NM	NM	NM
B12/B12R	**	2.9	3.9	2.87	3.66	6.79	3
B13 (artesian)		13.88	12.965	14.12	10.52	14.12	15.506
B13A		1.44	1.4	2.39	2.52	3.14	2.76
B13B		1.71	3.17	1.73	2.57	3.85	3.33
B14		1.67	2.42	2.32	3.42	3.73	3.23
B14A		2.05	2.6	2.3	3.49	3.38	2.83
B15A*	**	NM	NM	NM	NM	NM	NM
B16A*	**	1.71	NM	NM	NM	NM	NM
B17A*	**	1.82	3.48	2.18	2.97		2.5

Notes:

Elevations are based on USC&GS datum
Well installed July 1991
Elevation of replacement well TOC
NM - Not Measured
R - Replacement well
TOC - Top of Casing

Appendix B
Comprehensive Water Quality Database

Appendix B
Analytical Results Summary
Biennial Groundwater Monitoring
Petarcik Site - May 2023
Occidental Chemical Corporation
Tacoma, Washington

B-3

Sample Location:		**B-3**	**B-3**	**B-3**	**B-3**	**B-3**	**B-3**	**B-3**	**B-3**	**B-3**
Sample ID:		**GW-MPT-007**	**B-3**	**B-3**	**B-3**	**B-3-110700-DC**	**B-3-DC-051701**	**B-3-TR-111001**	**B-3-TR-050202**	**B-3-DC-111302**
Sample Date:		**5/8/1998**	**5/13/1999**	**11/3/1999**	**5/8/2000**	**11/7/2000**	**5/17/2001**	**11/10/2001**	**5/2/2002**	**11/13/2002**
Parameter	**Units**									
Volatiles										
Chloroform (Trichloromethane)	µg/L	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	1.2	0.26	3.2	90	1.4	1.6	0.70 J	0.5 U	0.80 J

B-3

Sample Location:		**B-3**	**B-3**	**B-3**	**B-3**	**B-3**	**B-3**	**B-3**	**B-3**	**B-3**
Sample ID:		**B-3-0503**	**B3-1103**	**B-3-0504**	**B-3-1104**	**B-3-0505**	**241105-B3-001**	**GW-052506-B-3-001**	**GW-110306-B-3-004**	**GW-051007-B-3-001**
Sample Date:		**5/9/2003**	**11/11/2003**	**5/15/2004**	**11/11/2004**	**5/13/2005**	**11/24/2005**	**05/25/2006**	**11/3/2006**	**5/10/2007**
Parameter	**Units**									
Volatiles										
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.275	1.0 U
Vinyl chloride	µg/L	1.4	1.2	3.1	0.72	3.3	3.7	11	3.2	4.3

B-3

Sample Location:		**B-3**	**B-3**	**B-3**	**B-3**	**B-3**	**B-3**	**B-3**	**B-3**	**B-3**
Sample ID:		**GW-112807-TG-B3**	**GW-052008-TG-B3**	**GW-111408-TG-pet-B3-07**	**GW-052909-TG-PET-B3**	**GW-111109-TG-B3**	**GW-052410-CM-B3**	**GW-111710-MD-B3**	**GW-052611-MD-B3**	**GW-052611-MD-FD1**
Sample Date:		**11/28/2007**	**5/20/2008**	**11/14/2008**	**5/29/2009**	**11/11/2009**	**5/24/2010**	**11/17/2010**	**5/26/2011**	**5/26/2011 (Duplicate)**
Parameter	**Units**									
Volatiles										
Chloroform (Trichloromethane)	µg/L	1 U	1 U	1 U	1.0U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1 U	1 U	1 U	1.0U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	1 U	1 U	1 U	1.0U	1.0 U	1.0 U	0.29 J	1.0 U	1.0 U
Vinyl chloride	µg/L	1.3	0.32 J	0.67	0.5U	1.2	1.2	5.6	1.5	2.0

Sample Location:		**B-3**	**B-3**	**B-3**	**B-3**	**B-3**	**B-3**	**B-3**	**B-3**	**B-3**
Sample ID:		**GW-111811-AK-B3**	**GW-053112-AK-B3**	**GW-112812-MD-B3**	**GW-051713-MD-B3**	**GW-112013-BP-B-3**	**GW-050814-BP-B-3**	**GW-111714-BP-B-3**	**GW-050515-NH-B-3**	**GW-050515-NH-B-3**
Sample Date:		**11/18/2011**	**5/31/2012**	**11/28/2012**	**5/17/2013**	**11/20/2013**	**5/8/2014**	**11/17/2014**	**5/5/2014**	**5/5/2014 (Duplicate)**
Parameter	**Units**									
Volatiles										
Chloroform (Trichloromethane)	µg/L	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U
Tetrachloroethene	µg/L	1.0 U	0.50 U	0.50 U	0.13 J	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U
Trichloroethene	µg/L	1.0 U	0.11 J	0.50 U	0.12 J	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U
Vinyl chloride	µg/L	0.5 U	1.7	0.29J	0.31 J	0.25 J	0.60 J	0.21 J	0.62	0.62

Sample Location:		**B-3**	**B-3**	**B-3**	**B-3**	**B-3**	**B-3**	**B-3**	**B-3**	**B-3**
Sample ID:		**GW-111115-BP-B-3**	**GW-051716-BP-B-3**	**GW-111516-NT-B-3**	**GW-052517-NT-B3**	**GW-171117-NT-B3**	**GW-053018-NT-B3**	**GW-110718-NT-B3**	**GW-050619-NT-B3**	**GW-0112019-NT-B3**
Sample Date:		**11/11/2015**	**05/17/16**	**11/15/16**	**05/25/17**	**11/17/17**	**5/30/18**	**11/07/18**	**05/06/2019**	**11/20/2019**
Parameter	**Units**									
Volatiles										
Chloroform (Trichloromethane)	µg/L	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	0.16 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Appendix B
Analytical Results Summary
Biennial Groundwater Monitoring
Petarcik Site - May 2023
Occidental Chemical Corporation
Tacoma, Washington

B-3

Sample Location:		**B-3**	**B-3**	**B-3**	**B-3**	**B-3**	**B-3**	**B-3**	**B-3**	**B-3**
Sample ID:		**GW-051320-RB-B-3**	**GW-111720-NT-B-3**	**GW-052421-NT-B-3**	**GW-052421-NT-FD-1**	**GW-052322-JT-B3**	**B-3-111622-MM**	**GW-05172023-B-3**	**GW-05172023-B-3**	**GW-060624-RB-B3**
Sample Date:		**05/13/2020**	**11/17/2020**	**05/24/2021**	**05/24/2021**	**05/23/2022**	**11/16/2022**	**5/26/2023**	**5/26/2023** DUPLICATE	**6/6/2024**
Parameter	**Units**									
Volatiles										
Chloroform (Trichloromethane)	µg/L	0.5 U	1.0 U	0.5 U	0.5 U	2.0 U	2.0 U	1.0 U	1.0 U	0.5 U
Tetrachloroethene	µg/L	0.5 U	1.0 U	0.5 U	0.5 U	2.0 U	2.0 U	1.0 U	1.0 U	0.5 U
Trichloroethene	µg/L	0.5 U	1.0 U	0.5 U	0.5 U	2.0 U	2.0 U	1.0 U	1.0 U	0.5 U
Vinyl chloride	µg/L	0.16 J	0.5 U	0.5 U	0.15 J	0.2 U	0.2 U	0.50 U	0.50 U	0.17 J

B-3A

Sample Location:		**B-3A**	**B-3A**	**B-3AR**	**B-3AR**	**B-3AR**	**B-3AR**	**B-3AR**	**B-3AR**	**B-3AR**
Sample ID:		**GW-MPT-008**	**B-3A**	**B-3**	**5/13/1999**	**B-3AR**	**B-3AR**	**B-3AR-110700-DC**	**B-3AR-DC-051701**	**B-3AR-TR-110901**
Sample Date:		**5/8/1998**	**11/2/1998**	**11/2/1998**		**11/3/1999**	**5/8/2000**	**11/7/2000**	**5/17/2001**	**11/9/2001**
Parameter	**Units**									
Volatiles					0.20 U					
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	1.0 U	0.27	0.50 U	1.0 U	1.0 U	2.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	0.39	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.0 U	0.96	0.20 J	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	1.5	1.9	1.0 U		3.2	1.0 U	1.3	1.0 U	1.9 J
Vinyl chloride	µg/L	0.5 U	1.5 J	0.5 U		0.5 U	0.5 U	0.5 U	0.69	0.5U

