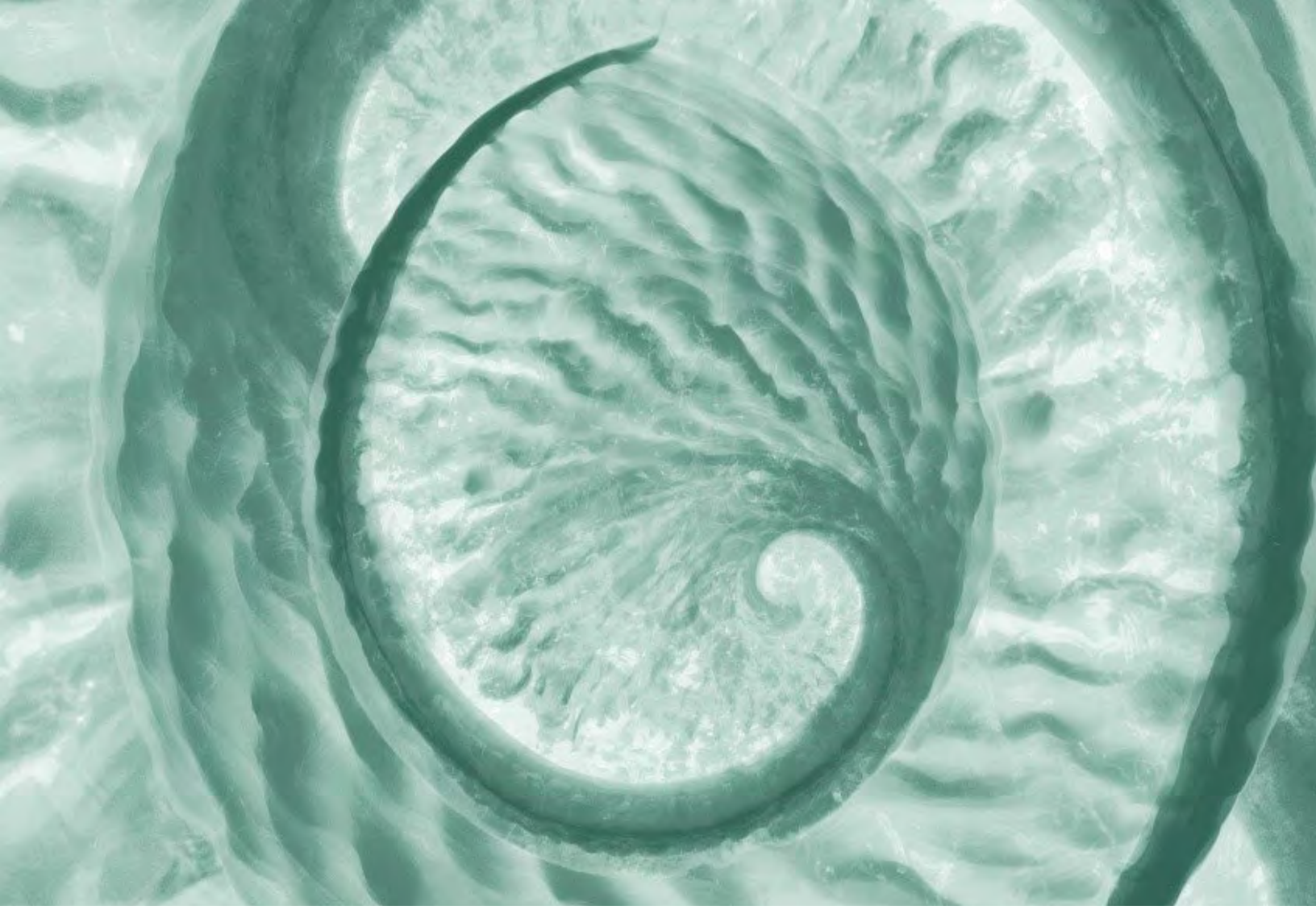

Prepared for: Legacy Site Services LLC

Arkema Quarter 3, 2023, Groundwater Monitoring Report

Arkema Inc. Facility, Portland, Oregon

December 2023

Project No.: 0682894

The business of sustainability

ERM

Signature Page

December 2023

Arkema Quarter 3, 2023, Groundwater Monitoring Report

Arkema Inc. Facility, Portland, Oregon

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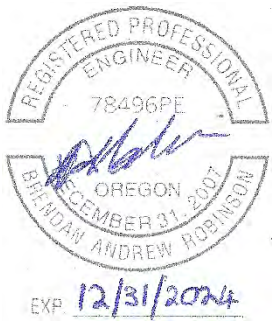

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Acronyms and Abbreviations

Name	Description
µg/L	Micrograms per liter
Arkema	Arkema Inc.
cis-1,2-DCE	cis-1,2-Dichloroethene
COC	Contaminant of concern
ERM	Environmental Resources Management, Inc.
GEE	Groundwater Extraction Enhancement
GMWP	Groundwater Monitoring Work Plan
GWBW	Groundwater barrier wall
GWET	Groundwater extraction and treatment
GW SCM	Groundwater source control measures
LSS	Legacy Site Services, LLC
ODEQ	Oregon Department of Environmental Quality
PCE	Tetrachloroethene
QA/QC	Quality assurance / quality control
QAPP	Quality Assurance Project Plan
Report	Quarter 3, 2023, Groundwater Monitoring Report
SEE	System Effectiveness Evaluation
Site	Former Arkema Portland Plant at 6400 NW Front Avenue, Portland, Oregon
TCE	Trichloroethene
VOC	Volatile organic compound

1. INTRODUCTION

Environmental Resources Management, Inc. (ERM) has prepared this *Arkema Quarter 3, 2023, Groundwater Monitoring Report* (Report) for the Arkema Inc. Facility (the Site) on behalf of Legacy Site Services, LLC (LSS), agent for Arkema Inc. (Arkema). The Site is located at 6400 NW Front Avenue in the Northwest Industrial Area of Portland, Oregon, and is bounded by Front Avenue on the north and west, the Willamette River on the east, and an asphalt roofing manufacturer on the south. The Site lies on the southwest bank of the lower Willamette River between river mile 6.9 and river mile 7.6, immediately upstream of the Burlington Northern Santa Fe Railroad Bridge and is adjacent to the Portland Harbor Superfund site.

The Site's operational and remedial history was documented in the *Revised Upland Feasibility Study Work Plan* (ERM 2017). This Report provides the field procedures, groundwater level data, and analytical results for the Quarter 3, 2023, groundwater monitoring at the former Arkema Portland Plant at 6400 NW Front Avenue, Portland, Oregon.

The objective of this groundwater monitoring program is to evaluate the performance of the groundwater source control measure (GW SCM). The GW SCM consists of the groundwater barrier wall (GWBW) and the groundwater extraction and treatment system (GWET). The objective of the GW SCM is to achieve hydraulic containment of the alluvial sequence within the Target Capture Zone at the Site to prevent the flow of contaminants of concern (COCs) to the Willamette River. The GW SCM is described in further detail in the *Revised Final Performance Monitoring Plan—Groundwater Source Control Measure* (ERM 2015). In 2022, the GWET system was upgraded by installing 14 additional extraction wells referred to as the Groundwater Extraction Enhancement (GEE). The GEE is described in further detail in the *Final Design Report* (ERM 2022).

In their 31 May 2019 review of the *Draft GWET System Effectiveness Evaluation [SEE] Report* (ODEQ 2019), the ODEQ requested the development of an analytical monitoring program for groundwater COCs. Subsequent to that letter, LSS, ERM, and the ODEQ held a meeting on 2 July 2019, during which ERM and LSS agreed to commence groundwater monitoring. Starting in October 2019 through April 2021, groundwater monitoring was conducted in accordance with the ODEQ-approved *Arkema Quarterly Groundwater Monitoring Work Plan* (GMWP), dated October 2019 (ERM 2019). This groundwater monitoring scope consisted of a sitewide assessment of groundwater COCs.

Following the ODEQ review of the *2021 GWET SEE Report* (ODEQ 2021; ERM 2021), ERM, on behalf of LSS, requested a reduced monitoring scope in a memorandum dated 9 September 2021. The ODEQ approved the reduced monitoring scope on 14 September 2021. The objective of the reduced monitoring scope of work is to evaluate the potential for the following COCs to migrate around or below the GWBW:

- Volatile organic compounds (VOCs)
- Perchlorate
- Chloride

The reduced monitoring scope includes 29 well locations in the Shallow, Intermediate, and Deep hydrogeological zones. On 24 February 2023, following implementation of the GEE, LSS, ERM, and ODEQ held a meeting during which the parties agreed to continue with the reduced monitoring program, and incorporate piezometer PA-18d into the program. Collectively, the GMWP as amended by the conversations with ODEQ discussed above is referred to as the Approved Groundwater Monitoring Program in this report. ERM conducts groundwater monitoring events on a quarterly basis and assesses historical and current groundwater analytical trends in the area of the GWBW on an annual basis. The annual assessment is included in the Annual SEE Report.

2. FIELD PROCEDURES

ERM collected groundwater elevation data from 128 well locations on 18 August 2023 and groundwater samples from 30 well locations between 21 August and 24 August 2023. The locations of all monitoring wells and piezometers are presented on Figure 1. A summary of groundwater level and sampling locations and analyses are displayed in Table 1.

ERM performed field sampling in accordance with the procedures outlined in the GMWP and addenda. These procedures cover well purging, field parameter collection, analytical requirements, and quality assurance / quality control (QA/QC) protocols.

Groundwater monitoring fieldwork included collecting groundwater level measurements, water quality parameters, and groundwater samples for laboratory analysis.

2.1 Groundwater Level Measurements

As shown in Table 1, ERM collected groundwater elevation data on 18 August 2023 from 128 well locations using a combination of transducer and manual measurements. Manual measurements were measured to the nearest 0.01 foot using a water level indicator in accordance with the GMWP. For locations with functioning transducers, transducer data were used for reporting in lieu of collecting manual measurements.

2.2 Groundwater Sample Collection Procedures

ERM collected groundwater samples from 30 well locations in accordance with the Approved Groundwater Monitoring Program. The monitoring well network includes eight monitoring wells and 22 piezometers (Table 1). Sample collection procedures pertaining to the 30 well locations under ERM's monitoring program are included below.

All wells and piezometers were sampled with a bladder or peristaltic pump using low-flow techniques and sample collection procedures as described in the GMWP. Field water quality measurements (i.e., temperature, pH, specific conductivity, dissolved oxygen, oxygen-reduction potential) were collected with calibrated field water quality meters. Turbidity was collected utilizing three-way valves and Hach turbidimeters. ERM recorded field notes taken during sampling in field logs; field forms are provided as Appendix A.

After well-purging criteria were satisfied, ERM disconnected the in-line flow cell and collected groundwater samples in the appropriate containers for the analyses as shown in Table 1. For VOCs, low-level analyses were performed if historical results were non-detected by standard methods.

After sampling, ERM removed the pump and associated tubing from the well, discarded disposable tubing, and decontaminated reusable equipment as described in the GMWP.

2.3 Sample Shipping and Investigation-Derived Waste

After sample collection, ERM labeled samples with the required data and entered the data into the chain-of-custody record to facilitate proper tracking and control. Samples were delivered under chain-of-custody to the Eurofins Beaverton Service Center and then shipped to their respective Eurofins laboratory in sealed containers, accompanied by the chain-of-custody record.

Investigation-derived waste generated during the groundwater monitoring included groundwater purged from monitoring wells, personal protective equipment, and disposable sampling equipment.

Decontamination fluids and purge water were contained in 5-gallon buckets and then processed in the GWET system. Disposable sampling equipment and used personal protective equipment were disposed of as non-hazardous solid waste.

2.4 Quality Assurance and Quality Control and Data Validation

As described in the GMWP, the analyses were performed in accordance with the Quality Assurance Project Plan (QAPP) and the 2009 and 2011 QAPP addenda, as described in the GMWP.

ERM collected field QA/QC samples in accordance with the QAPP and associated addenda (listed below). QA/QC samples—including trip blanks, field duplicates, and rinsate samples—were collected, controlled, and shipped in the same manner as normal field samples.

- Trip blanks were included in each cooler that contained VOC samples.
- Field duplicate samples were collected for every 20 samples.
- Rinsate blank samples were collected for every 20 samples to verify efficacy of sampling equipment decontamination.

ERM completed data validation after receiving the laboratory analytical reports. Appendix B includes laboratory analytical reports and Appendix C includes data validation memos. QA/QC sample results were reviewed during data validation and additional details are included in the data validation memos (Appendix C). Based on the results of the data validation, qualifiers were assigned to the data, and it was determined that the qualified data are acceptable for decision making and meet the overall objectives of the monitoring program. There were no deviations to the scope of work of the Approved Groundwater Monitoring Program during the Quarter 3, 2023, groundwater sampling event.

3. GROUNDWATER MONITORING RESULTS

3.1 Groundwater Elevations

On 18 August 2023, ERM manually measured depth to groundwater to the nearest 0.01 foot in 62 wells at the Site using an electronic water level indicator. For the additional 66 wells with functioning transducers, ERM collected transducer groundwater elevation data on 18 August 2023. ERM averaged transducer data recorded in the respective Shallow Zone, Intermediate Zone, and Deep Zone aquifer wells during the time period that manual water level measurements were collected to estimate groundwater elevations. Table 2 presents groundwater elevation data for all 128 well locations and the time period used for averaging transducer groundwater elevation data. These data were used to develop potentiometric surface maps for the Shallow, Intermediate, and Deep hydrogeological zones. These maps are presented on Figures 2 through 4, respectively.

The generalized flow direction indicated by the potentiometric surface maps show overall groundwater flow toward the GWBW. A potentiometric separation is noticeable exterior to the GWBW, indicating the GWBW is functioning by impeding groundwater flow. River elevations from the Willamette River (river mile 12.8) gauge are shown on the potentiometric surface maps in an inset (Figures 2 through 4) and depict stage movement during August 2023.

3.2 Groundwater Sampling Results

ERM personnel completed groundwater sampling between 21 and 24 August 2023 at 30 monitoring well and piezometer locations, in accordance with the Approved Groundwater Monitoring Program. Results from the groundwater sampling and analyses of the well locations included in ERM's monitoring program are presented in further detail below.

3.2.1 Field Parameter Results

ERM measured and recorded field parameters during well purging. Table 3 presents the results of the field parameter measurements.

Eleven monitoring locations did not stabilize for turbidity during the Quarter 3, 2023, groundwater monitoring event. Given the nature of analytes included in the monitoring program scope and the stabilization of other indicator parameters (dissolved oxygen, oxidation-reduction potential, specific conductance, and pH) consistent with ASTM International Standard D6771 (2018) as well as temperature, the unstable turbidity did not affect the quality of the data.

3.2.2 Analytical Results

Tables 4 and 5 present the analytical results for VOCs, and perchlorate and chloride, respectively, from the Quarter 3, 2023, groundwater monitoring event. Appendix B presents laboratory analytical reports. Appendix D includes previous groundwater monitoring data, beginning in October 2019, from well locations associated with the Approved Groundwater Monitoring Program. Appendix E includes historical groundwater data associated with the Site prior to implementation of the groundwater monitoring program in October 2019.

3.2.2.1 VOCs

The results for chlorobenzene in the Shallow, Intermediate, and Deep Zones are presented on Figures 5 through 7, respectively. Chlorobenzene was detected in 7 out of 30 samples. The highest detected

concentration of chlorobenzene was 26,000 micrograms per liter (µg/L) at Deep Zone piezometer PA-21d.

The results for 1,2-dichlorobenzene in the Shallow, Intermediate, and Deep Zones are presented on Figures 8 through 10, respectively. 1,2-Dichlorobenzene was detected in 3 out of 30 samples. The highest detected concentration of 1,2-dichlorobenzene was 0.20 µg/L at Intermediate Zone piezometer PA-10i.

The results for tetrachloroethene (PCE), trichloroethene (TCE), and their de-chlorination daughter-products cis-1,2-dichloroethene (cis-1,2-DCE) and vinyl chloride, in the Shallow, Intermediate, and Deep Zones, are presented on Figures 11 through 13, respectively:

- PCE was detected in 5 out of 30 samples. The highest detected concentration of PCE was 13 µg/L at Shallow Zone monitoring well MWA-63.
- TCE was detected in 4 out of 30 samples. The highest detected concentration of TCE was 2.9 µg/L at Shallow Zone monitoring well MWA-63.
- cis-1,2-DCE was detected in 9 out of 30 samples. The highest detected concentration of cis-1,2-DCE was 24 µg/L at Deep Zone monitoring well PA-19d.
- Vinyl chloride was detected in 3 out of 30 samples. The highest detected concentration of vinyl chloride was 0.28 j µg/L at Deep Zone monitoring well PA-18d.

3.2.2.2 Perchlorate

Perchlorate results for the Shallow, Intermediate, and Deep Zones are presented in Figures 14 through 16, respectively. Perchlorate was detected in 6 out of 30 samples. The highest detected concentration of perchlorate was 98,000 µg/L at Deep Zone monitoring well MWA-31i(d).

3.2.2.3 Chloride

Chloride results for the Shallow, Intermediate, and Deep Zones are presented on Figures 17 through 19, respectively. Chloride was detected in 30 out of 30 samples. The highest detected concentration of chloride was 31,000 milligrams per liter at Deep Zone piezometer PA-24d.

4. RECOMMENDATIONS

Following the Quarter 3, 2023, groundwater monitoring event, no changes are recommended to the GMWP at this time.

ERM will conduct the Quarter 4, 2023, groundwater monitoring event according to the following schedule:

- Water levels will be measured on 8 December 2023.
- Sampling will begin 11 December 2023 and is expected to be completed over a 1-week period.
- Receipt of analytical results is anticipated to be completed over a period of 5 weeks from the completion of the sampling event (January 2024).

The Quarter 4, 2023, Groundwater Monitoring Report will be submitted to the ODEQ within 60 days after data validation (March 2024).

5. REFERENCES

ERM (ERM-West, Inc.). 2015. *Revised Final Performance Monitoring Plan—Groundwater Source Control Measure*. Arkema Inc. Facility, Portland, Oregon. July 2015.

ERM. 2017. *Revised Upland Feasibility Study Work Plan*. Arkema Inc. Facility, Portland, Oregon. November 2017.

ERM. 2019. *Arkema Quarterly Groundwater Monitoring Work Plan*. Arkema Inc. Facility, Portland, Oregon. October 2019.

ERM. 2021. *GWET System Effectiveness Evaluation.* Arkema Inc. Facility, Portland, Oregon. April 2021.

ERM. 2022. *Final Design Report*. Arkema Inc. Facility, Portland, Oregon. July 2022.

ODEQ (Oregon Department of Environmental Quality). 2019. *Draft GWET System Effectiveness Evaluation Report. DEQ Review*.

ODEQ. 2021. *2021 GWET System Effectiveness Evaluation Report. DEQ Review.*

TABLES

Table 1
Groundwater Sampling Matrix
Arkema Quarter 3, 2023, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Analyte			Volatile Organic Compounds	Volatile Organic Compounds	Chloride	Perchlorate	
Analytical Method			8260C	8260C_LL[1]	300	314	
Location ID	Aquifer Classification	Groundwater Level Measurement					Comments
MWA-02	Shallow	X*	--	--	--	--	
MWA-15r	Shallow	X	--	--	--	--	
MWA-18	Shallow	X	--	--	--	--	
MWA-19	Shallow	X*	--	--	--	--	
MWA-20	Shallow	X	--	--	--	--	
MWA-22	Shallow	X	--	--	--	--	
MWA-24	Shallow	X	--	--	--	--	
MWA-29	Shallow	X	--	--	--	--	
MWA-33	Shallow	X	--	--	--	--	
MWA-40	Shallow	X	--	--	--	--	
MWA-41	Shallow	X	--	X	X	X	
MWA-42	Shallow	X	--	--	--	--	
MWA-43	Shallow	X	--	--	--	--	
MWA-46	Shallow	X	--	--	--	--	
MWA-47	Shallow	X	--	--	--	--	
MWA-61	Shallow	X	--	--	--	--	
MWA-63	Shallow	X	X	--	X	X	
MWA-69	Shallow	X*	--	--	--	--	
MWA-71	Shallow	X	--	--	--	--	
MWA-72	Shallow	X	--	--	--	--	
MWA-73	Shallow	X	--	--	--	--	
MWA-82	Shallow	X	--	X	X	X	
PA-03	Shallow	X*	--	X	X	X	
PA-04	Shallow	X*	--	X	X	X	
PA-05	Shallow	X	--	--	--	--	
PA-06	Shallow	X	--	--	--	--	
PA-07	Shallow	X*	--	--	--	--	
PA-08	Shallow	X*	--	X	X	X	
PA-09	Shallow	X*	--	X	X	X	
PA-28	Shallow	X*	--	--	--	--	
PA-31	Shallow	X	--	X	X	X	
PA-33	Shallow	X	--	--	--	--	
PA-35	Shallow	X	--	--	--	--	
PA-36	Shallow	X	--	--	--	--	
PA-38	Shallow	X	--	--	--	--	
PA-41	Shallow	X	--	--	--	--	
PA-42	Shallow	X	--	--	--	--	
PA-43	Shallow	X	--	--	--	--	
RP-02-31	Shallow	X	--	--	--	--	
RP-10-30	Shallow	X	--	--	--	--	
RW-05	Shallow	X*	--	--	--	--	
RW-07	Shallow	X	--	--	--	--	
RW-08	Shallow	X	--	--	--	--	
RW-10	Shallow	X	--	--	--	--	
RW-12	Shallow	X	--	--	--	--	
RW-14	Shallow	X*	--	--	--	--	
RW-15	Shallow	X	--	--	--	--	
RW-17	Shallow	X*	--	--	--	--	
RW-18	Shallow	X	--	--	--	--	
RW-20	Shallow	X	--	--	--	--	
RW-22	Shallow	X*	--	--	--	--	
RW-23	Shallow	X*	--	--	--	--	
RW-25	Shallow	X*	--	--	--	--	
EW-1	Shallow/Intermediate	X	--	--	--	--	
EW-2	Shallow/Intermediate	X	--	--	--	--	
EW-3	Shallow/Intermediate	X*	--	--	--	--	

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		Analyte	Volatile Organic Compounds	Volatile Organic Compounds	Chloride	Perchlorate	
		Analytical Method	8260C	8260C_LL[1]	300	314	
Location ID	Aquifer Classification	Groundwater Level Measurement					Comments
EW-4	Shallow/Intermediate	X*	--	--	--	--	
EW-5	Shallow/Intermediate	X*	--	--	--	--	
EW-6	Shallow/Intermediate	X	--	--	--	--	
EW-7	Shallow/Intermediate	X*	--	--	--	--	
EW-8	Shallow/Intermediate	X*	--	--	--	--	
EW-9	Shallow/Intermediate	X*	--	--	--	--	
EW-10	Shallow/Intermediate	X*	--	--	--	--	
EW-11	Shallow/Intermediate	X	--	--	--	--	
EW-12	Shallow/Intermediate	X	--	--	--	--	
EW-13	Shallow/Intermediate	X*	--	--	--	--	
EW-14	Shallow/Intermediate	X*	--	--	--	--	
MWA-83	Shallow/Intermediate	X	--	--	--	--	
MWA-84	Shallow/Intermediate	X	--	--	--	--	
MWA-85	Shallow/Intermediate	X	--	--	--	--	
MWA-86	Shallow/Intermediate	X	--	--	--	--	
MWA-87	Shallow/Intermediate	X	--	--	--	--	
MWA-88	Shallow/Intermediate	X	--	--	--	--	
MWA-89	Shallow/Intermediate	X	--	--	--	--	
MWA-07(i)	Intermediate	X	--	--	--	--	
MWA-08i	Intermediate	X*	--	--	--	--	
MWA-16i	Intermediate	X	--	--	--	--	
MWA-34i	Intermediate	X*	--	--	--	--	
MWA-49i	Intermediate	X	--	--	--	--	
MWA-53i	Intermediate	X	--	--	--	--	
MWA-54i	Intermediate	X	--	--	--	--	
MWA-66i	Intermediate	X*	--	--	--	--	
MWA-70i	Intermediate	X	--	--	--	--	
MWA-74i	Intermediate	X	--	--	--	--	
MWA-75i	Intermediate	X	--	--	--	--	
MWA-81i	Intermediate	X	--	X	X	X	
PA-10i	Intermediate	X*	--	X	X	X	
PA-11i	Intermediate	X	--	--	--	--	
PA-12i	Intermediate	X	--	--	--	--	
PA-13i	Intermediate	X*	--	--	--	--	
PA-14i	Intermediate	X*	--	--	--	--	
PA-15i	Intermediate	X*	--	X	X	X	
PA-16i	Intermediate	X*	--	X	X	X	
PA-17iR	Intermediate	X*	--	X	X	X	
PA-29i	Intermediate	X*	--	--	--	--	
PA-32i	Intermediate	X	--	X	X	X	
PA-34i	Intermediate	X	--	--	--	--	
PA-37i	Intermediate	X	--	--	--	--	
PA-39i	Intermediate	X	--	--	--	--	
PA-40i	Intermediate	X	--	--	--	--	
PA-44i	Intermediate	X	--	X	X	X	
RW-06i	Intermediate	X*	--	--	--	--	
RW-09i	Intermediate	X	--	--	--	--	
RW-11i	Intermediate	X	--	--	--	--	
RW-13i	Intermediate	X	--	--	--	--	
RW-16i	Intermediate	X	--	--	--	--	
RW-19i	Intermediate	X	--	--	--	--	
RW-21i	Intermediate	X	--	--	--	--	
RW-24i	Intermediate	X	--	--	--	--	
RW-26i	Intermediate	X	--	--	--	--	
MWA-11i(d)	Deep	X	--	X	X	X	
MWA-12i(d)	Deep	X	--	--	--	--	

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Portland, Oregon

Analyte			Volatile Organic Compounds	Volatile Organic Compounds	Chloride	Perchlorate	
Analytical Method			8260C	8260C_LL[1]	300	314	
Location ID	Aquifer Classification	Groundwater Level Measurement					Comments
MWA-31i(d)	Deep	X	X	--	X	X	
MWA-56d	Deep	X	X	--	X	X	
MWA-58d	Deep	X*	X	--	X	X	
PA-18d	Deep	X*	X	--	X	X	
PA-19d	Deep	X*	X	--	X	X	
PA-20d	Deep	X*	X	--	X	X	
PA-21d	Deep	X*	X	--	X	X	
PA-22d	Deep	X*	X	--	X	X	
PA-23d	Deep	X*	X	--	X	X	
PA-24d	Deep	X	X	--	X	X	
PA-25d	Deep	X*	--	X	X	X	
PA-26d	Deep	X*	--	X	X	X	
PA-27d	Deep	X*	X	--	X	X	
PA-30d	Deep	X*	X	--	X	X	
MWA-76g	Gravel	X	--	--	--	--	
MWA-77g	Gravel	X	--	--	--	--	

Notes:
** = indicates locations where groundwater level measured with transducer*
[1] = low level test

Table 2
Groundwater Elevation Results
Arkema Quarter 3, 2023, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Well ID	Date	Time	Aquifer Unit	Top of Casing Elevation (ft NAVD88)	Depth to Water (ft)	Groundwater Elevation (ft NAVD88)
MWA-02*	8/18/2023	*	Shallow	36.20	--	8.75
MWA-15r	8/18/2023	7:47:00 AM	Shallow	36.06	25.30	10.76
MWA-18	8/18/2023	8:35:00 AM	Shallow	39.43	30.24	9.19
MWA-19*	8/18/2023	*	Shallow	38.26	--	9.39
MWA-20	8/18/2023	8:28:00 AM	Shallow	40.95	27.98	12.97
MWA-22	8/18/2023	7:44:00 AM	Shallow	36.59	21.99	14.60
MWA-24	8/18/2023	9:34:00 AM	Shallow	37.58	22.90	14.68
MWA-29	8/18/2023	8:51:00 AM	Shallow	44.42	34.52	9.90
MWA-33	8/18/2023	9:25:00 AM	Shallow	37.26	17.76	19.50
MWA-40	8/18/2023	9:32:00 AM	Shallow	36.96	18.12	18.84
MWA-41	8/18/2023	9:17:00 AM	Shallow	45.14	33.59	11.55
MWA-42	8/18/2023	8:24:00 AM	Shallow	37.24	25.79	11.45
MWA-43	8/18/2023	9:08:00 AM	Shallow	44.53	34.43	10.10
MWA-46	8/18/2023	8:40:00 AM	Shallow	36.67	27.46	9.21
MWA-47*	8/18/2023	*	Shallow	39.02	--	9.04
MWA-61	8/18/2023	7:52:00 AM	Shallow	36.21	27.31	8.90
MWA-63	8/18/2023	7:16:00 AM	Shallow	36.29	26.51	9.78
MWA-69*	8/18/2023	*	Shallow	33.73	--	8.86
MWA-71	8/18/2023	7:08:00 AM	Shallow	34.82	5.53	29.29
MWA-72	8/18/2023	9:47:00 AM	Shallow	34.16	5.00	29.16
MWA-73	8/18/2023	9:40:00 AM	Shallow	36.01	7.10	28.91
MWA-82	8/18/2023	9:19:00 AM	Shallow	37.74	24.29	13.45
PA-03*	8/18/2023	*	Shallow	37.10	--	25.15
PA-04*	8/18/2023	*	Shallow	36.67	--	25.25
PA-05**	8/18/2023	10:04:00 AM	Shallow	37.22	26.15	11.07
PA-06**	8/18/2023	8:13:00 AM	Shallow	38.03	27.72	10.31
PA-07*	8/18/2023	*	Shallow	39.30	--	13.21
PA-08*	8/18/2023	*	Shallow	40.47	--	13.05
PA-09*	8/18/2023	*	Shallow	40.24	--	11.16
PA-28*	8/18/2023	*	Shallow	38.58	--	13.48
PA-31	8/18/2023	7:23:00 AM	Shallow	36.25	11.35	24.90
PA-33	8/18/2023	7:21:00 AM	Shallow	36.29	11.90	24.39
PA-35	8/18/2023	7:25:00 AM	Shallow	35.91	24.83	11.08
PA-36	8/18/2023	9:54:00 AM	Shallow	36.90	26.19	10.71
PA-38	8/18/2023	9:05:00 AM	Shallow	42.93	29.68	13.25
PA-41	8/18/2023	8:57:00 AM	Shallow	39.69	27.20	12.49
PA-42	8/18/2023	9:09:00 AM	Shallow	40.60	29.16	11.44
PA-43	8/18/2023	9:14:00 AM	Shallow	40.41	28.25	12.16
RP-02-31	8/18/2023	6:58:00 AM	Shallow	42.49	31.42	11.07
RP-10-30	8/18/2023	7:04:00 AM	Shallow	37.47	9.29	28.18
RW-05*	8/18/2023	*	Shallow	34.80	--	21.72
RW-07*	8/18/2023	*	Shallow	33.98	--	11.02
RW-08*	8/18/2023	*	Shallow	34.21	--	11.24
RW-10*	8/18/2023	*	Shallow	34.33	--	10.61
RW-12*	8/18/2023	*	Shallow	35.58	--	11.77
RW-14*	8/18/2023	*	Shallow	36.08	--	8.30
RW-15**	8/18/2023	11:22:00 AM	Shallow	35.81	22.68	13.13
RW-17*	8/18/2023	*	Shallow	36.55	--	12.94
RW-18*	8/18/2023	*	Shallow	36.51	--	13.11
RW-20*	8/18/2023	*	Shallow	37.07	--	13.06
RW-22*	8/18/2023	*	Shallow	38.02	--	9.54
RW-23*	8/18/2023	*	Shallow	33.63	--	8.35
RW-25*	8/18/2023	*	Shallow	38.06	--	8.49
EW-1*	8/18/2023	*	Shallow/Intermediate	33.84	--	2.58
EW-2*	8/18/2023	*	Shallow/Intermediate	34.20	--	2.96
EW-3*	8/18/2023	*	Shallow/Intermediate	34.43	--	11.40
EW-4*	8/18/2023	*	Shallow/Intermediate	34.61	--	10.77
EW-5*	8/18/2023	*	Shallow/Intermediate	35.03	--	0.54
EW-6*	8/18/2023	*	Shallow/Intermediate	35.43	--	0.66
EW-7*	8/18/2023	*	Shallow/Intermediate	35.24	--	2.44
EW-8*	8/18/2023	*	Shallow/Intermediate	35.07	--	2.38
EW-9*	8/18/2023	*	Shallow/Intermediate	36.77	--	2.81

Table 2
Groundwater Elevation Results
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Arkema Inc. Facility
Portland, Oregon

Well ID	Date	Time	Aquifer Unit	Top of Casing Elevation (ft NAVD88)	Depth to Water (ft)	Groundwater Elevation (ft NAVD88)
EW-10*	8/18/2023	*	Shallow/Intermediate	36.35	--	2.17
EW-11*	8/18/2023	*	Shallow/Intermediate	37.38	--	1.52
EW-12*	8/18/2023	*	Shallow/Intermediate	38.24	--	-0.24
EW-13*	8/18/2023	*	Shallow/Intermediate	39.79	--	0.43
EW-14*	8/18/2023	*	Shallow/Intermediate	40.03	--	-0.67
MWA-83	8/18/2023	7:27:00 AM	Shallow/Intermediate	35.82	25.72	10.10
MWA-84	8/18/2023	7:55:00 AM	Shallow/Intermediate	36.31	25.55	10.76
MWA-85	8/18/2023	7:59:00 AM	Shallow/Intermediate	36.86	32.50	4.36
MWA-86	8/18/2023	12:00:00 PM	Shallow/Intermediate	37.15	28.50	8.65
MWA-87	8/18/2023	8:30:00 AM	Shallow/Intermediate	37.68	28.36	9.31
MWA-88	8/18/2023	8:44:00 AM	Shallow/Intermediate	39.36	37.49	1.87
MWA-89	8/18/2023	9:11:00 AM	Shallow/Intermediate	41.65	35.04	6.61
MWA-07(i)	8/18/2023	9:39:00 AM	Intermediate	36.24	7.76	28.48
MWA-08i*	8/18/2023	*	Intermediate	36.25	--	9.46
MWA-16i	8/18/2023	8:05:00 AM	Intermediate	36.58	26.08	10.50
MWA-34i*	8/18/2023	*	Intermediate	38.02	--	8.58
MWA-49i	8/18/2023	8:41:00 AM	Intermediate	36.68	26.94	9.74
MWA-53i	8/18/2023	8:49:00 AM	Intermediate	44.63	34.68	9.95
MWA-54i	8/18/2023	8:26:00 AM	Intermediate	37.35	27.40	9.95
MWA-66i*	8/18/2023	*	Intermediate	33.35	--	8.40
MWA-70i	8/18/2023	9:28:00 AM	Intermediate	37.62	21.52	16.10
MWA-74i	8/18/2023	7:07:00 AM	Intermediate	34.72	11.28	23.44
MWA-75i	8/18/2023	9:46:00 AM	Intermediate	34.09	5.00	29.09
MWA-81i	8/18/2023	9:15:00 AM	Intermediate	44.62	34.24	10.38
PA-10i*	8/18/2023	*	Intermediate	36.67	--	12.73
PA-11i**	8/18/2023	9:56:00 AM	Intermediate	37.63	28.45	9.18
PA-12i**	8/18/2023	8:11:00 AM	Intermediate	38.03	27.82	10.21
PA-13i*	8/18/2023	*	Intermediate	38.48	--	10.44
PA-14i*	8/18/2023	*	Intermediate	39.30	--	10.33
PA-15i*	8/18/2023	*	Intermediate	40.62	--	10.00
PA-16i*	8/18/2023	*	Intermediate	40.30	--	10.42
PA-17iR*	8/18/2023	*	Intermediate	37.59	--	11.63
PA-29i*	8/18/2023	*	Intermediate	39.18	--	9.51
PA-32i	8/18/2023	7:24:00 AM	Intermediate	36.28	24.00	12.28
PA-34i	8/18/2023	7:21:00 AM	Intermediate	36.02	23.88	12.14
PA-37i	8/18/2023	7:32:00 AM	Intermediate	36.54	26.82	9.72
PA-39i	8/18/2023	9:02:00 AM	Intermediate	40.11	30.15	9.96
PA-40i	8/18/2023	9:03:00 AM	Intermediate	41.47	31.52	9.95
PA-44i	8/18/2023	9:13:00 AM	Intermediate	40.36	30.20	10.16
RW-06i*	8/18/2023	*	Intermediate	35.59	--	11.65
RW-09i*	8/18/2023	*	Intermediate	33.73	--	8.74
RW-11i**	8/18/2023	11:43:00 AM	Intermediate	34.77	27.15	7.62
RW-13i*	8/18/2023	*	Intermediate	36.09	--	19.24
RW-16i*	8/18/2023	*	Intermediate	35.77	--	12.43
RW-19i*	8/18/2023	*	Intermediate	36.56	--	10.22
RW-21i*	8/18/2023	*	Intermediate	37.38	--	9.79
RW-24i*	8/18/2023	*	Intermediate	34.03	--	10.16
RW-26i*	8/18/2023	*	Intermediate	38.10	--	9.97
MWA-11i(d)	8/18/2023	7:48:00 AM	Deep	36.49	27.00	9.49
MWA-12i(d)	8/18/2023	9:38:00 AM	Deep	35.86	11.73	24.13
MWA-31i(d)	8/18/2023	8:46:00 AM	Deep	38.36	29.10	9.26
MWA-56d	8/18/2023	8:38:00 AM	Deep	36.68	27.90	8.78
MWA-58d*	8/18/2023	*	Deep	37.97	--	8.65
PA-18d*	8/18/2023	*	Deep	36.55	--	10.80
PA-19d*	8/18/2023	*	Deep	36.65	--	9.33
PA-20d*	8/18/2023	*	Deep	37.91	--	9.49
PA-21d*	8/18/2023	*	Deep	34.36	--	9.13
PA-22d*	8/18/2023	*	Deep	38.75	--	10.01
PA-23d*	8/18/2023	*	Deep	39.31	--	10.26
PA-24d*	8/18/2023	*	Deep	39.06	--	8.83
PA-25d*	8/18/2023	*	Deep	40.44	--	11.34
PA-26d*	8/18/2023	*	Deep	40.33	--	11.21

Table 2
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Well ID	Date	Time	Aquifer Unit	Top of Casing Elevation (ft NAVD88)	Depth to Water (ft)	Groundwater Elevation (ft NAVD88)
PA-27d*	8/18/2023	*	Deep	37.10	--	10.75
PA-30d*	8/18/2023	*	Deep	37.34	--	9.65
MWA-76g	8/18/2023	9:43:00 AM	Gravel	34.96	11.25	23.71
MWA-77g	8/18/2023	7:08:00 AM	Gravel	34.03	5.53	28.50

Notes:
** = wells with transducers; transducer data were used to obtain groundwater elevation*
*** = wells with malfunctioning or down transducers, water levels collected manually*
ft = feet
NAVD 88 = North American Vertical Datum 1988
Manual measurement data collected in field with tablet.
Transducer data was averaged between 7:04 AM and 12:00 PM for the groundwater elevation value.