B-3A

Sample Location:		**B-3AR**	**B-3AR**	**B-3AR**	**GW-112607-TG-B3AR**	**B-3AR**	**B-3AR**	**B3-AR**	**B3-AR**	**B-3AR**
Sample ID:		**GW-052506-B-3AR-001**	**GW-110306-B-3AR-003**	**GW-051007-B-3AR-001**	**11/26/2007**	**GW-052008-TG-B3AR**	**GW-111308-TG-pet-B3AR-05**	**GW-052909-TG-PET-B3AR**	**GW-111109-TG-B3AR**	**GW-052410-CM-B3AR**
Sample Date:		**5/25/2006**	**11/03/06**	**5/10/2007**		**5/20/2008**	**11/13/2008**	**5/29/2009**	**11/11/2009**	**5/24/2010**
Parameter	**Units**	**Duplicate**								
Volatiles					1.0 U					
Chloroform (Trichloromethane)	µg/L	1.0U	1.0U	1.0U	1.0 U	1.0 U	1.0 U	1.0U	1.0U	1.0 U
Tetrachloroethene	µg/L	1.0U	1.0U	1.0U	0.73 J	1.0 U	1.0 U	1.0U	1.0U	1.0 U
Trichloroethene	µg/L	1.0U	0.38J	1.0U	0.8	0.55 J	1.0 U	0.76J	0.65J	0.44 J
Vinyl chloride	µg/L	0.5U	1.0U	0.5U		0.5 U	0.44J	0.5U	0.5U	0.5 U

Sample Location:		**B-3AR**	**B-3AR**	**B-3AR**	**B-3AR**	**B-3AR**	**B-3AR**	**B-3AR**	**B-3AR**	**B-3AR**
Sample ID:		**GW-111710-MD-B3AR**	**GW-111710-MD-FD1**	**GW-052611-MD-B3AR**	**GW-111811-AK-B3AR**	**GW-053112-AK-B3AR**	**GW-053112-AK-SP1**	**GW-112812-MD-B3AR**	**GW-112812-MD-FD1**	**GW-051713-MD-B3AR**
Sample Date:		**11/17/2010**	**11/17/2010**	**5/26/2011**	**11/18/2011**	**5/31/2012**	**5/31/2012**	**11/28/2012**	**11/28/2012**	**5/17/2013**
Parameter	**Units**		**Duplicate**				**(Duplicate)**		**(Duplicate)**	
Volatiles					1.0 U					
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	µg/L	0.57 J	0.35 J	0.37 J	0.5 U	0.35 J	0.50 U	0.32 J	0.33 J	0.50
Vinyl chloride	µg/L	0.29 J	0.5 U	0.5 U		0.50 U	0.50 U	0.10 J	0.10 J	0.50 U

Sample Location:		**B-3AR**	**B-3AR**	**B-3AR**	**B-3AR**	**B-3AR**	**B-3AR**	**B-3R**	**B-3R**	**B-3R**
Sample ID:		**GW-112013-BP-B-3AR**	**GW-050814-BP-B-3AR**	**GW-050914-BP-FD-1**	**GW-111714-BP-B-3AR**	**GW-050515-NH-B-3A**	**GW-111115-BP-B-3AR**	**GW-051716-BP-B-3R**	**GW-112816-NT-B-3AR**	**GW-052517-NT-B-3AR**
Sample Date:		**11/20/2013**	**5/8/2014**	**5/8/2014**	**11/17/2014**	**5/5/2014**	**11/11/2015**	**05/17/16**	**11/28/16**	**05/25/17**
Parameter	**Units**			**(Duplicate)**						
Volatiles										
Chloroform (Trichloromethane)	µg/L	0.50 U	0.50 UJ	0.50 UJ	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	0.50 U	0.50 UJ	0.50 UJ	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	0.39 J	0.35 J	0.44 J	0.32 J	0.35J	0.40 J	0.27 J	1.0 U	1.0 U
Vinyl chloride	µg/L	0.12 J	0.50 UJ	0.50 UJ	0.12 J	0.50U	0.12 J	0.5 U	0.5 U	0.5 U

Appendix B
Analytical Results Summary
Biennial Groundwater Monitoring
Petarcik Site - May 2023
Occidental Chemical Corporation
Tacoma, Washington

B-3A

Sample Location:		**B-3AR**	**B-3AR**	**B-3AR**	**B-3AR**	**B-3AR**	**B-3AR**	**B-3AR**	**B-3AR**	**B-3AR**
Sample ID:		**GW-052517-NT-B-3ARD**	**GW-053018-NT-B-3AR**	**GW-110718-NT-B-3AR**	**GW-050619-NT-B-3AR**	**GW-112019-NT-B-3AR**	**GW-05120-RB-B-3AR**	**GW-05120-RB-B-3AR**	**GW-111720-NT-B-3AR**	**GW-05421-NT-B3AR**
Sample Date:		**05/25/17**	**5/30/2018**	**11/07/18**	**5/06/2019**	**11/20/2019**	**05/13/2020**	**05/13/2020**	**11/17/2020**	**05/24/2021**
		Duplicate						**Duplicate**		
Parameter	**Units**									
Volatiles										
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.5 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.5 U
Trichloroethene	µg/L	1.0 U	1.0 U	0.27 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.32 J
Vinyl chloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Sample Location:		**B-3AR**	**B-3AR**	**B-3AR**	**B-3AR**
Sample ID:		**GW-05321-JT-B3AR**	**B-3A-111622-MM**	**GW-05162023-B-3AR**	**GW-060624-RB-B3AR**
Sample Date:		**05/23/2022**	**11/16/2022**	**5/19/2023**	**6/6/2024**
Parameter	**Units**				
Volatiles					
Chloroform (Trichloromethane)	µg/L	2.0 U	2.0 U	1.0 U	0.5 U
Tetrachloroethene	µg/L	2.0 U	2.0 U	1.0 U	0.5 U
Trichloroethene	µg/L	2.0 U	2.0 U	1.0 U	0.27 J
Vinyl chloride	µg/L	0.2 U	0.2 U	0.5 U	0.5 U

B-4

Sample Location:		**B-4**	**B-4**	**B-4**	**B-4**	**B-4**	**B-4**	**B-4**	**B-4**	**B-4**
Sample ID:		**GW-MLP-018**	**B-4**	**B-4**	**11/3/1999**	**B-4**	**B-4-110700-DC**	**B-4-DC-051701**	**B-4-TR-110901**	**B-4-TR-050202**
Sample Date:		**5/12/1998**	**11/2/1998**	**5/14/1999**		**5/8/2000**	**11/7/2000**	**5/17/2001**	**11/9/2001**	**5/2/2002**
Parameter	**Units**									
Volatiles										
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	0.20 U	0.80 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.80 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.80 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	3.1	4.7	1.0 U	2.3	1.0 U	0.92 J	0.5 U

B-4

Sample Location:		**B-4**	**B-4**	**B-4**	**B-4-0504**	**B-4**	**B-4**	**B-4**	**B-4**	**B-4**
Sample ID:		**B-4-DC-111302**	**B-4-0503**	**B4-1103**	**5/15/2004**	**B-4-1104**	**B-4-0505**	**231105-B-4-001**	**GW-052506-B-4-001**	**GW-110306-B-4-005**
Sample Date:		**11/13/2002**	**5/9/2003**	**11/11/2003**		**11/11/2004**	**5/13/2005**	**11/23/2005**	**5/25/2006**	**11/3/2006**
Parameter	**Units**									
Volatiles					1.0 U					
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0U	1.0U	1.0U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0U	1.0U	1.0U
Trichloroethene	µg/L	1.0 U	1.0 U	1.0 U	0.89	1.0 U	1.0 U	1.0U	1.0U	1.0U
Vinyl chloride	µg/L	1.1 J	0.81	0.87		0.5 U	0.5 U	0.5U	0.5U	0.5U

B-4

Sample Location:		**B-4**	**B-4**	**B-4**	**GW-052008-TG-B4**	**B-4**	**B-4**	**B-4**	**B-4**	**B-4**
Sample ID:		**GW-111408-TG-pet-B3-07**	**GW-051007-FDUP**	**GW-112607-TG-B4**	**5/20/2008**	**GW-111308-TG-pet-B4-01**	**GW-052909-TG-PET-B4**	**GW-052909-TG-PET-FD**	**GW-111109-TG-B4**	**GW-052410-CM-B4**
Sample Date:		**11/14/2008**	**5/10/2007**	**11/26/2007**		**5/20/2008**	**5/29/2009**	**5/20/2009**	**11/11/2009**	**5/24/2010**
			Duplicate					**Duplicate**		
Parameter	**Units**									
Volatiles					1 U					
Chloroform (Trichloromethane)	µg/L	1.0U	1.0U	1 U	1 U	1 U	1.0U	1.0U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0U	1.0U	1 U	1 U	1 U	1.0U	1.0U	1.0 U	1.0 U
Trichloroethene	µg/L	1.0U	1.0U	1 U	0.5 U	1 U	1.0U	1.0U	1.0 U	1.0 U
Vinyl chloride	µg/L	0.67	0.5U	0.5 U		0.5 U	0.5U	0.5U	0.5 U	0.5 U

Appendix B
Analytical Results Summary
Biennial Groundwater Monitoring
Petarcik Site - May 2023
Occidental Chemical Corporation
Tacoma, Washington

B-4										
Sample Location:		**B-4**	**B-4**	**B-4**	**GW-111911-AK-B4**	**B-4**	**B-4**	**B-4**	**B-4**	**B-4**
Sample ID:		**GW-052410-CM-FD**	**GW-111810-MD-B4**	**GW-052611-MD-B4**	**11/19/2011**	**GW-053112-AK-B4**	**GW-112912-MD-B4**	**GW-051713-MD-B4**	**GW-112513-BP-B-4**	**GW-050914-BP-B4**
Sample Date:		**5/24/2010**	**11/18/2010**	**5/26/2011**		**5/31/2012**	**11/29/2012**	**5/17/2013**	**11/25/2013**	**5/9/2014**
		Duplicate								
Parameter	**Units**									
Volatiles					1.0 U					
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	0.26 J	0.50 U	0.50 UJ
Trichloroethene	µg/L	1.0 U	1.0 U	1.0 U	0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ
Vinyl chloride	µg/L	0.5 U	0.5 U	0.5 U		0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ

B-4									
Sample Location:	**B-4**	**B-4**	**B-4**	**B-4**	**B-4**	**B-4**	**B-4**	**B-4**	**B-4**
Sample ID:	**GW-111714-BP-B-4**	**GW-050515-NH-B4**	**GW-111315-BP-B-4**	**GW-051716-BP-B-4**	**GW-111416-NT-B-4**	**GW-052517-NT-B-4**	**GW-171117-NT-B4**	**GW-052418-NT-B4**	**GW-171718-NT-B4**
Sample Date:	**11/17/2014**	**5/5/2015**	**11/13/2015**	**05/17/16**	**11/14/16**	**05/25/17**	**11/17/17**	**05/24/2018**	**11/07/18**
Parameter	**Units**								
Volatiles									
Chloroform (Trichloromethane)	µg/L	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	0.50 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

B-4										
Sample Location:		**B-4**	**B-4**	**B-4**	**B-4**	**B-4**	**B-4**	**B-4**	**B-4**	**B-4**
Sample ID:		**GW-050619-NT-B4**	**GW-050619-NT-FD-1**	**GW-112019-NT-B4**	**GW-05120-RB-B-4**	**GW-111720-NT-B4**	**GW-05421-NT-B4**	**GW-052522-MM-B4**	**B-4-111522-MM**	**B-4-111522-MM**
Sample Date:		**05/06/2019**	**05/06/2019**	**11/20/2019**	**05/13/2020**	**11/17/2020**	**05/24/2021**	**05/25/2022**	**11/15/2022**	**11/15/2022**
			Duplicate							**Duplicate**
Parameter	**Units**									
Volatiles										
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.5 U	2.0 U	2.0 U	2.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.5 U	2.0 U	2.0 U	2.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.5 U	2.0 U	2.0 U	2.0 U
Vinyl chloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U

B-4			
Sample Location:		**B-4**	**B-4**
Sample ID:		**GW-05172023-B-4**	**GW-060624-RB-B4**
Sample Date:		**5/17/2023**	**6/6/2024**
Parameter	**Units**		
Volatiles			
Chloroform (Trichloromethane)	µg/L	1.0 U	0.5 U
Tetrachloroethene	µg/L	1.0 U	0.5 U
Trichloroethene	µg/L	1.0 U	0.5 U
Vinyl chloride	µg/L	0.5 U	0.5 U

B-4A								
Sample Location:		**B-4A**	**B-4A**	**B-4A**	**B-4A**	**B-4A**	**B-4A**	**B-4A**
Sample ID:		**GW-111911-AK-B4A**	**GW-112213-BP-B-4A**	**GW-111315-BP-B-4A**	**GW-171117-NT-B-4A**	**GW-111919-NT-B-4A**	**GW-111919-NT-B-FD2**	**GW-052422-JT-B-4A**
Sample Date:		**11/19/2011**	**11/22/2013**	**11/13/2015**	**11/17/2017**	**11/19/2019**	**11/19/2019**	**05/24/2022**
							Duplicate	
Parameter	**Units**							
Volatiles								
Chloroform (Trichloromethane)	µg/L	1.0 U	0.50 U	0.50 U	1.0 U	1.0 U	1.0 U	2.0 U
Tetrachloroethene	µg/L	1.0 U	0.50 U	0.50 U	1.0 U	1.0 U	1.0 U	2.0 U
Trichloroethene	µg/L	1.0 U	0.50 U	0.50 U	1.0 U	1.0 U	1.0 U	2.0 U
Vinyl chloride	µg/L	0.5 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	0.2 U

Appendix B
Analytical Results Summary
Biennial Groundwater Monitoring
Petarcik Site - May 2023
Occidental Chemical Corporation
Tacoma, Washington

B-5

Sample Location:		**B-5**	**B-5**	**B-5**	**B-5**	**B-5**	**B-5**	**B-5**	**B-5**	**B-5**
Sample ID:		**GW-MPT-002**	**B-5**	**B-5**	**11/2/1999**	**B-5-TR-111001**	**B-5-1103**	**221105-B5-001**	**GW-112807-TG-B5**	**GW-111109-TG-B5**
Sample Date:		**5/8/1998**	**11/3/1998**	**5/13/1999**		**11/10/2001**	**11/12/2003**	**11/23/2005**	**11/28/2007**	**11/11/2009**
Parameter	**Units**									
Volatiles					0.50 U					
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.40 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	0.20 U		0.5 U	0.5 U	0.5U	0.5 U	0.5 U

B-5

Sample Location:		**B-5**	**B-5**	**B-5**	**B-5**	**B-5**	**B-5**	**B-5**	**B-5**	
Sample ID:		**GW-111811-AK-B5**	**GW-111811-AK-D3**	**GW-112713-BP-B-5**	**GW-111315-BP-B-5**	**GW-111315-BP-FD2**	**GW-171117-NT-B5**	**GW-11219-NT-B5**	**GW-052422-JT-B5**	
Sample Date:		**11/18/2011**	**11/18/2011 (Duplicate)**	**11/27/2013**	**11/13/2015**	**11/13/2015 (Duplicate)**	**11/17/2017**	**11/21/2019**	**05/24/2022**	
Parameter	**Units**									
Volatiles										
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	2.0 U	
Tetrachloroethene	µg/L	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	2.0 U	
Trichloroethene	µg/L	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	2.0 U	
Vinyl chloride	µg/L	0.5 U	0.5 U	0.50 U	0.32 J	0.50 U	0.5 U	0.5 U	0.2 U	

B-5AR

Sample Location:		**B-5AR**	**B-5AR**	**B-5AR**	**B-5AR**	**B-5AR2**	**B-5AR2**	**B-5AR**	**B-5AR**	**B-5AR**
Sample ID:		**GW-MPT-001**	**B-5AR**	**B-5AR**	**11/2/1999**	**B-5AR-TR-013002**	**B-5AR2-1103**	**231105-B5AR-001**	**GW-112807-TG-B5AR**	**GW-111109-TG-B5AR**
Sample Date:		**5/8/1998**	**11/3/1998**	**5/13/1999**		**1/30/2002**	**11/12/2003**	**11/22/2005**	**11/28/2007**	**11/11/2009**
Parameter	**Units**									
Volatiles					0.50 U					
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 UJ	1.0 U	1.0U	1 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 UJ	1.0 U	1.0U	1 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.20 U	1.0 UJ	1.0 U	1.0U	1 U	1.0 U
Vinyl chloride	µg/L	1.5	1.0 U	0.20 U		0.5 UJ	0.5 U	0.5U	0.5 U	0.5 U