Table 3
Field Parameters Measured in Groundwater
Arkema Quarter 3, 2023, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

			Analyte Method Unit	pH Field Measure SU	Temperature Field Measure deg C	Specific Conductivity Field Measure uS/cm	Oxidation-Reduction Potential Field Measure mV	Dissolved Oxygen Field Measure mg/L	Turbidity Field Measure NTU
Location ID	Sample Date	Aquifer Classification	Sample ID						
MWA-41	21-Aug-23	Shallow	MWA-41-082123	6.46	19	296.3	69.4	0.73	9.71
MWA-63	23-Aug-23	Shallow	MWA-63-082323	7.07	16.8	628	149.4	5.07	7.31
MWA-82	21-Aug-23	Shallow	MWA-82-082123	9.47	15.9	354.6	28.4	0.5	23.28
PA-03	22-Aug-23	Shallow	PA-03-082223	10.42	17.6	627	-332.9	0.14	21.2
PA-04	22-Aug-23	Shallow	PA-04-082223	9.88	16.1	586	-224.5	0.39	16.7
PA-08	21-Aug-23	Shallow	PA-08-082123	7.6	16.4	617	-128.6	0.82	34.3
PA-09	21-Aug-23	Shallow	PA-09-082123	7.24	19.8	285.7	-105.6	1.58	12.5
PA-31	24-Aug-23	Shallow	PA-31-082423	9.82	15.8	612	-231.9	0.41	61.7
MWA-81i	21-Aug-23	Intermediate	MWA-81I-082123	6.46	18.2	390.8	-32.3	0.7	3.27
PA-10i	22-Aug-23	Intermediate	PA-10I-082223	7.54	16.5	740	-234.2	0.23	10.32
PA-15i	21-Aug-23	Intermediate	PA-15I-082123	7.34	21.5	670	-166.8	0.51	53.45
PA-16i	22-Aug-23	Intermediate	PA-16I-082223	6.92	18.8	505	-99.7	0.78	42.55
PA-17iR	22-Aug-23	Intermediate	PA-17IR-082223	6.45	21.4	159.8	-222.7	0.45	7.42
PA-32i	24-Aug-23	Intermediate	PA-32I-082423	5.67	15.9	871	-119	0.22	1.3
PA-44i	22-Aug-23	Intermediate	PA-44I-082223	6.45	16.6	1289	139.5	0.9	15.62
MWA-11i(d)	23-Aug-23	Deep	MWA-11I(D)-082323	6.84	21.6	2716	-199.9	0.39	5.93
MWA-31i(d)	23-Aug-23	Deep	MWA-31I(D)-082323	6.35	16.9	52842	-109.7	0.28	6.99
MWA-56d	23-Aug-23	Deep	MWA-56D-082323	6.61	18.1	31174	-129.7	0.43	11.6
MWA-58d	23-Aug-23	Deep	MWA-58D-082323	6.52	17.3	42255	-136.7	0.37	16.1
PA-18d	21-Aug-23	Deep	PA-18D-082123	8.44	20.4	977	-266.5	0.21	9.25
PA-19d	24-Aug-23	Deep	PA-19D-082423	7.08	15.5	2751	-66.5	2.2	5.84
PA-20d	23-Aug-23	Deep	PA-20D-082323	6.56	20.7	3610	-115.2	0.97	2.97
PA-21d	23-Aug-23	Deep	PA-21D-082323	6.15	22.1	2965	-60.3	1.79	21.43
PA-22d	23-Aug-23	Deep	PA-22D-082323	7.08	18.2	14984	154.6	0.91	4.82
PA-23d	22-Aug-23	Deep	PA-23D-082223	6.86	20.6	64975	-146.9	0.88	3.89
PA-24d	22-Aug-23	Deep	PA-24D-082223	6.58	21.9	68530	-146.9	0.88	6.59
PA-25d	22-Aug-23	Deep	PA-25D-082223	7	16.8	533	-163.7	0.82	9.64
PA-26d	22-Aug-23	Deep	PA-26D-082223	6.74	19.2	513	-154.6	0.81	6.63
PA-27d	22-Aug-23	Deep	PA-27D-082223	7.14	21.4	2623	-304.9	0.15	1.23
PA-30d	24-Aug-23	Deep	PA-30D-082423	7.73	17.4	2935	-209.9	0.45	6.17

Notes:
uS/cm = microSiemens per centimeter
deg C = degrees Celsius
mg/L = milligrams per liter
mV = millivolts
NTU = nephelometric turbidity units
SU = standard units

Table 4
Volatile Organic Compounds Results
Arkema Quarter 3, 2023, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Analyte					1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene
Unit					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
FSWP SHSC (shaded values indicate results above the value shown)					NE	11	0.4	1.6	47	710	NE	NE	NE	0.076
Location ID	**Sample Date**	**Sample Type**	**Aquifer Classification**	**Sample ID**										
MWA-41	8/21/2023	N	Shallow	MWA-41-082123	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.025 U	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
MWA-63	8/23/2023	N	Shallow	MWA-63-082323	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.29 U	< 0.43 UJ	< 0.41 U	< 0.33 UJ
MWA-82	8/21/2023	N	Shallow	MWA-82-082123	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.025 U	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-03	8/22/2023	N	Shallow	PA-03-082223	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	**0.15 j**	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-04	8/22/2023	N	Shallow	PA-04-082223	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	**0.26**	**0.28**	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-08	8/21/2023	N	Shallow	PA-08-082123	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.025 U	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-09	8/21/2023	N	Shallow	PA-09-082123	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.025 U	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-31	8/24/2023	N	Shallow	PA-31-082423	< 0.038 U	**0.25**	< 0.056 U	< 0.070 U	**0.36**	**1.1**	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
MWA-81i	8/21/2023	N	Intermediate	MWA-81I-082123	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.025 U	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-10i	8/22/2023	N	Intermediate	PA-10I-082223	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.025 U	**0.060 j**	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-15i	8/21/2023	N	Intermediate	PA-15I-082123	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	**0.30**	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-16i	8/22/2023	N	Intermediate	PA-16I-082223	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.025 U	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-17iR	8/22/2023	N	Intermediate	PA-17IR-082223	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.025 U	**0.15 j**	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-17iR	8/22/2023	FD	Intermediate	DUP-01-082223	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	**0.075 j**	**0.24**	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-32i	8/24/2023	N	Intermediate	PA-32I-082423	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.025 U	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-44i	8/22/2023	N	Intermediate	PA-44I-082223	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	**0.27**	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
MWA-11i(d)	8/23/2023	N	Deep	MWA-11I(D)-082323	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.025 U	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
MWA-31i(d)	8/23/2023	N	Deep	MWA-31I(D)-082323	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	**0.39 j**	< 0.28 U	< 0.29 U	< 0.43 UJ	< 0.41 U	< 0.33 UJ
MWA-56d	8/23/2023	N	Deep	MWA-56D-082323	< 1.8 U	< 3.9 U	< 5.2 U	< 2.4 U	< 2.2 U	< 2.8 U	< 2.9 U	< 4.3 UJ	< 4.1 U	< 3.3 UJ
MWA-58d	8/23/2023	N	Deep	MWA-58D-082323	< 0.90 U	< 2.0 U	< 2.6 U	< 1.2 U	< 1.1 U	< 1.4 U	< 1.5 U	< 2.2 UJ	< 2.1 U	< 1.7 UJ
PA-18d	8/21/2023	N	Deep	PA-18D-082123	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.29 U	< 0.43 UJ	< 0.41 U	< 0.33 UJ
PA-19d	8/24/2023	N	Deep	PA-19D-082423	< 9.0 U	< 20 U	< 26 U	< 12 U	< 11 U	< 14 U	< 15 U	< 22 UJ	< 21 U	< 17 UJ
PA-20d	8/23/2023	N	Deep	PA-20D-082323	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	**3.3**	< 0.28 U	< 0.29 U	< 0.43 UJ	< 0.41 U	< 0.33 UJ
PA-20d	8/23/2023	FD	Deep	DUP-02-082323	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	**3.3**	< 0.28 U	< 0.29 U	< 0.43 UJ	< 0.41 U	< 0.33 UJ
PA-21d	8/23/2023	N	Deep	PA-21D-082323	< 90 U	< 200 U	< 260 U	< 120 U	< 110 U	< 140 U	< 150 U	< 220 UJ	< 210 U	< 170 UJ
PA-22d	8/23/2023	N	Deep	PA-22D-082323	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.29 U	< 0.43 UJ	< 0.41 U	< 0.33 UJ
PA-23d	8/22/2023	N	Deep	PA-23D-082223	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.29 U	< 0.43 UJ	< 0.41 U	< 0.33 U
PA-24d	8/22/2023	N	Deep	PA-24D-082223	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.29 U	< 0.43 UJ	< 0.41 U	< 0.33 UJ
PA-25d	8/22/2023	N	Deep	PA-25D-082223	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.025 U	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-26d	8/22/2023	N	Deep	PA-26D-082223	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.025 U	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-27d	8/22/2023	N	Deep	PA-27D-082223	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	**0.30 j**	< 0.28 U	< 0.29 U	< 0.43 UJ	< 0.41 U	< 0.33 UJ
PA-30d	8/24/2023	N	Deep	PA-30D-082423	< 9.0 U	< 20 U	< 26 U	< 12 U	< 11 U	< 14 U	< 15 U	< 22 UJ	< 21 U	< 17 UJ

Notes:
Bolded values indicate concentrations above the Method Detection Limit.
Shaded values indicate concentrations above the FSWP SHSC.
< = Compound not detected. Method Detection Limit shown.
µg/L = micrograms per liter
FD = Field Duplicate Sample
FSWP SHSC = Feasibility Study Work Plan Indirect Exposure Pathway Selected Hot Spot Criteria
N = Normal Environmental Sample
NE = Not Established
SW8260C analyses performed by TestAmerica - Seattle, WA of Seattle.

Qualifiers - Organic:
j = The analyte was positively identified below the RDL; associated numerical value is the approximate concentration of the analyte in the sample.
U = Analyte was analyzed for, but not detected above, the limit displayed.
UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.

Table 4
Volatile Organic Compounds Results
Arkema Quarter 3, 2023, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Analyte					1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane
Unit					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
FSWP SHSC (shaded values indicate results above the value shown)					NE	NE	14	3.7	1.5	NE	10	NE	15	NE
Location ID	**Sample Date**	**Sample Type**	**Aquifer Classification**	**Sample ID**										
MWA-41	8/21/2023	N	Shallow	MWA-41-082123	< 0.20 U	< 0.17 U	< 0.038 U	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
MWA-63	8/23/2023	N	Shallow	MWA-63-082323	< 0.61 U	< 0.57 U	< 0.46 U	< 0.42 U	< 0.18 U	< 0.55 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U
MWA-82	8/21/2023	N	Shallow	MWA-82-082123	< 0.20 U	< 0.17 U	**0.060 j**	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-03	8/22/2023	N	Shallow	PA-03-082223	< 0.20 U	< 0.17 U	< 0.038 U	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-04	8/22/2023	N	Shallow	PA-04-082223	< 0.20 U	< 0.17 U	< 0.038 U	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-08	8/21/2023	N	Shallow	PA-08-082123	< 0.20 U	< 0.17 U	< 0.038 U	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-09	8/21/2023	N	Shallow	PA-09-082123	< 0.20 U	< 0.17 U	< 0.038 U	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-31	8/24/2023	N	Shallow	PA-31-082423	< 0.20 U	< 0.17 UJ	< 0.038 U	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
MWA-81i	8/21/2023	N	Intermediate	MWA-81I-082123	< 0.20 U	< 0.17 U	< 0.038 U	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-10i	8/22/2023	N	Intermediate	PA-10I-082223	< 0.20 U	< 0.17 U	**0.20 j**	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-15i	8/21/2023	N	Intermediate	PA-15I-082123	< 0.20 U	< 0.17 U	< 0.038 U	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-16i	8/22/2023	N	Intermediate	PA-16I-082223	< 0.20 U	< 0.17 U	< 0.038 U	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-17iR	8/22/2023	N	Intermediate	PA-17IR-082223	< 0.20 U	< 0.17 U	< 0.038 U	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-17iR	8/22/2023	FD	Intermediate	DUP-01-082223	< 0.20 U	< 0.17 U	< 0.038 U	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	**0.052 j**	< 0.060 U
PA-32i	8/24/2023	N	Intermediate	PA-32I-082423	< 0.20 U	< 0.17 UJ	**0.15 j**	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-44i	8/22/2023	N	Intermediate	PA-44I-082223	< 0.20 U	< 0.17 U	< 0.038 U	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
MWA-11i(d)	8/23/2023	N	Deep	MWA-11I(D)-082323	< 0.20 U	< 0.17 U	< 0.038 U	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
MWA-31i(d)	8/23/2023	N	Deep	MWA-31I(D)-082323	< 0.61 U	< 0.57 U	< 0.46 U	< 0.42 U	< 0.18 U	< 0.55 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U
MWA-56d	8/23/2023	N	Deep	MWA-56D-082323	< 6.1 U	< 5.7 U	< 4.6 U	< 4.2 U	< 1.8 U	< 5.5 U	< 4.8 U	< 3.5 U	< 4.6 U	< 3.2 U
MWA-58d	8/23/2023	N	Deep	MWA-58D-082323	< 3.1 U	< 2.9 U	< 2.3 U	< 2.1 U	< 0.90 U	< 2.8 U	< 2.4 U	< 1.8 U	< 2.3 U	< 1.6 U
PA-18d	8/21/2023	N	Deep	PA-18D-082123	< 0.61 U	< 0.57 UJ	< 0.46 U	< 0.42 U	< 0.18 U	< 0.55 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U
PA-19d	8/24/2023	N	Deep	PA-19D-082423	< 31 U	< 29 U	< 23 U	< 21 U	< 9.0 U	< 28 U	< 24 U	< 18 U	< 23 U	< 16 U
PA-20d	8/23/2023	N	Deep	PA-20D-082323	< 0.61 U	< 0.57 U	< 0.46 U	**0.59 j**	< 0.18 U	< 0.55 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U
PA-20d	8/23/2023	FD	Deep	DUP-02-082323	< 0.61 U	< 0.57 U	< 0.46 U	**0.50 j**	< 0.18 U	< 0.55 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U
PA-21d	8/23/2023	N	Deep	PA-21D-082323	< 310 U	< 290 U	< 230 U	< 210 U	< 90 U	< 280 U	< 240 U	< 180 U	< 230 U	< 160 U
PA-22d	8/23/2023	N	Deep	PA-22D-082323	< 0.61 U	< 0.57 U	< 0.46 U	< 0.42 U	< 0.18 U	< 0.55 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U
PA-23d	8/22/2023	N	Deep	PA-23D-082223	< 0.61 U	< 0.57 U	< 0.46 U	< 0.42 U	< 0.18 U	< 0.55 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U
PA-24d	8/22/2023	N	Deep	PA-24D-082223	< 0.61 U	< 0.57 U	< 0.46 U	**2.4**	< 0.18 U	< 0.55 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U
PA-25d	8/22/2023	N	Deep	PA-25D-082223	< 0.20 U	< 0.17 U	< 0.038 U	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-26d	8/22/2023	N	Deep	PA-26D-082223	< 0.20 U	< 0.17 U	< 0.038 U	**0.39**	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-27d	8/22/2023	N	Deep	PA-27D-082223	< 0.61 U	< 0.57 U	< 0.46 U	< 0.42 U	< 0.18 U	< 0.55 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U
PA-30d	8/24/2023	N	Deep	PA-30D-082423	< 31 U	< 29 U	< 23 U	< 21 U	< 9.0 U	< 28 U	< 24 U	< 18 U	< 23 U	< 16 U

Notes:
Bolded values indicate concentrations above the Method Detection Limit.
Shaded values indicate concentrations above the FSWP SHSC.
< = Compound not detected. Method Detection Limit shown.
µg/L = micrograms per liter
FD = Field Duplicate Sample
FSWP SHSC = Feasibility Study Work Plan Indirect Exposure Pathway Selected Hot Spot Criteria
N = Normal Environmental Sample
NE = Not Established
SW8260C analyses performed by TestAmerica - Seattle, WA of Seattle.

Qualifiers - Organic:
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Table 4
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Portland, Oregon

Analyte					2-Butanone (Methyl ethyl ketone)	4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone	Acetone	Benzene	Bromobenzene	Bromodichloromethane	Bromoform	Bromomethane
Unit					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
FSWP SHSC (shaded values indicate results above the value shown)					14,000	NE	NE	NE	1,500	1.4	NE	1.7	14	150
Location ID	Sample Date	Sample Type	Aquifer Classification	Sample ID										
MWA-41	8/21/2023	N	Shallow	MWA-41-082123	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	< 0.030 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
MWA-63	8/23/2023	N	Shallow	MWA-63-082323	< 4.7 U	< 0.38 U	< 0.28 U	< 2.5 U	< 3.2 U	< 0.24 U	< 0.43 U	< 0.29 U	< 0.51 U	< 0.21 U
MWA-82	8/21/2023	N	Shallow	MWA-82-082123	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	< 0.030 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
PA-03	8/22/2023	N	Shallow	PA-03-082223	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	**0.083 j**	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
PA-04	8/22/2023	N	Shallow	PA-04-082223	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	< 0.030 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
PA-08	8/21/2023	N	Shallow	PA-08-082123	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	< 0.030 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
PA-09	8/21/2023	N	Shallow	PA-09-082123	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	< 0.030 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
PA-31	8/24/2023	N	Shallow	PA-31-082423	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	< 0.030 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
MWA-81i	8/21/2023	N	Intermediate	MWA-81I-082123	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	< 0.030 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
PA-10i	8/22/2023	N	Intermediate	PA-10I-082223	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	**0.037 j**	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
PA-15i	8/21/2023	N	Intermediate	PA-15I-082123	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	< 0.030 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
PA-16i	8/22/2023	N	Intermediate	PA-16I-082223	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	< 0.030 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
PA-17iR	8/22/2023	N	Intermediate	PA-17IR-082223	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	**0.095 j**	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
PA-17iR	8/22/2023	FD	Intermediate	DUP-01-082223	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	**0.096 j**	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
PA-32i	8/24/2023	N	Intermediate	PA-32I-082423	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	< 0.030 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
PA-44i	8/22/2023	N	Intermediate	PA-44I-082223	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	< 0.030 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
MWA-11i(d)	8/23/2023	N	Deep	MWA-11I(D)-082323	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	< 0.030 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
MWA-31i(d)	8/23/2023	N	Deep	MWA-31I(D)-082323	< 4.7 U	< 0.38 U	< 0.28 U	< 2.5 U	< 3.2 U	< 0.24 U	< 0.43 U	**0.41 j**	< 0.51 U	< 0.21 U
MWA-56d	8/23/2023	N	Deep	MWA-56D-082323	< 47 U	< 3.8 U	< 2.8 U	< 25 U	**51 j**	< 2.4 U	< 4.3 U	< 2.9 U	< 5.1 U	< 2.1 U
MWA-58d	8/23/2023	N	Deep	MWA-58D-082323	< 24 U	< 1.9 U	< 1.4 U	< 13 U	**26 j**	< 1.2 U	< 2.2 U	< 1.5 U	< 2.6 U	< 1.1 U
PA-18d	8/21/2023	N	Deep	PA-18D-082123	< 4.7 U	< 0.38 U	< 0.28 U	< 2.5 U	< 15 UJ	< 0.24 U	< 0.43 U	< 0.29 U	< 0.51 U	< 0.21 U
PA-19d	8/24/2023	N	Deep	PA-19D-082423	< 240 U	< 19 U	< 14 U	< 130 U	**240 j**	**34 j**	< 22 U	< 15 U	< 26 U	< 11 U
PA-20d	8/23/2023	N	Deep	PA-20D-082323	< 4.7 U	< 0.38 U	< 0.28 U	< 2.5 U	< 3.2 U	**4.0**	< 0.43 U	< 0.29 U	< 0.51 U	< 0.21 U
PA-20d	8/23/2023	FD	Deep	DUP-02-082323	< 4.7 U	< 0.38 U	< 0.28 U	< 2.5 U	< 3.2 U	**4.2**	< 0.43 U	< 0.29 U	< 0.51 U	< 0.21 U
PA-21d	8/23/2023	N	Deep	PA-21D-082323	< 2,400 U	< 190 U	< 140 U	< 1,300 U	**2,600 j**	< 120 U	< 220 U	< 150 U	< 260 U	< 110 U
PA-22d	8/23/2023	N	Deep	PA-22D-082323	< 4.7 U	< 0.38 U	< 0.28 U	< 2.5 U	< 3.2 U	< 0.24 U	< 0.43 U	< 0.29 U	< 0.51 U	< 0.21 U
PA-23d	8/22/2023	N	Deep	PA-23D-082223	< 4.7 U	< 0.38 U	< 0.28 U	< 2.5 U	< 15 U	< 0.24 U	< 0.43 U	< 0.29 U	< 0.51 U	< 0.21 U
PA-24d	8/22/2023	N	Deep	PA-24D-082223	< 4.7 U	< 0.38 U	< 0.28 U	< 2.5 U	< 3.2 U	< 0.24 U	< 0.43 U	< 0.29 U	< 0.51 U	< 0.21 U
PA-25d	8/22/2023	N	Deep	PA-25D-082223	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	< 0.030 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
PA-26d	8/22/2023	N	Deep	PA-26D-082223	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	< 0.030 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
PA-27d	8/22/2023	N	Deep	PA-27D-082223	< 4.7 U	< 0.38 U	< 0.28 U	< 2.5 U	< 3.2 U	< 0.24 U	< 0.43 U	< 0.29 U	< 0.51 U	< 0.21 U
PA-30d	8/24/2023	N	Deep	PA-30D-082423	< 240 U	< 19 U	< 14 U	< 130 U	**230 j**	**19 j**	< 22 U	< 15 U	< 26 U	< 11 U

Notes:
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< = Compound not detected. Method Detection Limit shown.
µg/L = micrograms per liter
FD = Field Duplicate Sample
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SW8260C analyses performed by TestAmerica - Seattle, WA of Seattle.

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				Analyte	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Dibromochloromethane
				Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
				FSWP SHSC (shaded values indicate results above the value shown)	0.92	0.16	64	NE	NE	28	NE	590	NE	1.3
Location ID	**Sample Date**	**Sample Type**	**Aquifer Classification**	**Sample ID**										
MWA-41	8/21/2023	N	Shallow	MWA-41-082123	*< 0.083 U*	*< 0.025 U*	*< 0.060 U*	*< 0.050 U*	*< 0.096 U*	*< 0.030 U*	*< 0.14 U*	*< 0.055 U*	*< 0.090 U*	*< 0.055 U*
MWA-63	8/23/2023	N	Shallow	MWA-63-082323	*< 0.53 U*	*< 0.30 U*	*< 0.44 U*	*< 0.29 U*	*< 0.35 U*	**84**	*< 0.28 U*	**2.5**	*< 0.42 U*	*< 0.43 U*
MWA-82	8/21/2023	N	Shallow	MWA-82-082123	*< 0.083 U*	*< 0.025 U*	*< 0.060 U*	*< 0.050 U*	*< 0.096 U*	**1.6**	*< 0.14 U*	*< 0.055 U*	*< 0.090 U*	*< 0.055 U*
PA-03	8/22/2023	N	Shallow	PA-03-082223	**0.083 j**	*< 0.025 U*	*< 0.060 U*	*< 0.050 U*	*< 0.096 U*	*< 0.030 U*	*< 0.14 U*	*< 0.055 U*	*< 0.090 U*	*< 0.055 U*
PA-04	8/22/2023	N	Shallow	PA-04-082223	*< 0.083 U*	*< 0.025 U*	*< 0.060 U*	*< 0.050 U*	*< 0.096 U*	*< 0.030 U*	*< 0.14 U*	*< 0.055 U*	*< 0.090 U*	*< 0.055 U*
PA-08	8/21/2023	N	Shallow	PA-08-082123	*< 0.083 U*	*< 0.025 U*	*< 0.060 U*	*< 0.050 U*	*< 0.096 U*	**0.082 j**	*< 0.14 U*	*< 0.055 U*	*< 0.090 U*	*< 0.055 U*
PA-09	8/21/2023	N	Shallow	PA-09-082123	*< 0.083 U*	*< 0.025 U*	*< 0.060 U*	*< 0.050 U*	*< 0.096 U*	*< 0.030 U*	*< 0.14 U*	*< 0.055 U*	*< 0.090 U*	*< 0.055 U*
PA-31	8/24/2023	N	Shallow	PA-31-082423	*< 0.083 U*	*< 0.025 U*	*< 0.060 U*	*< 0.050 U*	*< 0.096 U*	**0.11 j**	*< 0.14 U*	*< 0.055 U*	*< 0.090 U*	*< 0.055 U*
MWA-81i	8/21/2023	N	Intermediate	MWA-81I-082123	*< 0.083 U*	*< 0.025 U*	*< 0.060 U*	*< 0.050 U*	*< 0.096 U*	*< 0.030 U*	*< 0.14 U*	*< 0.055 U*	*< 0.090 U*	*< 0.055 U*
PA-10i	8/22/2023	N	Intermediate	PA-10I-082223	*< 0.083 U*	*< 0.025 U*	**0.67**	*< 0.050 U*	*< 0.096 U*	*< 0.030 U*	*< 0.14 U*	**0.20**	*< 0.090 U*	*< 0.055 U*
PA-15i	8/21/2023	N	Intermediate	PA-15I-082123	*< 0.083 U*	*< 0.025 U*	*< 0.060 U*	*< 0.050 U*	*< 0.096 U*	*< 0.030 U*	*< 0.14 U*	**0.088 j**	*< 0.090 U*	*< 0.055 U*
PA-16i	8/22/2023	N	Intermediate	PA-16I-082223	*< 0.083 U*	*< 0.025 U*	*< 0.060 U*	*< 0.050 U*	*< 0.096 U*	*< 0.030 U*	*< 0.14 U*	**0.091 j**	*< 0.090 U*	*< 0.055 U*
PA-17iR	8/22/2023	N	Intermediate	PA-17IR-082223	**0.12 j**	*< 0.025 U*	*< 0.060 U*	*< 0.050 U*	*< 0.096 U*	*< 0.030 U*	*< 0.14 U*	*< 0.055 U*	*< 0.090 U*	*< 0.055 U*
PA-17iR	8/22/2023	FD	Intermediate	DUP-01-082223	**0.48**	*< 0.025 U*	**0.065 j**	*< 0.050 U*	*< 0.096 U*	*< 0.030 U*	*< 0.14 U*	**0.10 j**	*< 0.090 U*	*< 0.055 U*
PA-32i	8/24/2023	N	Intermediate	PA-32I-082423	*< 0.083 U*	*< 0.025 U*	**0.13 j**	*< 0.050 U*	**0.31 j**	*< 0.030 U*	*< 0.14 U*	**0.061 j**	*< 0.090 U*	*< 0.055 U*
PA-44i	8/22/2023	N	Intermediate	PA-44I-082223	*< 0.083 U*	*< 0.025 U*	*< 0.060 U*	*< 0.050 U*	*< 0.096 U*	*< 0.030 U*	*< 0.14 U*	*< 0.055 U*	*< 0.090 U*	*< 0.055 U*
MWA-11i(d)	8/23/2023	N	Deep	MWA-11I(D)-082323	*< 0.083 U*	*< 0.025 U*	*< 0.060 U*	*< 0.050 U*	*< 0.096 U*	*< 0.030 U*	*< 0.14 U*	**0.25**	*< 0.090 U*	*< 0.055 U*
MWA-31i(d)	8/23/2023	N	Deep	MWA-31I(D)-082323	**0.54 j**	*< 0.30 U*	*< 0.44 U*	*< 0.29 U*	*< 0.35 U*	**76**	*< 0.28 U*	*< 0.35 U*	*< 0.42 U*	*< 0.43 U*
MWA-56d	8/23/2023	N	Deep	MWA-56D-082323	*< 5.3 U*	*< 3.0 U*	*< 4.4 U*	*< 2.9 U*	*< 3.5 U*	**150**	*< 2.8 U*	*< 3.5 U*	*< 4.2 U*	*< 4.3 U*
MWA-58d	8/23/2023	N	Deep	MWA-58D-082323	*< 2.7 U*	*< 1.5 U*	*< 2.2 U*	*< 1.5 U*	*< 1.8 U*	**160**	*< 1.4 U*	*< 1.8 U*	*< 2.1 U*	*< 2.2 U*
PA-18d	8/21/2023	N	Deep	PA-18D-082123	*< 0.53 U*	*< 0.30 U*	*< 0.44 U*	*< 0.29 U*	*< 0.35 U*	*< 0.26 U*	*< 0.28 U*	*< 0.35 U*	*< 0.42 U*	*< 0.43 U*
PA-19d	8/24/2023	N	Deep	PA-19D-082423	*< 27 U*	*< 15 U*	**6,600**	*< 15 U*	*< 18 U*	*< 13 U*	*< 14 U*	**24 j**	*< 21 U*	*< 22 U*
PA-20d	8/23/2023	N	Deep	PA-20D-082323	*< 0.53 U*	*< 0.30 U*	**20**	*< 0.29 U*	*< 0.35 U*	*< 0.26 U*	*< 0.28 U*	*< 0.35 U*	*< 0.42 U*	*< 0.43 U*
PA-20d	8/23/2023	FD	Deep	DUP-02-082323	*< 0.53 U*	*< 0.30 U*	**22**	*< 0.29 U*	*< 0.35 U*	*< 0.26 U*	*< 0.28 U*	*< 0.35 U*	*< 0.42 U*	*< 0.43 U*
PA-21d	8/23/2023	N	Deep	PA-21D-082323	*< 270 U*	*< 150 U*	**26,000**	*< 150 U*	*< 180 U*	*< 130 U*	*< 140 U*	*< 180 U*	*< 210 U*	*< 220 U*
PA-22d	8/23/2023	N	Deep	PA-22D-082323	*< 0.53 U*	*< 0.30 U*	*< 0.44 U*	*< 0.29 U*	*< 0.35 U*	**10**	*< 0.28 U*	*< 0.35 U*	*< 0.42 U*	*< 0.43 U*
PA-23d	8/22/2023	N	Deep	PA-23D-082223	*< 0.53 U*	*< 0.30 U*	*< 0.44 U*	*< 0.29 U*	*< 0.35 U*	*< 0.26 U*	*< 0.28 U*	*< 0.35 U*	*< 0.42 U*	*< 0.43 U*
PA-24d	8/22/2023	N	Deep	PA-24D-082223	*< 0.53 U*	*< 0.30 U*	*< 0.44 U*	*< 0.29 U*	*< 0.35 U*	*< 0.26 U*	*< 0.28 U*	*< 0.35 U*	*< 0.42 U*	*< 0.43 U*
PA-25d	8/22/2023	N	Deep	PA-25D-082223	*< 0.083 U*	*< 0.025 U*	*< 0.060 U*	*< 0.050 U*	*< 0.096 U*	*< 0.030 U*	*< 0.14 U*	*< 0.055 U*	*< 0.090 U*	*< 0.055 U*
PA-26d	8/22/2023	N	Deep	PA-26D-082223	*< 0.083 U*	*< 0.025 U*	*< 0.060 U*	*< 0.050 U*	*< 0.096 U*	*< 0.030 U*	*< 0.14 U*	*< 0.055 U*	*< 0.090 U*	*< 0.055 U*
PA-27d	8/22/2023	N	Deep	PA-27D-082223	*< 0.53 U*	*< 0.30 U*	*< 0.44 U*	*< 0.29 U*	*< 0.35 U*	**0.30 j**	*< 0.28 U*	**0.49 j**	*< 0.42 U*	*< 0.43 U*
PA-30d	8/24/2023	N	Deep	PA-30D-082423	*< 27 U*	*< 15 U*	**20,000**	*< 15 U*	*< 18 U*	*< 13 U*	*< 14 U*	*< 18 U*	*< 21 U*	*< 22 U*

Notes:
Bolded values indicate concentrations above the Method Detection Limit.
Shaded values indicate concentrations above the FSWP SHSC.
< = Compound not detected. Method Detection Limit shown.
µg/L = micrograms per liter
FD = Field Duplicate Sample
FSWP SHSC = Feasibility Study Work Plan Indirect Exposure Pathway Selected Hot Spot Criteria
N = Normal Environmental Sample
NE = Not Established
SW8260C analyses performed by TestAmerica - Seattle, WA of Seattle.

Qualifiers - Organic:
j = The analyte was positively identified below the RDL; associated numerical value is the approximate concentration of the analyte in the sample.
U = Analyte was analyzed for, but not detected above, the limit displayed.
UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.

Table 4
Volatile Organic Compounds Results
Arkema Quarter 3, 2023, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Analyte					Dibromomethane	Dichlorodifluoromethane (Freon 12)	Ethylbenzene	Ethylene dibromide	Hexachlorobutadiene	Isopropylbenzene (Cumene)	m,p-Xylenes	Methyl tert-butyl ether	Methylene chloride	Naphthalene
Unit					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
FSWP SHSC (shaded values indicate results above the value shown)					NE	NE	7.3	NE	0.01	NE	1.8	NE	59	12
Location ID	**Sample Date**	**Sample Type**	**Aquifer Classification**	**Sample ID**										
MWA-41	8/21/2023	N	Shallow	MWA-41-082123	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
MWA-63	8/23/2023	N	Shallow	MWA-63-082323	< 0.34 U	< 0.53 U	< 0.50 U	< 0.40 U	< 0.79 UJ	< 0.44 U	< 0.53 U	< 0.44 U	< 1.4 U	< 0.93 UJ
MWA-82	8/21/2023	N	Shallow	MWA-82-082123	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-03	8/22/2023	N	Shallow	PA-03-082223	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-04	8/22/2023	N	Shallow	PA-04-082223	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-08	8/21/2023	N	Shallow	PA-08-082123	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-09	8/21/2023	N	Shallow	PA-09-082123	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-31	8/24/2023	N	Shallow	PA-31-082423	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 UJ
MWA-81i	8/21/2023	N	Intermediate	MWA-81I-082123	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-10i	8/22/2023	N	Intermediate	PA-10I-082223	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-15i	8/21/2023	N	Intermediate	PA-15I-082123	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-16i	8/22/2023	N	Intermediate	PA-16I-082223	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-17iR	8/22/2023	N	Intermediate	PA-17IR-082223	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-17iR	8/22/2023	FD	Intermediate	DUP-01-082223	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-32i	8/24/2023	N	Intermediate	PA-32I-082423	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 UJ
PA-44i	8/22/2023	N	Intermediate	PA-44I-082223	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
MWA-11i(d)	8/23/2023	N	Deep	MWA-11I(D)-082323	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
MWA-31i(d)	8/23/2023	N	Deep	MWA-31I(D)-082323	< 0.34 U	< 0.53 U	< 0.50 U	< 0.40 U	< 0.79 UJ	< 0.44 U	< 0.53 U	< 0.44 U	< 1.4 U	< 0.93 UJ
MWA-56d	8/23/2023	N	Deep	MWA-56D-082323	< 3.4 U	< 5.3 U	< 5.0 U	< 4.0 U	< 7.9 UJ	< 4.4 U	< 5.3 U	< 4.4 U	< 14 U	< 9.3 UJ
MWA-58d	8/23/2023	N	Deep	MWA-58D-082323	< 1.7 U	< 2.7 U	< 2.5 U	< 2.0 U	< 4.0 UJ	< 2.2 U	< 2.7 U	< 2.2 U	< 7.2 U	< 4.7 UJ
PA-18d	8/21/2023	N	Deep	PA-18D-082123	< 0.34 U	< 0.53 U	< 0.50 U	< 0.40 U	< 0.79 U	< 0.44 U	< 0.53 U	< 0.44 U	< 1.4 U	< 0.93 UJ
PA-19d	8/24/2023	N	Deep	PA-19D-082423	< 17 U	< 27 U	< 25 U	< 20 U	< 40 UJ	< 22 U	< 27 U	< 22 U	< 72 U	< 47 UJ
PA-20d	8/23/2023	N	Deep	PA-20D-082323	< 0.34 U	< 0.53 U	< 0.50 U	< 0.40 U	< 0.79 UJ	< 0.44 U	< 0.53 U	< 0.44 U	< 1.4 U	< 0.93 UJ
PA-20d	8/23/2023	FD	Deep	DUP-02-082323	< 0.34 U	< 0.53 U	< 0.50 U	< 0.40 U	< 0.79 UJ	< 0.44 U	< 0.53 U	< 0.44 U	< 1.4 U	< 0.93 UJ
PA-21d	8/23/2023	N	Deep	PA-21D-082323	< 170 U	< 270 U	< 250 U	< 200 U	< 400 UJ	< 220 U	< 270 U	< 220 U	< 720 U	< 470 UJ
PA-22d	8/23/2023	N	Deep	PA-22D-082323	< 0.34 U	< 0.53 U	< 0.50 U	< 0.40 U	< 0.79 UJ	< 0.44 U	< 0.53 U	< 0.44 U	< 1.4 U	< 0.93 UJ
PA-23d	8/22/2023	N	Deep	PA-23D-082223	< 0.34 U	< 0.53 U	< 0.50 U	< 0.40 U	< 0.79 UJ	< 0.44 U	< 0.53 U	< 0.44 U	< 1.4 U	< 0.93 UJ
PA-24d	8/22/2023	N	Deep	PA-24D-082223	< 0.34 U	< 0.53 U	< 0.50 U	< 0.40 U	< 0.79 UJ	< 0.44 U	< 0.53 U	< 0.44 U	< 1.4 U	< 0.93 UJ
PA-25d	8/22/2023	N	Deep	PA-25D-082223	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-26d	8/22/2023	N	Deep	PA-26D-082223	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.22 U
PA-27d	8/22/2023	N	Deep	PA-27D-082223	< 0.34 U	< 0.53 U	< 0.50 U	< 0.40 U	< 0.79 UJ	< 0.44 U	< 0.53 U	< 0.44 U	< 1.4 U	< 0.93 UJ
PA-30d	8/24/2023	N	Deep	PA-30D-082423	< 17 U	< 27 U	< 25 U	< 20 U	< 40 UJ	< 22 U	< 27 U	< 22 U	< 72 U	< 47 UJ

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µg/L = micrograms per liter
FD = Field Duplicate Sample
FSWP SHSC = Feasibility Study Work Plan Indirect Exposure Pathway Selected Hot Spot Criteria
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SW8260C analyses performed by TestAmerica - Seattle, WA of Seattle.

Qualifiers - Organic:
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UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.