B-5AR

Sample Location:		**B-5AR**	**B-5AR**	**B-5AR**	**B-5AR**	**B-5AR**	**B-5AR**	**B-5AR**
Sample ID:		**GW-111811-AK-B5AR**	**GW-112113-BP-B-5AR**	**GW-111115-BP-B-5AR**	**GW-151117-NT-B5AR**	**GW-151117-NT-FD2**	**GW-111919-NT-B5AR**	**GW-052422-JT-B5AR**
Sample Date:		**11/18/2011**	**11/21/2013**	**11/11/2015**	**11/15/2017**	**11/15/2017 Duplicate**	**11/19/2019**	**05/24/2022**
Parameter	**Units**							
Volatiles								
Chloroform (Trichloromethane)	µg/L	1.0 U	0.50 U	0.50 U	1.0 U	1.0 U	1.0 U	2.0 U
Tetrachloroethene	µg/L	1.0 U	0.50 U	0.50 U	1.0 U	1.0 U	1.0 U	2.0 U
Trichloroethene	µg/L	1.0 U	0.50 U	0.50 U	1.0 U	1.0 U	1.0 U	2.0 U
Vinyl chloride	µg/L	0.5 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	0.2 U

B-6

Sample Location:		**B-6**	**B-6**	**B-6**	**B-6**	**B-6**	**B-6**	**B-6**	**B-6**	**B-6**
Sample ID:		**GW-MLP-022**	**B-6**	**B-6**	**11/2/1999**	**B-6-TR-111001**	**B-6-1103**	**241105-B-6-001**	**GW-112607-TG-B6**	**GW-111209-CM-B6**
Sample Date:		**5/12/1998**	**11/3/1998**	**5/13/1999**		**11/11/2001**	**11/13/2003**	**11/24/2005**	**11/26/2007**	**11/12/2009**
Parameter	**Units**									
Volatiles					0.50 U					
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	0.21	0.20 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	0.20 U		0.5 U	0.5 U	0.5U	0.5 U	0.5 U

Appendix B
Analytical Results Summary
Biennial Groundwater Monitoring
Petarcik Site - May 2023
Occidental Chemical Corporation
Tacoma, Washington

B-6

Sample Location:		**B-6**	**B-6**	**B-6**	**B-6**	**B-6**	**B-6**
Sample ID:		**GW-111711-AK-B6**	**GW-112223-BP-B-6**	**GW-111315-BP-B-6**	**GW-141117-NT-B6**	**GW-111819-NT-B6**	**GW-052422-JT-B6**
Sample Date:		**11/17/2011**	**11/22/2013**	**11/13/2015**	**11/14/2017**	**11/18/2019**	**05/24/2022**
Parameter	**Units**						
Volatiles							
Chloroform (Trichloromethane)	µg/L	1.0 U	0.50 U	0.50 U	1.0 UJ	0.50 U	2.0 U
Tetrachloroethene	µg/L	1.0 U	0.50 U	0.50 U	1.0 UJ	0.50 U	2.0 U
Trichloroethene	µg/L	1.0 U	0.50 U	0.50 U	1.0 UJ	0.50 U	2.0 U
Vinyl chloride	µg/L	0.5 U	0.50 U	0.50 U	0.5 UJ	0.50 U	0.2 U

B-6A

Sample Location:		**B-6A**	**B-6A**	**B-6A**	**B-6A**	**B-6A**	**B-6A**	**B-6A**	**B-6A**	**B-6A**
Sample ID:		**GW-MLP-021**	**B-6A**	**B-6A**	**11/2/1999**	**B-6A-TR-111101**	**B-6A-1103**	**241105-B-6A-001**	**GW-112607-TG-B6A**	**GW-111209-CM-B6A**
Sample Date:		**5/12/1998**	**11/3/1998**	**5/13/1999**		**11/11/2001**	**11/13/2003**	**11/24/2005**	**11/26/2007**	**11/12/2009**
Parameter	**Units**									
Volatiles					0.50 U					
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.20 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	0.20 U		0.5 U	0.5 U	0.5U	0.5 U	0.5 U

B-6A

Sample Location:		**B-6A**	**B-6A**	**B-6A**	**B-6A**	**B-6A**	**B-6A**
Sample ID:		**GW-111711-AK-B6A**	**GW-112223-BP-B-6A**	**GW-111315-BP-B-6A**	**GW-141117-NT-B6A**	**GW-111819-NT-B-6A**	**GW-052422-JT-B6A**
Sample Date:		**11/17/2011**	**11/22/2013**	**11/13/2015**	**11/14/2017**	**11/18/2019**	**05/24/2022**
Parameter	**Units**						
Volatiles							
Chloroform (Trichloromethane)	µg/L	1.0 UJ	0.50 U	0.50 U	1.0 UJ	1.0U	2.0 U
Tetrachloroethene	µg/L	1.0 UJ	0.50 U	0.50 U	1.0 UJ	1.0U	2.0 U
Trichloroethene	µg/L	1.0 UJ	0.50 U	0.50 U	1.0 UJ	1.0U	2.0 U
Vinyl chloride	µg/L	0.5 UJ	0.50 U	0.50 U	0.5 UJ	0.5U	0.2 U

B-7

Sample Location:		**B-7**	**B-7**	**B-7**	**D-2**	**B-7**	**B-7**	**B-7**	**B-7**	**B-7**
Sample ID:		**B-7**	**GW-MLP-019**	**B-7**	**11/3/1998**	**B-7**	**D-1**	**B-7**	**D-1**	**B-7-TR-111001**
Sample Date:		**5/12/1998**	**5/12/1998**	**11/3/1998**	**Duplicate**	**5/14/1999**	**5/14/1999**	**11/3/1999**	**11/3/1999**	**11/10/2001**
		Duplicate					**Duplicate**		**Duplicate**	
Parameter	**Units**									
Volatiles					100 U					
Chloroform (Trichloromethane)	µg/L	20 U	20 U	10 U	100 U	2.0 U	20 U	5.0	5.3	1.0 U
Tetrachloroethene	µg/L	20 U	20 U	10 U	100 U	17	20 U	0.50 U	0.50 U	1.0 U
Trichloroethene	µg/L	20 U	20 U	44	400	240	180	13	11	1.0 U
Vinyl chloride	µg/L	120 J	200 J	460		570 J	330 J	21	17	1.2 J

B-7

Sample Location:		**B-7**	**B-7**	**B-7**	**231105-B-7-001**	**B-7**	**B-7**	**B-7**	**B-7**	**B-7**
Sample ID:		**FD02-TR-111001**	**B-7-1103**	**FD2-1103**	**11/23/2005**	**231105-B-18-001**	**GW-112907-TG-B7**	**GW-111209-CM-B7**	**GW-111811-AK-B7**	**GW-112513-BP-B-7**
Sample Date:		**11/10/2001**	**11/12/2003**	**11/12/2003**		**11/23/2005**	**11/29/2007**	**11/12/2009**	**11/18/2011**	**11/25/2013**
		Duplicate		**Duplicate**		**Duplicate**				
Parameter	**Units**									
Volatiles					1.0U					
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	1.0 U	1.0U	1.0U	1 U	1.0 U	1.0 U	0.50 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	5.5	1.0U	1 U	1.0 U	1.0 U	0.50 U
Trichloroethene	µg/L	1.0 U	5.0	5.6	9.4	6.5	1 U	0.88 J	1.0 U	0.31 J
Vinyl chloride	µg/L	1.5 J	11.0 J	12.0 J		9.8	3.4	230	1.4	72

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B-7

Sample Location:		**B-7**	**B-7**	**B-7**	**B-7**
Sample ID:		**GW-111315-BP-B-7**	**GW-171117-NT-B7**	**GW-111919-NT-B7**	**GW-052422-JT-B6A**
Sample Date:		**11/13/2015**	**11/17/2017**	**11/19/2019**	**05/24/2022**
Parameter	**Units**				
Volatiles					
Chloroform (Trichloromethane)	µg/L	0.50 U	1.0 U	1.0 U	2.0 U
Tetrachloroethene	µg/L	0.50 U	1.0 U	1.0 U	3.0
Trichloroethene	µg/L	0.27 J	1.0 U	1.0 U	**70**
Vinyl chloride	µg/L	**4.4**	**16**	1.1	**12**

B-8

Sample Location:		**B-8**	**B-8**	**B-8**	**D-1**	**B-8**	**B-8**	**B-8**	**B-8**	**B-8**
Sample ID:		**GW-MPT-006**	**GW-MPT-009**	**B-8**	**11/3/1998**	**B-8**	**D-2**	**B-8**	**D-2**	**B-8-TR-111001**
Sample Date:		**5/8/1998**	**5/8/1998**	**11/3/1998**	**Duplicate**	**5/14/1999**	**5/14/1999**	**11/3/1999**	**11/3/1999**	**11/10/2001**
			Duplicate				**Duplicate**		**Duplicate**	
Parameter	**Units**									
Volatiles					100 U					
Chloroform (Trichloromethane)	µg/L	100 U	50 U	100 U	100 U	20 U	20 U	20 J	20 J	1.0 U
Tetrachloroethene	µg/L	100 U	50 U	100 U	100 U	22	20 U	0.50 U	0.50 U	1.0 U
Trichloroethene	µg/L	170	160	100 U	890	20 U	20 U	1.3 J	1.4 J	1.5
Vinyl chloride	µg/L	840	940	770		1300	970	1500	1100	350 J

B-8

Sample Location:		**B-8**	**B-8**	**B-8**	**GW-112907-TG-B8**	**B-8**	**B-8**	**B-8**	**B-8**	**B-8**
Sample ID:		**FD01-TR-111001**	**B-8-1103DL**	**231105-B8-001**	**11/29/2007**	**GW-111209-CM-B8**	**GW-111911-AK-B8**	**GW-112513-BP-B-8**	**GW-111315-BP-B-8**	**GW-141117-NT-B8**
Sample Date:		**11/10/2001**	**11/12/2003**	**11/23/2005**		**11/12/2009**	**11/19/2011**	**11/25/2013**	**11/13/2015**	**11/14/2017**
		Duplicate								
Parameter	**Units**									
Volatiles					1 U					
Chloroform (Trichloromethane)	µg/L	1.0 U	2 U	1.0U	1 U	1.0 U	1.0 U	0.50 U	0.50 U	1.0 UJ
Tetrachloroethene	µg/L	1.0 U	2 U	8.9	3.4	0.22 J	64	0.50 U	4.0	1.0 UJ
Trichloroethene	µg/L	1.5	2 U	38	66	2.9	99	0.28 J	25	1.0 UJ
Vinyl chloride	µg/L	640 J	430	150		78	31	0.47 J	72	0.5 UJ

Sample Location:		**B-8**	**B-8**	**B-8**
Sample ID:		**GW-111819-NT-B8**	**GW-052322-JT-B8**	**GW-052322-JT-B8-DUP**
Sample Date:		**11/18/2019**	**05/23/2022**	**05/23/2022**
		1.0 U	2.0 U	2.0 U
B-10A		1.0 U	2.0 U	2.0 U
		1.0 U	2.0 U	2.0 U
		0.5 U	**1.6**	**1.6**

B-10A

Sample Location:		**B-10A**	**B-10A**	**B-10A**	**B-10A**	**B-10A**	**B-10A**	**B-10A**	**B-10A**	**B-10A**
Sample ID:		**GW-MLP-012**	**B-10A**	**B-10A**	**11/3/1999**	**B-10A-TR-110901**	**B-10A-1103**	**231105-B-10A-001**	**GW-112707-TG-B10A**	**GW-111209-CM-B10A**
Sample Date:		**5/11/1998**	**11/2/1998**	**5/14/1999**		**11/9/2001**	**11/12/2003**	**11/23/2005**	**11/27/2007**	**11/12/2009**
Parameter	**Units**									
Volatiles					0.50 U					
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.20 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	0.20 U		0.5 U	0.5 U	0.5U	0.5 U	0.5 U

B-10A

Sample Location:		**B-10A**
Sample ID:		**GW-111209-CM-FD2**
Sample Date:		**11/12/2009**
		Duplicate
Parameter	**Units**	
Volatiles		
Chloroform (Trichloromethane)	µg/L	1.0 U
Tetrachloroethene	µg/L	1.0 U
Trichloroethene	µg/L	1.0 U
Vinyl chloride	µg/L	0.5 U

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B-12										
Sample Location:		**B-12**	**B-12**	**B-12**	**B-12**	**B-12**	**B-12**	**B-12**	**B-12**	**B-12**
Sample ID:		**GW-MLP-011**	**B-12**	**B-12**	**11/3/1999**	**B-12**	**B-12 DUP**	**B-12-110700-TR**	**FD1-110700-TR**	**B-12-DC-051701**
Sample Date:		**5/11/1998**	**11/2/1998**	**5/13/1999**		**5/8/2000**	**5/8/2000**	**11/7/2000**	**11/7/2000**	**5/17/2001**
Parameter	**Units**									
Volatiles										
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.7	0.35	1.9	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

B-12							
Sample ID:		**B-12**	**B-12**	**B-12**	**B-12**	**B-12**	**B-12**
Sample Date:		**FD1-DC-051701**	**B-12-TR-111001**	**B-12-TR-050202**	**FD1-TR-050202**	**GW-05172023-B-12**	**GW-060624-RB-B12**
		5/17/2001	**11/10/2001**	**5/2/2002**	**5/2/2002**	**5/26/2023**	**6/6/2024**
Parameter	**Units**	**Duplicate**			**Duplicate**		
Volatiles							
Chloroform (Trichloromethane)	µg/L						
Tetrachloroethene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.25 J
Vinyl chloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U
		1.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.50 U

B-12R										
Sample Location:		**B-12R**	**B-12R**	**B-12R**	**FD1-0503**	**B-12R**	**B-12R**	**B-12R**	**B-12R**	**B-12R**
Sample ID:		**B-12R-DC-111302**	**FD1-DC-111302**	**B-12R-0503**	**5/9/2003**	**B12R-1103**	**B-12R-0504**	**FD1-0504**	**B-12R-1104**	**FD1-1104**
Sample Date:		**11/13/2002**	**11/13/2002**	**5/9/2003**	**Duplicate**	**11/11/2003**	**5/15/2004**	**5/15/2004**	**11/11/2004**	**11/11/2004**
			Duplicate					**Duplicate**		**Duplicate**
Parameter	**Units**									
Volatiles					1.0 U					
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	0.53 J	0.71 J	1.0		0.52 J	1.4	1.6	1.8	0.5 U

B-12R										
Sample Location:		**B-12R**	**B-12R**	**B-12R**	**GW-052606-B-12R-001**	**B-12R**	**B-12R**	**B-12R**	**B-12R**	**B-12R**
Sample ID:		**B-12R-0505**	**FD1-0505**	**241105-B-12R-001**	**5/25/2006**	**GW-110206-B-12R-001**	**GW-110206-B-12R-002**	**GW-051007-B-12R-001**	**GW-112807-TG-B12R**	**GW-052008-TG-B12R**
Sample Date:		**5/13/2005**	**5/13/2005**	**11/24/2005**		**11/02/2006**	**11/02/2006**	**5/10/2007**	**11/28/2007**	**5/20/2008**
			Duplicate							
Parameter	**Units**									
Volatiles					1.0 U					
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	1.0U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.0U	0.5 U	1.0 U	1.0 U	1.0 U	1 U	1 U
Vinyl chloride	µg/L	3.5	3.4	1.7		1.3	1.3	0.97	0.5 U	0.96

B-12R										
Sample Location:		**B-12R**	**B-12R**	**B-12R**	**GW-111109-TG-FD1**	**B-12R**	**B-12R**	**B-12R**	**B-12R**	**B-12R**
Sample ID:		**GW-111308-TG-pet-B12R-04**	**GW-052909-TG-PET-B12R**	**GW-111109-TG-B12R**	**11/11/2009**	**GW-052410-CM-B12R**	**GW-111810-MD-B12R**	**GW-052611-MD-B12R**	**GW-111911-AK-B12R**	**GW-053112-AK-B12R**
Sample Date:		**11/13/2008**	**5/29/2009**	**11/11/2009**	**Duplicate**	**5/24/2010**	**11/18/2010**	**5/26/2011**	**11/19/2011**	**5/31/2012**
Parameter	**Units**									
Volatiles					1.0 U					
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U
Tetrachloroethene	µg/L	1.0 U	1.0U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U
Trichloroethene	µg/L	1.0 U	1.0U	1.0 U	1.0	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U
Vinyl chloride	µg/L	0.5 U	0.5U	0.95		0.97	0.5 U	0.5 U	0.5 U	0.24 J