Table 4
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Arkema Quarter 3, 2023, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

				Analyte	n-Butylbenzene	n-Propylbenzene	o-Chlorotoluene (2-chlorotoluene)	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene
				Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
				FSWP SHSC (shaded values indicate results above the value shown)	NE	NE	NE	13	NE	NE	NE	0.33	9.8	1,000
Location ID	**Sample Date**	**Sample Type**	**Aquifer Classification**	**Sample ID**										
MWA-41	8/21/2023	N	Shallow	MWA-41-082123	*< 0.23 U*	*< 0.091 U*	*< 0.12 U*	*< 0.15 U*	*< 0.17 U*	*< 0.19 U*	*< 0.26 U*	*< 0.084 U*	*< 0.050 U*	*< 0.033 U*
MWA-63	8/23/2023	N	Shallow	MWA-63-082323	*< 0.44 U*	*< 0.50 U*	*< 0.51 U*	*< 0.39 U*	*< 0.49 U*	*< 0.53 U*	*< 0.58 U*	**13**	*< 0.39 U*	*< 0.39 U*
MWA-82	8/21/2023	N	Shallow	MWA-82-082123	*< 0.23 U*	*< 0.091 U*	*< 0.12 U*	*< 0.15 U*	*< 0.17 U*	*< 0.19 U*	*< 0.26 U*	**0.38**	*< 0.050 U*	*< 0.033 U*
PA-03	8/22/2023	N	Shallow	PA-03-082223	*< 0.23 U*	*< 0.091 U*	*< 0.12 U*	*< 0.15 U*	*< 0.17 U*	*< 0.19 U*	*< 0.26 U*	*< 0.084 U*	**0.12 j**	*< 0.033 U*
PA-04	8/22/2023	N	Shallow	PA-04-082223	*< 0.23 U*	*< 0.091 U*	*< 0.12 U*	*< 0.15 U*	*< 0.17 U*	*< 0.19 U*	*< 0.26 U*	**0.16 j**	*< 0.050 U*	*< 0.033 U*
PA-08	8/21/2023	N	Shallow	PA-08-082123	*< 0.23 U*	*< 0.091 U*	*< 0.12 U*	*< 0.15 U*	*< 0.17 U*	*< 0.19 U*	*< 0.26 U*	**0.29**	*< 0.050 U*	*< 0.033 U*
PA-09	8/21/2023	N	Shallow	PA-09-082123	*< 0.23 U*	*< 0.091 U*	*< 0.12 U*	*< 0.15 U*	*< 0.17 U*	*< 0.19 U*	*< 0.26 U*	*< 0.084 U*	*< 0.050 U*	*< 0.033 U*
PA-31	8/24/2023	N	Shallow	PA-31-082423	*< 0.23 U*	*< 0.091 U*	*< 0.12 U*	*< 0.15 U*	*< 0.17 U*	*< 0.19 U*	*< 0.26 U*	**0.22 j**	*< 0.050 U*	*< 0.033 U*
MWA-81i	8/21/2023	N	Intermediate	MWA-81I-082123	*< 0.23 U*	*< 0.091 U*	*< 0.12 U*	*< 0.15 U*	*< 0.17 U*	*< 0.19 U*	*< 0.26 U*	*< 0.084 U*	*< 0.050 U*	*< 0.033 U*
PA-10i	8/22/2023	N	Intermediate	PA-10I-082223	*< 0.23 U*	*< 0.091 U*	*< 0.12 U*	*< 0.15 U*	*< 0.17 U*	*< 0.19 U*	*< 0.26 U*	*< 0.084 U*	*< 0.050 U*	*< 0.033 U*
PA-15i	8/21/2023	N	Intermediate	PA-15I-082123	*< 0.23 U*	*< 0.091 U*	*< 0.12 U*	*< 0.15 U*	*< 0.17 U*	*< 0.19 U*	*< 0.26 U*	*< 0.084 U*	*< 0.050 U*	*< 0.033 U*
PA-16i	8/22/2023	N	Intermediate	PA-16I-082223	*< 0.23 U*	*< 0.091 U*	*< 0.12 U*	*< 0.15 U*	*< 0.17 U*	*< 0.19 U*	*< 0.26 U*	*< 0.084 U*	*< 0.050 U*	*< 0.033 U*
PA-17iR	8/22/2023	N	Intermediate	PA-17IR-082223	*< 0.23 U*	*< 0.091 U*	*< 0.12 U*	*< 0.15 U*	*< 0.17 U*	*< 0.19 U*	*< 0.26 U*	*< 0.084 U*	**0.050 j**	*< 0.033 U*
PA-17iR	8/22/2023	FD	Intermediate	DUP-01-082223	*< 0.23 U*	*< 0.091 U*	*< 0.12 U*	*< 0.15 U*	*< 0.17 U*	*< 0.19 U*	*< 0.26 U*	*< 0.084 U*	*< 0.050 U*	*< 0.033 U*
PA-32i	8/24/2023	N	Intermediate	PA-32I-082423	*< 0.23 U*	*< 0.091 U*	*< 0.12 U*	*< 0.15 U*	*< 0.17 U*	*< 0.19 U*	*< 0.26 U*	*< 0.084 U*	*< 0.050 U*	*< 0.033 U*
PA-44i	8/22/2023	N	Intermediate	PA-44I-082223	*< 0.23 U*	*< 0.091 U*	*< 0.12 U*	*< 0.15 U*	*< 0.17 U*	*< 0.19 U*	*< 0.26 U*	*< 0.084 U*	*< 0.050 U*	*< 0.033 U*
MWA-11i(d)	8/23/2023	N	Deep	MWA-11I(D)-082323	*< 0.23 U*	*< 0.091 U*	*< 0.12 U*	*< 0.15 U*	*< 0.17 U*	*< 0.19 U*	*< 0.26 U*	*< 0.084 U*	*< 0.050 U*	*< 0.033 U*
MWA-31i(d)	8/23/2023	N	Deep	MWA-31I(D)-082323	*< 0.44 U*	*< 0.50 U*	*< 0.51 U*	*< 0.39 U*	*< 0.49 U*	*< 0.53 U*	*< 0.58 U*	*< 0.41 U*	*< 0.39 U*	*< 0.39 U*
MWA-56d	8/23/2023	N	Deep	MWA-56D-082323	*< 4.4 U*	*< 5.0 U*	*< 5.1 U*	*< 3.9 U*	*< 4.9 U*	*< 5.3 U*	*< 5.8 U*	*< 4.1 U*	*< 3.9 U*	*< 3.9 U*
MWA-58d	8/23/2023	N	Deep	MWA-58D-082323	*< 2.2 U*	*< 2.5 U*	*< 2.6 U*	*< 2.0 U*	*< 2.5 U*	*< 2.7 U*	*< 2.9 U*	*< 2.1 U*	*< 2.0 U*	*< 2.0 U*
PA-18d	8/21/2023	N	Deep	PA-18D-082123	*< 0.44 U*	*< 0.50 U*	*< 0.51 U*	*< 0.39 U*	*< 0.49 U*	*< 0.53 U*	*< 0.58 U*	*< 0.41 U*	*< 0.39 U*	*< 0.39 U*
PA-19d	8/24/2023	N	Deep	PA-19D-082423	*< 22 U*	*< 25 U*	*< 26 U*	*< 20 U*	*< 25 U*	*< 27 U*	*< 29 U*	*< 21 U*	*< 20 U*	*< 20 U*
PA-20d	8/23/2023	N	Deep	PA-20D-082323	*< 0.44 U*	*< 0.50 U*	*< 0.51 U*	*< 0.39 U*	*< 0.49 U*	*< 0.53 U*	*< 0.58 U*	*< 0.41 U*	*< 0.39 U*	*< 0.39 U*
PA-20d	8/23/2023	FD	Deep	DUP-02-082323	*< 0.44 U*	*< 0.50 U*	*< 0.51 U*	*< 0.39 U*	*< 0.49 U*	*< 0.53 U*	*< 0.58 U*	*< 0.41 U*	*< 0.39 U*	*< 0.39 U*
PA-21d	8/23/2023	N	Deep	PA-21D-082323	*< 220 U*	*< 250 U*	*< 260 U*	*< 200 U*	*< 250 U*	*< 270 U*	*< 290 U*	*< 210 U*	*< 200 U*	*< 200 U*
PA-22d	8/23/2023	N	Deep	PA-22D-082323	*< 0.44 U*	*< 0.50 U*	*< 0.51 U*	*< 0.39 U*	*< 0.49 U*	*< 0.53 U*	*< 0.58 U*	*< 0.41 U*	*< 0.39 U*	*< 0.39 U*
PA-23d	8/22/2023	N	Deep	PA-23D-082223	*< 0.44 U*	*< 0.50 U*	*< 0.51 U*	*< 0.39 U*	*< 0.49 U*	*< 0.53 U*	*< 0.58 U*	*< 0.41 U*	**2.7**	*< 0.39 U*
PA-24d	8/22/2023	N	Deep	PA-24D-082223	*< 0.44 U*	*< 0.50 U*	*< 0.51 U*	*< 0.39 U*	*< 0.49 U*	*< 0.53 U*	*< 0.58 U*	*< 0.41 U*	*< 0.39 U*	*< 0.39 U*
PA-25d	8/22/2023	N	Deep	PA-25D-082223	*< 0.23 U*	*< 0.091 U*	*< 0.12 U*	*< 0.15 U*	*< 0.17 U*	*< 0.19 U*	*< 0.26 U*	*< 0.084 U*	*< 0.050 U*	*< 0.033 U*
PA-26d	8/22/2023	N	Deep	PA-26D-082223	*< 0.23 U*	*< 0.091 U*	*< 0.12 U*	*< 0.15 U*	*< 0.17 U*	*< 0.19 U*	*< 0.26 U*	*< 0.084 U*	*< 0.050 U*	*< 0.033 U*
PA-27d	8/22/2023	N	Deep	PA-27D-082223	*< 0.44 U*	*< 0.50 U*	*< 0.51 U*	*< 0.39 U*	*< 0.49 U*	*< 0.53 U*	*< 0.58 U*	*< 0.41 U*	*< 0.39 U*	*< 0.39 U*
PA-30d	8/24/2023	N	Deep	PA-30D-082423	*< 22 U*	*< 25 U*	*< 26 U*	*< 20 U*	*< 25 U*	*< 27 U*	*< 29 U*	*< 21 U*	*< 20 U*	*< 20 U*

Notes:
Bolded values indicate concentrations above the Method Detection Limit.
Shaded values indicate concentrations above the FSWP SHSC.
< = Compound not detected. Method Detection Limit shown.
µg/L = micrograms per liter
FD = Field Duplicate Sample
FSWP SHSC = Feasibility Study Work Plan Indirect Exposure Pathway Selected Hot Spot Criteria
N = Normal Environmental Sample
NE = Not Established
SW8260C analyses performed by TestAmerica - Seattle, WA of Seattle.

Qualifiers - Organic:
j = The analyte was positively identified below the RDL; associated numerical value is the approximate concentration of the analyte in the sample.
U = Analyte was analyzed for, but not detected above, the limit displayed.
UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.

Table 4
Volatile Organic Compounds Results
Arkema Quarter 3, 2023, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

				Analyte	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane (Freon 11)	Vinyl chloride
				Unit	µg/L	µg/L	µg/L	µg/L
				FSWP SHSC (shaded values indicate results above the value shown)	NE	3	NE	0.24
Location ID	Sample Date	Sample Type	Aquifer Classification	Sample ID				
MWA-41	8/21/2023	N	Shallow	MWA-41-082123	*< 0.092 U*	*< 0.066 U*	*< 0.12 U*	*< 0.040 U*
MWA-63	8/23/2023	N	Shallow	MWA-63-082323	*< 0.41 U*	**2.9**	*< 0.36 U*	*< 0.22 U*
MWA-82	8/21/2023	N	Shallow	MWA-82-082123	*< 0.092 U*	**0.13 j**	*< 0.12 U*	*< 0.040 U*
PA-03	8/22/2023	N	Shallow	PA-03-082223	*< 0.092 U*	*< 0.066 U*	*< 0.12 U*	*< 0.040 U*
PA-04	8/22/2023	N	Shallow	PA-04-082223	*< 0.092 U*	*< 0.066 U*	*< 0.12 U*	*< 0.040 U*
PA-08	8/21/2023	N	Shallow	PA-08-082123	*< 0.092 U*	**0.092 j**	*< 0.12 U*	*< 0.040 U*
PA-09	8/21/2023	N	Shallow	PA-09-082123	*< 0.092 U*	*< 0.066 U*	*< 0.12 U*	*< 0.040 U*
PA-31	8/24/2023	N	Shallow	PA-31-082423	*< 0.092 U*	**0.089 j**	**0.14 j**	*< 0.040 U*
MWA-81i	8/21/2023	N	Intermediate	MWA-81I-082123	*< 0.092 U*	*< 0.066 U*	*< 0.12 U*	*< 0.040 U*
PA-10i	8/22/2023	N	Intermediate	PA-10I-082223	*< 0.092 U*	*< 0.066 U*	*< 0.12 U*	**0.18**
PA-15i	8/21/2023	N	Intermediate	PA-15I-082123	*< 0.092 U*	*< 0.066 U*	*< 0.12 U*	*< 0.040 U*
PA-16i	8/22/2023	N	Intermediate	PA-16I-082223	*< 0.092 U*	*< 0.066 U*	*< 0.12 U*	*< 0.040 U*
PA-17iR	8/22/2023	N	Intermediate	PA-17IR-082223	*< 0.092 U*	*< 0.066 U*	*< 0.12 U*	*< 0.040 U*
PA-17iR	8/22/2023	FD	Intermediate	DUP-01-082223	*< 0.092 U*	*< 0.066 U*	*< 0.12 U*	*< 0.040 U*
PA-32i	8/24/2023	N	Intermediate	PA-32I-082423	*< 0.092 U*	*< 0.066 U*	*< 0.12 U*	**0.055 j**
PA-44i	8/22/2023	N	Intermediate	PA-44I-082223	*< 0.092 U*	*< 0.066 U*	*< 0.12 U*	*< 0.040 U*
MWA-11i(d)	8/23/2023	N	Deep	MWA-11I(D)-082323	*< 0.092 U*	*< 0.066 U*	*< 0.12 U*	*< 0.040 U*
MWA-31i(d)	8/23/2023	N	Deep	MWA-31I(D)-082323	*< 0.41 U*	*< 0.26 U*	*< 0.36 U*	*< 0.22 U*
MWA-56d	8/23/2023	N	Deep	MWA-56D-082323	*< 4.1 U*	*< 2.6 U*	*< 3.6 U*	*< 2.2 U*
MWA-58d	8/23/2023	N	Deep	MWA-58D-082323	*< 2.1 U*	*< 1.3 U*	*< 1.8 U*	*< 1.1 U*
PA-18d	8/21/2023	N	Deep	PA-18D-082123	*< 0.41 U*	*< 0.26 U*	*< 0.36 U*	**0.28 j**
PA-19d	8/24/2023	N	Deep	PA-19D-082423	*< 21 U*	*< 13 U*	*< 18 U*	*< 11 U*
PA-20d	8/23/2023	N	Deep	PA-20D-082323	*< 0.41 U*	*< 0.26 U*	*< 0.36 U*	*< 0.22 U*
PA-20d	8/23/2023	FD	Deep	DUP-02-082323	*< 0.41 U*	*< 0.26 U*	*< 0.36 U*	*< 0.22 U*
PA-21d	8/23/2023	N	Deep	PA-21D-082323	*< 210 U*	*< 130 U*	*< 180 U*	*< 110 U*
PA-22d	8/23/2023	N	Deep	PA-22D-082323	*< 0.41 U*	*< 0.26 U*	*< 0.36 U*	*< 0.22 U*
PA-23d	8/22/2023	N	Deep	PA-23D-082223	*< 0.41 U*	*< 0.26 U*	*< 0.36 U*	*< 0.22 U*
PA-24d	8/22/2023	N	Deep	PA-24D-082223	*< 0.41 U*	*< 0.26 U*	*< 0.36 U*	*< 0.22 U*
PA-25d	8/22/2023	N	Deep	PA-25D-082223	*< 0.092 U*	*< 0.066 U*	*< 0.12 U*	*< 0.040 U*
PA-26d	8/22/2023	N	Deep	PA-26D-082223	*< 0.092 U*	*< 0.066 U*	*< 0.12 U*	*< 0.040 U*
PA-27d	8/22/2023	N	Deep	PA-27D-082223	*< 0.41 U*	*< 0.26 U*	*< 0.36 U*	*< 0.22 U*
PA-30d	8/24/2023	N	Deep	PA-30D-082423	*< 21 U*	*< 13 U*	*< 18 U*	*< 11 U*

Notes:
Bolded values indicate concentrations above the Method Detection Limit.
Shaded values indicate concentrations above the FSWP SHSC.
< = Compound not detected. Method Detection Limit shown.
µg/L = micrograms per liter
FD = Field Duplicate Sample
FSWP SHSC = Feasibility Study Work Plan Indirect Exposure Pathway Selected Hot Spot Criteria
N = Normal Environmental Sample
NE = Not Established
SW8260C analyses performed by TestAmerica - Seattle, WA of Seattle.

Qualifiers - Organic:
j = The analyte was positively identified below the RDL; associated numerical value is the approximate concentration of the analyte in the sample.
U = Analyte was analyzed for, but not detected above, the limit displayed.
UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.

Table 5
Additional Compounds Results
Arkema Quarter 3, 2023, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

				Analyte	Chloride	Perchlorate
				Unit	mg/L	µg/L
				FSWP SHSC (shaded values indicate results above the value shown)	230	1,800
Location ID	Sample Date	Sample Type	Aquifer Classification	Sample ID		
MWA-41	8/21/2023	N	Shallow	MWA-41-082123	**7.1**	*< 2.0 U*
MWA-63	8/23/2023	N	Shallow	MWA-63-082323	**17**	*< 2.0 U*
MWA-82	8/21/2023	N	Shallow	MWA-82-082123	**9.7**	**210**
PA-03	8/22/2023	N	Shallow	PA-03-082223	**4.5**	*< 2.0 U*
PA-04	8/22/2023	N	Shallow	PA-04-082223	**5.9**	*< 10 U*
PA-08	8/21/2023	N	Shallow	PA-08-082123	**53**	**17**
PA-09	8/21/2023	N	Shallow	PA-09-082123	**5.7**	*< 2.0 U*
PA-31	8/24/2023	N	Shallow	PA-31-082423	**4.6**	*< 4.0 U*
MWA-81i	8/21/2023	N	Intermediate	MWA-81I-082123	**19**	*< 2.0 U*
PA-10i	8/22/2023	N	Intermediate	PA-10I-082223	**53**	*< 4.0 U*
PA-15i	8/21/2023	N	Intermediate	PA-15I-082123	**41**	*< 10 U*
PA-16i	8/22/2023	N	Intermediate	PA-16I-082223	**35**	*< 4.0 U*
PA-17iR	8/22/2023	N	Intermediate	PA-17IR-082223	**8.8 J**	*< 2.0 U*
PA-17iR	8/22/2023	FD	Intermediate	DUP-01-082223	**32 J**	*< 10 U*
PA-32i	8/24/2023	N	Intermediate	PA-32I-082423	**71**	*< 20 U*
PA-44i	8/22/2023	N	Intermediate	PA-44I-082223	**370**	*< 10 U*
MWA-11i(d)	8/23/2023	N	Deep	MWA-11I(D)-082323	**830**	*< 10 U*
MWA-31i(d)	8/23/2023	N	Deep	MWA-31I(D)-082323	**27,000**	**98,000**
MWA-56d	8/23/2023	N	Deep	MWA-56D-082323	**14,000**	**14,000**
MWA-58d	8/23/2023	N	Deep	MWA-58D-082323	**20,000**	**50,000**
PA-18d	8/21/2023	N	Deep	PA-18D-082123	**80**	*< 10 U*
PA-19d	8/24/2023	N	Deep	PA-19D-082423	**320**	*< 20 U*
PA-20d	8/23/2023	N	Deep	PA-20D-082323	**840**	*< 10 U*
PA-20d	8/23/2023	FD	Deep	DUP-02-082323	**840**	*< 10 U*
PA-21d	8/23/2023	N	Deep	PA-21D-082323	**330**	*< 100 U*
PA-22d	8/23/2023	N	Deep	PA-22D-082323	**4,800**	**13,000**
PA-23d	8/22/2023	N	Deep	PA-23D-082223	**29,000**	*< 400 U*
PA-24d	8/22/2023	N	Deep	PA-24D-082223	**31,000**	*< 400 U*
PA-25d	8/22/2023	N	Deep	PA-25D-082223	**24**	*< 2.0 U*
PA-26d	8/22/2023	N	Deep	PA-26D-082223	**74**	*< 2.0 U*
PA-27d	8/22/2023	N	Deep	PA-27D-082223	**660**	*< 10 U*
PA-30d	8/24/2023	N	Deep	PA-30D-082423	**320**	*< 20 U*

Notes:
Bolded values indicate concentrations above the Method Detection Limit.
Shaded values indicate concentrations above the FSWP SHSC.
< = Compound not detected. Method Detection Limit shown.
µg/L = micrograms per liter
mg/L = milligrams per liter
FD = Field Duplicate Sample
FSWP SHSC = Feasibility Study Work Plan Indirect Exposure Pathway Selected Hot Spot Criteria
N = Normal Environmental Sample
E300 analyses performed by TestAmerica - Seattle, WA of Seattle.
E314.0 analyses performed by TestAmerica - Sacramento, CA of West Sacramento.

Qualifiers - Organic:
J = The concentrations of the sample pair are outside of the duplicate criteria limits and associated results are qualified as estimates.
U = Analyte was analyzed for, but not detected above, the limit displayed.

FIGURES

DRAWN BY: Kelly Lyons DATE: 5/24/2023

\\SCUSPRDGISFS01\Data\US\Projects\S-UT\total\Arkema_Portland\Groundwater Monitoring Report\Maps\2021 Q1\Figure 1 Site Layout.mxd REVISED: 05/24/2023 SCALE: 1:2,040 when printed at 11x17

Willamette River

GCC1 & Proximal Wells

GCC2

GCC3

GCC4 & Proximal Wells

GCC5 & Proximal Wells

GCC6 & Proximal Wells

Well Distal from BW and GCCs

Groundwater Treatment Plant

Sand Filter Basin

Detention Basin

RP-02-31

RP-10-30

MWA-63 MWA-64i MWA-8i MWA-2 MWA-61 PA-19d PA-05 RW-23 PA-36 PA-37i RW-24i PA-11i RW-7 PA-35 EW-3 EW-4 MWA-84 RW-5 RW-6i PA-34i PA-33 PA-31 PA-32i EW-2 EW-1 MWA-83 PA-17iR PA-27d PA-03 PA-10i PA-04 PA-18d RW-9i RW-8 PA-30d MWA-85 MWA-66i PA-21d EW-6 RW-10 PA-06 RW-11i MWA-6r MWA-16i PA-12i EW-5 PA-20d EW-7 EW-8 RW-12 RW-13i MWA-86 MWA-42 MWA-54i MWA-15R MWA-22 MWA-11i(d) MWA-24 MWA-40 MWA-33 MWA-70i MWA-39 MWA-23 MWA-73 MWA-12i(d) MWA-7(i) MWA-71 MWA-74i MWA-77g MWA-72 MWA-75i MWA-76g

MWA-32i MWA-30 MWA-31i(d) MWA-47 PA-29i PA-24d MWA-49i MWA-46 MWA-56d MWA-58d MWA-34i MWA-19 MWA-18 MWA-51i RW-17 RW-16i PA-22d RW-18 RW-20 RW-21i MWA-53i MWA-29 PA-14i PA-23d PA-07 PA-41 RW-16i RW-15 PA-13i PA-28 EW-9 EW-11 EW-10 MWA-88 EW-12 PA-39i PA-40i EW-13 MWA-43 PA-38 MWA-89 PA-42 RW-22 PA-16i EW-14 PA-15i PA-25d PA-09 PA-26d PA-08 PA-44i RW-26i PA-43 MWA-81i MWA-41 RW-25 MWA-82 MW-30 MW-29 RW-14 MWA-20 MWA-87

Legend

- Shallow Zone Monitoring Well
- Intermediate Zone Monitoring Well
- Deep Zone Monitoring Well
- Gravel Zone Monitoring Well
- Shallow Zone Piezometer
- Intermediate Zone Piezometer
- Deep Zone Piezometer
- Shallow Zone Recovery Well
- Intermediate Zone Recovery Well
- Trench Extraction Well
- Barrier Wall Alignment
- Parcel and Property Boundaries
- Extraction Trench (Not To Scale)

Notes:
GCC= Gradient Control Cluster.
GWBW = Ground water barrier wall.

N

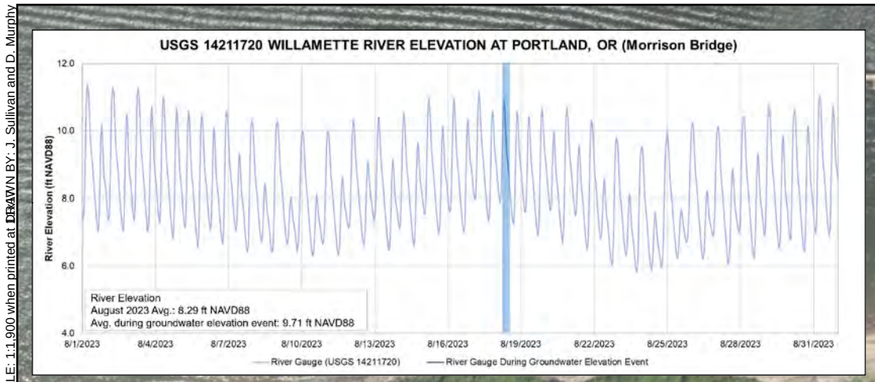
0 170 340

Feet

Source: City of Portland Aerial Imagery, flown Summer 2021 NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl

Figure 1
Site Layout
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

Environmental Resources Management
www.erm.com
ERM



Legend

- Shallow Zone Piezometer
- Shallow Zone Monitoring Well
- Active Recovery Well; Not Used During Contouring
- Shallow-Intermediate Zone Monitoring Well
- 27.70 Groundwater Elevation (ft NAVD88)
- Shallow Zone Groundwater Contours (ft NAVD88) Dashed where Inferred
- Target Capture Zone
- Barrier Wall Alignment
- Extraction Trench (Not To Scale)

Notes:
* Value not used for contouring.
Water levels collected August 18, 2023.
ft NAVD88: feet North American Vertical Datum of 1988.
Aerial Photo: City of Portland, Summer 2017.

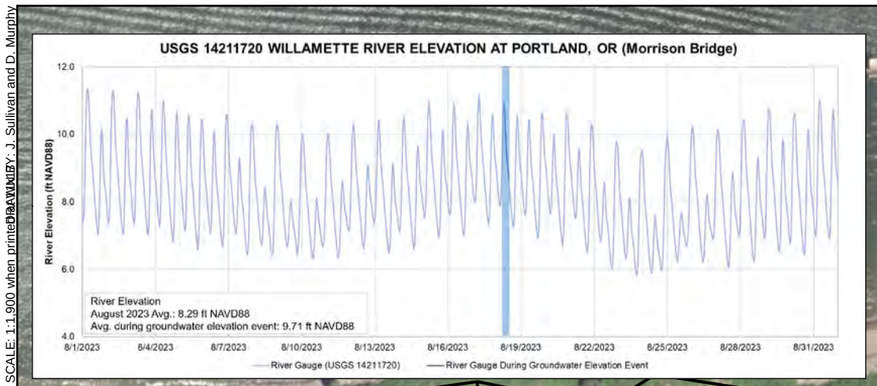
N

0 160 320
Feet

NAD 1983 StatePlane Oregon North FIPS 3601 Feet Intl

Figure 2
August 2023 Shallow Zone Groundwater Contours
Quarter 3, 2023
Groundwater Source Control Measures
Arkema Inc.
Portland, Oregon

Environmental Resources Management
www.erm.com



Legend

- Intermediate Zone Piezometer
- Intermediate Zone Monitoring Well
- Shallow-Intermediate Zone Monitoring Well
- 27.70 Groundwater Elevation (ft NAVD88)
- Intermediate Zone Groundwater Contours (ft NAVD88) Dashed where Inferred
- Target Capture Zone
- Barrier Wall Alignment
- Extraction Trench (Not To Scale)

Notes:
* Value not used for contouring.
Water levels collected August 18, 2023.
ft NAVD88: feet North American Vertical Datum of 1988.
Aerial Photo: City of Portland, Summer 2017.

N

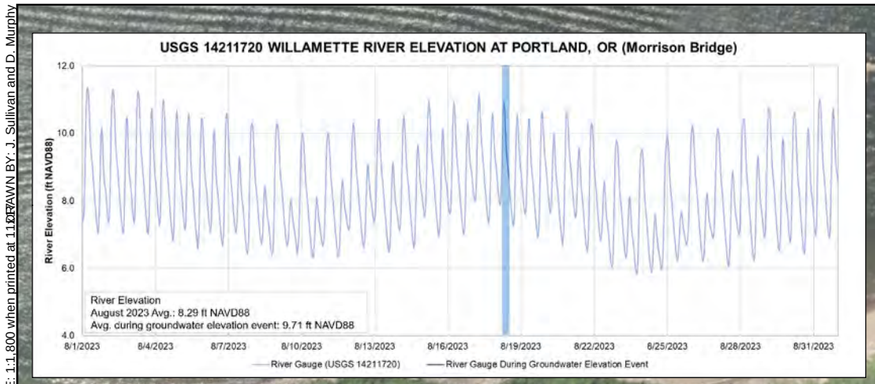
0 160 320
Feet

Figure 3
August 2023 Intermediate Zone Groundwater Contours
Quarter 3, 2023
Groundwater Source Control Measures
Arkema Inc.
Portland, Oregon

Environmental Resources Management
www.erm.com

NAD 1983 StatePlane Oregon North FIPS 3601 Feet Intl

\\SCUSPRDGISFS01\Data\US\Projects\S-U\Total\Arkema_Portland\Groundwater Source Control\maps\PMP\GWET PMP 2023Q3\Figure 3 August 2023 Intermediate Zone.mxd REVISED: 09/21/2023, SCALE: 1:1,900 when printed ON LANDSCAPE: J. Sullivan and D. Murphy



Legend

- Deep Zone Piezometer
- Deep Zone Monitoring Well
- Gravel Zone Monitoring Well
- 27.70 Groundwater Elevation (ft NAVD88)
- Deep Zone Groundwater Contours (ft NAVD88) Dashed where Inferred
- Target Capture Zone
- Barrier Wall Alignment

Notes:
* Value not used for contouring.
Gravel zone wells not used in contouring.
Water levels collected August 18, 2023.
ft NAVD88: feet North American Vertical Datum of 1988.
Aerial Photo: City of Portland, Summer 2017.

N

0 150 300
Feet

Figure 4
August 2023 Deep Zone Groundwater Contours
Quarterly 3, 2023
Groundwater Source Control Measures
Arkema Inc.
Portland, Oregon

Environmental Resources Management
www.erm.com

NAD 1983 StatePlane Oregon North FIPS 3601 Feet Intl

\\SCUSPROG\SF601\Data\US\Projects\S-U\Total\Arkema_Portland\Groundwater Source Control\maps\PMP\GWET PMP 202308\Figure 4 August 2023 Deep Zone.mxd REVISED: 09/21/2023, SCALE: 1:1,800 when printed at 11"x17" DRAWN BY: J. Sullivan and D. Murphy

M:\US\Projects\S-UT\Total\Arkema_Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working\Maps\2023 Q3\Figure 5_Chlorobenzene Shallow.mxd REVISED: 11/02/2023 SCALE: 1:1,440 when printed at 11x17 DRAWN BY: Jake Sullivan DATE: 11/2/2023

Willamette River

MWA-46 NS
MWA-19 NS
MWA-30 NS
MWA-47 NS
MWA-69 NS
MWA-61 NS
MWA-2 NS
MWA-18 NS
PA-28 NS
PA-07 NS
MWA-29 NS
PA-05 NS
PA-06 NS
PA-36 NS
MWA-20 NS
MWA-63 ND < 0.44 U
MWA-15r NS
MWA-42 NS
PA-38 NS
PA-42 NS
Groundwater Treatment Plant
PA-08 ND < 0.06 U
PA-09 ND < 0.06 U
PA-03 ND < 0.06 U
PA-04 ND < 0.06 U
PA-31 ND < 0.06 U
MWA-22 NS
MWA-41 ND < 0.06 U
MWA-24 NS
MWA-82 ND < 0.06 U
MWA-40 NS
MWA-33 NS

Legend

- > 6,400 ug/L
- >= 640 - 6,400 ug/L
- >= 64 - < 640 ug/L
- < 64 ug/L
- Not Detected
- Not Sampled
- Target Capture Zone
- Barrier Wall Alignment
- Parcel and Property Boundaries
- Shallow Zone Groundwater Contours (ft NAVD88) August 2023

Notes:
Samples collected August 21–24, 2023
All results in micrograms per liter (ug/L)
Screening Criteria for Chlorobenzene = 64 ug/L
See Table 4 for definition of qualifiers
ND: Non-Detect

N

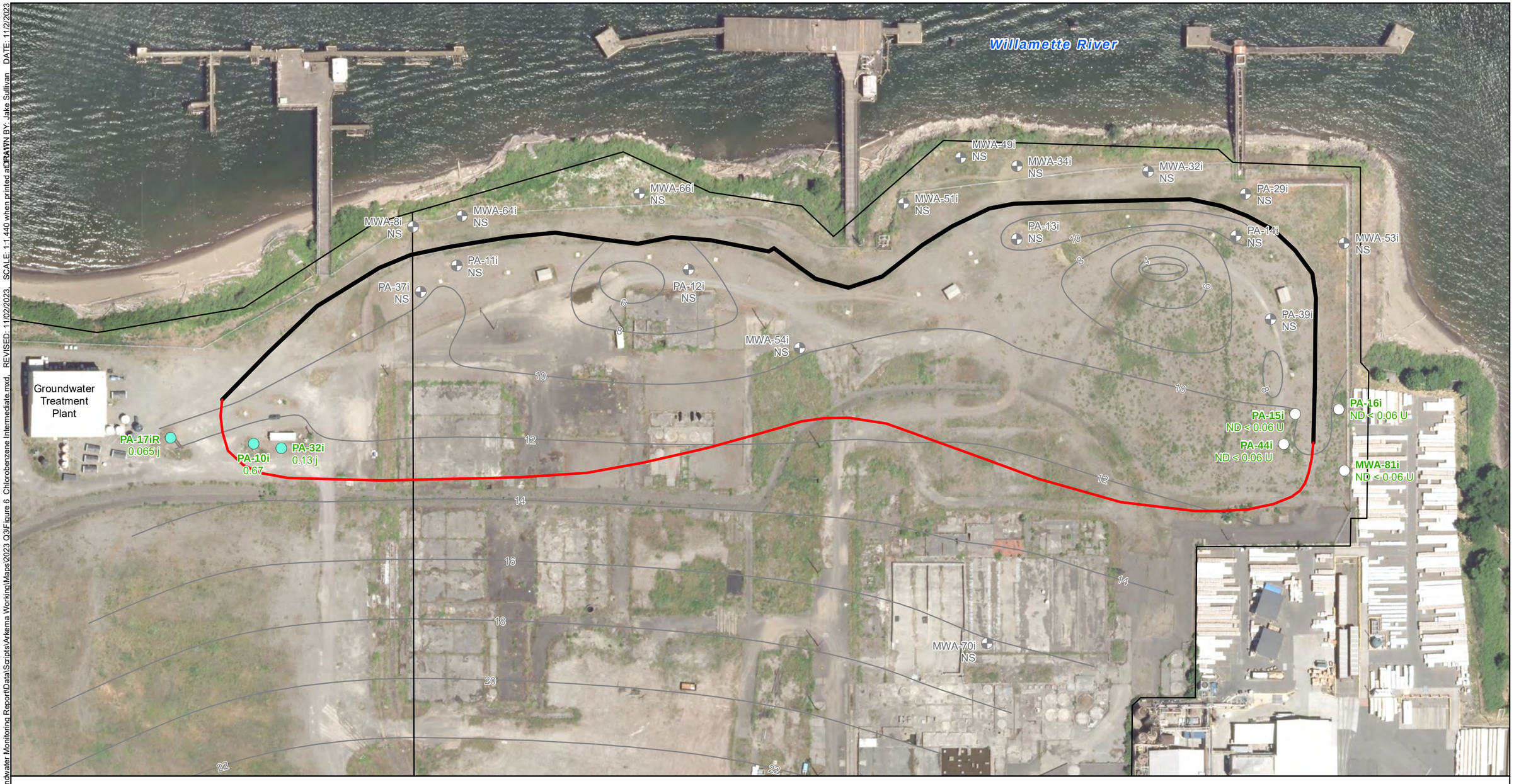
0 120 240
Feet

Figure 5
Chlorobenzene Groundwater Concentrations
Shallow Zone
Quarter 3, 2023
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

Environmental Resources Management
www.erm.com

Source: City of Portland Aerial Imagery, flown Summer 2017; NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl

M:\US\Projects\S-U\Total\Arkema_Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working\Maps\2023 Q3\Figure 6_Chlorobenzene Intermediate.mxd REVISED: 11/02/2023 SCALE: 1:1,440 when printed at DRAWN BY: Jake Sullivan DATE: 11/2/2023



Legend

- > 6,400 ug/L
- >= 640 - 6,400 ug/L
- >= 64 - < 640 ug/L
- < 64 ug/L
- Not Detected
- Not Sampled
- Target Capture Zone
- Barrier Wall Alignment
- Parcel and Property Boundaries
- Intermediate Zone Groundwater Contours (ft NAVD88) August 2023

Notes:
Samples collected August 21–24, 2023
All results in micrograms per liter (ug/L)
Screening Criteria for Chlorobenzene = 64 ug/L
See Table 4 for definition of qualifiers
ND: Non-Detect

N

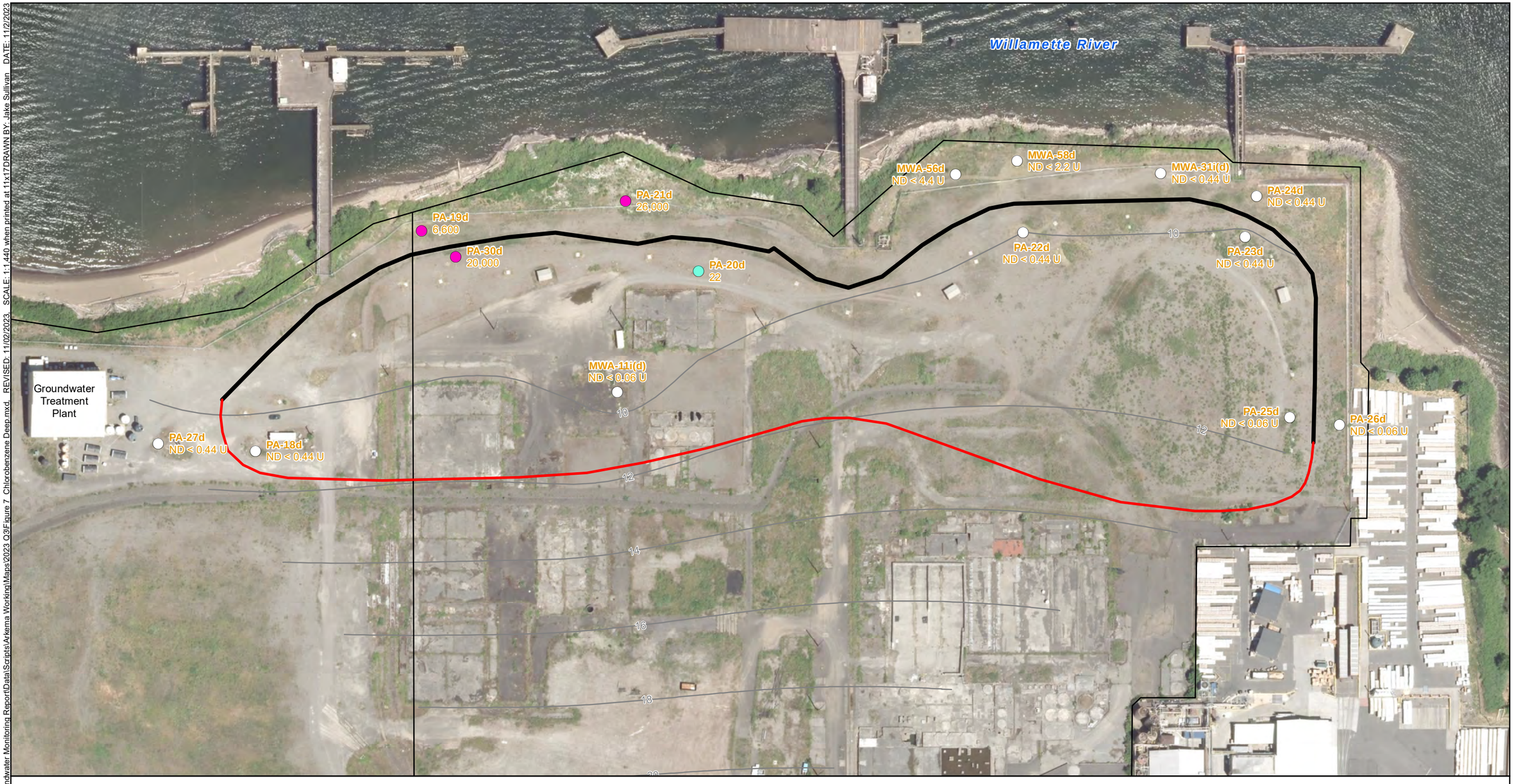
0 120 240
Feet

Source: City of Portland Aerial Imagery, flown Summer 2017; NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl

Figure 6
Chlorobenzene Groundwater Concentrations
Intermediate Zone
Quarter 3, 2023
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

Environmental Resources Management
www.erm.com

M:\US\Projects\S-U\Total\Arkema_Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working\Maps\2023 Q3\Figure 7_Chlorobenzene Deep.mxd REVISED: 11/02/2023 SCALE: 1:1,440 when printed at 11x17 DRAWN BY: Jake Sullivan DATE: 11/2/2023