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Tacoma, Washington

B-12R

Sample Location:		**B-12R**	**B-12R**	**B-12R**	**B-12R**	**B-12R**	**B-12R**	**B-12R**	**B-12R**	**B-12R**
Sample ID:		**GW-112812-MD-B4**	**GW-051713-MD-B12R**	**GW-051713-MD-FD1**	**GW-112013-BP-B-12R**	**GW-050914-BP-B12**	**GW-111714-BP-B12**	**GW-111714-BP-FD-1**	**GW-050515-NH-B12**	**GW-111115-BP-B12**
Sample Date:		**11/28/2012**	**5/17/2013**	**5/17/2013 (Duplicate)**	**11/20/2013**	**5/9/2014**	**11/17/2014**	**11/17/2014 (Duplicate)**	**5/5/2015**	**11/11/2015**
Parameter	**Units**									
Volatiles										
Chloroform (Trichloromethane)	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl chloride	µg/L	0.31 J	0.14 J	0.15 J	0.18 J	0.50 UJ	0.11 J	0.11 J	0.50 U	0.50

B-12R

Sample Location:		**B-12R**	**B-12R**	**B-12R**	**B-12R**	**B-12R**	**B-12**	**B-12R**	**B-12R**	**B-12R**
Sample ID:		**GW-051716-BP-B12**	**GW-111416-NT-B12**	**GW-111416-NT-FD-1**	**GW-112517-NT-B12**	**GW-151117-NT-B12**	**GW-151117-NT-B12R**	**GW-052318-NT-B12R**	**GW-052318-NT-FD**	**GW-110718-NT-B12R**
Sample Date:		**05/17/2016**	**11/14/2016**	**11/14/2016**	**05/25/2017**	**11/15/2017**	**11/15/2017 Duplicate**	**05/23/18**	**05/23/18 Duplicate**	**11/07/18**
Parameter	**Units**									
Volatiles										
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U

B-12R

Sample Location:		**B-12R**	**B-12R**	**B-12R**	**B-12R**	**B-12R**	**B-12R**	**B-12R**	**B-12R**
Sample ID:		**GW-110718-NT-FD2**	**GW-050619-NT-B12R**	**GW-111919-NT-B12R**	**GW-05120-RB-B-12R**	**GW-111720-NT-B12R**	**GW-05421-NT-B-12R**	**GW-052322-JT-B12R**	**B-12-111522-MM**
Sample Date:		**11/07/18 Duplicate**	**05/06/19**	**11/19/19**	**05/13/2020**	**11/17/20**	**05/24/2021**	**5/23/2022**	**11/15/2022**
Parameter	**Units**								
Volatiles									
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.5 U	2.0 U	2.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.5 U	2.0 U	2.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.5 U	2.0 U	2.0 U
Vinyl chloride	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U

B-13

Sample Location:		**B-13**	**B-13**	**B-13**	**B-13**	**B-13**	**B-13**	**B-13**	**B-13**	**B-13**
Sample ID:		**GW-MLP-016**	**B-13**	**B-13**	**11/3/1999**	**B-13-TR-111001**	**B-13-1103**	**241105-B-13-001**	**GW-112807-TG-B13**	**GW-111209-TG-B13**
Sample Date:		**5/11/1998**	**11/3/1998**	**5/13/1999**		**11/10/2001**	**11/12/2003**	**11/24/2005**	**11/28/2007**	**11/12/2009**
Parameter	**Units**									
Volatiles					0.50 U					
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.20 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	0.20 U		0.5 U	0.5 U	0.5U	0.5 U	0.5 U

Sample Location:		**B-13**	**B-13**	**B-13**	**B-13**	**B-13**	**B-13**	**B-13**
Sample ID:		**GW-111811-AK-B13**	**GW-112223-BP-B-13**	**GW-112223-BP-FD-2**	**GW-111215-BP-B-13**	**GW-052318-NT-B-13**	**GW-112019-NT-B-13**	**GW-052522-MM-B13**
Sample Date:		**11/18/2011**	**11/22/2013**	**11/22/2013 (Duplicate)**	**11/12/2015**	**05/24/18**	**11/20/2019**	**5/25/2022**
Parameter	**Units**							
Volatiles								
Chloroform (Trichloromethane)	µg/L	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	2.0 U
Tetrachloroethene	µg/L	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	2.0 U
Trichloroethene	µg/L	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	2.0 U
Vinyl chloride	µg/L	0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	0.5 U	0.2 U

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B-13A										
Sample Location:		**B-13A**	**B-13A**	**B-13A**	**B-13A**	**B-13A**	**B-13A**	**B-13A**	**B-13A**	**B-13A**
Sample ID:		**GW-MLP-017**	**B-13A**	**B-13A**	**11/3/1999**	**B-13A-TR-111001**	**B-13A-1103**	**241105-B-13A-001**	**GW-112707-TG-B13A**	**GW-111209-TG-B13A**
Sample Date:		**5/12/1998**	**11/2/1998**	**5/13/1999**		**11/10/2001**	**11/12/2003**	**11/24/2005**	**11/27/2007**	**11/12/2009**
Parameter	**Units**									
Volatiles					0.50 U					
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	0.46	0.50 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.20 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	0.20 U		0.5 U	0.5 U	0.5U	0.5 U	0.5 U

B-13A							
Sample Location:		**B-13A**	**B-13A**	**B-13A**	**B-13A**	**B-13A**	**B-13A**
Sample ID:		**GW-111811-AK-B13A**	**GW-112513-BP-B13A**	**GW-111215-BP-B13A**	**GW-171117-NT-B13A**	**GW-112119-NT-B13A**	**GW-052522-MM-B13A**
Sample Date:		**11/18/2011**	**11/25/2013**	**11/12/2015**	**11/17/17**	**11/21/19**	**5/25/2022**
Parameter	**Units**						
Volatiles							
Chloroform (Trichloromethane)	µg/L	1.0 U	0.50 U	0.50 U	1.0 U	1.0 U	2.0 U
Tetrachloroethene	µg/L	1.0 U	0.50 U	0.50 U	1.0 U	1.0 U	2.0 U
Trichloroethene	µg/L	1.0 U	0.50 U	0.50 U	1.0 U	1.0 U	2.0 U
Vinyl chloride	µg/L	0.5 U	0.50 U	0.50 U	0.5 U	0.5 U	0.2 U

B-13B										
Sample Location:		**B-13B**	**B-13B**	**B-13B**	**B-13B**	**B-13B**	**B-13B**	**B-13B**	**B-13B**	**B-13B**
Sample ID:		**GW-MLP-014**	**B-13B**	**B-13B**	**11/3/1999**	**B-13B-TR-111001**	**B-13-B-1103**	**241105-B-13B-001**	**GW-112607-TG-B13B**	**GW-111209-TG-B13B**
Sample Date:		**5/11/1998**	**11/2/1998**	**5/13/1999**		**11/10/2001**	**11/12/2003**	**11/24/2005**	**11/26/2007**	**11/12/2009**
Parameter	**Units**									
Volatiles					0.50 U					
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.20 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	0.20 U		0.5 U	0.5 U	0.5U	0.5 U	0.5 U

B-13B									
Sample Location:		**B-13B**	**B-13B**	**B-13B**	**B-13B**	**B-13B**	**B-13B**	**B-13B**	**B-13B**
Sample ID:		**GW-111811-AK-B13B**	**GW-112113-BP-B-13B**	**GW-111215-BP-B-13B**	**GW-111215-BP-B-FD1**	**GW-161117-NT-B13B**	**GW-1111819-NT-B13B**	**GW-1111819-NT-FD-1**	**GW-052322-JT-B13B**
Sample Date:		**11/18/2011**	**11/21/2013**	**11/12/2015**	**11/12/2015 (Duplicate)**	**11/16/17**	**11/18/19**	**11/18/19 (Duplicate)**	**5/23/2022**
Parameter	**Units**								
Volatiles									
Chloroform (Trichloromethane)	µg/L	1.0 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	1.0 U	2.0 U
Tetrachloroethene	µg/L	1.0 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	1.0 U	2.0 U
Trichloroethene	µg/L	1.0 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	1.0 U	2.0 U
Vinyl chloride	µg/L	0.5 U	0.50 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	0.2 U

B-14										
Sample Location:		**B-14**	**B-14**	**B-14**	**B-14**	**B-14**	**B-14**	**B-14**	**B-14**	**B-14**
Sample ID:		**GW-MPT-003**	**B-14**	**B-14**	**11/2/1999**	**B-14-TR-111001**	**B-14-1103**	**221105-B14-001**	**GW-112707-TG-B14**	**GW-111109-TG-B14**
Sample Date:		**5/8/1998**	**11/3/1998**	**5/13/1999**		**11/10/2001**	**11/12/2003**	**11/22/2005**	**11/27/2007**	**11/11/2009**
Parameter	**Units**									
Volatiles					0.50 U					
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.20 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	0.20 U		0.5 U	0.5 U	0.5U	0.5 U	0.5 U