Legend

- > 6,400 ug/L
- >= 640 - 6,400 ug/L
- >= 64 - < 640 ug/L
- < 64 ug/L
- Not Detected
- Target Capture Zone
- Barrier Wall Alignment
- Parcel and Property Boundaries
- Deep Zone Groundwater Contours (ft NAVD88) August 2023

Notes:
Samples collected August 21–24, 2023
All results in micrograms per liter (ug/L)
Screening Criteria for Chlorobenzene = 64 ug/L
See Table 4 for definition of qualifiers
ND: Non-Detect

N

0 120 240
Feet

Figure 7
Chlorobenzene Groundwater Concentrations
Deep Zone
Quarter 3, 2023
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

Environmental Resources Management
www.erm.com

Source: City of Portland Aerial Imagery, flown Summer 2017; NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl

Legend

- > 1,400 ug/L
- >= 140 - 1,400 ug/L
- >= 14 - < 140 ug/L
- < 14 ug/L
- Not Detected
- Not Sampled
- Target Capture Zone
- Barrier Wall Alignment
- Parcel and Property Boundaries
- Shallow Zone Groundwater Contours (ft NAVD88) August 2023

Notes:
Samples collected August 21–24, 2023
All results in micrograms per liter (ug/L)
Screening Criteria for 1,2-Dichlorobenzene = 14 ug/L
See Table 4 for definition of qualifiers
ND: Non-Detect

Figure 8
1,2-Dichlorobenzene Groundwater Concentrations
Shallow Zone
Quarter 3, 2023
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

Environmental Resources Management
www.erm.com
ERM

Source: City of Portland Aerial Imagery, flown Summer 2017; NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl

M:\US\Projects\S-U\Total\Arkema Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working\Maps\2023 Q3\Figure 8 12-Dichlorobenzene Shallow.mxd. REVISED: 11/02/2023. SCALE: 1:1,440 when printed at DRAWN BY: Jake Sullivan DATE: 11/2/2023

M:\US\Projects\S-U\Total\Arkema_Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working\Maps\2023 Q3\Figure 9_12-Dichlorobenzene Intermediate.mxd REVISED: 11/02/2023 SCALE: 1:1,440 when printed at 11" DRAWN BY: Jake Sullivan DATE: 11/2/2023

Willamette River

Groundwater Treatment Plant

MWA-49i NS
MWA-34i NS
MWA-32i NS
MWA-66i NS
MWA-64i NS
MWA-8i NS
MWA-51i NS
PA-29i NS
PA-13i NS
PA-14i NS
MWA-53i NS
PA-11i NS
PA-37i NS
PA-12i NS
PA-39i NS
MWA-54i NS
MWA-70i NS

PA-17iR ND < 0.038 U
PA-10i 0.2 j
PA-32i 0.15 j
PA-15i ND < 0.038 U
PA-44i ND < 0.038 U
PA-16i ND < 0.038 U
MWA-81i ND < 0.038 U

6 8 10 12 14 16 18 20 22

Legend

- > 1,400 ug/L
- >= 140 - 1,400 ug/L
- >= 14 - < 140 ug/L
- < 14 ug/L
- Not Detected
- Not Sampled
- Target Capture Zone
- Barrier Wall Alignment
- Parcel and Property Boundaries
- Intermediate Zone Groundwater Contours (ft NAVD88) August 2023

Notes:
Samples collected August 21–24, 2023
All results in micrograms per liter (ug/L)
Screening Criteria for 1,2-Dichlorobenzene = 14 ug/L
See Table 4 for definition of qualifiers
ND: Non-Detect

N

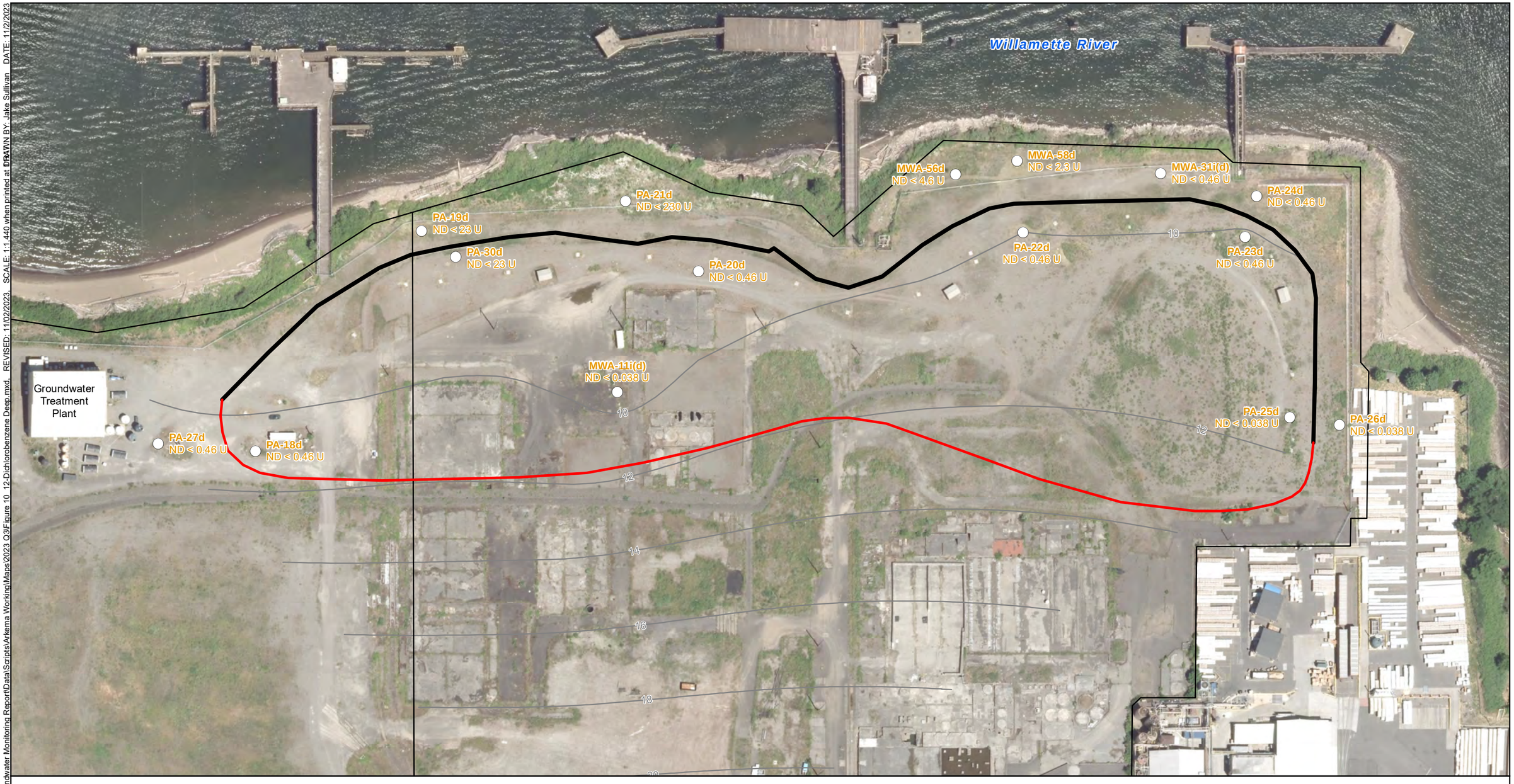
0 120 240
Feet

Source: City of Portland Aerial Imagery, flown Summer 2017; NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl

Figure 9
1,2-Dichlorobenzene Groundwater Concentrations
Intermediate Zone
Quarter 3, 2023
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

Environmental Resources Management
www.erm.com

M:\US\Projects\S-U\Total\Arkema_Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working\Maps\2023 Q3\Figure 10_12-Dichlorobenzene Deep.mxd REVISED: 11/02/2023 SCALE: 1:1,440 when printed at DRAWN BY: Jake Sullivan DATE: 11/2/2023



Legend

- > 1,400 ug/L
- >= 140 - 1,400 ug/L
- >= 14 - < 140 ug/L
- < 14 ug/L
- Not Detected
- Target Capture Zone
- Barrier Wall Alignment
- Parcel and Property Boundaries
- Deep Zone Groundwater Contours (ft NAVD88) August 2023

Notes:
Samples collected August 21–24, 2023
All results in micrograms per liter (ug/L)
Screening Criteria for 1,2-Dichlorobenzene = 14 ug/L
See Table 4 for definition of qualifiers
ND: Non-Detect

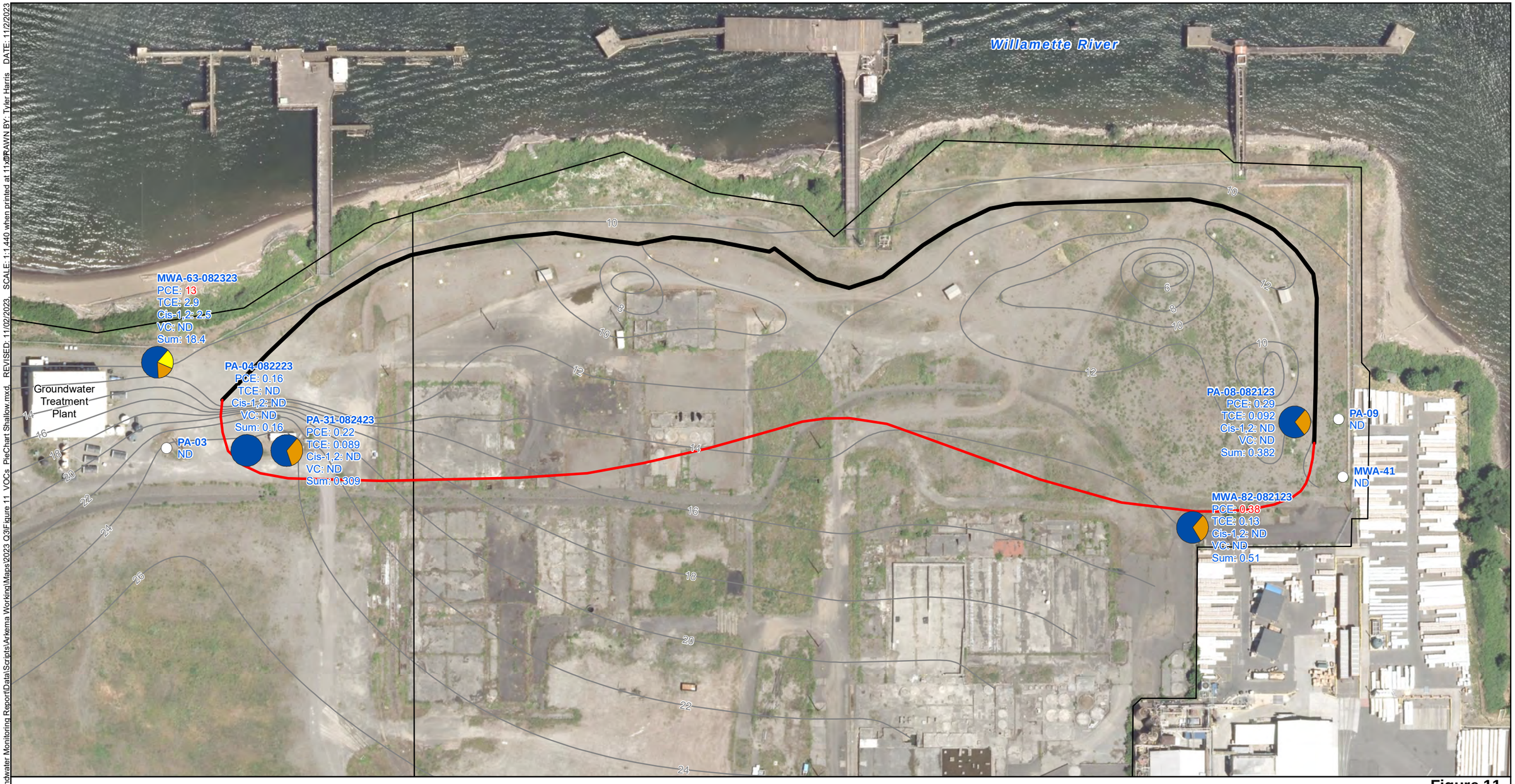
N

0 120 240
Feet

Source: City of Portland Aerial Imagery, flown Summer 2017; NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl

Figure 10
1,2-Dichlorobenzene Groundwater Concentrations
Deep Zone
Quarter 3, 2023
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

Environmental Resources Management
www.erm.com



Legend

Molar Ratio

- Tetrachloroethene
- Trichloroethene
- cis-1,2-Dichloroethene
- Vinyl chloride

- Not Detected
- Target Capture Zone
- Barrier Wall Alignment
- Parcel and Property Boundaries
- Shallow Zone Groundwater Contours (ft NAVD88) August 2023

Notes:
Samples collected August 21–24, 2023.
All results in micrograms per liter (µg/L).
Results in red exceed screening criteria.
Screening criteria for tetrachloroethene (PCE) = 0.33 µg/L
Screening criteria for trichloroethene (TCE) = 3 µg/L
Screening criteria for cis-1,2-dichloroethene (Cis-1,2) = 590 µg/L
Screening criteria for vinyl chloride (VC) = 0.24 µg/L.
ND: Non-Detect

N

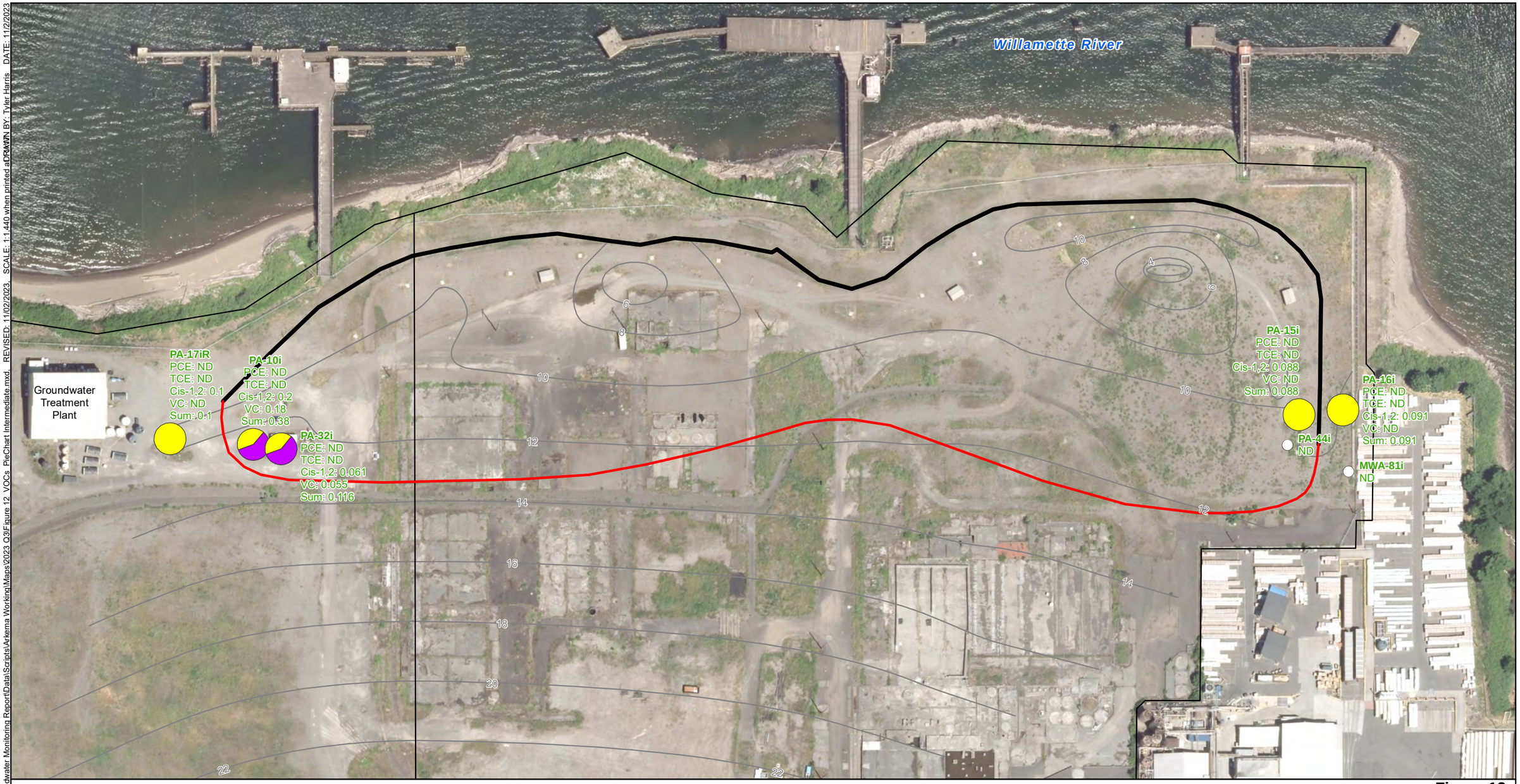
0 120 240
Feet

Figure 11
PCE, TCE, cis-1,2-DCE and Vinyl Chloride Groundwater Concentrations Shallow Zone
Quarter 3, 2023
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

Environmental Resources Management
www.erm.com

Source: City of Portland Aerial Imagery, flown Summer 2017; NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl

M:\US\Projects\S-U\Total\Arkema_Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working\Maps\2023 Q3\Figure 11_VOCs_PieChart Shallow.mxd REVISED: 11/02/2023 SCALE: 1:1,440 when printed at 11x17 DRAWN BY: Tyler Harris DATE: 11/2/2023



Legend

Molar Ratio

- Tetrachloroethene
- Trichloroethene
- cis-1,2-Dichloroethene
- Vinyl chloride

- Not Detected
- Target Capture Zone
- Barrier Wall Alignment
- Parcel and Property Boundaries
- Intermediate Zone Groundwater Contours (ft NAVD88) August 2023

Notes:
Samples collected August 21–24, 2023.
All results in micrograms per liter (µg/L).
Results in red exceed screening criteria.
Screening criteria for tetrachloroethene (PCE) = 0.33 µg/L
Screening criteria for trichloroethene (TCE) = 3 µg/L
Screening criteria for cis-1,2-dichloroethene (Cis-1,2) = 590 µg/L
Screening criteria for vinyl chloride (VC) = 0.24 µg/L.
ND: Non-Detect

N

0 120 240
Feet

Source: City of Portland Aerial Imagery, flown Summer 2017; NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl

Figure 12
PCE, TCE, cis-1,2-DCE and Vinyl Chloride Groundwater Concentrations Intermediate Zone
Quarter 3, 2023
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

Environmental Resources Management
www.erm.com

M:\US\Projects\S-U\Total\Arkema_Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working\Maps\2023 Q3\Figure 13_VOCs_PieChart_Deep.mxd REVISED: 11/02/2023 SCALE: 1:1,440 when printed at 11x17DRAWN BY: Tyler Harris DATE: 11/2/2023

Willamette River

PA-19d
PCE: ND
TCE: ND
Cis-1,2: 24
VC: ND
Sum: 24

PA-21d
ND

PA-30d
ND

PA-20d
ND

MWA-56d
ND

MWA-58d
ND

MWA-31i(d)
ND

PA-24d
ND

PA-22d
ND

PA-23d
ND

MWA-11i(d)
PCE: ND
TCE: ND
Cis-1,2: 0.25
VC: ND
Sum: 0.25

PA-27d
PCE: ND
TCE: ND
Cis-1,2: 0.49
VC: ND
Sum: 0.49

PA-18d
PCE: ND
TCE: ND
Cis-1,2: ND
VC: 0.28
Sum: 0.28

PA-25d
ND

PA-26d
ND

Groundwater Treatment Plant

10
12
14
16
18

Legend

Molar Ratio

- Tetrachloroethene
- Trichloroethene
- cis-1,2-Dichloroethene
- Vinyl chloride

- Not Detected
- Target Capture Zone
- Barrier Wall Alignment
- Parcel and Property Boundaries
- Deep Zone Groundwater Contours (ft NAVD88) August 2023

Notes:
Samples collected August 21–24, 2023.
All results in micrograms per liter (µg/L).
Results in red exceed screening criteria.
Screening criteria for tetrachloroethene (PCE) = 0.33 µg/L
Screening criteria for trichloroethene (TCE) = 3 µg/L
Screening criteria for cis-1,2-dichloroethene (Cis-1,2) = 590 µg/L
Screening criteria for vinyl chloride (VC) = 0.24 µg/L.
ND: Non-Detect

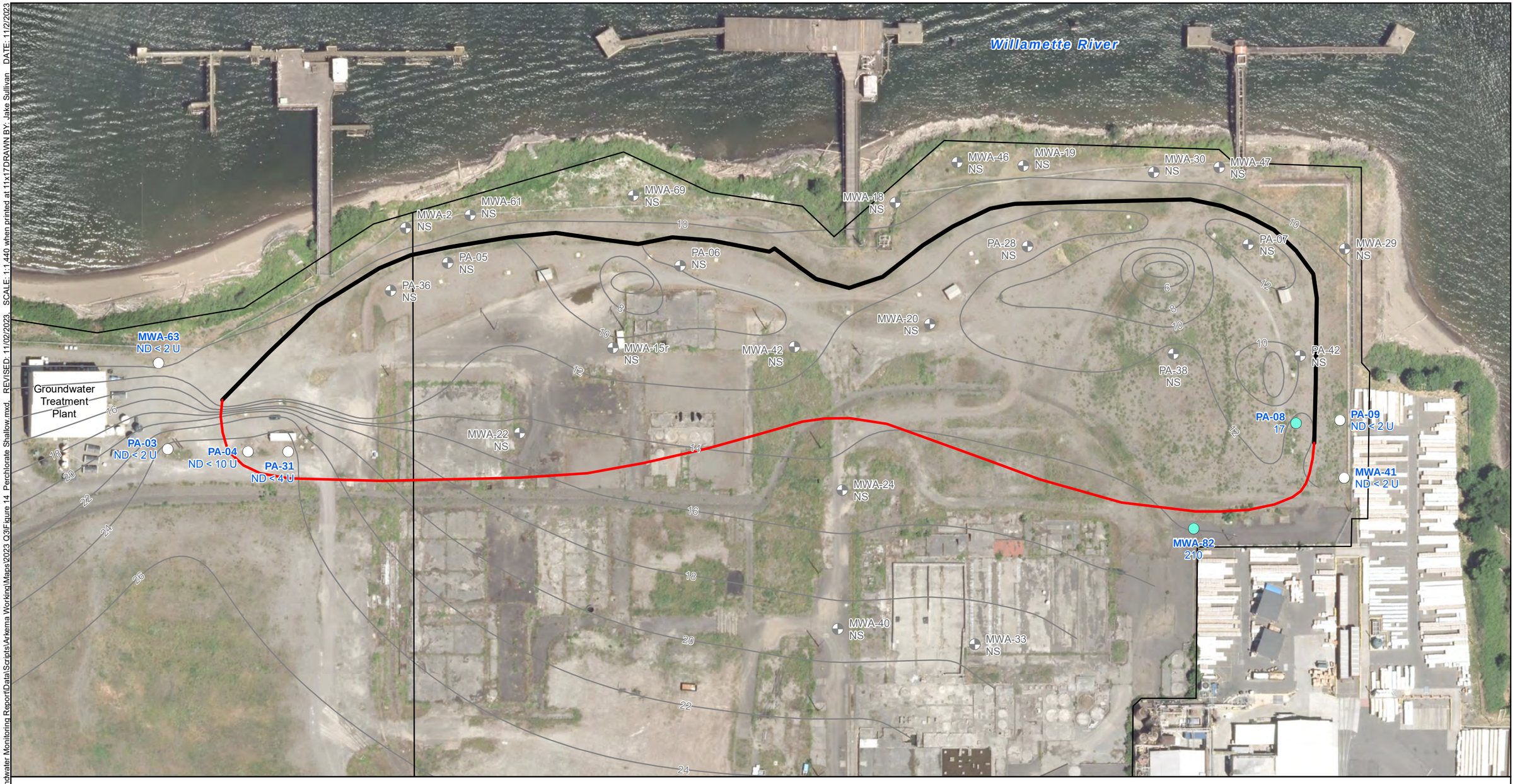
N

0 120 240
Feet

Source: City of Portland Aerial Imagery, flown Summer 2017; NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl

Figure 13
PCE, TCE, cis-1,2-DCE and Vinyl Chloride Groundwater Concentrations Deep Zone
Quarter 3, 2023
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

Environmental Resources Management
www.erm.com



Legend

- > 180,000 ug/L
- >= 18,000 - 180,000 ug/L
- >= 1,800 - < 18,000 ug/L
- < 1,800 ug/L
- Not Detected
- Not Sampled
- Target Capture Zone
- Barrier Wall Alignment
- Parcel and Property Boundaries
- Shallow Zone Groundwater Contours (ft NAVD88) August 2023

Notes:
Samples collected August 21–24, 2023
All results in micrograms per liter (ug/L)
Screening Criteria for Perchlorate = 1,800 ug/L
See Table 5 for definition of qualifiers
ND: Non-Detect

N

0 120 240
Feet

Figure 14
Perchlorate Groundwater Concentrations
Shallow Zone
Quarter 3, 2023
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

Environmental Resources Management
www.erm.com

Source: City of Portland Aerial Imagery, flown Summer 2017; NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl

M:\US\Projects\S-U\Total\Arkema_Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working\Maps\2023 Q3\Figure 14_Perchlorate Shallow.mxd REVISED: 11/02/2023 SCALE: 1:1,440 when printed at 11x17 DRAWN BY: Jake Sullivan DATE: 11/2/2023

M:\US\Projects\S-U\Total\Arkema_Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working\Maps\2023 Q3\Figure 15_Perchlorate Intermediate.mxd REVISED: 11/02/2023 SCALE: 1:1,440 when printed at 11 DRAWN BY: Jake Sullivan DATE: 11/2/2023

Willamette River

MWA-49i NS
MWA-34i NS
MWA-32i NS
PA-29i NS
MWA-66i NS
MWA-64i NS
MWA-8i NS
MWA-51i NS
PA-13i NS
PA-14i NS
MWA-53i NS
PA-11i NS
PA-37i NS
PA-12i NS
PA-39i NS
MWA-54i NS
MWA-70i NS

Groundwater Treatment Plant

PA-17iR ND < 2 U
PA-10i ND < 4 U
PA-32i ND < 20 U
PA-15i ND < 10 U
PA-44i ND < 10 U
PA-16i ND < 4 U
MWA-81i ND < 2 U

6 8 10 12 14 16 18 20 22

Legend

- > 180,000 ug/L
- >= 18,000 - 180,000 ug/L
- >= 1,800 - < 18,000 ug/L
- < 1,800 ug/L
- Not Detected
- Not Sampled
- Target Capture Zone
- Barrier Wall Alignment
- Parcel and Property Boundaries
- Intermediate Zone Groundwater Contours (ft NAVD88) August 2023

Notes:
Samples collected August 21–24, 2023
All results in micrograms per liter (ug/L)
Screening Criteria for Perchlorate = 1,800 ug/L
See Table 5 for definition of qualifiers
ND: Non-Detect

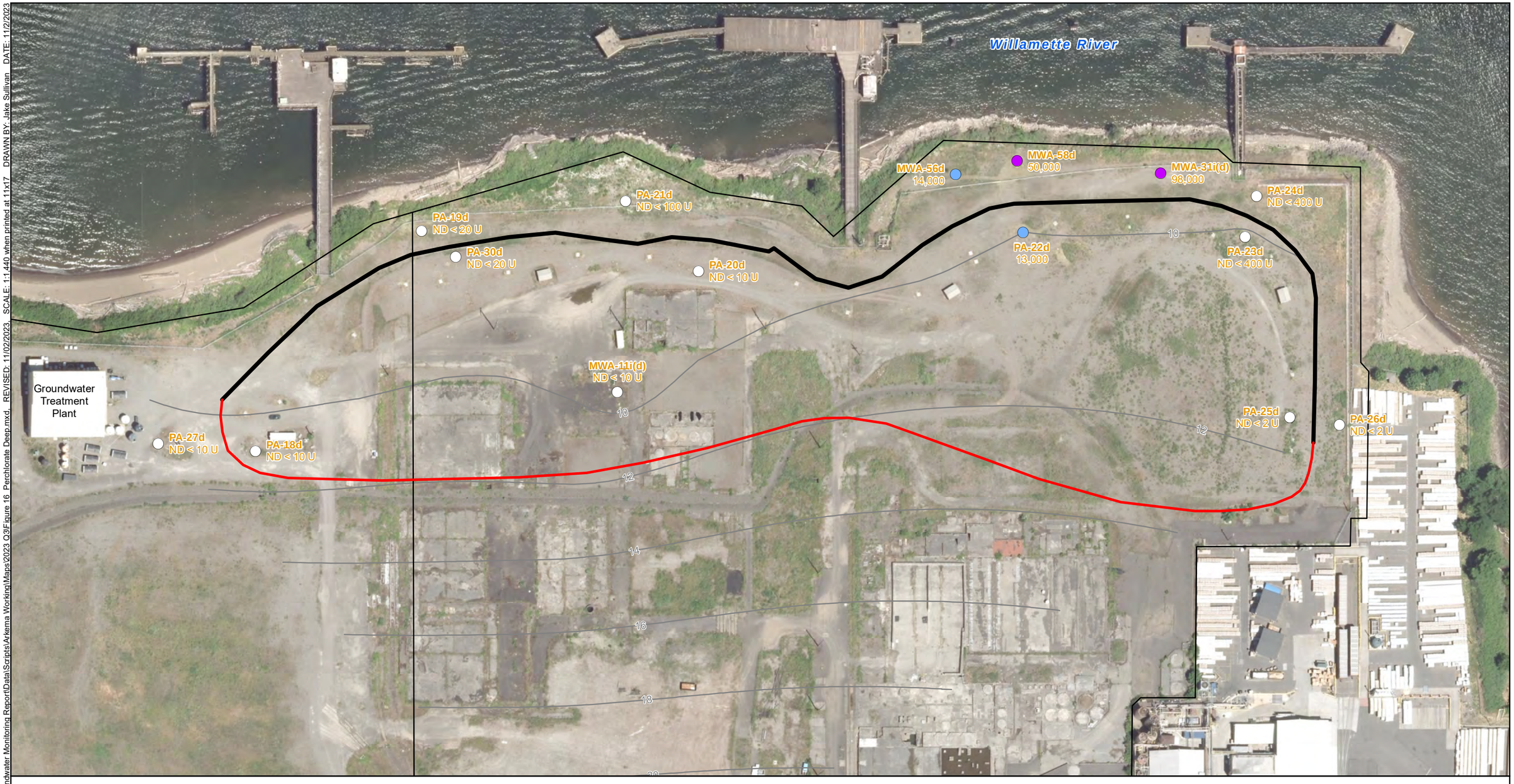
N

0 120 240
Feet

Source: City of Portland Aerial Imagery, flown Summer 2017; NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl

Figure 15
Perchlorate Groundwater Concentrations
Intermediate Zone
Quarter 3, 2023
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

Environmental Resources Management
www.erm.com



Legend

- > 180,000 ug/L
- >= 18,000 - 180,000 ug/L
- >= 1,800 - < 18,000 ug/L
- < 1,800 ug/L
- Not Detected
- Target Capture Zone
- Barrier Wall Alignment
- Parcel and Property Boundaries
- Deep Zone Groundwater Contours (ft NAVD88) August 2023

Notes:
Samples collected August 21–24, 2023
All results in micrograms per liter (ug/L)
Screening Criteria for Perchlorate = 1,800 ug/L
See Table 5 for definition of qualifiers
ND: Non-Detect

N

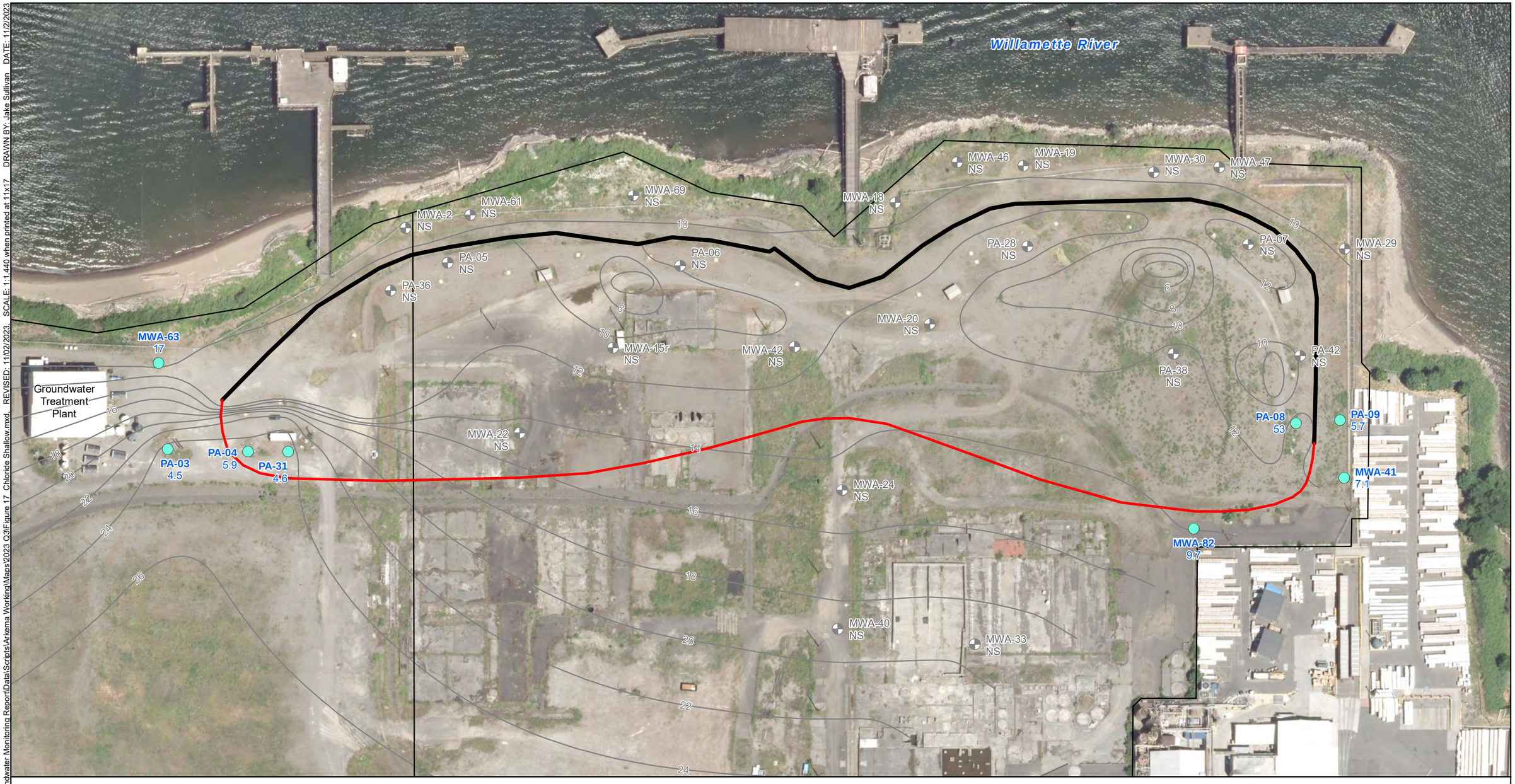
0 120 240
Feet

Figure 16
Perchlorate Groundwater Concentrations
Deep Zone
Quarter 3, 2023
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

Environmental Resources Management
www.erm.com

Source: City of Portland Aerial Imagery, flown Summer 2017; NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl

M:\USI\Projects\S-U\Total\Arkema_Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working\Maps\2023 Q3\Figure 16_Perchlorate Deep.mxd REVISED: 11/02/2023 SCALE: 1:1,440 when printed at 11x17 DRAWN BY: Jake Sullivan DATE: 11/2/2023



Legend

- > 23,000 mg/L
- >= 2,300 - 23,000 mg/L
- >= 230 - < 2,300 mg/L
- < 230 mg/L
- Not Detected
- Not Sampled
- Target Capture Zone
- Barrier Wall Alignment
- Parcel and Property Boundaries
- Shallow Zone Groundwater Contours (ft NAVD88) August 2023

Notes:
Samples collected August 21–24, 2023
All results in milligrams per liter (mg/L)
Screening Criteria for Chloride = 230 mg/L
See Table 5 for definition of qualifiers

N

0 120 240
Feet

Figure 17
Chloride Groundwater Concentrations
Shallow Zone
Quarter 3, 2023
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

Environmental Resources Management
www.erm.com

Source: City of Portland Aerial Imagery, flown Summer 2017; NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl

M:\US\Projects\S-U\Total\Arkema_Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working\Maps\2023 Q3\Figure 17_Chloride Shallow.mxd, REVISED: 11/02/2023, SCALE: 1:1,440 when printed at 11x17, DRAWN BY: Jake Sullivan, DATE: 11/2/2023

M:\US\Projects\S-U\Total\Arkema_Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working\Maps\2023 Q3\Figure 18_Chloride Intermediate.mxd REVISED: 11/02/2023 SCALE: 1:1,440 when printed at 11x17 DRAWN BY: Jake Sullivan DATE: 11/2/2023

Willamette River

Groundwater Treatment Plant

MWA-49i NS
MWA-34i NS
MWA-32i NS
PA-29i NS
MWA-66i NS
MWA-64i NS
MWA-8i NS
MWA-51i NS
PA-13i NS
PA-14i NS
MWA-53i NS
PA-11i NS
PA-37i NS
PA-12i NS
PA-39i NS
MWA-54i NS
MWA-70i NS

PA-17iR 32 J
PA-10i 53
PA-32i 71
PA-15i 41
PA-16i 35
PA-44i 370
MWA-81i 19

6 8 10 12 14 16 18 20 22

Legend

- > 23,000 mg/L
- >= 2,300 - 23,000 mg/L
- >= 230 - < 2,300 mg/L
- < 230 mg/L
- Not Detected
- Not Sampled
- Target Capture Zone
- Barrier Wall Alignment
- Parcel and Property Boundaries
- Intermediate Zone Groundwater Contours (ft NAVD88) August 2023

Notes:
Samples collected August 21–24, 2023
All results in milligrams per liter (mg/L)
Screening Criteria for Chloride = 230 mg/L
See Table 5 for definition of qualifiers

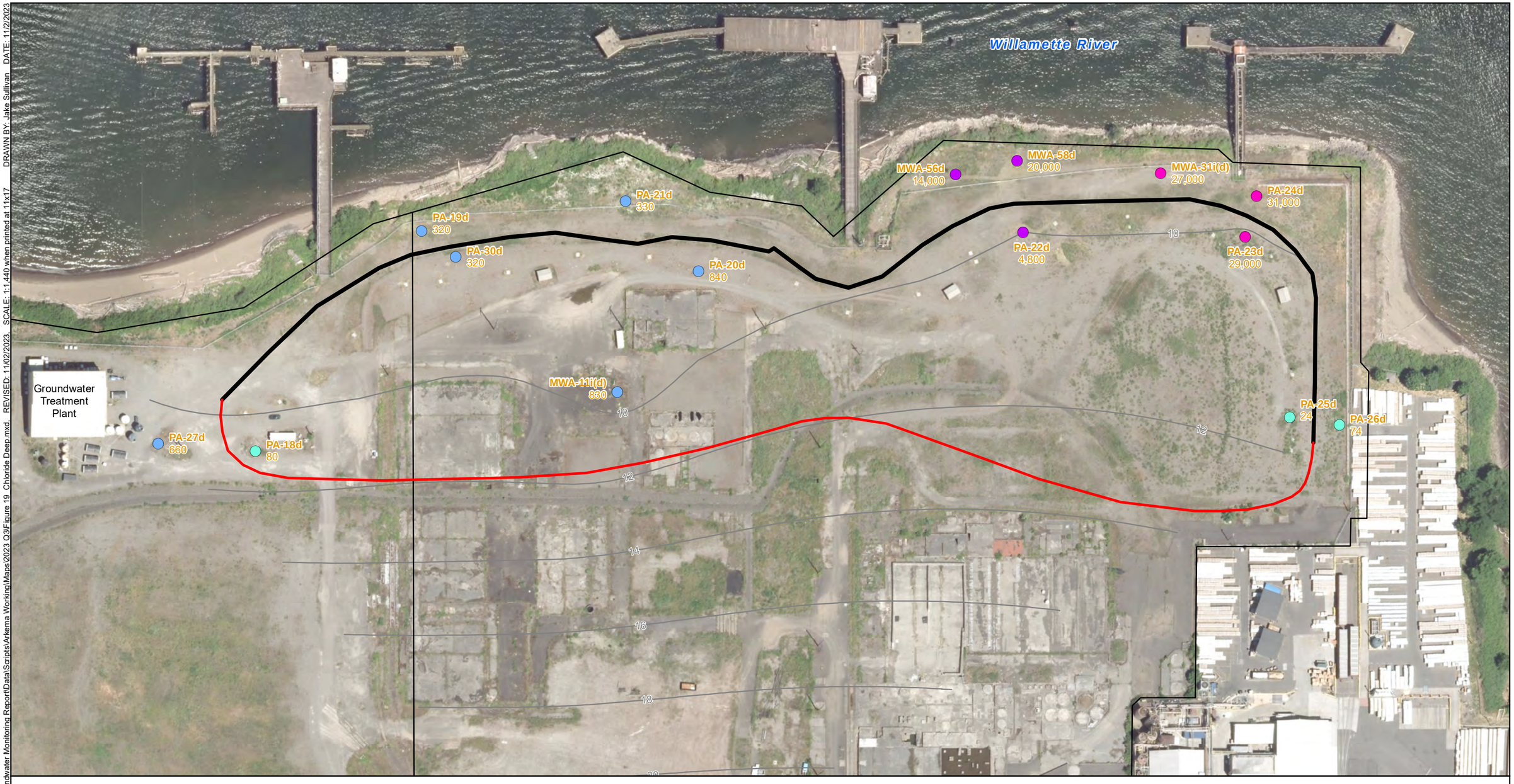
N

0 120 240
Feet

Source: City of Portland Aerial Imagery, flown Summer 2017; NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl

Figure 18
Chloride Groundwater Concentrations
Intermediate Zone
Quarter 3, 2023
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

Environmental Resources Management
www.erm.com
ERM



Legend

- > 23,000 mg/L
- >= 2,300 - 23,000 mg/L
- >= 230 - < 2,300 mg/L
- < 230 mg/L
- Not Detected
- Target Capture Zone
- Barrier Wall Alignment
- Parcel and Property Boundaries
- Deep Zone Groundwater Contours (ft NAVD88) August 2023

Notes:
Samples collected August 21–24, 2023
All results in milligrams per liter (mg/L)
Screening Criteria for Chloride = 230 mg/L
See Table 5 for definition of qualifiers

N

0 120 240
Feet

Source: City of Portland Aerial Imagery, flown Summer 2017; NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl

Figure 19
Chloride Groundwater Concentrations
Deep Zone
Quarter 3, 2023
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

Environmental Resources Management
www.erm.com

APPENDIX A FIELD FORMS

Low Flow Groundwater Sampling Field Data Form

Well ID: MWA-11I(D)
Well Permit No:

Date: 2023/08/23
Warm sunny

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 48 (ft)	**Reference Elevation** 36.49 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 27.17 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 0 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / - ()
Sampler paul vannevel	**Volume of Water in Well / Total Volume Purged** () / 2.1 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10 %	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
12:21	27.36			21.9	6.86	4224	NM	1.64	-162	25.2	NM	
12:24	27.33		0.375	21.9	6.83	3396	NM	0.91	-165.7	14.5	NM	
12:27	27.33	126.5	0.775	21.6	6.83	2970	NM	0.64	-177.8	11.86	NM	
12:30	27.33	150.2	1.25	21.5	6.83	2774	NM	0.52	-187.4	8.62	NM	
12:33	27.33	129.9	1.7	21.2	6.84	2729	NM	0.43	-194.4	7.8	NM	
12:36	27.33	126.5	2.1	21.6	6.84	2716	NM	0.39	-199.9	5.93	NM	

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
MWA-11i(d)-082323	2-inch bladder pump used	Paul Van Nevel 	08/23/2023 19:39
Analysis:			

Low Flow Groundwater Sampling Field Data Form

Well ID: MWA-31I(D)
Well Permit No:

Date: 2023/08/23
Cool partly cloudy

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 57 (ft)	**Reference Elevation** 38.36 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 31.33 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 0 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / - ()
Sampler paul vannevel	**Volume of Water in Well / Total Volume Purged** () / 3.4 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10 %	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
07:23	31.51			17.1	6.05	46263	NM	3.82	-45.1	41.4	NM	
07:26	31.52		0.325	17	6.11	49861	NM	1.59	-43.6	32.2	NM	
07:29	31.52	132.7	0.65	16.7	6.17	51036	NM	0.88	-52.3	19	NM	
07:32	31.52	110.7	1	16.8	6.26	51455	NM	0.61	-61.9	13.2	NM	
07:35	31.53	115.5	1.4	16.9	6.3	51763	NM	0.49	-70.5	11.37	NM	
07:38	31.55	115.5	1.8	16.9	6.33	51947	NM	0.44	-79.7	8.5	NM	
07:41	31.53	141.4	2.2	16.9	6.34	52187	NM	0.39	-87	10.26	NM	
07:44	31.53	115.5	2.6	16.9	6.35	52388	NM	0.36	-93.5	7.49	NM	
07:47	31.54	126.5	3	16.9	6.25	52496	NM	0.33	-99.7	7.37	NM	
07:50	31.54	126.5	3.4	16.9	6.35	52688	NM	0.3	-105.8	5.34	NM	
07:53	31.54			16.9	6.35	52842	NM	0.28	-109.7	6.99	NM	

Sample ID(s): MWA-31i(d)-082323	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:	2-inch bladder pump used	Paul Van Nevel 	08/23/2023 15:01

Low Flow Groundwater Sampling Field Data Form

Well ID: MWA-56D
Well Permit No:

Date: 2023/08/23
Warm Sunny

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 58 (ft)	**Reference Elevation** 36.68 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 28.77 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 0 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / - ()
Sampler paul vannevel	**Volume of Water in Well / Total Volume Purged** () / 2.5 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10 %	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
10:23	28.77			19.4	6.69	31034	NM	3.02	-117.2	46	NM	
10:26	28.77		0.35	18.7	6.63	30851	NM	1.46	-114	87.7	NM	
10:29	28.78	141.4	0.75	18.4	6.62	31086	NM	0.89	-115.9	40.7	NM	
10:32	28.79	141.4	1.15	18.3	6.62	31157	NM	0.67	-120.1	27.2	NM	
10:35	28.77	125	1.65	18.2	6.62	31226	NM	0.55	-124.9	17.4	NM	
10:38	28.77	141.4	2.05	18.1	6.61	31163	NM	0.5	-127.1	15.1	NM	
10:41	28.77	142.3	2.5	18.1	6.61	31174	NM	0.43	-129.7	11.6	NM	

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
MWA-56d-082323,MWA-56d-082323	2-inch bladder pump used	Paul Van Nevel 	08/23/2023 18:08
Analysis:			

Low Flow Groundwater Sampling Field Data Form

Well ID: MWA-58D
Well Permit No:

Date: 2023/08/23
Cool Sunny

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 58 (ft)	**Reference Elevation** 37.97 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 30.91 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 0 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / - ()
Sampler paul vannevel	**Volume of Water in Well / Total Volume Purged** () / 2.5 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10 %	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
08:52	30.88			17.9	6.6	40560	NM	2.48	-98.9	52.8	NM	
08:55	30.88		0.35	17.6	6.57	41370	NM	1.26	-107.3	60.9	NM	
08:58	30.91	142.3	0.8	17.4	6.55	41899	NM	0.71	-115.6	51.8	NM	
09:01	30.91	142.3	1.25	17.4	6.54	41966	NM	0.54	-122.9	35.5	NM	
09:04	30.85	126.5	1.65	17.3	6.54	42051	NM	0.47	-128.9	28.5	NM	
09:07	30.86	126.5	2.05	17.3	6.53	42181	NM	0.41	-133.3	20.3	NM	
09:10	30.86	183.7	2.5	17.3	6.52	42255	NM	0.37	-136.7	16.1	NM	

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
MWA-58d-082323	2-inch bladder pump used	Paul Van Nevel 	08/23/2023 20:22
Analysis:			

Low Flow Groundwater Sampling Field Data Form

Well ID: PA-32I
Well Permit No:

Date: 2023/08/24
Cool clear

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 37.5 (ft)	**Reference Elevation** 36.28 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 24.3 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 0 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / - ()
Sampler paul vannevel	**Volume of Water in Well / Total Volume Purged** () / 2.15 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10 %	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
06:42	24.2			16.2	5.98	1273	NM	2.38	-106.4	2.45	NM	
06:45	24.19		0.45	16	5.86	1031	NM	0.81	-108.9	1.65	NM	
06:48	24.17	129.9	0.9	15.9	5.77	935	NM	0.43	-112.2	3.54	NM	
06:51	24.11	129.9	1.35	15.9	5.73	897	NM	0.32	-115.5	3.59	NM	
06:54	24.13	126.5	1.75	15.9	5.69	888	NM	0.26	-117.2	1.24	NM	
06:57	24.14	141.4	2.15	15.9	5.67	871	NM	0.22	-119	1.3	NM	

Sample ID(s): PA-32i-082423	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:	2-inch bladder pump used	Paul Van Nevel	08/24/2023 14:07

Low Flow Groundwater Sampling Field Data Form

Well ID: PA-03
Well Permit No:

Date: 2023/08/22
Cool partly cloudy

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 15 (ft)	**Reference Elevation** 37.1 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 12.2 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 0 (mL/min)	**Well Diameter / Well Screen Interval** 1 (in) / - ()
Sampler paul vannevel	**Volume of Water in Well / Total Volume Purged** () / 3.05 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10 %	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
08:57	13.6		0.15	17.3	10.32	597	NM	2.08	-164.3	10.29	NM	
09:00	13.75	163.3	0.55	17	10.39	600	NM	0.88	-210.7	11.8	NM	
09:03	13.8	126.5	0.95	16.9	10.42	605	NM	0.57	-253.9	14.7	NM	
09:06	13.91	141.4	1.35	16.9	10.42	616	NM	0.4	-285.7	20.9	NM	
09:09	13.95	141.4	1.75	16.9	10.4	628	NM	0.28	-307.9	29.9	NM	
09:12	14	141.4	2.15	17.5	10.4	625	NM	0.22	-319.4	23	NM	
09:15	14.05	126.5	2.55	17.1	10.43	628	NM	0.17	-327	20.8	NM	
09:18	14.13	158.1	3.05	17.6	10.42	627	NM	0.14	-332.9	21.2	NM	

Sample ID(s): PA-03-082223	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:	Peri pump used	Paul Van Nevel 	08/22/2023 16:22

Low Flow Groundwater Sampling Field Data Form

Well ID: PA-04
Well Permit No:

Date: 2023/08/22
Cool, partly cloudy

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 13 (ft)	**Reference Elevation** 36.67 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 11.8 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 0 (mL/min)	**Well Diameter / Well Screen Interval** 1 (in) / - ()
Sampler paul vannevel	**Volume of Water in Well / Total Volume Purged** () / 3.75 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10 %	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
06:48	11.99		0	15.8	7.89	162.3	NM	8.12	-78.9	13.5	NM	
06:51	11.99	141.4	0.4	15.4	7.6	125.5	NM	7.44	-52.7	12.59	NM	
06:54	11.95	115.5	0.8	15.2	9.26	152.4	NM	6.75	-69.9	19.5	NM	
06:57	11.95	110.7	1.15	15.3	9.82	394.5	NM	3.14	-107.8	25.2	NM	
07:00	11.95	110.7	1.5	15.4	9.86	505	NM	1.63	-139.7	25.7	NM	
07:03	11.95	123.7	1.85	15.4	9.88	551	NM	1.03	-163.8	24.1	NM	
07:06	11.95	142.9	2.2	15.5	9.89	569	NM	0.77	-182.3	21.5	NM	
07:09	11.96	123.7	2.55	15.7	9.89	575	NM	0.63	-196.4	18.6	NM	
07:12	11.96	126.5	2.95	15.8	9.89	581	NM	0.51	-207.8	18.7	NM	
07:15	11.96	183.7	3.4	16	9.89	583	NM	0.44	-215.9	15.1	NM	
07:18	11.97	101	3.75	16.1	9.88	586	NM	0.39	-224.5	16.7	NM	

Sample ID(s): PA-04-082223	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:	Peri pump used	Paul Van Nevel 	08/22/2023 14:29

Low Flow Groundwater Sampling Field Data Form

Well ID: PA-09
Well Permit No:

Date: 2023/08/21
Cool 64, clear

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 30.5 (ft)	**Reference Elevation** 40.24 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 29.01 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 0 (mL/min)	**Well Diameter / Well Screen Interval** 1 (in) / - ()
Sampler paul vannevel	**Volume of Water in Well / Total Volume Purged** () / 1.1 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10 %	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
10:56	28.99		0	20.9	7.17	317.8	NM	1.88	-105.8	66.2	NM	
10:59	29	66.8	0.25	20.5	7.21	304.4	NM	1.42	-118.6	48.4	NM	
11:02	29	41.2	0.425	20.3	7.22	297.8	NM	1.57	-113.5	31.5	NM	
11:05	29	41.2	0.6	20.1	7.23	291.8	NM	1.49	-112.1	31.4	NM	
11:08	29	53	0.75	20	7.23	292.5	NM	1.55	-109.3	18	NM	
11:11	29	43.3	0.9	20	7.24	287.1	NM	1.71	-105	14.7	NM	
11:14	29	63.2	1.1	19.8	7.24	285.7	NM	1.58	-105.6	12.5	NM	

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
PA-09-082123	Peri pump used	Paul Van Nevel 	08/21/2023 18:27
Analysis:			

Low Flow Groundwater Sampling Field Data Form

Well ID: PA-10I
Well Permit No:

Date: 2023/08/22
Cool, partly cloudy

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 27 (ft)	**Reference Elevation** 36.67 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 24.25 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 0 (mL/min)	**Well Diameter / Well Screen Interval** 1 (in) / - ()
Sampler paul vannevel	**Volume of Water in Well / Total Volume Purged** () / 1.65 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10 %	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
08:08	24.4			17.2	7.62	763	NM	1.78	-149.8	21.8	NM	
08:11	24.4		0.35	17	7.58	752	NM	0.61	-183.4	14.5	NM	
08:14	24.4	110.7	0.7	16.7	7.56	746	NM	0.44	-205.8	12.01	NM	
08:17	24.4	106.1	1	16.5	7.55	743	NM	0.33	-220.5	9.38	NM	
08:20	24.4	106.1	1.3	16.5	7.54	741	NM	0.28	-227.9	7.69	NM	
08:23	24.4	110.7	1.65	16.5	7.54	740	NM	0.23	-234.2	10.32	NM	

Sample ID(s): PA-10i-082223	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:	Peri pump used	Paul Van Nevel 	08/22/2023 15:37

Low Flow Groundwater Sampling Field Data Form

Well ID: PA-17IR
Well Permit No:

Date: 2023/08/22
Warm, sunny

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 28.5 (ft)	**Reference Elevation** 37.59 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 26.82 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 0 (mL/min)	**Well Diameter / Well Screen Interval** (in) / - (ft)
Sampler paul vannevel	**Volume of Water in Well / Total Volume Purged** () / 1.15 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10 %	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
09:58	27.35			20.2	6.56	176.3	NM	2.5	-188.9	12.2	NM	
10:01	27.48		0.275	20.6	6.43	170.1	NM	1.1	-199.8	13.6	NM	
10:04	27.78	71.2	0.5	20.7	6.4	167.7	NM	0.76	-204	9.14	NM	
10:07	27.79	70.7	0.7	21.3	6.4	160.3	NM	0.59	-210.7	7.76	NM	
10:10	27.88	57.7	0.9	21.2	6.41	161.2	NM	0.54	-216.5	8.03	NM	
10:13	27.94	79.1	1.15	21.4	6.45	159.8	NM	0.45	-222.7	7.42	NM	

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Dup-01-082223,PA-17iR-082223	Peri pump used	Paul Van Nevel 	08/22/2023 17:26
Analysis:			

Low Flow Groundwater Sampling Field Data Form

Well ID: PA-18D
Well Permit No:

Date: 2023/08/21
Warm 72, clear

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 42 (ft)	**Reference Elevation** 36.55 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 25.2 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 0 (mL/min)	**Well Diameter / Well Screen Interval** (in) / - ()
Sampler paul vannevel	**Volume of Water in Well / Total Volume Purged** () / 3 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10 %	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
12:56	28.22			18.8	7.28	264.1	NM	6.37	-102.5	7.23	NM	
12:59	28.51		0.4	19	7.41	266.5	NM	5.43	-68.3	6.03	NM	
13:02	28.65	122.5	0.7	19.7	7.61	351.4	NM	3.71	-82	4.14	NM	
13:05		47.4	0.85	NM	NM	NM	NM	NM	NM	NM	NM	Pump stopped, pausing to fix
13:14	26.95	22.6	1.05	21.5	8.03	508	NM	2.25	-124.9	1.77	NM	
13:17	27.95	106.1	1.35	19.3	8.41	794	NM	1.51	-208.5	2.15	NM	
13:20	28.69	142.9	1.7	19.3	8.42	851	NM	0.59	-229.6	2.98	NM	
13:23	28.98	86.6	2	19.7	8.44	889	NM	0.49	-235.1	5.4	NM	
13:27	29.1	80.2	2.3	20.1	8.43	942	NM	0.36	-246.5	8.38	NM	
13:30	29.15	106.9	2.7	20.4	8.43	961	NM	0.26	-257.6	8.54	NM	
13:33	29.15	80.2	3	20.4	8.44	977	NM	0.21	-266.5	9.25	NM	

Sample ID(s): PA-18d-082123	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Paul Van Nevel 	08/21/2023 20:52

Low Flow Groundwater Sampling Field Data Form

Well ID: PA-27D
Well Permit No:

Date: 2023/08/22
Warm partly cloudy

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 28 (ft)	**Reference Elevation** 37.1 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 26.45 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 0 (mL/min)	**Well Diameter / Well Screen Interval** (in) / - ()
Sampler paul vannevel	**Volume of Water in Well / Total Volume Purged** () / 1.1 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10 %	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
11:15	28.25			24	7.13	2552	NM	1.7	-267.6	1.18	NM	
11:18	28.48		0.175	24.1	7.14	2571	NM	0.78	-277.4	6.55	NM	
11:21	28.66	79.4	0.45	23.5	7.14	2619	NM	0.45	-288.5	0.87	NM	
11:24	28.6	79.1	0.7	22.3	7.14	2639	NM	0.26	-297.7	0.82	NM	
11:27	28.69	79.1	0.95	22	7.15	2622	NM	0.2	-300.9	0.74	NM	
11:30	28.7	61.2	1.1	21.4	7.14	2623	NM	0.15	-304.9	1.23	NM	

Sample ID(s): PA-27d-082223	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:	Peri pump used	Paul Van Nevel 	08/22/2023 18:32

Low Flow Groundwater Sampling Field Data Form

Well ID: PA-31
Well Permit No:

Date: 2023/08/24
Cool clear

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 22 (ft)	**Reference Elevation** 36.25 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 11.42 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 0 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / - ()
Sampler paul vannevel	**Volume of Water in Well / Total Volume Purged** () / 1.75 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10 %	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
07:50	11.68			15.8	9.49	636	NM	1.94	-152.2	46.1	NM	
07:53	11.69		0.45	15.8	9.78	612	NM	0.8	-192.7	10	NM	
07:56	11.71	129.9	0.9	15.6	9.82	611	NM	0.55	-214.4	73.3	NM	
07:59	11.71	142.3	1.35	15.8	9.82	612	NM	0.48	-224.9	65.4	NM	
08:02	11.71	141.4	1.75	15.8	9.82	612	NM	0.41	-231.9	61.7	NM	

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
PA-31-082423	2-inch bladder pump used	Paul Van Nevel 	08/24/2023 15:31
Analysis:			

Low Flow Groundwater Sampling Field Data Form

Well ID: PA-08
Well Permit No:

Date: 2023/08/21
Cool 60, hazy

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 30 (ft)	**Reference Elevation** 40.47 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 28.29 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 0 (mL/min)	**Well Diameter / Well Screen Interval** 1 (in) / - ()
Sampler paul vannevel	**Volume of Water in Well / Total Volume Purged** () / 5.5 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10 %	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
08:49				NM	NM	NM	NM	NM	NM	NM	NM	
09:13	28.35	150	0.45	16.2	7.51	1053	NM	1.84	-57	21.5	NM	
09:16				NM	NM	NM	NM	NM	NM	NM	NM	Pump shut off, paused to restart
09:22	28.35	100	0.75	16.6	7.43	1032	NM	1.49	-125.4	24.8	NM	
09:25	28.35	176.8	1.25	16.3	7.41	1015	NM	0.73	-170	48.1	NM	
09:28	28.35	79.1	1.5	16.3	7.42	1000	NM	0.83	-156.3	37.2	NM	
09:31	28.35	122.5	1.8	16.3	7.43	982	NM	0.94	-139.4	36.9	NM	
09:34	28.36	106.1	2.1	16.2	7.44	956	NM	1.26	-123.7	35.3	NM	
09:37	28.36	110.7	2.45	16.2	7.45	916	NM	1.43	-112.3	36	NM	
09:40	28.36	86.6	2.75	16.2	7.47	865	NM	1.03	-114.5	37.3	NM	
09:43	28.36	123.7	3.1	16.2	7.49	817	NM	1.49	-113.1	35.5	NM	
09:46	28.37	123.7	3.45	16.3	7.55	773	NM	4.04	-73.5	35.6	NM	
09:49	28.37	-17.7	3.75	16.3	7.57	748	NM	4.32	-56.3	34	NM	
09:52	28.37	79.1	4	16.3	7.56	714	NM	2.19	-63.1	34.4	NM	
09:55	28.37	237.2	4.35	16.4	7.57	668	NM	1.16	-88.5	35	NM	
09:58	28.37	159.1	4.8	16.3	7.57	648	NM	1.05	-107.3	36	NM	
10:01	28.37	110.7	5.15	16.4	7.58	627	NM	0.94	-119.5	35.9	NM	
10:04	28.37	110.7	5.5	16.4	7.6	617	NM	0.82	-128.6	34.3	NM	

Sample ID(s): PA-08-082123	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:	Peri pump used	Paul Van Nevel 	08/21/2023 17:18

Low Flow Groundwater Sampling Field Data Form

Well ID: MWA-41
Well Permit No:

Date: 2023/08/21
Cool clear

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 38 (ft)	**Reference Elevation** 45.14 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 33.54 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 160 (mL/min)	**Well Diameter / Well Screen Interval** (in) / - ()
Sampler scott terranova	**Volume of Water in Well / Total Volume Purged** () / 2.4 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
10:52	33.55	160		19.1	6.51	309.9	NM	1.91	80.7	10.37	NM	
10:55	33.55	160		19.1	6.48	306	NM	0.9	70.5	10.13	NM	
10:58	33.55	160		19	6.47	302.7	NM	0.75	69.1	8.67	NM	
11:01	33.55	160		19	6.46	298.8	NM	0.71	68.4	8.72	NM	
11:04	33.55	160	2.4	19	6.46	296.3	NM	0.73	69.4	9.71	NM	

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
MWA-41-082123	2 pump	ST 	08/21/2023 18:06
Analysis:			

Low Flow Groundwater Sampling Field Data Form

Well ID: MWA-82
Well Permit No:

Date: 2023/08/21
Cool clear

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 28 (ft)	**Reference Elevation** 37.74 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 24.35 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 160 (mL/min)	**Well Diameter / Well Screen Interval** (in) / - ()
Sampler scott terranova	**Volume of Water in Well / Total Volume Purged** () / 2.4 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
09:31	24.35	160		15.8	9.27	375.2	NM	2.68	31	29.43	NM	
09:34	24.35	160		15.7	9.52	363.1	NM	0.93	29.1	25.62	NM	
09:37	24.35	160		15.7	9.49	356.8	NM	0.57	29.1	28.42	NM	
09:40	24.35	160		15.7	9.47	354.5	NM	0.54	28.8	22.06	NM	
09:43	24.35	160	2.4	15.9	9.47	354.6	NM	0.5	28.4	23.28	NM	

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
MWA-82-082123	2 pump	ST 	08/21/2023 16:46
Analysis:			

Low Flow Groundwater Sampling Field Data Form

Well ID: PA-19D
Well Permit No:

Date: 2023/08/24
Cool clear

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 47 (ft)	**Reference Elevation** 36.65 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 29.87 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 100 (mL/min)	**Well Diameter / Well Screen Interval** (in) / - ()
Sampler scott terranova	**Volume of Water in Well / Total Volume Purged** () / 1.65 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
06:49	32.2	100		15.7	7.16	3410	NM	2.68	-36.4	7.8	NM	
06:52	33.6	100		15.6	7.14	3095	NM	2.57	-79.8	5.37	NM	
06:55	34.39	100		15.6	7.11	2909	NM	2.39	-73.8	5.12	NM	
06:58	34.87	100		15.5	7.09	2805	NM	2.27	-68.2	5.68	NM	
07:01	35.22	100	1.65	15.5	7.08	2751	NM	2.2	-66.5	5.84	NM	

Sample ID(s): PA-19d-082423	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:	1 pump	ST	08/24/2023 14:11

Low Flow Groundwater Sampling Field Data Form

Well ID: PA-20D
Well Permit No:

Date: 2023/08/23
Cool clear

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 60 (ft)	**Reference Elevation** 37.91 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 29.68 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 100 (mL/min)	**Well Diameter / Well Screen Interval** (in) / - ()
Sampler scott terranova	**Volume of Water in Well / Total Volume Purged** () / 2 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
10:01	31.15	100		19.7	6.55	3530	NM	3.92	-88.9	3.03	NM	
10:04	32.6	100		20.4	6.54	3541	NM	1.57	-104.3	4.68	NM	
10:07	33.45	100		20.7	6.55	3564	NM	1.25	-108.7	3.65	NM	
10:10	33.9	100		20.8	6.55	3583	NM	1.1	-110.4	2.65	NM	
10:13	34.18			20.8	6.56	3604	NM	1.03	-113.8	3.15	NM	
10:16	34.35	100	2	20.7	6.56	3610	NM	0.97	-115.2	2.97	NM	

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
DUP-02-082323,PA-20d-082323	1 pump. Took RB-02-082323 before purging	ST 	08/23/2023 17:32
Analysis:			

Low Flow Groundwater Sampling Field Data Form

Well ID: PA-21D
Well Permit No:

Date: 2023/08/23
Warm clear

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 57 (ft)	**Reference Elevation** 34.36 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 27 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 100 (mL/min)	**Well Diameter / Well Screen Interval** (in) / - ()
Sampler scott terranova	**Volume of Water in Well / Total Volume Purged** () / 2 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
11:23	29.1	100		21.3	6.24	3034	NM	2.72	-70.3	26.6	NM	
11:26	31.24	100		20.7	6.17	3005	NM	1.41	-68.3	22.76	NM	
11:29	32.1	100		20.9	6.16	2962	NM	2.19	-66.8	22.35	NM	
11:32	32.86	100		21.2	6.15	2974	NM	1.91	-64.2	24.74	NM	
11:35	33.24	100		21.8	6.16	2985	NM	1.83	-62	20.33	NM	
11:38	33.52	100	2	22.1	6.15	2965	NM	1.79	-60.3	21.43	NM	

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
PA-21d-082323	1 pump	ST 	08/23/2023 18:47
Analysis:			

Low Flow Groundwater Sampling Field Data Form

Well ID: PA-23D
Well Permit No:

Date: 2023/08/22
Clear warm

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 80 (ft)	**Reference Elevation** 39.31 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 30.05 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 100 (mL/min)	**Well Diameter / Well Screen Interval** (in) / - ()
Sampler scott terranova	**Volume of Water in Well / Total Volume Purged** () / 2.1 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
11:21	31.95	100		19.8	6.78	64301	NM	2.06	-124.8	8.75	NM	
11:24	33.45	100		20.3	6.88	64200	NM	1.08	-138.9	6.43	NM	
11:27	34	100		20.4	6.83	64985	NM	0.99	-140.1	4.13	NM	
11:30	34.48	100		20.5	6.84	65184	NM	0.96	-143.7	3.18	NM	
11:33	34.73	100		20.7	6.85	64798	NM	0.9	-144.1	4.07	NM	
11:36	34.96	100	2.1	20.6	6.86	64975	NM	0.88	-146.9	3.89	NM	

Sample ID(s): PA-23d-082223	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:	1 pump	ST 	08/22/2023 18:38

Low Flow Groundwater Sampling Field Data Form

Well ID: PA-24D
Well Permit No:

Date: 2023/08/22
Clear warm

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 80 (ft)	**Reference Elevation** 39.06 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 31.25 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 100 (mL/min)	**Well Diameter / Well Screen Interval** (in) / - ()
Sampler scott terranova	**Volume of Water in Well / Total Volume Purged** () / 2.1 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
12:19	33.25	100		21.3	6.59	64645	NM	3.56	-123.9	7.34	NM	
12:22	33.7	100		21.4	6.57	68621	NM	1.75	-132.7	6.83	NM	
12:25	34	100		21.4	6.57	68812	NM	1.49	-137	6.54	NM	
12:28	34.1	100		21.5	6.58	68594	NM	0.96	-141.5	6.81	NM	
12:31	34.2	100		22	6.58	68113	NM	0.93	-145	6.54	NM	
12:34	34.27	100	2.1	21.9	6.58	68530	NM	0.88	-146.9	6.59	NM	

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
PA-24d-082223	1 pump	ST 	08/22/2023 19:37
Analysis:			

Low Flow Groundwater Sampling Field Data Form

Well ID: PA-25D
Well Permit No:

Date: 2023/08/22
Cool clear

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 80 (ft)	**Reference Elevation** 40.44 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 30.2 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 100 (mL/min)	**Well Diameter / Well Screen Interval** (in) / - ()
Sampler scott terranova	**Volume of Water in Well / Total Volume Purged** () / 1.8 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
08:05	32.05	100		17	6.97	576	NM	1.91	-148.4	17.8	NM	
08:08	33.5	100		16.9	7.02	554	NM	1.16	-163.8	16.43	NM	
08:11	34.35	100		16.8	7.03	545	NM	0.92	-165.9	12.39	NM	
08:14	35.1	100		16.8	7.01	538	NM	0.86	-164.8	10.84	NM	
08:17	35.97	100	1.8	16.8	7	533	NM	0.82	-163.7	9.64	NM	

Sample ID(s): PA-25d-082223	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:	1 pump	ST 	08/22/2023 15:21

Low Flow Groundwater Sampling Field Data Form

Well ID: PA-26D
Well Permit No:

Date: 2023/08/22
Cool warm

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 80 (ft)	**Reference Elevation** 40.33 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 29.7 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 100 (mL/min)	**Well Diameter / Well Screen Interval** (in) / - ()
Sampler scott terranova	**Volume of Water in Well / Total Volume Purged** () / 2.1 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
09:59	30.9	100		20.3	6.45	182.6	NM	3.71	-56.9	10.13	NM	
10:02	31.1	100		19.9	6.41	220.8	NM	2.16	-81.9	7.76	NM	
10:05	31.25	100		19.3	6.49	468.9	NM	1.05	-114.5	6.76	NM	
10:08	31.25	100		18.9	6.67	503	NM	0.91	-146.8	7.6	NM	
10:11	31.25	100		19	6.7	516	NM	0.86	-151.9	7.69	NM	
10:14	31.25	100	2.1	19.2	6.74	513	NM	0.81	-154.6	6.63	NM	

Sample ID(s): PA-26d-082223	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:	1 pump	ST 	08/22/2023 17:16

Low Flow Groundwater Sampling Field Data Form

Well ID: PA-30D
Well Permit No:

Date: 2023/08/24
Cool clear

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 48 (ft)	**Reference Elevation** 37.34 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 29.09 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 100 (mL/min)	**Well Diameter / Well Screen Interval** (in) / - ()
Sampler scott terranova	**Volume of Water in Well / Total Volume Purged** () / 1.92 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
07:45	29.2	100		17.1	7.29	2395	NM	1.38	-137.9	5.43	NM	
07:48	29.25	100		17	7.56	2439	NM	0.76	-183.9	3.72	NM	
07:51	29.28	100		17.2	7.64	2458	NM	0.53	-195.7	5.44	NM	
07:54	29.3	100		17.2	7.69	2545	NM	0.49	-205.6	6.58	NM	
07:57	29.32	100		17.3	7.71	2751	NM	0.46	-208.6	5.88	NM	
08:00	29.34	100	1.92	17.4	7.73	2935	NM	0.45	-209.9	6.17	NM	

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
PA-30d-082423	1 pump	ST 	08/24/2023 15:02
Analysis:			

Low Flow Groundwater Sampling Field Data Form

Well ID: PA-15I
Well Permit No:

Date: 2023/08/21
Cool warm

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 42 (ft)	**Reference Elevation** 40.62 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 29.54 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 100 (mL/min)	**Well Diameter / Well Screen Interval** (in) / - ()
Sampler scott terranova	**Volume of Water in Well / Total Volume Purged** () / 1.8 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
12:02	29.8	100		20.1	7.18	645	NM	2.4	-104.9	63.86	NM	
12:05	29.8	100		20.9	7.22	649	NM	0.69	-136.9	50.86	NM	
12:08	29.8	100		20.8	7.28	656	NM	0.6	-149.4	57.34	NM	
12:11	29.8	100		21	7.29	658	NM	0.57	-159.5	59.9	NM	
12:14	29.8	100		21.3	7.31	662	NM	0.55	-163.6	56.82	NM	
12:17	29.8	100	1.8	21.5	7.34	670	NM	0.51	-166.8	53.45	NM	

Sample ID(s): PA-15i-082123	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:	1 pump	ST 	08/21/2023 19:19

Low Flow Groundwater Sampling Field Data Form

Well ID: PA-16I
Well Permit No:

Date: 2023/08/22
Cool clear

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 43 (ft)	**Reference Elevation** 40.3 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 30.2 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 100 (mL/min)	**Well Diameter / Well Screen Interval** (in) / - ()
Sampler scott terranova	**Volume of Water in Well / Total Volume Purged** () / 1.6 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
09:09	30.4	100		19	6.77	477.1	NM	2.16	-57.8	50.26	NM	
09:12	30.45	100		19	6.81	487.4	NM	1.09	-92.6	45.29	NM	
09:15	30.45	100		18.9	6.84	493.7	NM	0.89	-94.9	42.37	NM	
09:18	30.45	100		18.8	6.68	500	NM	0.83	-96.9	38.4	NM	
09:21	30.45	100	1.6	18.8	6.92	505	NM	0.78	-99.7	42.55	NM	

Sample ID(s): PA-16i-082223	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:	1 pump	ST 	08/22/2023 16:23

Low Flow Groundwater Sampling Field Data Form

Well ID: PA-44I
Well Permit No:

Date: 2023/08/22
Cool clear

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 42 (ft)	**Reference Elevation** 40.36 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 29.61 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 160 (mL/min)	**Well Diameter / Well Screen Interval** (in) / - ()
Sampler scott terranova	**Volume of Water in Well / Total Volume Purged** () / 2.88 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
07:13	29.65	160		16.5	7.64	289	NM	7.55	93.1	12.97	NM	
07:16	29.65	160		16.1	6.98	539	NM	4.21	124.9	14.45	NM	
07:19	29.65	160		16.6	6.6	981	NM	2.23	138.6	14.89	NM	
07:22	29.65	160		16.6	6.51	1180	NM	0.93	138.9	15.05	NM	
07:25	29.65	160		16.6	6.47	1257	NM	0.94	137.8	14.61	NM	
07:28	29.65	160	2.88	16.6	6.45	1289	NM	0.9	139.5	15.62	NM	

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
PA-44i-082223	RB-01-082123 taken before purging. 2 pump	ST 	08/22/2023 14:34
Analysis:			

Low Flow Groundwater Sampling Field Data Form

Well ID: MWA-81I
Well Permit No:

Date: 2023/08/21
Cool clear

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 48 (ft)	**Reference Elevation** 44.62 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 34.05 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 160 (mL/min)	**Well Diameter / Well Screen Interval** (in) / - ()
Sampler scott terranova	**Volume of Water in Well / Total Volume Purged** () / 2.88 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
10:17	34.1	160		18.4	6.54	378.8	NM	2.25	29.4	5.45	NM	
10:20	34.1	160		18.2	6.47	384.9	NM	1.22	-21.8	4.06	NM	
10:23	34.1	160		18.2	6.46	387.3	NM	1.04	-26.9	3.86	NM	
10:26	34.1	160		17.9	6.46	388.6	NM	0.78	-28.8	3.52	NM	
10:29	34.1	160		18	6.46	389.5	NM	0.75	-30.4	3.29	NM	
10:32	34.1	160	2.88	18.2	6.46	390.8	NM	0.7	-32.3	3.27	NM	

Sample ID(s):	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
MWA-81i-082123	2 pump	ST 	08/21/2023 17:35
Analysis:			

Low Flow Groundwater Sampling Field Data Form

Well ID: PA-22D
Well Permit No:

Date: 2023/08/23
Cool clear

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 59 (ft)	**Reference Elevation** 38.75 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 29.65 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 100 (mL/min)	**Well Diameter / Well Screen Interval** (in) / - ()
Sampler scott terranova	**Volume of Water in Well / Total Volume Purged** () / 1.7 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
08:05	29.96	100		17.6	7.11	14909	NM	2.01	148.2	9.65	NM	
08:08	30	100		17.7	7.09	14164	NM	1.3	151.6	5.52	NM	
08:11	30	100		17.9	7.08	14314	NM	1.08	152.8	3.89	NM	
08:14	30	100		18.1	7.07	14808	NM	0.96	153.7	4.28	NM	
08:17	30	100	1.7	18.2	7.08	14984	NM	0.91	154.6	4.82	NM	

Sample ID(s): PA-22d-082323	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:	1 pump	ST 	08/23/2023 15:20

Low Flow Groundwater Sampling Field Data Form

Well ID: MWA-63
Well Permit No:

Date: 2023/08/23
Cool clear

Site ID ARKEMA-PORTLAND	**Purge Method / Pump Intake Depth** Low_Flow / 28.5 (ft)	**Reference Elevation** 36.29 (ft)
Site Address , Portland, US-OR	**Purge Equipment** NA	**Depth to Water / Free Product** 26.6 (ft) / None
Project Number 0000000	**Sample Equipment** NA	**Total Well Depth** (ft)
Project Name 20230821-GWMonitor	**Average Purge Rate** 100 (mL/min)	**Well Diameter / Well Screen Interval** (in) / - ()
Sampler scott terranova	**Volume of Water in Well / Total Volume Purged** () / 1.5 (l)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
08:57	26.9	100		17.1	7.22	1087	NM	5.38	126.8	7.16	NM	
09:00	26.98	100		16.9	7.1	839	NM	5.4	134.1	6.6	NM	
09:03	27.02	100		16.8	7.08	687	NM	5.26	142.9	7.08	NM	
09:06	27.05	100		16.8	7.07	658	NM	5.15	146.9	6.77	NM	
09:09	27.07	100	1.5	16.8	7.07	628	NM	5.07	149.4	7.31	NM	

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
MWA-63-082323	Peri pump	ST 	08/23/2023 16:11
Analysis:			

APPENDIX B LABORATORY ANALYTICAL REPORTS

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12

ANALYTICAL REPORT

PREPARED FOR

Attn: Avery Soplata
ERM-West
1050 SW 6th Avenue
Suite 1650
Portland, Oregon 97204

Generated 9/13/2023 3:45:43 PM

JOB DESCRIPTION

Arkema - Q3 2023 Groundwater Event

JOB NUMBER

580-130777-1

Eurofins Seattle
5755 8th Street East
Tacoma WA 98424

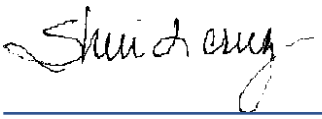
See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northwest, LLC Project Manager.