Appendix B
Analytical Results Summary
Biennial Groundwater Monitoring
Petarcik Site - May 2023
Occidental Chemical Corporation
Tacoma, Washington

B-14

Sample Location:		**B-14**	**B-14**	**B-14**	**B-14**	**B-14**	**B-14**
Sample ID:		**GW-111711-AK-14**	**GW-112113-BP-B-14**	**GW-111315-BP-B-14**	**GW-151117-NT-B14**	**GW-111919-NT-B14**	**GW-052422-JT-B14**
Sample Date:		**11/17/2011**	**11/21/2013**	**11/13/2015**	**11/15/2017**	**11/19/2019**	**5/24/2022**
Parameter	**Units**						
Volatiles							
Chloroform (Trichloromethane)	µg/L	1.0 U	0.50 U	0.50 U	1.0 U	1.0 U	2.0 U
Tetrachloroethene	µg/L	1.0 U	0.50 U	0.50 U	1.0 U	1.0 U	2.0 U
Trichloroethene	µg/L	1.0 U	0.50 U	0.50 U	1.0 U	1.0 U	2.0 U
Vinyl chloride	µg/L	0.5 U	0.50 U	0.50 U	0.5 U	0.5 U	0.2 U

B-14A

Sample Location:		**B-14A**	**B-14A**	**B-14A**	**B-14A**	**B-14A**	**B-14A**	**B-14A**	**B-14A**	**B-14A**
Sample ID:		**GW-MPT-004**	**B-14A**	**B-14A**	**11/2/1999**	**B-14A-TR-111001**	**B-14A-1103**	**221105-B-14A-001**	**GW-112707-TG-B14A**	**GW-111109-TG-B14A**
Sample Date:		**5/8/1998**	**11/3/1998**	**5/13/1999**		**11/10/2001**	**11/12/2003**	**11/22/2005**	**11/27/2007**	**11/11/2009**
Parameter	**Units**									
Volatiles					0.50 U					
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0U	1 UJ	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0U	1 UJ	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.20 U	1.0 U	1.0 U	1.0U	1 UJ	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	0.20 U		0.5 U	0.5 U	0.5U	0.5 UJ	0.5 U

B-14A

Sample Location:		**B-14A**	**B-14A**	**B-14A**	**B-14A**	**B-14A**	**B-14A**	**B-14A**
Sample ID:		**GW-111811-AK-B14A**	**GW-112113-BP-B-14A**	**GW-111315-BP-B-14A**	**GW-151117-NT-B14A**	**GW-112019-NT-B14A**	**GW-052422-JT-B14A**	**GW-052422-JT-B14A-DUP**
Sample Date:		**11/18/2011**	**11/21/2013**	**11/13/2015**	**11/15/2017**	**11/20/2019**	**5/24/2022**	**5/24/2022**
Parameter	**Units**							
Volatiles								
Chloroform (Trichloromethane)	µg/L	1.0 U	0.50 U	0.50 U	1.0 U	1.0 U	2.0 U	2.0 U
Tetrachloroethene	µg/L	1.0 U	0.50 U	0.50 U	1.0 U	1.0 U	2.0 U	2.0 U
Trichloroethene	µg/L	1.0 U	0.50 U	0.50 U	1.0 U	1.0 U	2.0 U	2.0 U
Vinyl chloride	µg/L	0.5 U	0.50 U	0.50 U	0.5 U	0.5 U	0.2 U	0.2 U

B-15A

Sample Location:		**B-15A**	**B-15A**	**B-15A**	**B-15A**	**B-15A**	**B-15A**	**B-15A**	**B-15A**	**B-15A**
Sample ID:		**GW-MLP-015**	**B-15A**	**B-15A**	**11/3/1999**	**B-15A-TR-111001**	**B-15A-1103**	**241105-B15A-001**	**241105-B19-001**	**GW-112807-TG-B15A**
Sample Date:		**5/11/1998**	**11/2/1998**	**5/13/1999**		**11/10/2001**	**11/13/2003**	**11/24/2005**	**11/24/2005 Duplicate**	**11/28/2007**
Parameter	**Units**									
Volatiles					0.50 U					
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0U	1.0U	1 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	0.28	0.50 U	1.0 U	1.0 U	1.0U	1.0U	1 U
Trichloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.20 U	1.0 U	1.0 U	1.0U	1.0U	1 U
Vinyl chloride	µg/L	1.0 U	1.0 U	0.20 U		0.5 U	0.5 U	0.5U	0.5U	0.5 U

Sample Location:		**B-15A**	**B-15A**	**B-15A**	**B-15A**
Sample ID:		**GW-111109-TG-B15A**	**GW-111811-AK-B15A**	**GW-112113-BP-B-15A**	**GW-111215-BP-B-15A**
Sample Date:		**11/11/2009**	**11/18/2011**	**11/21/2013**	**11/12/2015**
Parameter	**Units**				
Volatiles					
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	0.50 U	0.50 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	0.50 U	0.50 U
Trichloroethene	µg/L	1.0 U	1.0 U	0.50 U	0.50 U
Vinyl chloride	µg/L	0.5 U	0.5 U	0.50 U	0.53

Appendix B
Analytical Results Summary
Biennial Groundwater Monitoring
Petarcik Site - May 2023
Occidental Chemical Corporation
Tacoma, Washington

B-16A										
Sample Location:		**B-16A**	**B-16A**	**B-16A**	**B-16A**	**B-16A**	**B-16A**	**B-16A**	**B-16A**	**B-16A**
Sample ID:		**GW-MPT-005**	**B-16A**	**B-16A**	**11/2/1999**	**B-16A-TR-111001**	**B-16A-1103**	**221105-B16A-001**	**GW-112807-TG-B16A**	**GW-111109-TG-B16A**
Sample Date:		**5/8/1998**	**11/3/1998**	**5/13/1999**		**11/10/2001**	**11/12/2003**	**11/22/2005**	**11/28/2007**	**11/11/2009**
Parameter	**Units**									
Volatiles					0.50 U					
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.20 U	1.0 U	1.0 U	1.0U	1 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	0.20 U		0.5 U	0.5 U	0.5U	0.5 U	0.5 U

B-16A							
Sample Location:		**B-16A**	**B-16A**	**B-16A**	**B-16A**	**B-16A**	**B-16A**
Sample ID:		**GW-111811-AK-B16A**	**GW-112113-BP-B-16A**	**GW-112113-BP-FD-1**	**GW-111215-BP-B-16A**	**GW-161117-NT-B16A**	**GW-111919-NT-B16A**
Sample Date:		**11/18/2011**	**11/21/2013**	**11/21/2013 (Duplicate)**	**11/12/2015**	**11/16/2017**	**11/19/2019**
Parameter	**Units**						
Volatiles							
Chloroform (Trichloromethane)	µg/L	1.0 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U
Trichloroethene	µg/L	1.0 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U
Vinyl chloride	µg/L	0.5 U	0.50 U	0.50 U	0.50 U	0.5 U	0.5 U

B-17A										
Sample Location:		**B-17A**	**B-17A**	**B-17A**	**B-17A**	**B-17A**	**B-17A**	**B-17A**	**B-17A**	**B-17A**
Sample ID:		**GW-MLP-010**	**B-17A**	**B-17A**	**11/2/1999**	**B-17A-TR-111101**	**B-17A-1103**	**FD1-1103**	**231105-B17A-001**	**GW-112607-TG-B17A**
Sample Date:		**5/11/1998**	**11/3/1998**	**5/13/1999**		**11/11/2001**	**11/12/2003**	**11/12/2003 Duplicate**	**11/23/2005**	**11/26/2007**
Parameter	**Units**									
Volatiles					0.50 U					
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0U	1 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0U	1 U
Trichloroethene	µg/L	1.0 U	1.0 U	0.20 U	0.20 U	1.0 U	1.0 U	1.0 U	1.0U	1 U
Vinyl chloride	µg/L	1.0 U	1.0 U	0.20 U		0.5 U	0.5 U	0.5 U	0.5U	0.5 U