Authorization



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Authorized for release by
Sheri Cruz, Project Manager I
Sheri.Cruz@et.eurofinsus.com
(253)922-2310

Table of Contents

Job ID: 580-130777-1

Laboratory: Eurofins Seattle

Narrative

Job Narrative
580-130777-1

Comments
No additional comments.

Receipt
The samples were received on 8/23/2023 11:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.0º C.

GC/MS VOA
Method 8260D: The CCV for analytical batch 580-435722 recovered outside control limits for the following analyte(s): Naphthalene and 1,2,3-Trichlorobenzene . Naphthalene and 1,2,3-Trichlorobenzene have been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method 8260D: The [QC] associated with 580-435722 is compliant under 8260D criteria for 1,2,4-Trichlorobenzene. The software does not display the data to the whole number as is listed in the method (i.e. limit of 20%). When applying the evaluation to a whole number, the QC passes the criteria.

Method 8260D: The method blank for analytical batch 580-435722 contained 1,2,4-Trichlorobenzene and 1,2,3-Trichlorobenzene above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8260D: The method blank for analytical batch 580-435722 contained Acetone above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-435722 recovered outside acceptance criteria, low biased, for Hexachlorobutadiene. A reporting limit (RL) standard was analyzed, and the target analytes are detected. Since the associated samples were non-detect for the analyte(s), the data are reported.

Method 8260D: The method blank for analytical batch 580-436014 contained Acetone, 1,2,4-Trichlorobenzene and 1,2,3-Trichlorobenzene above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-436014 recovered above the upper control limit for Dichlorodifluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: PA-18d-082123 (580-130777-8) and (CCVIS 580-436014/3).

Method 8260D: The [QC] associated with 580-436014 is compliant under 8260D criteria for Hexachlorobutadiene. The software does not display the data to the whole number as is listed in the method (i.e. limit of 20%). When applying the evaluation to a whole number, the QC passes the criteria.

Method 8260D: The CCV for analytical batch 580-436014 recovered outside control limits for the following analyte(s): Acetone, 1,2-Dibromo-3-Chloropropane, 1,2,3-Trichlorobenzene, and Naphthalene have been identified as poor performing analytes when analyzed using this method; therefore, re-analysis was not performed. These results have been reported and qualified.

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-436014 recovered outside acceptance criteria, low biased, for 1,2,4-Trichlorobenzene. A reporting limit (RL) standard was analyzed, and the target analytes are detected. Since the associated samples were non-detect for the analyte(s), the data are reported.

Method 8260D: The method blank for analytical batch 580-436121 contained 1,2,4-Trichlorobenzene, Hexachlorobutadiene and 1,2,3-Trichlorobenzene above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Job ID: 580-130777-1 (Continued)

Laboratory: Eurofins Seattle (Continued)

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-436121 recovered above the upper control limit for Dichlorodifluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: PA-27d-082223 (580-130777-20), PA-24d-082223 (580-130777-21), (CCVIS 580-436121/3) and (580-130869-C-8).

Method 8260D: The CCV for analytical batch 580-436121 recovered outside control limits for the following analyte(s): 1,2,3-Trichlorobenzene and Naphthalene have been identified as poor performing analytes when analyzed using this method; therefore, re-analysis was not performed. These results have been reported and qualified.

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-436121 recovered outside acceptance criteria, low biased, for 1,2,4-Trichlorobenzene and Hexachlorobutadiene. A reporting limit (RL) standard was analyzed, and the target analytes are detected. Since the associated samples were non-detect for the analyte(s), the data are reported.

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

General Chemistry

Method 314.0: Due to the nature of the matrix and/or the high conductivity measurement for the following samples, the samples in analytical batch 320-703730 were diluted. In order to protect instrumentation, the samples were diluted. Elevated reporting limits (RLs) are provided. PA-15i-082123 (580-130777-5).

Method 314.0: Due to the nature of the matrix and/or the high conductivity measurement for the following samples, the samples in analytical batch 320-703989 were diluted. In order to protect instrumentation, the samples were diluted. Elevated reporting limits (RLs) are provided. PA-18d-082123 (580-130777-8), PA-44i-082223 (580-130777-10), PA-44i-082223 (580-130777-10[MS]), PA-44i-082223 (580-130777-10[MSD]), PA-16i-082223 (580-130777-12), PA-23d-082223 (580-130777-14), PA-04-082223 (580-130777-15), PA-10i-082223 (580-130777-16), Dup-01-082223 (580-130777-19) and PA-27d-082223 (580-130777-20)

Method 314.0: The following sample in analytical batch 320-703989 was diluted to bring the concentration of target analytes within the calibration range: MWA-82-082123 (580-130777-2). Elevated reporting limits (RLs) are provided.

Method 314.0: Due to the nature of the matrix and/or the high conductivity measurement for the following samples, the samples in analytical batch 320-704634 were diluted. In order to protect instrumentation, the samples were diluted. Elevated reporting limits (RLs) are provided. PA-24d-082223 (580-130777-21)

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

VOA Prep

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

Definitions/Glossary

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

HPLC/IC

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

Glossary

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

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: TB-082123
Lab Sample ID: 580-130777-1
Date Collected: 08/21/23 00:01
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			08/24/23 15:25	1
Chloromethane	ND		0.50	0.14	ug/L			08/24/23 15:25	1
Vinyl chloride	ND		0.10	0.040	ug/L			08/24/23 15:25	1
Bromomethane	ND		0.50	0.13	ug/L			08/24/23 15:25	1
Chloroethane	ND		0.50	0.096	ug/L			08/24/23 15:25	1
Carbon disulfide	ND		0.30	0.083	ug/L			08/24/23 15:25	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			08/24/23 15:25	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			08/24/23 15:25	1
Acetone	ND		10	3.1	ug/L			08/24/23 15:25	1
Methylene Chloride	ND		5.0	1.2	ug/L			08/24/23 15:25	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			08/24/23 15:25	1
2-Butanone (MEK)	ND		10	2.5	ug/L			08/24/23 15:25	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			08/24/23 15:25	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			08/24/23 15:25	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			08/24/23 15:25	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			08/24/23 15:25	1
Chlorobromomethane	ND		0.20	0.050	ug/L			08/24/23 15:25	1
Chloroform	ND		0.20	0.030	ug/L			08/24/23 15:25	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			08/24/23 15:25	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			08/24/23 15:25	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			08/24/23 15:25	1
Benzene	ND		0.20	0.030	ug/L			08/24/23 15:25	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			08/24/23 15:25	1
Trichloroethene	ND		0.20	0.066	ug/L			08/24/23 15:25	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			08/24/23 15:25	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			08/24/23 15:25	1
Dibromomethane	ND		0.20	0.062	ug/L			08/24/23 15:25	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			08/24/23 15:25	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			08/24/23 15:25	1
Toluene	ND		0.20	0.050	ug/L			08/24/23 15:25	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			08/24/23 15:25	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			08/24/23 15:25	1
Tetrachloroethene	ND		0.24	0.084	ug/L			08/24/23 15:25	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			08/24/23 15:25	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			08/24/23 15:25	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			08/24/23 15:25	1
Chlorobenzene	ND		0.20	0.060	ug/L			08/24/23 15:25	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			08/24/23 15:25	1
Ethylbenzene	ND		0.20	0.030	ug/L			08/24/23 15:25	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			08/24/23 15:25	1
o-Xylene	ND		0.50	0.15	ug/L			08/24/23 15:25	1
Styrene	ND		1.0	0.19	ug/L			08/24/23 15:25	1
Bromoform	ND		0.50	0.16	ug/L			08/24/23 15:25	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/24/23 15:25	1
Bromobenzene	ND		0.20	0.038	ug/L			08/24/23 15:25	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			08/24/23 15:25	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			08/24/23 15:25	1
N-Propylbenzene	ND		0.30	0.091	ug/L			08/24/23 15:25	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			08/24/23 15:25	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: TB-082123
Lab Sample ID: 580-130777-1
Date Collected: 08/21/23 00:01
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			08/24/23 15:25	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			08/24/23 15:25	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			08/24/23 15:25	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			08/24/23 15:25	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			08/24/23 15:25	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			08/24/23 15:25	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 15:25	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 15:25	1
n-Butylbenzene	ND		1.0	0.23	ug/L			08/24/23 15:25	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			08/24/23 15:25	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			08/24/23 15:25	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			08/24/23 15:25	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			08/24/23 15:25	1
Naphthalene	ND		1.0	0.22	ug/L			08/24/23 15:25	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			08/24/23 15:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*92*		*80 - 120*		*08/24/23 15:25*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 120*		*08/24/23 15:25*	*1*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*		*08/24/23 15:25*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*08/24/23 15:25*	*1*

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: MWA-82-082123
Lab Sample ID: 580-130777-2
Date Collected: 08/21/23 09:44
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			08/24/23 15:47	1
Chloromethane	ND		0.50	0.14	ug/L			08/24/23 15:47	1
Vinyl chloride	ND		0.10	0.040	ug/L			08/24/23 15:47	1
Bromomethane	ND		0.50	0.13	ug/L			08/24/23 15:47	1
Chloroethane	ND		0.50	0.096	ug/L			08/24/23 15:47	1
Carbon disulfide	ND		0.30	0.083	ug/L			08/24/23 15:47	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			08/24/23 15:47	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			08/24/23 15:47	1
Acetone	ND		10	3.1	ug/L			08/24/23 15:47	1
Methylene Chloride	ND		5.0	1.2	ug/L			08/24/23 15:47	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			08/24/23 15:47	1
2-Butanone (MEK)	ND		10	2.5	ug/L			08/24/23 15:47	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			08/24/23 15:47	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			08/24/23 15:47	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			08/24/23 15:47	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			08/24/23 15:47	1
Chlorobromomethane	ND		0.20	0.050	ug/L			08/24/23 15:47	1
Chloroform	**1.6**		0.20	0.030	ug/L			08/24/23 15:47	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			08/24/23 15:47	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			08/24/23 15:47	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			08/24/23 15:47	1
Benzene	ND		0.20	0.030	ug/L			08/24/23 15:47	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			08/24/23 15:47	1
Trichloroethene	**0.13**	**J**	0.20	0.066	ug/L			08/24/23 15:47	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			08/24/23 15:47	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			08/24/23 15:47	1
Dibromomethane	ND		0.20	0.062	ug/L			08/24/23 15:47	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			08/24/23 15:47	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			08/24/23 15:47	1
Toluene	ND		0.20	0.050	ug/L			08/24/23 15:47	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			08/24/23 15:47	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			08/24/23 15:47	1
Tetrachloroethene	**0.38**		0.24	0.084	ug/L			08/24/23 15:47	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			08/24/23 15:47	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			08/24/23 15:47	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			08/24/23 15:47	1
Chlorobenzene	ND		0.20	0.060	ug/L			08/24/23 15:47	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			08/24/23 15:47	1
Ethylbenzene	ND		0.20	0.030	ug/L			08/24/23 15:47	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			08/24/23 15:47	1
o-Xylene	ND		0.50	0.15	ug/L			08/24/23 15:47	1
Styrene	ND		1.0	0.19	ug/L			08/24/23 15:47	1
Bromoform	ND		0.50	0.16	ug/L			08/24/23 15:47	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/24/23 15:47	1
Bromobenzene	ND		0.20	0.038	ug/L			08/24/23 15:47	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			08/24/23 15:47	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			08/24/23 15:47	1
N-Propylbenzene	ND		0.30	0.091	ug/L			08/24/23 15:47	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			08/24/23 15:47	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: MWA-82-082123
Lab Sample ID: 580-130777-2
Date Collected: 08/21/23 09:44
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			08/24/23 15:47	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			08/24/23 15:47	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			08/24/23 15:47	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			08/24/23 15:47	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			08/24/23 15:47	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			08/24/23 15:47	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 15:47	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 15:47	1
n-Butylbenzene	ND		1.0	0.23	ug/L			08/24/23 15:47	1
1,2-Dichlorobenzene	**0.060**	**J**	0.30	0.038	ug/L			08/24/23 15:47	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			08/24/23 15:47	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			08/24/23 15:47	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			08/24/23 15:47	1
Naphthalene	ND		1.0	0.22	ug/L			08/24/23 15:47	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			08/24/23 15:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*91*		*80 - 120*		*08/24/23 15:47*	*1*
Dibromofluoromethane (Surr)	*111*		*80 - 120*		*08/24/23 15:47*	*1*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*		*08/24/23 15:47*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*80 - 120*		*08/24/23 15:47*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**210**		20	10	ug/L			09/06/23 12:59	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**9.7**		1.5	0.43	mg/L			08/28/23 17:10	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: MWA-81i-082123
Lab Sample ID: 580-130777-3
Date Collected: 08/21/23 10:33
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			08/24/23 16:09	1
Chloromethane	ND		0.50	0.14	ug/L			08/24/23 16:09	1
Vinyl chloride	ND		0.10	0.040	ug/L			08/24/23 16:09	1
Bromomethane	ND		0.50	0.13	ug/L			08/24/23 16:09	1
Chloroethane	ND		0.50	0.096	ug/L			08/24/23 16:09	1
Carbon disulfide	ND		0.30	0.083	ug/L			08/24/23 16:09	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			08/24/23 16:09	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			08/24/23 16:09	1
Acetone	ND		10	3.1	ug/L			08/24/23 16:09	1
Methylene Chloride	ND		5.0	1.2	ug/L			08/24/23 16:09	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			08/24/23 16:09	1
2-Butanone (MEK)	ND		10	2.5	ug/L			08/24/23 16:09	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			08/24/23 16:09	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			08/24/23 16:09	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			08/24/23 16:09	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			08/24/23 16:09	1
Chlorobromomethane	ND		0.20	0.050	ug/L			08/24/23 16:09	1
Chloroform	ND		0.20	0.030	ug/L			08/24/23 16:09	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			08/24/23 16:09	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			08/24/23 16:09	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			08/24/23 16:09	1
Benzene	ND		0.20	0.030	ug/L			08/24/23 16:09	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			08/24/23 16:09	1
Trichloroethene	ND		0.20	0.066	ug/L			08/24/23 16:09	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			08/24/23 16:09	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			08/24/23 16:09	1
Dibromomethane	ND		0.20	0.062	ug/L			08/24/23 16:09	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			08/24/23 16:09	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			08/24/23 16:09	1
Toluene	ND		0.20	0.050	ug/L			08/24/23 16:09	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			08/24/23 16:09	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			08/24/23 16:09	1
Tetrachloroethene	ND		0.24	0.084	ug/L			08/24/23 16:09	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			08/24/23 16:09	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			08/24/23 16:09	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			08/24/23 16:09	1
Chlorobenzene	ND		0.20	0.060	ug/L			08/24/23 16:09	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			08/24/23 16:09	1
Ethylbenzene	ND		0.20	0.030	ug/L			08/24/23 16:09	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			08/24/23 16:09	1
o-Xylene	ND		0.50	0.15	ug/L			08/24/23 16:09	1
Styrene	ND		1.0	0.19	ug/L			08/24/23 16:09	1
Bromoform	ND		0.50	0.16	ug/L			08/24/23 16:09	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/24/23 16:09	1
Bromobenzene	ND		0.20	0.038	ug/L			08/24/23 16:09	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			08/24/23 16:09	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			08/24/23 16:09	1
N-Propylbenzene	ND		0.30	0.091	ug/L			08/24/23 16:09	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			08/24/23 16:09	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: MWA-81i-082123
Lab Sample ID: 580-130777-3
Date Collected: 08/21/23 10:33
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			08/24/23 16:09	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			08/24/23 16:09	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			08/24/23 16:09	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			08/24/23 16:09	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			08/24/23 16:09	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			08/24/23 16:09	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 16:09	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 16:09	1
n-Butylbenzene	ND		1.0	0.23	ug/L			08/24/23 16:09	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			08/24/23 16:09	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			08/24/23 16:09	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			08/24/23 16:09	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			08/24/23 16:09	1
Naphthalene	ND		1.0	0.22	ug/L			08/24/23 16:09	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			08/24/23 16:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*92*		*80 - 120*		*08/24/23 16:09*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 120*		*08/24/23 16:09*	*1*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*		*08/24/23 16:09*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*80 - 120*		*08/24/23 16:09*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	2.0	ug/L			09/05/23 17:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**19**		1.5	0.43	mg/L			08/28/23 17:22	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: MWA-41-082123
Lab Sample ID: 580-130777-4
Date Collected: 08/21/23 11:05
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			08/24/23 16:30	1
Chloromethane	ND		0.50	0.14	ug/L			08/24/23 16:30	1
Vinyl chloride	ND		0.10	0.040	ug/L			08/24/23 16:30	1
Bromomethane	ND		0.50	0.13	ug/L			08/24/23 16:30	1
Chloroethane	ND		0.50	0.096	ug/L			08/24/23 16:30	1
Carbon disulfide	ND		0.30	0.083	ug/L			08/24/23 16:30	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			08/24/23 16:30	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			08/24/23 16:30	1
Acetone	ND		10	3.1	ug/L			08/24/23 16:30	1
Methylene Chloride	ND		5.0	1.2	ug/L			08/24/23 16:30	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			08/24/23 16:30	1
2-Butanone (MEK)	ND		10	2.5	ug/L			08/24/23 16:30	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			08/24/23 16:30	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			08/24/23 16:30	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			08/24/23 16:30	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			08/24/23 16:30	1
Chlorobromomethane	ND		0.20	0.050	ug/L			08/24/23 16:30	1
Chloroform	ND		0.20	0.030	ug/L			08/24/23 16:30	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			08/24/23 16:30	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			08/24/23 16:30	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			08/24/23 16:30	1
Benzene	ND		0.20	0.030	ug/L			08/24/23 16:30	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			08/24/23 16:30	1
Trichloroethene	ND		0.20	0.066	ug/L			08/24/23 16:30	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			08/24/23 16:30	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			08/24/23 16:30	1
Dibromomethane	ND		0.20	0.062	ug/L			08/24/23 16:30	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			08/24/23 16:30	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			08/24/23 16:30	1
Toluene	ND		0.20	0.050	ug/L			08/24/23 16:30	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			08/24/23 16:30	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			08/24/23 16:30	1
Tetrachloroethene	ND		0.24	0.084	ug/L			08/24/23 16:30	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			08/24/23 16:30	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			08/24/23 16:30	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			08/24/23 16:30	1
Chlorobenzene	ND		0.20	0.060	ug/L			08/24/23 16:30	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			08/24/23 16:30	1
Ethylbenzene	ND		0.20	0.030	ug/L			08/24/23 16:30	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			08/24/23 16:30	1
o-Xylene	ND		0.50	0.15	ug/L			08/24/23 16:30	1
Styrene	ND		1.0	0.19	ug/L			08/24/23 16:30	1
Bromoform	ND		0.50	0.16	ug/L			08/24/23 16:30	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/24/23 16:30	1
Bromobenzene	ND		0.20	0.038	ug/L			08/24/23 16:30	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			08/24/23 16:30	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			08/24/23 16:30	1
N-Propylbenzene	ND		0.30	0.091	ug/L			08/24/23 16:30	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			08/24/23 16:30	1

Client Sample ID: MWA-41-082123
Lab Sample ID: 580-130777-4

Date Collected: 08/21/23 11:05
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			08/24/23 16:30	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			08/24/23 16:30	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			08/24/23 16:30	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			08/24/23 16:30	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			08/24/23 16:30	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			08/24/23 16:30	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 16:30	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 16:30	1
n-Butylbenzene	ND		1.0	0.23	ug/L			08/24/23 16:30	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			08/24/23 16:30	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			08/24/23 16:30	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			08/24/23 16:30	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			08/24/23 16:30	1
Naphthalene	ND		1.0	0.22	ug/L			08/24/23 16:30	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			08/24/23 16:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*91*		*80 - 120*		*08/24/23 16:30*	*1*
Dibromofluoromethane (Surr)	*111*		*80 - 120*		*08/24/23 16:30*	*1*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*		*08/24/23 16:30*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*80 - 120*		*08/24/23 16:30*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	2.0	ug/L			09/05/23 17:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**7.1**		1.5	0.43	mg/L			08/28/23 17:34	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-15i-082123
Lab Sample ID: 580-130777-5
Date Collected: 08/21/23 12:18
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			08/24/23 16:52	1
Chloromethane	ND		0.50	0.14	ug/L			08/24/23 16:52	1
Vinyl chloride	ND		0.10	0.040	ug/L			08/24/23 16:52	1
Bromomethane	ND		0.50	0.13	ug/L			08/24/23 16:52	1
Chloroethane	ND		0.50	0.096	ug/L			08/24/23 16:52	1
Carbon disulfide	ND		0.30	0.083	ug/L			08/24/23 16:52	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			08/24/23 16:52	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			08/24/23 16:52	1
Acetone	ND		10	3.1	ug/L			08/24/23 16:52	1
Methylene Chloride	ND		5.0	1.2	ug/L			08/24/23 16:52	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			08/24/23 16:52	1
2-Butanone (MEK)	ND		10	2.5	ug/L			08/24/23 16:52	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			08/24/23 16:52	1
1,1-Dichloroethane	**0.30**		0.20	0.025	ug/L			08/24/23 16:52	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			08/24/23 16:52	1
cis-1,2-Dichloroethene	**0.088**	**J**	0.20	0.055	ug/L			08/24/23 16:52	1
Chlorobromomethane	ND		0.20	0.050	ug/L			08/24/23 16:52	1
Chloroform	ND		0.20	0.030	ug/L			08/24/23 16:52	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			08/24/23 16:52	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			08/24/23 16:52	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			08/24/23 16:52	1
Benzene	ND		0.20	0.030	ug/L			08/24/23 16:52	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			08/24/23 16:52	1
Trichloroethene	ND		0.20	0.066	ug/L			08/24/23 16:52	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			08/24/23 16:52	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			08/24/23 16:52	1
Dibromomethane	ND		0.20	0.062	ug/L			08/24/23 16:52	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			08/24/23 16:52	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			08/24/23 16:52	1
Toluene	ND		0.20	0.050	ug/L			08/24/23 16:52	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			08/24/23 16:52	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			08/24/23 16:52	1
Tetrachloroethene	ND		0.24	0.084	ug/L			08/24/23 16:52	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			08/24/23 16:52	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			08/24/23 16:52	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			08/24/23 16:52	1
Chlorobenzene	ND		0.20	0.060	ug/L			08/24/23 16:52	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			08/24/23 16:52	1
Ethylbenzene	ND		0.20	0.030	ug/L			08/24/23 16:52	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			08/24/23 16:52	1
o-Xylene	ND		0.50	0.15	ug/L			08/24/23 16:52	1
Styrene	ND		1.0	0.19	ug/L			08/24/23 16:52	1
Bromoform	ND		0.50	0.16	ug/L			08/24/23 16:52	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/24/23 16:52	1
Bromobenzene	ND		0.20	0.038	ug/L			08/24/23 16:52	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			08/24/23 16:52	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			08/24/23 16:52	1
N-Propylbenzene	ND		0.30	0.091	ug/L			08/24/23 16:52	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			08/24/23 16:52	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-15i-082123
Lab Sample ID: 580-130777-5
Date Collected: 08/21/23 12:18
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			08/24/23 16:52	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			08/24/23 16:52	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			08/24/23 16:52	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			08/24/23 16:52	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			08/24/23 16:52	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			08/24/23 16:52	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 16:52	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 16:52	1
n-Butylbenzene	ND		1.0	0.23	ug/L			08/24/23 16:52	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			08/24/23 16:52	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			08/24/23 16:52	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			08/24/23 16:52	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			08/24/23 16:52	1
Naphthalene	ND		1.0	0.22	ug/L			08/24/23 16:52	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			08/24/23 16:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*92*		*80 - 120*		*08/24/23 16:52*	*1*
Dibromofluoromethane (Surr)	*111*		*80 - 120*		*08/24/23 16:52*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*08/24/23 16:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*80 - 120*		*08/24/23 16:52*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	10	ug/L			09/05/23 17:44	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**41**		1.5	0.43	mg/L			08/28/23 17:46	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-08-082123
Lab Sample ID: 580-130777-6
Date Collected: 08/21/23 10:06
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			08/24/23 17:14	1
Chloromethane	ND		0.50	0.14	ug/L			08/24/23 17:14	1
Vinyl chloride	ND		0.10	0.040	ug/L			08/24/23 17:14	1
Bromomethane	ND		0.50	0.13	ug/L			08/24/23 17:14	1
Chloroethane	ND		0.50	0.096	ug/L			08/24/23 17:14	1
Carbon disulfide	ND		0.30	0.083	ug/L			08/24/23 17:14	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			08/24/23 17:14	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			08/24/23 17:14	1
Acetone	ND		10	3.1	ug/L			08/24/23 17:14	1
Methylene Chloride	ND		5.0	1.2	ug/L			08/24/23 17:14	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			08/24/23 17:14	1
2-Butanone (MEK)	ND		10	2.5	ug/L			08/24/23 17:14	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			08/24/23 17:14	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			08/24/23 17:14	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			08/24/23 17:14	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			08/24/23 17:14	1
Chlorobromomethane	ND		0.20	0.050	ug/L			08/24/23 17:14	1
Chloroform	**0.082**	**J**	0.20	0.030	ug/L			08/24/23 17:14	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			08/24/23 17:14	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			08/24/23 17:14	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			08/24/23 17:14	1
Benzene	ND		0.20	0.030	ug/L			08/24/23 17:14	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			08/24/23 17:14	1
Trichloroethene	**0.092**	**J**	0.20	0.066	ug/L			08/24/23 17:14	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			08/24/23 17:14	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			08/24/23 17:14	1
Dibromomethane	ND		0.20	0.062	ug/L			08/24/23 17:14	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			08/24/23 17:14	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			08/24/23 17:14	1
Toluene	ND		0.20	0.050	ug/L			08/24/23 17:14	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			08/24/23 17:14	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			08/24/23 17:14	1
Tetrachloroethene	**0.29**		0.24	0.084	ug/L			08/24/23 17:14	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			08/24/23 17:14	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			08/24/23 17:14	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			08/24/23 17:14	1
Chlorobenzene	ND		0.20	0.060	ug/L			08/24/23 17:14	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			08/24/23 17:14	1
Ethylbenzene	ND		0.20	0.030	ug/L			08/24/23 17:14	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			08/24/23 17:14	1
o-Xylene	ND		0.50	0.15	ug/L			08/24/23 17:14	1
Styrene	ND		1.0	0.19	ug/L			08/24/23 17:14	1
Bromoform	ND		0.50	0.16	ug/L			08/24/23 17:14	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/24/23 17:14	1
Bromobenzene	ND		0.20	0.038	ug/L			08/24/23 17:14	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			08/24/23 17:14	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			08/24/23 17:14	1
N-Propylbenzene	ND		0.30	0.091	ug/L			08/24/23 17:14	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			08/24/23 17:14	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-08-082123
Lab Sample ID: 580-130777-6
Date Collected: 08/21/23 10:06
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			08/24/23 17:14	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			08/24/23 17:14	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			08/24/23 17:14	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			08/24/23 17:14	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			08/24/23 17:14	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			08/24/23 17:14	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 17:14	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 17:14	1
n-Butylbenzene	ND		1.0	0.23	ug/L			08/24/23 17:14	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			08/24/23 17:14	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			08/24/23 17:14	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			08/24/23 17:14	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			08/24/23 17:14	1
Naphthalene	ND		1.0	0.22	ug/L			08/24/23 17:14	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			08/24/23 17:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*91*		*80 - 120*		*08/24/23 17:14*	*1*
Dibromofluoromethane (Surr)	*113*		*80 - 120*		*08/24/23 17:14*	*1*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*		*08/24/23 17:14*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*80 - 120*		*08/24/23 17:14*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**17**		4.0	2.0	ug/L			09/06/23 13:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**53**		1.5	0.43	mg/L			08/28/23 17:57	1

Client Sample ID: PA-09-082123
Lab Sample ID: 580-130777-7
Date Collected: 08/21/23 11:17
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			08/24/23 17:36	1
Chloromethane	ND		0.50	0.14	ug/L			08/24/23 17:36	1
Vinyl chloride	ND		0.10	0.040	ug/L			08/24/23 17:36	1
Bromomethane	ND		0.50	0.13	ug/L			08/24/23 17:36	1
Chloroethane	ND		0.50	0.096	ug/L			08/24/23 17:36	1
Carbon disulfide	ND		0.30	0.083	ug/L			08/24/23 17:36	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			08/24/23 17:36	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			08/24/23 17:36	1
Acetone	ND		10	3.1	ug/L			08/24/23 17:36	1
Methylene Chloride	ND		5.0	1.2	ug/L			08/24/23 17:36	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			08/24/23 17:36	1
2-Butanone (MEK)	ND		10	2.5	ug/L			08/24/23 17:36	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			08/24/23 17:36	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			08/24/23 17:36	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			08/24/23 17:36	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			08/24/23 17:36	1
Chlorobromomethane	ND		0.20	0.050	ug/L			08/24/23 17:36	1
Chloroform	ND		0.20	0.030	ug/L			08/24/23 17:36	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			08/24/23 17:36	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			08/24/23 17:36	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			08/24/23 17:36	1
Benzene	ND		0.20	0.030	ug/L			08/24/23 17:36	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			08/24/23 17:36	1
Trichloroethene	ND		0.20	0.066	ug/L			08/24/23 17:36	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			08/24/23 17:36	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			08/24/23 17:36	1
Dibromomethane	ND		0.20	0.062	ug/L			08/24/23 17:36	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			08/24/23 17:36	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			08/24/23 17:36	1
Toluene	ND		0.20	0.050	ug/L			08/24/23 17:36	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			08/24/23 17:36	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			08/24/23 17:36	1
Tetrachloroethene	ND		0.24	0.084	ug/L			08/24/23 17:36	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			08/24/23 17:36	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			08/24/23 17:36	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			08/24/23 17:36	1
Chlorobenzene	ND		0.20	0.060	ug/L			08/24/23 17:36	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			08/24/23 17:36	1
Ethylbenzene	ND		0.20	0.030	ug/L			08/24/23 17:36	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			08/24/23 17:36	1
o-Xylene	ND		0.50	0.15	ug/L			08/24/23 17:36	1
Styrene	ND		1.0	0.19	ug/L			08/24/23 17:36	1
Bromoform	ND		0.50	0.16	ug/L			08/24/23 17:36	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/24/23 17:36	1
Bromobenzene	ND		0.20	0.038	ug/L			08/24/23 17:36	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			08/24/23 17:36	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			08/24/23 17:36	1
N-Propylbenzene	ND		0.30	0.091	ug/L			08/24/23 17:36	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			08/24/23 17:36	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-09-082123
Lab Sample ID: 580-130777-7
Date Collected: 08/21/23 11:17
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			08/24/23 17:36	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			08/24/23 17:36	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			08/24/23 17:36	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			08/24/23 17:36	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			08/24/23 17:36	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			08/24/23 17:36	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 17:36	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 17:36	1
n-Butylbenzene	ND		1.0	0.23	ug/L			08/24/23 17:36	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			08/24/23 17:36	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			08/24/23 17:36	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			08/24/23 17:36	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			08/24/23 17:36	1
Naphthalene	ND		1.0	0.22	ug/L			08/24/23 17:36	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			08/24/23 17:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*91*		*80 - 120*		*08/24/23 17:36*	*1*
Dibromofluoromethane (Surr)	*110*		*80 - 120*		*08/24/23 17:36*	*1*
4-Bromofluorobenzene (Surr)	*88*		*80 - 120*		*08/24/23 17:36*	*1*
1,2-Dichloroethane-d4 (Surr)	*111*		*80 - 120*		*08/24/23 17:36*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	2.0	ug/L			09/06/23 13:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**5.7**		1.5	0.43	mg/L			08/28/23 18:09	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-18d-082123
Lab Sample ID: 580-130777-8
Date Collected: 08/21/23 13:35
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.53	ug/L			08/29/23 07:53	1
Chloromethane	ND		1.0	0.28	ug/L			08/29/23 07:53	1
Vinyl chloride	**0.28**	**J**	1.0	0.22	ug/L			08/29/23 07:53	1
Bromomethane	ND		1.0	0.21	ug/L			08/29/23 07:53	1
Chloroethane	ND		1.0	0.35	ug/L			08/29/23 07:53	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			08/29/23 07:53	1
Carbon disulfide	ND		1.0	0.53	ug/L			08/29/23 07:53	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			08/29/23 07:53	1
Acetone	**4.9**	**J B**	15	3.2	ug/L			08/29/23 07:53	1
Methylene Chloride	ND		5.0	1.4	ug/L			08/29/23 07:53	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			08/29/23 07:53	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			08/29/23 07:53	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			08/29/23 07:53	1
2-Butanone (MEK)	ND		15	4.7	ug/L			08/29/23 07:53	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			08/29/23 07:53	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			08/29/23 07:53	1
Bromochloromethane	ND		1.0	0.29	ug/L			08/29/23 07:53	1
Chloroform	ND		1.0	0.26	ug/L			08/29/23 07:53	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			08/29/23 07:53	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			08/29/23 07:53	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			08/29/23 07:53	1
Benzene	ND		1.0	0.24	ug/L			08/29/23 07:53	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			08/29/23 07:53	1
Trichloroethene	ND		1.0	0.26	ug/L			08/29/23 07:53	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			08/29/23 07:53	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			08/29/23 07:53	1
Dibromomethane	ND		1.0	0.34	ug/L			08/29/23 07:53	1
Bromodichloromethane	ND		1.0	0.29	ug/L			08/29/23 07:53	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			08/29/23 07:53	1
Toluene	ND		1.0	0.39	ug/L			08/29/23 07:53	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			08/29/23 07:53	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			08/29/23 07:53	1
Tetrachloroethene	ND		1.0	0.41	ug/L			08/29/23 07:53	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			08/29/23 07:53	1
Dibromochloromethane	ND		1.0	0.43	ug/L			08/29/23 07:53	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			08/29/23 07:53	1
Chlorobenzene	ND		1.0	0.44	ug/L			08/29/23 07:53	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			08/29/23 07:53	1
Ethylbenzene	ND		1.0	0.50	ug/L			08/29/23 07:53	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			08/29/23 07:53	1
o-Xylene	ND		1.0	0.39	ug/L			08/29/23 07:53	1
Styrene	ND		1.0	0.53	ug/L			08/29/23 07:53	1
Bromoform	ND		1.0	0.51	ug/L			08/29/23 07:53	1
Isopropylbenzene	ND		1.0	0.44	ug/L			08/29/23 07:53	1
Bromobenzene	ND		1.0	0.43	ug/L			08/29/23 07:53	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			08/29/23 07:53	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			08/29/23 07:53	1
N-Propylbenzene	ND		1.0	0.50	ug/L			08/29/23 07:53	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			08/29/23 07:53	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-18d-082123
Lab Sample ID: 580-130777-8
Date Collected: 08/21/23 13:35
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		1.0	0.38	ug/L			08/29/23 07:53	1
t-Butylbenzene	ND		2.0	0.58	ug/L			08/29/23 07:53	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			08/29/23 07:53	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			08/29/23 07:53	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			08/29/23 07:53	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			08/29/23 07:53	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			08/29/23 07:53	1
n-Butylbenzene	ND		1.0	0.44	ug/L			08/29/23 07:53	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			08/29/23 07:53	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			08/29/23 07:53	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			08/29/23 07:53	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			08/29/23 07:53	1
Naphthalene	ND		3.0	0.93	ug/L			08/29/23 07:53	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			08/29/23 07:53	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			08/29/23 07:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*		*08/29/23 07:53*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*08/29/23 07:53*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*08/29/23 07:53*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*08/29/23 07:53*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	10	ug/L			09/06/23 13:53	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**80**		1.5	0.43	mg/L			08/28/23 18:21	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: RB-01-082223
Lab Sample ID: 580-130777-9
Date Collected: 08/22/23 06:45
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			08/24/23 17:57	1
Chloromethane	ND		0.50	0.14	ug/L			08/24/23 17:57	1
Vinyl chloride	ND		0.10	0.040	ug/L			08/24/23 17:57	1
Bromomethane	ND		0.50	0.13	ug/L			08/24/23 17:57	1
Chloroethane	ND		0.50	0.096	ug/L			08/24/23 17:57	1
Carbon disulfide	ND		0.30	0.083	ug/L			08/24/23 17:57	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			08/24/23 17:57	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			08/24/23 17:57	1
Acetone	ND		10	3.1	ug/L			08/24/23 17:57	1
Methylene Chloride	ND		5.0	1.2	ug/L			08/24/23 17:57	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			08/24/23 17:57	1
2-Butanone (MEK)	ND		10	2.5	ug/L			08/24/23 17:57	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			08/24/23 17:57	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			08/24/23 17:57	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			08/24/23 17:57	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			08/24/23 17:57	1
Chlorobromomethane	ND		0.20	0.050	ug/L			08/24/23 17:57	1
Chloroform	ND		0.20	0.030	ug/L			08/24/23 17:57	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			08/24/23 17:57	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			08/24/23 17:57	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			08/24/23 17:57	1
Benzene	ND		0.20	0.030	ug/L			08/24/23 17:57	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			08/24/23 17:57	1
Trichloroethene	ND		0.20	0.066	ug/L			08/24/23 17:57	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			08/24/23 17:57	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			08/24/23 17:57	1
Dibromomethane	ND		0.20	0.062	ug/L			08/24/23 17:57	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			08/24/23 17:57	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			08/24/23 17:57	1
Toluene	ND		0.20	0.050	ug/L			08/24/23 17:57	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			08/24/23 17:57	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			08/24/23 17:57	1
Tetrachloroethene	ND		0.24	0.084	ug/L			08/24/23 17:57	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			08/24/23 17:57	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			08/24/23 17:57	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			08/24/23 17:57	1
Chlorobenzene	ND		0.20	0.060	ug/L			08/24/23 17:57	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			08/24/23 17:57	1
Ethylbenzene	ND		0.20	0.030	ug/L			08/24/23 17:57	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			08/24/23 17:57	1
o-Xylene	ND		0.50	0.15	ug/L			08/24/23 17:57	1
Styrene	ND		1.0	0.19	ug/L			08/24/23 17:57	1
Bromoform	ND		0.50	0.16	ug/L			08/24/23 17:57	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/24/23 17:57	1
Bromobenzene	ND		0.20	0.038	ug/L			08/24/23 17:57	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			08/24/23 17:57	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			08/24/23 17:57	1
N-Propylbenzene	ND		0.30	0.091	ug/L			08/24/23 17:57	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			08/24/23 17:57	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: RB-01-082223
Lab Sample ID: 580-130777-9
Date Collected: 08/22/23 06:45
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			08/24/23 17:57	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			08/24/23 17:57	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			08/24/23 17:57	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			08/24/23 17:57	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			08/24/23 17:57	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			08/24/23 17:57	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 17:57	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 17:57	1
n-Butylbenzene	ND		1.0	0.23	ug/L			08/24/23 17:57	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			08/24/23 17:57	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			08/24/23 17:57	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			08/24/23 17:57	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			08/24/23 17:57	1
Naphthalene	ND		1.0	0.22	ug/L			08/24/23 17:57	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			08/24/23 17:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*90*		*80 - 120*		*08/24/23 17:57*	*1*
Dibromofluoromethane (Surr)	*113*		*80 - 120*		*08/24/23 17:57*	*1*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*		*08/24/23 17:57*	*1*
1,2-Dichloroethane-d4 (Surr)	*114*		*80 - 120*		*08/24/23 17:57*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	2.0	ug/L			09/06/23 14:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	ND		1.5	0.43	mg/L			08/28/23 18:56	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-44i-082223
Lab Sample ID: 580-130777-10
Date Collected: 08/22/23 07:30
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			08/24/23 18:19	1
Chloromethane	ND		0.50	0.14	ug/L			08/24/23 18:19	1
Vinyl chloride	ND		0.10	0.040	ug/L			08/24/23 18:19	1
Bromomethane	ND		0.50	0.13	ug/L			08/24/23 18:19	1
Chloroethane	ND		0.50	0.096	ug/L			08/24/23 18:19	1
Carbon disulfide	ND		0.30	0.083	ug/L			08/24/23 18:19	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			08/24/23 18:19	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			08/24/23 18:19	1
Acetone	ND		10	3.1	ug/L			08/24/23 18:19	1
Methylene Chloride	ND		5.0	1.2	ug/L			08/24/23 18:19	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			08/24/23 18:19	1
2-Butanone (MEK)	ND		10	2.5	ug/L			08/24/23 18:19	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			08/24/23 18:19	1
1,1-Dichloroethane	**0.27**		0.20	0.025	ug/L			08/24/23 18:19	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			08/24/23 18:19	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			08/24/23 18:19	1
Chlorobromomethane	ND		0.20	0.050	ug/L			08/24/23 18:19	1
Chloroform	ND		0.20	0.030	ug/L			08/24/23 18:19	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			08/24/23 18:19	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			08/24/23 18:19	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			08/24/23 18:19	1
Benzene	ND		0.20	0.030	ug/L			08/24/23 18:19	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			08/24/23 18:19	1
Trichloroethene	ND		0.20	0.066	ug/L			08/24/23 18:19	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			08/24/23 18:19	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			08/24/23 18:19	1
Dibromomethane	ND		0.20	0.062	ug/L			08/24/23 18:19	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			08/24/23 18:19	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			08/24/23 18:19	1
Toluene	ND		0.20	0.050	ug/L			08/24/23 18:19	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			08/24/23 18:19	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			08/24/23 18:19	1
Tetrachloroethene	ND		0.24	0.084	ug/L			08/24/23 18:19	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			08/24/23 18:19	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			08/24/23 18:19	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			08/24/23 18:19	1
Chlorobenzene	ND		0.20	0.060	ug/L			08/24/23 18:19	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			08/24/23 18:19	1
Ethylbenzene	ND		0.20	0.030	ug/L			08/24/23 18:19	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			08/24/23 18:19	1
o-Xylene	ND		0.50	0.15	ug/L			08/24/23 18:19	1
Styrene	ND		1.0	0.19	ug/L			08/24/23 18:19	1
Bromoform	ND		0.50	0.16	ug/L			08/24/23 18:19	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/24/23 18:19	1
Bromobenzene	ND		0.20	0.038	ug/L			08/24/23 18:19	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			08/24/23 18:19	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			08/24/23 18:19	1
N-Propylbenzene	ND		0.30	0.091	ug/L			08/24/23 18:19	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			08/24/23 18:19	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-44i-082223
Lab Sample ID: 580-130777-10
Date Collected: 08/22/23 07:30
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			08/24/23 18:19	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			08/24/23 18:19	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			08/24/23 18:19	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			08/24/23 18:19	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			08/24/23 18:19	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			08/24/23 18:19	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 18:19	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 18:19	1
n-Butylbenzene	ND		1.0	0.23	ug/L			08/24/23 18:19	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			08/24/23 18:19	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			08/24/23 18:19	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			08/24/23 18:19	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			08/24/23 18:19	1
Naphthalene	ND		1.0	0.22	ug/L			08/24/23 18:19	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			08/24/23 18:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*89*		*80 - 120*		*08/24/23 18:19*	*1*
Dibromofluoromethane (Surr)	*110*		*80 - 120*		*08/24/23 18:19*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*08/24/23 18:19*	*1*
1,2-Dichloroethane-d4 (Surr)	*114*		*80 - 120*		*08/24/23 18:19*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	10	ug/L			09/06/23 12:06	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**370**		15	4.3	mg/L			08/28/23 19:19	10

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-25d-082223
Lab Sample ID: 580-130777-11
Date Collected: 08/22/23 08:18
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			08/24/23 18:41	1
Chloromethane	ND		0.50	0.14	ug/L			08/24/23 18:41	1
Vinyl chloride	ND		0.10	0.040	ug/L			08/24/23 18:41	1
Bromomethane	ND		0.50	0.13	ug/L			08/24/23 18:41	1
Chloroethane	ND		0.50	0.096	ug/L			08/24/23 18:41	1
Carbon disulfide	ND		0.30	0.083	ug/L			08/24/23 18:41	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			08/24/23 18:41	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			08/24/23 18:41	1
Acetone	ND		10	3.1	ug/L			08/24/23 18:41	1
Methylene Chloride	ND		5.0	1.2	ug/L			08/24/23 18:41	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			08/24/23 18:41	1
2-Butanone (MEK)	ND		10	2.5	ug/L			08/24/23 18:41	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			08/24/23 18:41	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			08/24/23 18:41	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			08/24/23 18:41	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			08/24/23 18:41	1
Chlorobromomethane	ND		0.20	0.050	ug/L			08/24/23 18:41	1
Chloroform	ND		0.20	0.030	ug/L			08/24/23 18:41	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			08/24/23 18:41	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			08/24/23 18:41	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			08/24/23 18:41	1
Benzene	ND		0.20	0.030	ug/L			08/24/23 18:41	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			08/24/23 18:41	1
Trichloroethene	ND		0.20	0.066	ug/L			08/24/23 18:41	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			08/24/23 18:41	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			08/24/23 18:41	1
Dibromomethane	ND		0.20	0.062	ug/L			08/24/23 18:41	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			08/24/23 18:41	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			08/24/23 18:41	1
Toluene	ND		0.20	0.050	ug/L			08/24/23 18:41	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			08/24/23 18:41	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			08/24/23 18:41	1
Tetrachloroethene	ND		0.24	0.084	ug/L			08/24/23 18:41	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			08/24/23 18:41	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			08/24/23 18:41	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			08/24/23 18:41	1
Chlorobenzene	ND		0.20	0.060	ug/L			08/24/23 18:41	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			08/24/23 18:41	1
Ethylbenzene	ND		0.20	0.030	ug/L			08/24/23 18:41	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			08/24/23 18:41	1
o-Xylene	ND		0.50	0.15	ug/L			08/24/23 18:41	1
Styrene	ND		1.0	0.19	ug/L			08/24/23 18:41	1
Bromoform	ND		0.50	0.16	ug/L			08/24/23 18:41	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/24/23 18:41	1
Bromobenzene	ND		0.20	0.038	ug/L			08/24/23 18:41	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			08/24/23 18:41	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			08/24/23 18:41	1
N-Propylbenzene	ND		0.30	0.091	ug/L			08/24/23 18:41	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			08/24/23 18:41	1

Client Sample ID: PA-25d-082223
Lab Sample ID: 580-130777-11

Date Collected: 08/22/23 08:18
Matrix: Water

Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			08/24/23 18:41	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			08/24/23 18:41	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			08/24/23 18:41	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			08/24/23 18:41	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			08/24/23 18:41	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			08/24/23 18:41	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 18:41	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 18:41	1
n-Butylbenzene	ND		1.0	0.23	ug/L			08/24/23 18:41	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			08/24/23 18:41	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			08/24/23 18:41	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			08/24/23 18:41	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			08/24/23 18:41	1
Naphthalene	ND		1.0	0.22	ug/L			08/24/23 18:41	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			08/24/23 18:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*89*		*80 - 120*		*08/24/23 18:41*	*1*
Dibromofluoromethane (Surr)	*112*		*80 - 120*		*08/24/23 18:41*	*1*
4-Bromofluorobenzene (Surr)	*89*		*80 - 120*		*08/24/23 18:41*	*1*
1,2-Dichloroethane-d4 (Surr)	*116*		*80 - 120*		*08/24/23 18:41*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	2.0	ug/L			09/06/23 15:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**24**		1.5	0.43	mg/L			08/29/23 14:54	1

Client Sample ID: PA-16i-082223
Lab Sample ID: 580-130777-12

Date Collected: 08/22/23 09:22
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			08/24/23 19:02	1
Chloromethane	ND		0.50	0.14	ug/L			08/24/23 19:02	1
Vinyl chloride	ND		0.10	0.040	ug/L			08/24/23 19:02	1
Bromomethane	ND		0.50	0.13	ug/L			08/24/23 19:02	1
Chloroethane	ND		0.50	0.096	ug/L			08/24/23 19:02	1
Carbon disulfide	ND		0.30	0.083	ug/L			08/24/23 19:02	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			08/24/23 19:02	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			08/24/23 19:02	1
Acetone	ND		10	3.1	ug/L			08/24/23 19:02	1
Methylene Chloride	ND		5.0	1.2	ug/L			08/24/23 19:02	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			08/24/23 19:02	1
2-Butanone (MEK)	ND		10	2.5	ug/L			08/24/23 19:02	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			08/24/23 19:02	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			08/24/23 19:02	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			08/24/23 19:02	1
cis-1,2-Dichloroethene	**0.091**	**J**	0.20	0.055	ug/L			08/24/23 19:02	1
Chlorobromomethane	ND		0.20	0.050	ug/L			08/24/23 19:02	1
Chloroform	ND		0.20	0.030	ug/L			08/24/23 19:02	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			08/24/23 19:02	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			08/24/23 19:02	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			08/24/23 19:02	1
Benzene	ND		0.20	0.030	ug/L			08/24/23 19:02	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			08/24/23 19:02	1
Trichloroethene	ND		0.20	0.066	ug/L			08/24/23 19:02	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			08/24/23 19:02	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			08/24/23 19:02	1
Dibromomethane	ND		0.20	0.062	ug/L			08/24/23 19:02	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			08/24/23 19:02	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			08/24/23 19:02	1
Toluene	ND		0.20	0.050	ug/L			08/24/23 19:02	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			08/24/23 19:02	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			08/24/23 19:02	1
Tetrachloroethene	ND		0.24	0.084	ug/L			08/24/23 19:02	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			08/24/23 19:02	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			08/24/23 19:02	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			08/24/23 19:02	1
Chlorobenzene	ND		0.20	0.060	ug/L			08/24/23 19:02	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			08/24/23 19:02	1
Ethylbenzene	ND		0.20	0.030	ug/L			08/24/23 19:02	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			08/24/23 19:02	1
o-Xylene	ND		0.50	0.15	ug/L			08/24/23 19:02	1
Styrene	ND		1.0	0.19	ug/L			08/24/23 19:02	1
Bromoform	ND		0.50	0.16	ug/L			08/24/23 19:02	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/24/23 19:02	1
Bromobenzene	ND		0.20	0.038	ug/L			08/24/23 19:02	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			08/24/23 19:02	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			08/24/23 19:02	1
N-Propylbenzene	ND		0.30	0.091	ug/L			08/24/23 19:02	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			08/24/23 19:02	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-16i-082223
Lab Sample ID: 580-130777-12
Date Collected: 08/22/23 09:22
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			08/24/23 19:02	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			08/24/23 19:02	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			08/24/23 19:02	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			08/24/23 19:02	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			08/24/23 19:02	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			08/24/23 19:02	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 19:02	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 19:02	1
n-Butylbenzene	ND		1.0	0.23	ug/L			08/24/23 19:02	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			08/24/23 19:02	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			08/24/23 19:02	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			08/24/23 19:02	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			08/24/23 19:02	1
Naphthalene	ND		1.0	0.22	ug/L			08/24/23 19:02	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			08/24/23 19:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*91*		*80 - 120*		*08/24/23 19:02*	*1*
Dibromofluoromethane (Surr)	*114*		*80 - 120*		*08/24/23 19:02*	*1*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*		*08/24/23 19:02*	*1*
1,2-Dichloroethane-d4 (Surr)	*117*		*80 - 120*		*08/24/23 19:02*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		8.0	4.0	ug/L			09/06/23 15:22	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**35**		1.5	0.43	mg/L			08/28/23 20:06	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-26d-082223
Lab Sample ID: 580-130777-13
Date Collected: 08/22/23 10:15
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			08/24/23 19:24	1
Chloromethane	ND		0.50	0.14	ug/L			08/24/23 19:24	1
Vinyl chloride	ND		0.10	0.040	ug/L			08/24/23 19:24	1
Bromomethane	ND		0.50	0.13	ug/L			08/24/23 19:24	1
Chloroethane	ND		0.50	0.096	ug/L			08/24/23 19:24	1
Carbon disulfide	ND		0.30	0.083	ug/L			08/24/23 19:24	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			08/24/23 19:24	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			08/24/23 19:24	1
Acetone	ND		10	3.1	ug/L			08/24/23 19:24	1
Methylene Chloride	ND		5.0	1.2	ug/L			08/24/23 19:24	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			08/24/23 19:24	1
2-Butanone (MEK)	ND		10	2.5	ug/L			08/24/23 19:24	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			08/24/23 19:24	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			08/24/23 19:24	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			08/24/23 19:24	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			08/24/23 19:24	1
Chlorobromomethane	ND		0.20	0.050	ug/L			08/24/23 19:24	1
Chloroform	ND		0.20	0.030	ug/L			08/24/23 19:24	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			08/24/23 19:24	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			08/24/23 19:24	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			08/24/23 19:24	1
Benzene	ND		0.20	0.030	ug/L			08/24/23 19:24	1
1,2-Dichloroethane	**0.39**		0.20	0.043	ug/L			08/24/23 19:24	1
Trichloroethene	ND		0.20	0.066	ug/L			08/24/23 19:24	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			08/24/23 19:24	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			08/24/23 19:24	1
Dibromomethane	ND		0.20	0.062	ug/L			08/24/23 19:24	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			08/24/23 19:24	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			08/24/23 19:24	1
Toluene	ND		0.20	0.050	ug/L			08/24/23 19:24	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			08/24/23 19:24	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			08/24/23 19:24	1
Tetrachloroethene	ND		0.24	0.084	ug/L			08/24/23 19:24	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			08/24/23 19:24	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			08/24/23 19:24	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			08/24/23 19:24	1
Chlorobenzene	ND		0.20	0.060	ug/L			08/24/23 19:24	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			08/24/23 19:24	1
Ethylbenzene	ND		0.20	0.030	ug/L			08/24/23 19:24	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			08/24/23 19:24	1
o-Xylene	ND		0.50	0.15	ug/L			08/24/23 19:24	1
Styrene	ND		1.0	0.19	ug/L			08/24/23 19:24	1
Bromoform	ND		0.50	0.16	ug/L			08/24/23 19:24	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/24/23 19:24	1
Bromobenzene	ND		0.20	0.038	ug/L			08/24/23 19:24	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			08/24/23 19:24	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			08/24/23 19:24	1
N-Propylbenzene	ND		0.30	0.091	ug/L			08/24/23 19:24	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			08/24/23 19:24	1

Client Sample ID: PA-26d-082223
Lab Sample ID: 580-130777-13

Date Collected: 08/22/23 10:15
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			08/24/23 19:24	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			08/24/23 19:24	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			08/24/23 19:24	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			08/24/23 19:24	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			08/24/23 19:24	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			08/24/23 19:24	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 19:24	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 19:24	1
n-Butylbenzene	ND		1.0	0.23	ug/L			08/24/23 19:24	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			08/24/23 19:24	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			08/24/23 19:24	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			08/24/23 19:24	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			08/24/23 19:24	1
Naphthalene	ND		1.0	0.22	ug/L			08/24/23 19:24	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			08/24/23 19:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*90*		*80 - 120*		*08/24/23 19:24*	*1*
Dibromofluoromethane (Surr)	*112*		*80 - 120*		*08/24/23 19:24*	*1*
4-Bromofluorobenzene (Surr)	*89*		*80 - 120*		*08/24/23 19:24*	*1*
1,2-Dichloroethane-d4 (Surr)	*116*		*80 - 120*		*08/24/23 19:24*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	2.0	ug/L			09/06/23 15:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**74**		1.5	0.43	mg/L			08/28/23 20:18	1

Client Sample ID: PA-23d-082223
Lab Sample ID: 580-130777-14

Date Collected: 08/22/23 11:37
Matrix: Water

Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.53	ug/L			08/25/23 07:10	1
Chloromethane	ND		1.0	0.28	ug/L			08/25/23 07:10	1
Vinyl chloride	ND		1.0	0.22	ug/L			08/25/23 07:10	1
Bromomethane	ND		1.0	0.21	ug/L			08/25/23 07:10	1
Chloroethane	ND		1.0	0.35	ug/L			08/25/23 07:10	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			08/25/23 07:10	1
Carbon disulfide	ND		1.0	0.53	ug/L			08/25/23 07:10	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			08/25/23 07:10	1
Acetone	**11**	**J B**	15	3.2	ug/L			08/25/23 07:10	1
Methylene Chloride	ND		5.0	1.4	ug/L			08/25/23 07:10	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			08/25/23 07:10	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			08/25/23 07:10	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			08/25/23 07:10	1
2-Butanone (MEK)	ND		15	4.7	ug/L			08/25/23 07:10	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			08/25/23 07:10	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			08/25/23 07:10	1
Bromochloromethane	ND		1.0	0.29	ug/L			08/25/23 07:10	1
Chloroform	ND		1.0	0.26	ug/L			08/25/23 07:10	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			08/25/23 07:10	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			08/25/23 07:10	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			08/25/23 07:10	1
Benzene	ND		1.0	0.24	ug/L			08/25/23 07:10	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			08/25/23 07:10	1
Trichloroethene	ND		1.0	0.26	ug/L			08/25/23 07:10	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			08/25/23 07:10	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			08/25/23 07:10	1
Dibromomethane	ND		1.0	0.34	ug/L			08/25/23 07:10	1
Bromodichloromethane	ND		1.0	0.29	ug/L			08/25/23 07:10	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			08/25/23 07:10	1
Toluene	**2.7**		1.0	0.39	ug/L			08/25/23 07:10	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			08/25/23 07:10	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			08/25/23 07:10	1
Tetrachloroethene	ND		1.0	0.41	ug/L			08/25/23 07:10	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			08/25/23 07:10	1
Dibromochloromethane	ND		1.0	0.43	ug/L			08/25/23 07:10	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			08/25/23 07:10	1
Chlorobenzene	ND		1.0	0.44	ug/L			08/25/23 07:10	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			08/25/23 07:10	1
Ethylbenzene	ND		1.0	0.50	ug/L			08/25/23 07:10	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			08/25/23 07:10	1
o-Xylene	ND		1.0	0.39	ug/L			08/25/23 07:10	1
Styrene	ND		1.0	0.53	ug/L			08/25/23 07:10	1
Bromoform	ND		1.0	0.51	ug/L			08/25/23 07:10	1
Isopropylbenzene	ND		1.0	0.44	ug/L			08/25/23 07:10	1
Bromobenzene	ND		1.0	0.43	ug/L			08/25/23 07:10	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			08/25/23 07:10	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			08/25/23 07:10	1
N-Propylbenzene	ND		1.0	0.50	ug/L			08/25/23 07:10	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			08/25/23 07:10	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-23d-082223
Lab Sample ID: 580-130777-14
Date Collected: 08/22/23 11:37
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		1.0	0.38	ug/L			08/25/23 07:10	1
t-Butylbenzene	ND		2.0	0.58	ug/L			08/25/23 07:10	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			08/25/23 07:10	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			08/25/23 07:10	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			08/25/23 07:10	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			08/25/23 07:10	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			08/25/23 07:10	1
n-Butylbenzene	ND		1.0	0.44	ug/L			08/25/23 07:10	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			08/25/23 07:10	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			08/25/23 07:10	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			08/25/23 07:10	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			08/25/23 07:10	1
Naphthalene	ND		3.0	0.93	ug/L			08/25/23 07:10	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			08/25/23 07:10	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			08/25/23 07:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*		*08/25/23 07:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*08/25/23 07:10*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*08/25/23 07:10*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 120*		*08/25/23 07:10*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		800	400	ug/L			09/06/23 15:58	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**29000**		1500	430	mg/L			08/28/23 20:29	1000

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-04-082223
Lab Sample ID: 580-130777-15
Date Collected: 08/22/23 07:20
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			08/24/23 19:46	1
Chloromethane	ND		0.50	0.14	ug/L			08/24/23 19:46	1
Vinyl chloride	ND		0.10	0.040	ug/L			08/24/23 19:46	1
Bromomethane	ND		0.50	0.13	ug/L			08/24/23 19:46	1
Chloroethane	ND		0.50	0.096	ug/L			08/24/23 19:46	1
Carbon disulfide	ND		0.30	0.083	ug/L			08/24/23 19:46	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			08/24/23 19:46	1
1,1-Dichloroethene	**0.28**		0.20	0.035	ug/L			08/24/23 19:46	1
Acetone	ND		10	3.1	ug/L			08/24/23 19:46	1
Methylene Chloride	ND		5.0	1.2	ug/L			08/24/23 19:46	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			08/24/23 19:46	1
2-Butanone (MEK)	ND		10	2.5	ug/L			08/24/23 19:46	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			08/24/23 19:46	1
1,1-Dichloroethane	**0.26**		0.20	0.025	ug/L			08/24/23 19:46	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			08/24/23 19:46	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			08/24/23 19:46	1
Chlorobromomethane	ND		0.20	0.050	ug/L			08/24/23 19:46	1
Chloroform	ND		0.20	0.030	ug/L			08/24/23 19:46	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			08/24/23 19:46	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			08/24/23 19:46	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			08/24/23 19:46	1
Benzene	ND		0.20	0.030	ug/L			08/24/23 19:46	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			08/24/23 19:46	1
Trichloroethene	ND		0.20	0.066	ug/L			08/24/23 19:46	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			08/24/23 19:46	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			08/24/23 19:46	1
Dibromomethane	ND		0.20	0.062	ug/L			08/24/23 19:46	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			08/24/23 19:46	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			08/24/23 19:46	1
Toluene	ND		0.20	0.050	ug/L			08/24/23 19:46	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			08/24/23 19:46	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			08/24/23 19:46	1
Tetrachloroethene	**0.16**	**J**	0.24	0.084	ug/L			08/24/23 19:46	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			08/24/23 19:46	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			08/24/23 19:46	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			08/24/23 19:46	1
Chlorobenzene	ND		0.20	0.060	ug/L			08/24/23 19:46	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			08/24/23 19:46	1
Ethylbenzene	ND		0.20	0.030	ug/L			08/24/23 19:46	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			08/24/23 19:46	1
o-Xylene	ND		0.50	0.15	ug/L			08/24/23 19:46	1
Styrene	ND		1.0	0.19	ug/L			08/24/23 19:46	1
Bromoform	ND		0.50	0.16	ug/L			08/24/23 19:46	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/24/23 19:46	1
Bromobenzene	ND		0.20	0.038	ug/L			08/24/23 19:46	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			08/24/23 19:46	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			08/24/23 19:46	1
N-Propylbenzene	ND		0.30	0.091	ug/L			08/24/23 19:46	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			08/24/23 19:46	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-04-082223
Lab Sample ID: 580-130777-15
Date Collected: 08/22/23 07:20
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			08/24/23 19:46	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			08/24/23 19:46	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			08/24/23 19:46	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			08/24/23 19:46	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			08/24/23 19:46	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			08/24/23 19:46	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 19:46	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 19:46	1
n-Butylbenzene	ND		1.0	0.23	ug/L			08/24/23 19:46	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			08/24/23 19:46	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			08/24/23 19:46	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			08/24/23 19:46	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			08/24/23 19:46	1
Naphthalene	ND		1.0	0.22	ug/L			08/24/23 19:46	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			08/24/23 19:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*90*		*80 - 120*		*08/24/23 19:46*	*1*
Dibromofluoromethane (Surr)	*114*		*80 - 120*		*08/24/23 19:46*	*1*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*		*08/24/23 19:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*115*		*80 - 120*		*08/24/23 19:46*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	10	ug/L			09/06/23 16:16	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**5.9**		1.5	0.43	mg/L			08/28/23 20:41	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-10i-082223
Lab Sample ID: 580-130777-16
Date Collected: 08/22/23 08:25
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			08/24/23 20:08	1
Chloromethane	ND		0.50	0.14	ug/L			08/24/23 20:08	1
Vinyl chloride	**0.18**		0.10	0.040	ug/L			08/24/23 20:08	1
Bromomethane	ND		0.50	0.13	ug/L			08/24/23 20:08	1
Chloroethane	ND		0.50	0.096	ug/L			08/24/23 20:08	1
Carbon disulfide	ND		0.30	0.083	ug/L			08/24/23 20:08	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			08/24/23 20:08	1
1,1-Dichloroethene	**0.060**	**J**	0.20	0.035	ug/L			08/24/23 20:08	1
Acetone	ND		10	3.1	ug/L			08/24/23 20:08	1
Methylene Chloride	ND		5.0	1.2	ug/L			08/24/23 20:08	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			08/24/23 20:08	1
2-Butanone (MEK)	ND		10	2.5	ug/L			08/24/23 20:08	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			08/24/23 20:08	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			08/24/23 20:08	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			08/24/23 20:08	1
cis-1,2-Dichloroethene	**0.20**		0.20	0.055	ug/L			08/24/23 20:08	1
Chlorobromomethane	ND		0.20	0.050	ug/L			08/24/23 20:08	1
Chloroform	ND		0.20	0.030	ug/L			08/24/23 20:08	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			08/24/23 20:08	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			08/24/23 20:08	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			08/24/23 20:08	1
Benzene	**0.037**	**J**	0.20	0.030	ug/L			08/24/23 20:08	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			08/24/23 20:08	1
Trichloroethene	ND		0.20	0.066	ug/L			08/24/23 20:08	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			08/24/23 20:08	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			08/24/23 20:08	1
Dibromomethane	ND		0.20	0.062	ug/L			08/24/23 20:08	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			08/24/23 20:08	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			08/24/23 20:08	1
Toluene	ND		0.20	0.050	ug/L			08/24/23 20:08	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			08/24/23 20:08	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			08/24/23 20:08	1
Tetrachloroethene	ND		0.24	0.084	ug/L			08/24/23 20:08	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			08/24/23 20:08	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			08/24/23 20:08	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			08/24/23 20:08	1
Chlorobenzene	**0.67**		0.20	0.060	ug/L			08/24/23 20:08	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			08/24/23 20:08	1
Ethylbenzene	ND		0.20	0.030	ug/L			08/24/23 20:08	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			08/24/23 20:08	1
o-Xylene	ND		0.50	0.15	ug/L			08/24/23 20:08	1
Styrene	ND		1.0	0.19	ug/L			08/24/23 20:08	1
Bromoform	ND		0.50	0.16	ug/L			08/24/23 20:08	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/24/23 20:08	1
Bromobenzene	ND		0.20	0.038	ug/L			08/24/23 20:08	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			08/24/23 20:08	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			08/24/23 20:08	1
N-Propylbenzene	ND		0.30	0.091	ug/L			08/24/23 20:08	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			08/24/23 20:08	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-10i-082223
Lab Sample ID: 580-130777-16
Date Collected: 08/22/23 08:25
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			08/24/23 20:08	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			08/24/23 20:08	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			08/24/23 20:08	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			08/24/23 20:08	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			08/24/23 20:08	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			08/24/23 20:08	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 20:08	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 20:08	1
n-Butylbenzene	ND		1.0	0.23	ug/L			08/24/23 20:08	1
1,2-Dichlorobenzene	**0.20**	**J**	0.30	0.038	ug/L			08/24/23 20:08	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			08/24/23 20:08	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			08/24/23 20:08	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			08/24/23 20:08	1
Naphthalene	ND		1.0	0.22	ug/L			08/24/23 20:08	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			08/24/23 20:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*91*		*80 - 120*		*08/24/23 20:08*	*1*
Dibromofluoromethane (Surr)	*112*		*80 - 120*		*08/24/23 20:08*	*1*
4-Bromofluorobenzene (Surr)	*87*		*80 - 120*		*08/24/23 20:08*	*1*
1,2-Dichloroethane-d4 (Surr)	*116*		*80 - 120*		*08/24/23 20:08*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		8.0	4.0	ug/L			09/06/23 16:34	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**53**		1.5	0.43	mg/L			08/28/23 21:16	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-03-082223
Lab Sample ID: 580-130777-17
Date Collected: 08/22/23 09:20
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			08/24/23 20:29	1
Chloromethane	ND		0.50	0.14	ug/L			08/24/23 20:29	1
Vinyl chloride	ND		0.10	0.040	ug/L			08/24/23 20:29	1
Bromomethane	ND		0.50	0.13	ug/L			08/24/23 20:29	1
Chloroethane	ND		0.50	0.096	ug/L			08/24/23 20:29	1
Carbon disulfide	**0.083**	**J**	0.30	0.083	ug/L			08/24/23 20:29	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			08/24/23 20:29	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			08/24/23 20:29	1
Acetone	ND		10	3.1	ug/L			08/24/23 20:29	1
Methylene Chloride	ND		5.0	1.2	ug/L			08/24/23 20:29	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			08/24/23 20:29	1
2-Butanone (MEK)	ND		10	2.5	ug/L			08/24/23 20:29	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			08/24/23 20:29	1
1,1-Dichloroethane	**0.15**	**J**	0.20	0.025	ug/L			08/24/23 20:29	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			08/24/23 20:29	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			08/24/23 20:29	1
Chlorobromomethane	ND		0.20	0.050	ug/L			08/24/23 20:29	1
Chloroform	ND		0.20	0.030	ug/L			08/24/23 20:29	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			08/24/23 20:29	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			08/24/23 20:29	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			08/24/23 20:29	1
Benzene	**0.083**	**J**	0.20	0.030	ug/L			08/24/23 20:29	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			08/24/23 20:29	1
Trichloroethene	ND		0.20	0.066	ug/L			08/24/23 20:29	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			08/24/23 20:29	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			08/24/23 20:29	1
Dibromomethane	ND		0.20	0.062	ug/L			08/24/23 20:29	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			08/24/23 20:29	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			08/24/23 20:29	1
Toluene	**0.12**	**J**	0.20	0.050	ug/L			08/24/23 20:29	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			08/24/23 20:29	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			08/24/23 20:29	1
Tetrachloroethene	ND		0.24	0.084	ug/L			08/24/23 20:29	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			08/24/23 20:29	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			08/24/23 20:29	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			08/24/23 20:29	1
Chlorobenzene	ND		0.20	0.060	ug/L			08/24/23 20:29	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			08/24/23 20:29	1
Ethylbenzene	ND		0.20	0.030	ug/L			08/24/23 20:29	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			08/24/23 20:29	1
o-Xylene	ND		0.50	0.15	ug/L			08/24/23 20:29	1
Styrene	ND		1.0	0.19	ug/L			08/24/23 20:29	1
Bromoform	ND		0.50	0.16	ug/L			08/24/23 20:29	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/24/23 20:29	1
Bromobenzene	ND		0.20	0.038	ug/L			08/24/23 20:29	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			08/24/23 20:29	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			08/24/23 20:29	1
N-Propylbenzene	ND		0.30	0.091	ug/L			08/24/23 20:29	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			08/24/23 20:29	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-03-082223
Lab Sample ID: 580-130777-17
Date Collected: 08/22/23 09:20
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			08/24/23 20:29	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			08/24/23 20:29	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			08/24/23 20:29	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			08/24/23 20:29	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			08/24/23 20:29	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			08/24/23 20:29	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 20:29	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 20:29	1
n-Butylbenzene	ND		1.0	0.23	ug/L			08/24/23 20:29	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			08/24/23 20:29	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			08/24/23 20:29	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			08/24/23 20:29	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			08/24/23 20:29	1
Naphthalene	ND		1.0	0.22	ug/L			08/24/23 20:29	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			08/24/23 20:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*90*		*80 - 120*		*08/24/23 20:29*	*1*
Dibromofluoromethane (Surr)	*115*		*80 - 120*		*08/24/23 20:29*	*1*
4-Bromofluorobenzene (Surr)	*89*		*80 - 120*		*08/24/23 20:29*	*1*
1,2-Dichloroethane-d4 (Surr)	*114*		*80 - 120*		*08/24/23 20:29*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	2.0	ug/L			09/06/23 16:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**4.5**		1.5	0.43	mg/L			08/28/23 21:28	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-17iR-082223
Lab Sample ID: 580-130777-18
Date Collected: 08/22/23 10:16
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			08/24/23 20:51	1
Chloromethane	ND		0.50	0.14	ug/L			08/24/23 20:51	1
Vinyl chloride	ND		0.10	0.040	ug/L			08/24/23 20:51	1
Bromomethane	ND		0.50	0.13	ug/L			08/24/23 20:51	1
Chloroethane	ND		0.50	0.096	ug/L			08/24/23 20:51	1
Carbon disulfide	**0.12**	**J**	0.30	0.083	ug/L			08/24/23 20:51	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			08/24/23 20:51	1
1,1-Dichloroethene	**0.15**	**J**	0.20	0.035	ug/L			08/24/23 20:51	1
Acetone	ND		10	3.1	ug/L			08/24/23 20:51	1
Methylene Chloride	ND		5.0	1.2	ug/L			08/24/23 20:51	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			08/24/23 20:51	1
2-Butanone (MEK)	ND		10	2.5	ug/L			08/24/23 20:51	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			08/24/23 20:51	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			08/24/23 20:51	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			08/24/23 20:51	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			08/24/23 20:51	1
Chlorobromomethane	ND		0.20	0.050	ug/L			08/24/23 20:51	1
Chloroform	ND		0.20	0.030	ug/L			08/24/23 20:51	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			08/24/23 20:51	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			08/24/23 20:51	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			08/24/23 20:51	1
Benzene	**0.095**	**J**	0.20	0.030	ug/L			08/24/23 20:51	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			08/24/23 20:51	1
Trichloroethene	ND		0.20	0.066	ug/L			08/24/23 20:51	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			08/24/23 20:51	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			08/24/23 20:51	1
Dibromomethane	ND		0.20	0.062	ug/L			08/24/23 20:51	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			08/24/23 20:51	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			08/24/23 20:51	1
Toluene	**0.050**	**J**	0.20	0.050	ug/L			08/24/23 20:51	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			08/24/23 20:51	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			08/24/23 20:51	1
Tetrachloroethene	ND		0.24	0.084	ug/L			08/24/23 20:51	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			08/24/23 20:51	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			08/24/23 20:51	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			08/24/23 20:51	1
Chlorobenzene	ND		0.20	0.060	ug/L			08/24/23 20:51	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			08/24/23 20:51	1
Ethylbenzene	ND		0.20	0.030	ug/L			08/24/23 20:51	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			08/24/23 20:51	1
o-Xylene	ND		0.50	0.15	ug/L			08/24/23 20:51	1
Styrene	ND		1.0	0.19	ug/L			08/24/23 20:51	1
Bromoform	ND		0.50	0.16	ug/L			08/24/23 20:51	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/24/23 20:51	1
Bromobenzene	ND		0.20	0.038	ug/L			08/24/23 20:51	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			08/24/23 20:51	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			08/24/23 20:51	1
N-Propylbenzene	ND		0.30	0.091	ug/L			08/24/23 20:51	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			08/24/23 20:51	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-17iR-082223
Lab Sample ID: 580-130777-18
Date Collected: 08/22/23 10:16
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			08/24/23 20:51	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			08/24/23 20:51	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			08/24/23 20:51	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			08/24/23 20:51	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			08/24/23 20:51	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			08/24/23 20:51	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 20:51	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 20:51	1
n-Butylbenzene	ND		1.0	0.23	ug/L			08/24/23 20:51	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			08/24/23 20:51	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			08/24/23 20:51	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			08/24/23 20:51	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			08/24/23 20:51	1
Naphthalene	ND		1.0	0.22	ug/L			08/24/23 20:51	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			08/24/23 20:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*90*		*80 - 120*		*08/24/23 20:51*	*1*
Dibromofluoromethane (Surr)	*115*		*80 - 120*		*08/24/23 20:51*	*1*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*		*08/24/23 20:51*	*1*
1,2-Dichloroethane-d4 (Surr)	*116*		*80 - 120*		*08/24/23 20:51*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	2.0	ug/L			09/06/23 17:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**8.8**		1.5	0.43	mg/L			08/28/23 21:40	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: Dup-01-082223
Lab Sample ID: 580-130777-19
Date Collected: 08/22/23 10:17
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			08/24/23 21:13	1
Chloromethane	ND		0.50	0.14	ug/L			08/24/23 21:13	1
Vinyl chloride	ND		0.10	0.040	ug/L			08/24/23 21:13	1
Bromomethane	ND		0.50	0.13	ug/L			08/24/23 21:13	1
Chloroethane	ND		0.50	0.096	ug/L			08/24/23 21:13	1
Carbon disulfide	**0.48**		0.30	0.083	ug/L			08/24/23 21:13	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			08/24/23 21:13	1
1,1-Dichloroethene	**0.24**		0.20	0.035	ug/L			08/24/23 21:13	1
Acetone	ND		10	3.1	ug/L			08/24/23 21:13	1
Methylene Chloride	ND		5.0	1.2	ug/L			08/24/23 21:13	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			08/24/23 21:13	1
2-Butanone (MEK)	ND		10	2.5	ug/L			08/24/23 21:13	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			08/24/23 21:13	1
1,1-Dichloroethane	**0.075**	**J**	0.20	0.025	ug/L			08/24/23 21:13	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			08/24/23 21:13	1
cis-1,2-Dichloroethene	**0.10**	**J**	0.20	0.055	ug/L			08/24/23 21:13	1
Chlorobromomethane	ND		0.20	0.050	ug/L			08/24/23 21:13	1
Chloroform	ND		0.20	0.030	ug/L			08/24/23 21:13	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			08/24/23 21:13	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			08/24/23 21:13	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			08/24/23 21:13	1
Benzene	**0.096**	**J**	0.20	0.030	ug/L			08/24/23 21:13	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			08/24/23 21:13	1
Trichloroethene	ND		0.20	0.066	ug/L			08/24/23 21:13	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			08/24/23 21:13	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			08/24/23 21:13	1
Dibromomethane	ND		0.20	0.062	ug/L			08/24/23 21:13	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			08/24/23 21:13	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			08/24/23 21:13	1
Toluene	ND		0.20	0.050	ug/L			08/24/23 21:13	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			08/24/23 21:13	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			08/24/23 21:13	1
Tetrachloroethene	ND		0.24	0.084	ug/L			08/24/23 21:13	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			08/24/23 21:13	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			08/24/23 21:13	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			08/24/23 21:13	1
Chlorobenzene	**0.065**	**J**	0.20	0.060	ug/L			08/24/23 21:13	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			08/24/23 21:13	1
Ethylbenzene	ND		0.20	0.030	ug/L			08/24/23 21:13	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			08/24/23 21:13	1
o-Xylene	ND		0.50	0.15	ug/L			08/24/23 21:13	1
Styrene	ND		1.0	0.19	ug/L			08/24/23 21:13	1
Bromoform	ND		0.50	0.16	ug/L			08/24/23 21:13	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/24/23 21:13	1
Bromobenzene	ND		0.20	0.038	ug/L			08/24/23 21:13	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			08/24/23 21:13	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			08/24/23 21:13	1
N-Propylbenzene	ND		0.30	0.091	ug/L			08/24/23 21:13	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			08/24/23 21:13	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: Dup-01-082223
Lab Sample ID: 580-130777-19
Date Collected: 08/22/23 10:17
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			08/24/23 21:13	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			08/24/23 21:13	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			08/24/23 21:13	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			08/24/23 21:13	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			08/24/23 21:13	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			08/24/23 21:13	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 21:13	1
1,4-Dichlorobenzene	**0.052**	**J**	0.30	0.050	ug/L			08/24/23 21:13	1
n-Butylbenzene	ND		1.0	0.23	ug/L			08/24/23 21:13	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			08/24/23 21:13	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			08/24/23 21:13	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			08/24/23 21:13	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			08/24/23 21:13	1
Naphthalene	ND		1.0	0.22	ug/L			08/24/23 21:13	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			08/24/23 21:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*90*		*80 - 120*		*08/24/23 21:13*	*1*
Dibromofluoromethane (Surr)	*116*		*80 - 120*		*08/24/23 21:13*	*1*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*		*08/24/23 21:13*	*1*
1,2-Dichloroethane-d4 (Surr)	*117*		*80 - 120*		*08/24/23 21:13*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	10	ug/L			09/06/23 17:28	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**32**		1.5	0.43	mg/L			08/28/23 21:51	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-27d-082223
Lab Sample ID: 580-130777-20
Date Collected: 08/22/23 11:33
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.53	ug/L			08/30/23 03:00	1
Chloromethane	ND		1.0	0.28	ug/L			08/30/23 03:00	1
Vinyl chloride	ND		1.0	0.22	ug/L			08/30/23 03:00	1
Bromomethane	ND		1.0	0.21	ug/L			08/30/23 03:00	1
Chloroethane	ND		1.0	0.35	ug/L			08/30/23 03:00	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			08/30/23 03:00	1
Carbon disulfide	ND		1.0	0.53	ug/L			08/30/23 03:00	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			08/30/23 03:00	1
Acetone	ND		15	3.2	ug/L			08/30/23 03:00	1
Methylene Chloride	ND		5.0	1.4	ug/L			08/30/23 03:00	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			08/30/23 03:00	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			08/30/23 03:00	1
1,1-Dichloroethane	**0.30**	**J**	1.0	0.22	ug/L			08/30/23 03:00	1
2-Butanone (MEK)	ND		15	4.7	ug/L			08/30/23 03:00	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			08/30/23 03:00	1
cis-1,2-Dichloroethene	**0.49**	**J**	1.0	0.35	ug/L			08/30/23 03:00	1
Bromochloromethane	ND		1.0	0.29	ug/L			08/30/23 03:00	1
Chloroform	**0.30**	**J**	1.0	0.26	ug/L			08/30/23 03:00	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			08/30/23 03:00	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			08/30/23 03:00	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			08/30/23 03:00	1
Benzene	ND		1.0	0.24	ug/L			08/30/23 03:00	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			08/30/23 03:00	1
Trichloroethene	ND		1.0	0.26	ug/L			08/30/23 03:00	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			08/30/23 03:00	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			08/30/23 03:00	1
Dibromomethane	ND		1.0	0.34	ug/L			08/30/23 03:00	1
Bromodichloromethane	ND		1.0	0.29	ug/L			08/30/23 03:00	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			08/30/23 03:00	1
Toluene	ND		1.0	0.39	ug/L			08/30/23 03:00	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			08/30/23 03:00	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			08/30/23 03:00	1
Tetrachloroethene	ND		1.0	0.41	ug/L			08/30/23 03:00	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			08/30/23 03:00	1
Dibromochloromethane	ND		1.0	0.43	ug/L			08/30/23 03:00	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			08/30/23 03:00	1
Chlorobenzene	ND		1.0	0.44	ug/L			08/30/23 03:00	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			08/30/23 03:00	1
Ethylbenzene	ND		1.0	0.50	ug/L			08/30/23 03:00	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			08/30/23 03:00	1
o-Xylene	ND		1.0	0.39	ug/L			08/30/23 03:00	1
Styrene	ND		1.0	0.53	ug/L			08/30/23 03:00	1
Bromoform	ND		1.0	0.51	ug/L			08/30/23 03:00	1
Isopropylbenzene	ND		1.0	0.44	ug/L			08/30/23 03:00	1
Bromobenzene	ND		1.0	0.43	ug/L			08/30/23 03:00	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			08/30/23 03:00	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			08/30/23 03:00	1
N-Propylbenzene	ND		1.0	0.50	ug/L			08/30/23 03:00	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			08/30/23 03:00	1

Client Sample ID: PA-27d-082223
Lab Sample ID: 580-130777-20
Date Collected: 08/22/23 11:33
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		1.0	0.38	ug/L			08/30/23 03:00	1
t-Butylbenzene	ND		2.0	0.58	ug/L			08/30/23 03:00	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			08/30/23 03:00	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			08/30/23 03:00	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			08/30/23 03:00	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			08/30/23 03:00	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			08/30/23 03:00	1
n-Butylbenzene	ND		1.0	0.44	ug/L			08/30/23 03:00	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			08/30/23 03:00	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			08/30/23 03:00	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			08/30/23 03:00	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			08/30/23 03:00	1
Naphthalene	ND		3.0	0.93	ug/L			08/30/23 03:00	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			08/30/23 03:00	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			08/30/23 03:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/30/23 03:00*	*1*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 120*		*08/30/23 03:00*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*08/30/23 03:00*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*08/30/23 03:00*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	10	ug/L			09/06/23 17:46	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**660**		15	4.3	mg/L			08/28/23 22:15	10

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-24d-082223
Lab Sample ID: 580-130777-21
Date Collected: 08/22/23 12:35
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.53	ug/L			08/30/23 02:12	1
Chloromethane	ND		1.0	0.28	ug/L			08/30/23 02:12	1
Vinyl chloride	ND		1.0	0.22	ug/L			08/30/23 02:12	1
Bromomethane	ND		1.0	0.21	ug/L			08/30/23 02:12	1
Chloroethane	ND		1.0	0.35	ug/L			08/30/23 02:12	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			08/30/23 02:12	1
Carbon disulfide	ND		1.0	0.53	ug/L			08/30/23 02:12	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			08/30/23 02:12	1
Acetone	ND		15	3.2	ug/L			08/30/23 02:12	1
Methylene Chloride	ND		5.0	1.4	ug/L			08/30/23 02:12	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			08/30/23 02:12	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			08/30/23 02:12	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			08/30/23 02:12	1
2-Butanone (MEK)	ND		15	4.7	ug/L			08/30/23 02:12	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			08/30/23 02:12	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			08/30/23 02:12	1
Bromochloromethane	ND		1.0	0.29	ug/L			08/30/23 02:12	1
Chloroform	ND		1.0	0.26	ug/L			08/30/23 02:12	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			08/30/23 02:12	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			08/30/23 02:12	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			08/30/23 02:12	1
Benzene	ND		1.0	0.24	ug/L			08/30/23 02:12	1
1,2-Dichloroethane	**2.4**		1.0	0.42	ug/L			08/30/23 02:12	1
Trichloroethene	ND		1.0	0.26	ug/L			08/30/23 02:12	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			08/30/23 02:12	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			08/30/23 02:12	1
Dibromomethane	ND		1.0	0.34	ug/L			08/30/23 02:12	1
Bromodichloromethane	ND		1.0	0.29	ug/L			08/30/23 02:12	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			08/30/23 02:12	1
Toluene	ND		1.0	0.39	ug/L			08/30/23 02:12	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			08/30/23 02:12	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			08/30/23 02:12	1
Tetrachloroethene	ND		1.0	0.41	ug/L			08/30/23 02:12	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			08/30/23 02:12	1
Dibromochloromethane	ND		1.0	0.43	ug/L			08/30/23 02:12	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			08/30/23 02:12	1
Chlorobenzene	ND		1.0	0.44	ug/L			08/30/23 02:12	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			08/30/23 02:12	1
Ethylbenzene	ND		1.0	0.50	ug/L			08/30/23 02:12	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			08/30/23 02:12	1
o-Xylene	ND		1.0	0.39	ug/L			08/30/23 02:12	1
Styrene	ND		1.0	0.53	ug/L			08/30/23 02:12	1
Bromoform	ND		1.0	0.51	ug/L			08/30/23 02:12	1
Isopropylbenzene	ND		1.0	0.44	ug/L			08/30/23 02:12	1
Bromobenzene	ND		1.0	0.43	ug/L			08/30/23 02:12	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			08/30/23 02:12	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			08/30/23 02:12	1
N-Propylbenzene	ND		1.0	0.50	ug/L			08/30/23 02:12	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			08/30/23 02:12	1

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-24d-082223
Lab Sample ID: 580-130777-21
Date Collected: 08/22/23 12:35
Matrix: Water
Date Received: 08/23/23 11:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		1.0	0.38	ug/L			08/30/23 02:12	1
t-Butylbenzene	ND		2.0	0.58	ug/L			08/30/23 02:12	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			08/30/23 02:12	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			08/30/23 02:12	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			08/30/23 02:12	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			08/30/23 02:12	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			08/30/23 02:12	1
n-Butylbenzene	ND		1.0	0.44	ug/L			08/30/23 02:12	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			08/30/23 02:12	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			08/30/23 02:12	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			08/30/23 02:12	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			08/30/23 02:12	1
Naphthalene	ND		3.0	0.93	ug/L			08/30/23 02:12	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			08/30/23 02:12	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			08/30/23 02:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*		*08/30/23 02:12*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*80 - 120*		*08/30/23 02:12*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*08/30/23 02:12*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*08/30/23 02:12*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		800	400	ug/L			09/08/23 12:04	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**31000**		1500	430	mg/L			08/28/23 22:26	1000

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

Lab Sample ID: MB 580-435690/7
Matrix: Water
Analysis Batch: 435690

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			08/24/23 14:50	1
Chloromethane	ND		0.50	0.14	ug/L			08/24/23 14:50	1
Vinyl chloride	ND		0.10	0.040	ug/L			08/24/23 14:50	1
Bromomethane	ND		0.50	0.13	ug/L			08/24/23 14:50	1
Chloroethane	ND		0.50	0.096	ug/L			08/24/23 14:50	1
Carbon disulfide	ND		0.30	0.083	ug/L			08/24/23 14:50	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			08/24/23 14:50	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			08/24/23 14:50	1
Acetone	ND		10	3.1	ug/L			08/24/23 14:50	1
Methylene Chloride	ND		5.0	1.2	ug/L			08/24/23 14:50	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			08/24/23 14:50	1
2-Butanone (MEK)	ND		10	2.5	ug/L			08/24/23 14:50	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			08/24/23 14:50	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			08/24/23 14:50	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			08/24/23 14:50	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			08/24/23 14:50	1
Chlorobromomethane	ND		0.20	0.050	ug/L			08/24/23 14:50	1
Chloroform	ND		0.20	0.030	ug/L			08/24/23 14:50	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			08/24/23 14:50	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			08/24/23 14:50	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			08/24/23 14:50	1
Benzene	ND		0.20	0.030	ug/L			08/24/23 14:50	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			08/24/23 14:50	1
Trichloroethene	ND		0.20	0.066	ug/L			08/24/23 14:50	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			08/24/23 14:50	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			08/24/23 14:50	1
Dibromomethane	ND		0.20	0.062	ug/L			08/24/23 14:50	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			08/24/23 14:50	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			08/24/23 14:50	1
Toluene	ND		0.20	0.050	ug/L			08/24/23 14:50	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			08/24/23 14:50	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			08/24/23 14:50	1
Tetrachloroethene	ND		0.24	0.084	ug/L			08/24/23 14:50	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			08/24/23 14:50	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			08/24/23 14:50	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			08/24/23 14:50	1
Chlorobenzene	ND		0.20	0.060	ug/L			08/24/23 14:50	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			08/24/23 14:50	1
Ethylbenzene	ND		0.20	0.030	ug/L			08/24/23 14:50	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			08/24/23 14:50	1
o-Xylene	ND		0.50	0.15	ug/L			08/24/23 14:50	1
Styrene	ND		1.0	0.19	ug/L			08/24/23 14:50	1
Bromoform	ND		0.50	0.16	ug/L			08/24/23 14:50	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/24/23 14:50	1
Bromobenzene	ND		0.20	0.038	ug/L			08/24/23 14:50	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			08/24/23 14:50	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			08/24/23 14:50	1
N-Propylbenzene	ND		0.30	0.091	ug/L			08/24/23 14:50	1

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

Lab Sample ID: MB 580-435690/7
Matrix: Water
Analysis Batch: 435690

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorotoluene	ND		0.50	0.12	ug/L			08/24/23 14:50	1
4-Chlorotoluene	ND		0.30	0.12	ug/L			08/24/23 14:50	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			08/24/23 14:50	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			08/24/23 14:50	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			08/24/23 14:50	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			08/24/23 14:50	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			08/24/23 14:50	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 14:50	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			08/24/23 14:50	1
n-Butylbenzene	ND		1.0	0.23	ug/L			08/24/23 14:50	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			08/24/23 14:50	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			08/24/23 14:50	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			08/24/23 14:50	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			08/24/23 14:50	1
Naphthalene	ND		1.0	0.22	ug/L			08/24/23 14:50	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			08/24/23 14:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*91*		*80 - 120*		*08/24/23 14:50*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 120*		*08/24/23 14:50*	*1*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*		*08/24/23 14:50*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*80 - 120*		*08/24/23 14:50*	*1*

Lab Sample ID: LCS 580-435690/4
Matrix: Water
Analysis Batch: 435690

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Dichlorodifluoromethane	5.00	5.21		ug/L		104	20 - 150
Chloromethane	5.00	5.31		ug/L		106	32 - 150
Vinyl chloride	5.00	5.21		ug/L		104	41 - 150
Bromomethane	5.00	5.06		ug/L		101	51 - 148
Chloroethane	5.00	5.04		ug/L		101	54 - 140
Carbon disulfide	5.00	5.12		ug/L		102	54 - 142
Trichlorofluoromethane	5.00	5.17		ug/L		103	60 - 132
1,1-Dichloroethene	5.00	4.94		ug/L		99	60 - 129
Acetone	25.0	24.7		ug/L		99	49 - 150
Methylene Chloride	5.00	4.96	J	ug/L		99	40 - 142
Methyl tert-butyl ether	5.00	4.99		ug/L		100	61 - 131
2-Butanone (MEK)	25.0	23.5		ug/L		94	37 - 150
trans-1,2-Dichloroethene	5.00	5.26		ug/L		105	69 - 121
1,1-Dichloroethane	5.00	5.41		ug/L		108	74 - 120
2,2-Dichloropropane	5.00	5.32		ug/L		106	55 - 140
cis-1,2-Dichloroethene	5.00	5.36		ug/L		107	72 - 120
Chlorobromomethane	5.00	5.01		ug/L		100	79 - 121
Chloroform	5.00	5.33		ug/L		107	75 - 120
1,1,1-Trichloroethane	5.00	5.37		ug/L		107	70 - 121
Carbon tetrachloride	5.00	5.19		ug/L		104	66 - 130

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

Lab Sample ID: LCS 580-435690/4
Matrix: Water
Analysis Batch: 435690

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloropropene	5.00	5.34		ug/L		107	72 - 125
Benzene	5.00	5.14		ug/L		103	80 - 120
1,2-Dichloroethane	5.00	4.94		ug/L		99	74 - 127
Trichloroethene	5.00	5.30		ug/L		106	72 - 120
1,2-Dichloropropane	5.00	5.13		ug/L		103	69 - 130
4-Methyl-2-pentanone (MIBK)	25.0	20.5		ug/L		82	63 - 137
Dibromomethane	5.00	4.97		ug/L		99	65 - 141
Dichlorobromomethane	5.00	5.06		ug/L		101	74 - 131
cis-1,3-Dichloropropene	5.00	4.69		ug/L		94	77 - 131
Toluene	5.00	4.85		ug/L		97	80 - 126
trans-1,3-Dichloropropene	5.00	4.77		ug/L		95	71 - 138
1,1,2-Trichloroethane	5.00	4.37		ug/L		87	73 - 127
Tetrachloroethene	5.00	4.68		ug/L		94	75 - 124
1,3-Dichloropropane	5.00	4.62		ug/L		92	69 - 138
Chlorodibromomethane	5.00	4.53		ug/L		91	62 - 141
Ethylene Dibromide	5.00	4.56		ug/L		91	61 - 143
Chlorobenzene	5.00	4.70		ug/L		94	74 - 123
1,1,1,2-Tetrachloroethane	5.00	4.78		ug/L		96	69 - 127
Ethylbenzene	5.00	5.02		ug/L		100	80 - 124
m-Xylene & p-Xylene	5.00	5.00		ug/L		100	75 - 124
o-Xylene	5.00	4.94		ug/L		99	71 - 124
Styrene	5.00	4.94		ug/L		99	74 - 127
Bromoform	5.00	4.39		ug/L		88	48 - 127
Isopropylbenzene	5.00	5.03		ug/L		101	71 - 123
Bromobenzene	5.00	4.85		ug/L		97	74 - 130
1,1,2,2-Tetrachloroethane	5.00	4.24		ug/L		85	67 - 136
1,2,3-Trichloropropane	5.00	4.34		ug/L		87	67 - 135
N-Propylbenzene	5.00	4.99		ug/L		100	72 - 126
2-Chlorotoluene	5.00	5.08		ug/L		102	73 - 120
4-Chlorotoluene	5.00	5.24		ug/L		105	75 - 124
1,3,5-Trimethylbenzene	5.00	5.11		ug/L		102	75 - 123
tert-Butylbenzene	5.00	5.06		ug/L		101	70 - 129
1,2,4-Trimethylbenzene	5.00	5.14		ug/L		103	71 - 127
sec-Butylbenzene	5.00	5.22		ug/L		104	75 - 126
4-Isopropyltoluene	5.00	5.07		ug/L		101	78 - 125
1,3-Dichlorobenzene	5.00	4.85		ug/L		97	72 - 125
1,4-Dichlorobenzene	5.00	4.92		ug/L		98	71 - 129
n-Butylbenzene	5.00	4.91		ug/L		98	69 - 127
1,2-Dichlorobenzene	5.00	4.72		ug/L		94	72 - 129
1,2-Dibromo-3-Chloropropane	5.00	3.98		ug/L		80	55 - 135
1,2,4-Trichlorobenzene	5.00	4.50		ug/L		90	60 - 130
Hexachlorobutadiene	5.00	4.54		ug/L		91	63 - 130
Naphthalene	5.00	4.07		ug/L		81	54 - 137
1,2,3-Trichlorobenzene	5.00	4.48		ug/L		90	60 - 136

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*100*		*80 - 120*

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

Lab Sample ID: LCS 580-435690/4
Matrix: Water
Analysis Batch: 435690

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*

Lab Sample ID: LCSD 580-435690/5
Matrix: Water
Analysis Batch: 435690

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Dichlorodifluoromethane			5.00	4.88		ug/L		98	20 - 150	6	30
Chloromethane			5.00	5.16		ug/L		103	32 - 150	3	33
Vinyl chloride			5.00	5.00		ug/L		100	41 - 150	4	32
Bromomethane			5.00	4.83		ug/L		97	51 - 148	5	35
Chloroethane			5.00	4.84		ug/L		97	54 - 140	4	33
Carbon disulfide			5.00	4.95		ug/L		99	54 - 142	4	34
Trichlorofluoromethane			5.00	4.98		ug/L		100	60 - 132	4	32
1,1-Dichloroethene			5.00	4.87		ug/L		97	60 - 129	1	29
Acetone			25.0	23.8		ug/L		95	49 - 150	4	24
Methylene Chloride			5.00	4.83	J	ug/L		97	40 - 142	3	25
Methyl tert-butyl ether			5.00	4.92		ug/L		98	61 - 131	1	27
2-Butanone (MEK)			25.0	24.0		ug/L		96	37 - 150	2	35
trans-1,2-Dichloroethene			5.00	5.03		ug/L		101	69 - 121	4	27
1,1-Dichloroethane			5.00	5.05		ug/L		101	74 - 120	7	26
2,2-Dichloropropane			5.00	5.19		ug/L		104	55 - 140	2	31
cis-1,2-Dichloroethene			5.00	5.13		ug/L		103	72 - 120	4	22
Chlorobromomethane			5.00	4.99		ug/L		100	79 - 121	0	20
Chloroform			5.00	5.11		ug/L		102	75 - 120	4	21
1,1,1-Trichloroethane			5.00	5.16		ug/L		103	70 - 121	4	24
Carbon tetrachloride			5.00	5.05		ug/L		101	66 - 130	3	24
1,1-Dichloropropene			5.00	5.19		ug/L		104	72 - 125	3	23
Benzene			5.00	5.08		ug/L		102	80 - 120	1	22
1,2-Dichloroethane			5.00	5.01		ug/L		100	74 - 127	2	21
Trichloroethene			5.00	5.21		ug/L		104	72 - 120	2	22
1,2-Dichloropropane			5.00	5.25		ug/L		105	69 - 130	2	22
4-Methyl-2-pentanone (MIBK)			25.0	20.8		ug/L		83	63 - 137	2	26
Dibromomethane			5.00	4.99		ug/L		100	65 - 141	0	22
Dichlorobromomethane			5.00	4.96		ug/L		99	74 - 131	2	21
cis-1,3-Dichloropropene			5.00	4.68		ug/L		94	77 - 131	0	24
Toluene			5.00	4.75		ug/L		95	80 - 126	2	20
trans-1,3-Dichloropropene			5.00	4.84		ug/L		97	71 - 138	1	26
1,1,2-Trichloroethane			5.00	4.55		ug/L		91	73 - 127	4	22
Tetrachloroethene			5.00	4.75		ug/L		95	75 - 124	2	20
1,3-Dichloropropane			5.00	4.57		ug/L		91	69 - 138	1	19
Chlorodibromomethane			5.00	4.57		ug/L		91	62 - 141	1	22
Ethylene Dibromide			5.00	4.63		ug/L		93	61 - 143	2	22
Chlorobenzene			5.00	4.65		ug/L		93	74 - 123	1	21
1,1,1,2-Tetrachloroethane			5.00	4.68		ug/L		94	69 - 127	2	22
Ethylbenzene			5.00	4.95		ug/L		99	80 - 124	1	22
m-Xylene & p-Xylene			5.00	4.85		ug/L		97	75 - 124	3	22

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

Lab Sample ID: LCSD 580-435690/5
Matrix: Water
Analysis Batch: 435690

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
o-Xylene			5.00	4.90		ug/L		98	71 - 124	1	23
Styrene			5.00	4.91		ug/L		98	74 - 127	1	22
Bromoform			5.00	4.49		ug/L		90	48 - 127	2	23
Isopropylbenzene			5.00	4.89		ug/L		98	71 - 123	3	23
Bromobenzene			5.00	4.80		ug/L		96	74 - 130	1	23
1,1,2,2-Tetrachloroethane			5.00	4.27		ug/L		85	67 - 136	1	24
1,2,3-Trichloropropane			5.00	4.50		ug/L		90	67 - 135	4	25
N-Propylbenzene			5.00	4.89		ug/L		98	72 - 126	2	20
2-Chlorotoluene			5.00	4.85		ug/L		97	73 - 120	5	22
4-Chlorotoluene			5.00	4.99		ug/L		100	75 - 124	5	23
1,3,5-Trimethylbenzene			5.00	4.98		ug/L		100	75 - 123	2	23
tert-Butylbenzene			5.00	4.88		ug/L		98	70 - 129	4	24
1,2,4-Trimethylbenzene			5.00	5.00		ug/L		100	71 - 127	3	23
sec-Butylbenzene			5.00	5.00		ug/L		100	75 - 126	4	23
4-Isopropyltoluene			5.00	4.98		ug/L		100	78 - 125	2	24
1,3-Dichlorobenzene			5.00	4.71		ug/L		94	72 - 125	3	22
1,4-Dichlorobenzene			5.00	4.76		ug/L		95	71 - 129	3	22
n-Butylbenzene			5.00	4.82		ug/L		96	69 - 127	2	24
1,2-Dichlorobenzene			5.00	4.61		ug/L		92	72 - 129	2	22
1,2-Dibromo-3-Chloropropane			5.00	3.90		ug/L		78	55 - 135	2	29
1,2,4-Trichlorobenzene			5.00	4.42		ug/L		88	60 - 130	2	26
Hexachlorobutadiene			5.00	4.44		ug/L		89	63 - 130	2	26
Naphthalene			5.00	4.10		ug/L		82	54 - 137	1	28
1,2,3-Trichlorobenzene			5.00	4.42		ug/L		88	60 - 136	1	28

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*

Lab Sample ID: 580-130777-10 MS
Matrix: Water
Analysis Batch: 435690

Client Sample ID: PA-44i-082223
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Dichlorodifluoromethane	ND		5.00	5.84		ug/L		117	20 - 150
Chloromethane	ND		5.00	5.55		ug/L		111	32 - 150
Vinyl chloride	ND		5.00	5.78		ug/L		116	41 - 150
Bromomethane	ND		5.00	3.55		ug/L		71	51 - 148
Chloroethane	ND		5.00	5.95		ug/L		119	54 - 140
Carbon disulfide	ND		5.00	5.71		ug/L		114	54 - 142
Trichlorofluoromethane	ND		5.00	5.65		ug/L		113	60 - 132
1,1-Dichloroethene	ND		5.00	5.73		ug/L		115	60 - 129
Acetone	ND		25.0	21.7		ug/L		87	49 - 150
Methylene Chloride	ND		5.00	5.64		ug/L		113	40 - 142
Methyl tert-butyl ether	ND		5.00	5.31		ug/L		106	61 - 131
2-Butanone (MEK)	ND		25.0	24.0		ug/L		96	37 - 150

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

Lab Sample ID: 580-130777-10 MS
Matrix: Water
Analysis Batch: 435690

Client Sample ID: PA-44i-082223
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,2-Dichloroethene	ND		5.00	5.87		ug/L		117	69 - 121
1,1-Dichloroethane	0.27		5.00	6.19		ug/L		119	74 - 120
2,2-Dichloropropane	ND		5.00	5.56		ug/L		111	55 - 140
cis-1,2-Dichloroethene	ND		5.00	5.89		ug/L		118	72 - 120
Chlorobromomethane	ND		5.00	5.58		ug/L		112	79 - 121
Chloroform	ND		5.00	5.83		ug/L		117	75 - 120
1,1,1-Trichloroethane	ND		5.00	5.88		ug/L		118	70 - 121
Carbon tetrachloride	ND		5.00	5.83		ug/L		117	66 - 130
1,1-Dichloropropene	ND		5.00	5.94		ug/L		119	72 - 125
Benzene	ND		5.00	5.80		ug/L		116	80 - 120
1,2-Dichloroethane	ND		5.00	5.67		ug/L		113	74 - 127
Trichloroethene	ND		5.00	5.73		ug/L		115	72 - 120
1,2-Dichloropropane	ND		5.00	5.89		ug/L		118	69 - 130
4-Methyl-2-pentanone (MIBK)	ND		25.0	20.1		ug/L		81	63 - 137
Dibromomethane	ND		5.00	5.47		ug/L		109	65 - 141
Dichlorobromomethane	ND		5.00	5.43		ug/L		109	74 - 131
cis-1,3-Dichloropropene	ND		5.00	4.62		ug/L		92	77 - 131
Toluene	ND		5.00	5.02		ug/L		100	80 - 126
trans-1,3-Dichloropropene	ND		5.00	4.80		ug/L		96	71 - 138
1,1,2-Trichloroethane	ND		5.00	4.78		ug/L		96	73 - 127
Tetrachloroethene	ND		5.00	5.20		ug/L		104	75 - 124
1,3-Dichloropropane	ND		5.00	4.73		ug/L		95	69 - 138
Chlorodibromomethane	ND		5.00	4.75		ug/L		95	62 - 141
Ethylene Dibromide	ND		5.00	4.74		ug/L		95	61 - 143
Chlorobenzene	ND		5.00	4.93		ug/L		99	74 - 123
1,1,1,2-Tetrachloroethane	ND		5.00	4.88		ug/L		98	69 - 127
Ethylbenzene	ND		5.00	5.22		ug/L		104	80 - 124
m-Xylene & p-Xylene	ND		5.00	5.12		ug/L		102	75 - 124
o-Xylene	ND		5.00	5.15		ug/L		103	71 - 124
Styrene	ND		5.00	5.02		ug/L		100	74 - 127
Bromoform	ND		5.00	4.35		ug/L		87	48 - 127
Isopropylbenzene	ND		5.00	5.11		ug/L		102	71 - 123
Bromobenzene	ND		5.00	4.93		ug/L		99	74 - 130
1,1,2,2-Tetrachloroethane	ND		5.00	4.68		ug/L		94	67 - 136
1,2,3-Trichloropropane	ND		5.00	4.53		ug/L		91	67 - 135
N-Propylbenzene	ND		5.00	5.15		ug/L		103	72 - 126
2-Chlorotoluene	ND		5.00	5.15		ug/L		103	73 - 120
4-Chlorotoluene	ND		5.00	5.38		ug/L		108	75 - 124
1,3,5-Trimethylbenzene	ND		5.00	5.28		ug/L		106	75 - 123
tert-Butylbenzene	ND		5.00	5.10		ug/L		102	70 - 129
1,2,4-Trimethylbenzene	ND		5.00	5.27		ug/L		105	71 - 127
sec-Butylbenzene	ND		5.00	5.32		ug/L		106	75 - 126
4-Isopropyltoluene	ND		5.00	5.21		ug/L		104	78 - 125
1,3-Dichlorobenzene	ND		5.00	4.97		ug/L		99	72 - 125
1,4-Dichlorobenzene	ND		5.00	5.09		ug/L		102	71 - 129
n-Butylbenzene	ND		5.00	5.03		ug/L		101	69 - 127
1,2-Dichlorobenzene	ND		5.00	5.02		ug/L		100	72 - 129
1,2-Dibromo-3-Chloropropane	ND		5.00	3.98		ug/L		80	55 - 135
1,2,4-Trichlorobenzene	ND		5.00	4.32		ug/L		86	60 - 130

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

Lab Sample ID: 580-130777-10 MS
Matrix: Water
Analysis Batch: 435690

Client Sample ID: PA-44i-082223
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexachlorobutadiene	ND		5.00	4.43		ug/L		89	63 - 130
Naphthalene	ND		5.00	3.97		ug/L		79	54 - 137
1,2,3-Trichlorobenzene	ND		5.00	4.35		ug/L		87	60 - 136

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

Lab Sample ID: 580-130777-10 MSD
Matrix: Water
Analysis Batch: 435690

Client Sample ID: PA-44i-082223
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Dichlorodifluoromethane	ND		5.00	5.72		ug/L		114	20 - 150	2	30
Chloromethane	ND		5.00	5.65		ug/L		113	32 - 150	2	33
Vinyl chloride	ND		5.00	5.74		ug/L		115	41 - 150	1	32
Bromomethane	ND		5.00	3.95		ug/L		79	51 - 148	11	35
Chloroethane	ND		5.00	5.90		ug/L		118	54 - 140	1	33
Carbon disulfide	ND		5.00	5.67		ug/L		113	54 - 142	1	34
Trichlorofluoromethane	ND		5.00	5.57		ug/L		111	60 - 132	1	32
1,1-Dichloroethene	ND		5.00	5.59		ug/L		112	60 - 129	3	29
Acetone	ND		25.0	21.5		ug/L		86	49 - 150	1	24
Methylene Chloride	ND		5.00	5.22		ug/L		104	40 - 142	8	25
Methyl tert-butyl ether	ND		5.00	5.35		ug/L		107	61 - 131	1	27
2-Butanone (MEK)	ND		25.0	23.8		ug/L		95	37 - 150	1	35
trans-1,2-Dichloroethene	ND		5.00	5.82		ug/L		116	69 - 121	1	27
1,1-Dichloroethane	0.27		5.00	5.97		ug/L		114	74 - 120	4	26
2,2-Dichloropropane	ND		5.00	5.41		ug/L		108	55 - 140	3	31
cis-1,2-Dichloroethene	ND		5.00	5.88		ug/L		118	72 - 120	0	22
Chlorobromomethane	ND		5.00	5.54		ug/L		111	79 - 121	1	20
Chloroform	ND		5.00	5.62		ug/L		112	75 - 120	4	21
1,1,1-Trichloroethane	ND		5.00	5.84		ug/L		117	70 - 121	1	24
Carbon tetrachloride	ND		5.00	5.78		ug/L		116	66 - 130	1	24
1,1-Dichloropropene	ND		5.00	5.93		ug/L		119	72 - 125	0	23
Benzene	ND		5.00	5.77		ug/L		115	80 - 120	1	22
1,2-Dichloroethane	ND		5.00	5.65		ug/L		113	74 - 127	0	21
Trichloroethene	ND		5.00	5.74		ug/L		115	72 - 120	0	22
1,2-Dichloropropane	ND		5.00	5.81		ug/L		116	69 - 130	1	22
4-Methyl-2-pentanone (MIBK)	ND		25.0	21.4		ug/L		86	63 - 137	6	26
Dibromomethane	ND		5.00	5.43		ug/L		109	65 - 141	1	22
Dichlorobromomethane	ND		5.00	5.41		ug/L		108	74 - 131	0	21
cis-1,3-Dichloropropene	ND		5.00	4.80		ug/L		96	77 - 131	4	24
Toluene	ND		5.00	4.97		ug/L		99	80 - 126	1	20
trans-1,3-Dichloropropene	ND		5.00	4.79		ug/L		96	71 - 138	0	26
1,1,2-Trichloroethane	ND		5.00	4.73		ug/L		95	73 - 127	1	22
Tetrachloroethene	ND		5.00	4.70		ug/L		94	75 - 124	10	20

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

Lab Sample ID: 580-130777-10 MSD
Matrix: Water
Analysis Batch: 435690

Client Sample ID: PA-44i-082223
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,3-Dichloropropane	ND		5.00	4.84		ug/L		97	69 - 138	2	19
Chlorodibromomethane	ND		5.00	4.61		ug/L		92	62 - 141	3	22
Ethylene Dibromide	ND		5.00	4.74		ug/L		95	61 - 143	0	22
Chlorobenzene	ND		5.00	4.90		ug/L		98	74 - 123	1	21
1,1,1,2-Tetrachloroethane	ND		5.00	4.73		ug/L		95	69 - 127	3	22
Ethylbenzene	ND		5.00	5.21		ug/L		104	80 - 124	0	22
m-Xylene & p-Xylene	ND		5.00	5.04		ug/L		101	75 - 124	2	22
o-Xylene	ND		5.00	5.12		ug/L		102	71 - 124	1	23
Styrene	ND		5.00	5.03		ug/L		101	74 - 127	0	22
Bromoform	ND		5.00	4.51		ug/L		90	48 - 127	4	23
Isopropylbenzene	ND		5.00	5.13		ug/L		103	71 - 123	0	23
Bromobenzene	ND		5.00	4.71		ug/L		94	74 - 130	5	23
1,1,2,2-Tetrachloroethane	ND		5.00	4.54		ug/L		91	67 - 136	3	24
1,2,3-Trichloropropane	ND		5.00	4.51		ug/L		90	67 - 135	0	25
N-Propylbenzene	ND		5.00	4.87		ug/L		97	72 - 126	6	20
2-Chlorotoluene	ND		5.00	4.86		ug/L		97	73 - 120	6	22
4-Chlorotoluene	ND		5.00	5.12		ug/L		102	75 - 124	5	23
1,3,5-Trimethylbenzene	ND		5.00	5.14		ug/L		103	75 - 123	3	23
tert-Butylbenzene	ND		5.00	4.82		ug/L		96	70 - 129	6	24
1,2,4-Trimethylbenzene	ND		5.00	5.05		ug/L		101	71 - 127	4	23
sec-Butylbenzene	ND		5.00	5.07		ug/L		101	75 - 126	5	23
4-Isopropyltoluene	ND		5.00	5.05		ug/L		101	78 - 125	3	24
1,3-Dichlorobenzene	ND		5.00	4.76		ug/L		95	72 - 125	4	22
1,4-Dichlorobenzene	ND		5.00	4.88		ug/L		98	71 - 129	4	22
n-Butylbenzene	ND		5.00	4.69		ug/L		94	69 - 127	7	24
1,2-Dichlorobenzene	ND		5.00	4.78		ug/L		96	72 - 129	5	22
1,2-Dibromo-3-Chloropropane	ND		5.00	4.06		ug/L		81	55 - 135	2	29
1,2,4-Trichlorobenzene	ND		5.00	4.23		ug/L		85	60 - 130	2	26
Hexachlorobutadiene	ND		5.00	4.23		ug/L		85	63 - 130	5	26
Naphthalene	ND		5.00	3.96		ug/L		79	54 - 137	0	28
1,2,3-Trichlorobenzene	ND		5.00	4.32		ug/L		86	60 - 136	1	28

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*95*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*

Lab Sample ID: MB 580-435722/11
Matrix: Water
Analysis Batch: 435722

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.53	ug/L			08/25/23 03:58	1
Chloromethane	ND		1.0	0.28	ug/L			08/25/23 03:58	1
Vinyl chloride	ND		1.0	0.22	ug/L			08/25/23 03:58	1
Bromomethane	ND		1.0	0.21	ug/L			08/25/23 03:58	1
Chloroethane	ND		1.0	0.35	ug/L			08/25/23 03:58	1

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

Lab Sample ID: MB 580-435722/11
Matrix: Water
Analysis Batch: 435722

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	ND		1.0	0.36	ug/L			08/25/23 03:58	1
Carbon disulfide	ND		1.0	0.53	ug/L			08/25/23 03:58	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			08/25/23 03:58	1
Acetone	10.4	J	15	3.2	ug/L			08/25/23 03:58	1
Methylene Chloride	ND		5.0	1.4	ug/L			08/25/23 03:58	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			08/25/23 03:58	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			08/25/23 03:58	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			08/25/23 03:58	1
2-Butanone (MEK)	ND		15	4.7	ug/L			08/25/23 03:58	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			08/25/23 03:58	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			08/25/23 03:58	1
Bromochloromethane	ND		1.0	0.29	ug/L			08/25/23 03:58	1
Chloroform	ND		1.0	0.26	ug/L			08/25/23 03:58	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			08/25/23 03:58	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			08/25/23 03:58	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			08/25/23 03:58	1
Benzene	ND		1.0	0.24	ug/L			08/25/23 03:58	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			08/25/23 03:58	1
Trichloroethene	ND		1.0	0.26	ug/L			08/25/23 03:58	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			08/25/23 03:58	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			08/25/23 03:58	1
Dibromomethane	ND		1.0	0.34	ug/L			08/25/23 03:58	1
Bromodichloromethane	ND		1.0	0.29	ug/L			08/25/23 03:58	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			08/25/23 03:58	1
Toluene	ND		1.0	0.39	ug/L			08/25/23 03:58	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			08/25/23 03:58	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			08/25/23 03:58	1
Tetrachloroethene	ND		1.0	0.41	ug/L			08/25/23 03:58	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			08/25/23 03:58	1
Dibromochloromethane	ND		1.0	0.43	ug/L			08/25/23 03:58	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			08/25/23 03:58	1
Chlorobenzene	ND		1.0	0.44	ug/L			08/25/23 03:58	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			08/25/23 03:58	1
Ethylbenzene	ND		1.0	0.50	ug/L			08/25/23 03:58	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			08/25/23 03:58	1
o-Xylene	ND		1.0	0.39	ug/L			08/25/23 03:58	1
Styrene	ND		1.0	0.53	ug/L			08/25/23 03:58	1
Bromoform	ND		1.0	0.51	ug/L			08/25/23 03:58	1
Isopropylbenzene	ND		1.0	0.44	ug/L			08/25/23 03:58	1
Bromobenzene	ND		1.0	0.43	ug/L			08/25/23 03:58	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			08/25/23 03:58	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			08/25/23 03:58	1
N-Propylbenzene	ND		1.0	0.50	ug/L			08/25/23 03:58	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			08/25/23 03:58	1
4-Chlorotoluene	ND		1.0	0.38	ug/L			08/25/23 03:58	1
t-Butylbenzene	ND		2.0	0.58	ug/L			08/25/23 03:58	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			08/25/23 03:58	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			08/25/23 03:58	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			08/25/23 03:58	1

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

Lab Sample ID: MB 580-435722/11
Matrix: Water
Analysis Batch: 435722

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			08/25/23 03:58	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			08/25/23 03:58	1
n-Butylbenzene	ND		1.0	0.44	ug/L			08/25/23 03:58	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			08/25/23 03:58	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			08/25/23 03:58	1
1,2,4-Trichlorobenzene	0.371	J	1.0	0.33	ug/L			08/25/23 03:58	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			08/25/23 03:58	1
Naphthalene	ND		3.0	0.93