B-17A									
Sample Location:		**B-17A**	**B-17A**	**B-17A**	**B-17A**	**B-17A**	**B-17A**	**B-17A**	**B-17A**
Sample ID:		**GW-111109-CM-B17A**	**GW-111711-AK-B17A**	**GW-111711-AK-D2**	**GW-112113-BP-B-17A**	**GW-111315-BP-B-17A**	**GW-171117-NT-B17A**	**GW-111919-NT-B17A**	**GW-052422-JT-B17A**
Sample Date:		**11/11/2009**	**11/17/2011**	**11/17/2011 (Duplicate)**	**11/21/2013**	**11/13/2015**	**11/17/2017**	**11/19/2019**	**5/24/2022**
Parameter	**Units**								
Volatiles									
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	1.0 U	1.0 U	2.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	1.0 U	1.0 U	2.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	1.0 U	1.0 U	2.0 U
Vinyl chloride	µg/L	0.5 U	0.5 U	0.5 U	0.50 U	0.50 U	0.5 U	0.5 U	0.2 U

Notes:

µg/L Micrograms per liter.
U Non-detect at associated level
J Estimated

Appendix C
Sample Collection Summary Log

APPENDIX C
SAMPLE COLLECTION SUMMARY LOG
BIENNIAL GROUNDWATER MONITORING
PETARCIK SITE - MAY 2024
OCCIDENTAL CHEMICAL CORPORATION
TACOMA, WASHINGTON

Petarcik		PROJECT NO.	11195900 (54)
Rick Bieber		SUPERVISOR	R. Bieber
6/6/2024			

[Note: For 2" dia. well, 1 ft. = 0.14 gal (imp) or 0.16 gal (us)]

Sample I.D. Number	Well Number	Measuring Point Elev. (ft. AMSL)	Bottom Depth (ft. btoc)	Water Depth (ft. btoc)	Water Elevation (ft. AMSL)	Well Volume (gallons)	Flow Rate (ml/min)	Volume Purged (gallons)	Field pH	Field Cond. (uS/cm)	Field Temp. (C)	Time	Date	Sample Description & Analysis
GW-060624-RB-B3	B-3(2)	10.08	19.48	8.34	1.74	2.56		6.5	7.05	110	14.26	10:00	6/6/2024	
GW-060624-RB-B3AR	B-3AR	10.80	13.7	7.78	3.02	1.49		2.6	6.9	244	14.18	11:30	6/6/2024	
GW-060624-RB-B4	B-4	6.40	21.7	4.8	1.6	2.35		7	7.1	314	14	13:00	6/6/2024	
GW-060624-RB-B12	B-12	8.25	13.35	5.25	3	1.20		4	7.2	220	14.1	14:00	6/6/2024	

Additional Comments: SAMPLE SET: 3 x 40ml glass w/ HCl preserve for VOC
* Volume purged before well went dry

Copies to: (1) MS / MSD taken
(2) field duplicate taken

Appendix D
Analytical Results and QA/QC Review

Data Verification Report

July 16, 2024

To	Rick Bieber-Geosyntec	**Project No.**	11218874
Copy to	File	**DVR No.**	12
From	Sheri Finn/eew	**Contact No.**	716-205-1977
Project Name	Biennial Groundwater Sampling-Petarcik	**Email**	Sheri.finn@ghd.com
Subject	Analytical Results and Data Verification Biennial Groundwater Sampling Glenn Springs Holdings, Inc. - Petarcik Tacoma, Washington June 2024		

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

1. Introduction

This document details a reduced validation of analytical results for groundwater samples collected in support of the Biennial Groundwater Monitoring at the Petarcik Site located in Tacoma, Washington during June 2024. Samples were submitted to ALS Environmental Laboratory located in Kelso, Washington. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2. A summary of the analytical methodology is presented in Table 3.

Standard GHD report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody form, finished report forms, method blank data, recovery data from surrogate spikes/laboratory control samples (LCS)/matrix spike/matrix spike duplicates (MS/MSD), and field QA/QC samples.

The QA/QC criteria by which these data have been assessed are outlined in the analytical method referenced in Table 3 and applicable guidance from the document entitled " National Functional Guidelines for Organic Superfund Methods Data Review", United States Environmental Protection Agency (USEPA) 540-R-20-005, November 2020, subsequently referred to as the "Guidelines" in this report.

2. Sample Holding Time and Preservation

The sample holding time criterion for the analyses is summarized in Table 3. The sample chain of custody document and analytical report were used to determine sample holding times. Samples were analyzed within the required holding times.

All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

3. Laboratory Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

All method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation.

4. Surrogate Spike Recoveries

In accordance with the method employed, all samples, blanks, and QC samples analyzed for organics are spiked with surrogate compounds prior to sample analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for volatile organic compounds (VOC) determinations were spiked with the appropriate number of surrogate compounds prior to sample analysis.

Surrogate recoveries were assessed against laboratory control limits. All surrogate recoveries met the laboratory criteria.

5. Laboratory Control Sample Analyses

LCS are prepared and analyzed as samples to assess the analytical efficiencies of the method employed, independent of sample matrix effects.

For this study, LCS were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch. The LCS was analyzed in duplicate (LCSD) to assess analytical precison.

The LCS contained all compounds of interest. All LCS recoveries and relative percent differences (RPD) were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, samples are spiked with known concentrations of the analytes of concern and analyzed as MS/MSD samples. The relative percent difference (RPD) between the MS and MSD is used to assess analytical precision.

MS/MSD analysis was performed as specified in Table 1.

The MS/MSD sample was spiked with all compounds of interest. All percent recoveries and RPD values were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision.

7. Field QA/QC Samples

The field QA/QC consisted of one trip blank and one field duplicate sample set.

7.1 Trip Blank Sample Analysis

To evaluate contamination from sample collection, transportation, storage, and analytical activities, a trip blank was submitted to the laboratory for VOC analysis. All results were non-detect for the compounds of interest with the exception of tetrachloroethene. The associated sample results were non-detect and would not have been impacted by the implied high bias.

7.2 Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, one field duplicate sample was collected and submitted "blind" to the laboratory, as specified in Table 1. The RPDs associated with the duplicate sample must be less than 50 percent for water samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criterion is one times the RL value.

All field duplicate results were within acceptable agreement, demonstrating acceptable sampling and analytical precision.

8. Analyte Reporting

The laboratory evaluated detected results down to the laboratory's method detection limit (MDL) for each analyte. Positive analyte detections less than the RL but greater than the MDL were reported as estimated (J) in Table 2. Non-detect results were presented as non-detect at the RL in Table 2.

9. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 2 are acceptable without qualification.

Regards

Sheri Finn
Analyst

Table 1

Sample Collection and Analysis Summary
Biennial Groundwater Monitoring
Glenn Springs Holdings, Inc. - Petarcik Site
Tacoma, Washington
June 2024

					Analysis	
Sample Identification	**Location**	**Matrix**	**Collection Date (mm/dd/yyyy)**	**Collection Time (hr:min)**	**Volatiles**	**Comments**
GW-060624-RB-B3	B-3	Water	06/06/2024	10:00	X	
GW-060624-RB-Dup	B-3	Water	06/06/2024	10:00	X	Field Duplicate of GW-060624-RB-B3
GW-060624-RB-B3AR	B-3AR	Water	06/06/2024	11:30	X	
GW-060624-RB-B4	B-4	Water	06/06/2024	13:00	X	
GW-060624-RB-B12	B-12	Water	06/06/2024	14:00	X	MS/MSD
Trip Blank		Water	06/06/2024	23:59	X	Trip Blank

Notes:

"-" - Not applicable

MS/MSD - Matrix Spike/Matrix Spike Duplicate

Table 2

Analytical Results Summary
Biennial Groundwater Monitoring
Glenn Springs Holdings, Inc. - Petarcik Site
Tacoma, Washington
June 2024

Location ID:		B-3	B-3	B-3AR	B-4	B-12	Trip Blank
Sample Name:		GW-060624-RB-B3	GW-060624-RB-Dup	GW-060624-RB-B3AR	GW-060624-RB-B4	GW-060624-RB-B12	Trip Blank
Sample Date:		06/06/2024	06/06/2024	06/06/2024	06/06/2024	06/06/2024	06/06/2024
			Duplicate				
Parameters	**Unit**						
Volatile Organic Compounds							
Chloroform (Trichloromethane)	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.25 J
Trichloroethene	µg/L	0.50 U	0.50 U	0.27 J	0.50 U	0.50 U	0.50 U
Vinyl chloride	µg/L	0.17 J	0.15 J	0.50 U	0.50 U	0.50 U	0.50 U

Notes:

J - Estimated concentration

U - Not detected at the associated reporting limit

Table 3

Analytical Method
Biennial Groundwater Monitoring
Glenn Springs Holdings, Inc. - Petarcik Site
Tacoma, Washington
June 2024

Parameter	Method	Matrix	Holding Time Collection to to Analysis (Days)
Volatile Organic Compounds (VOCs)	SW-846 8260B	Water	14

Notes:

SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions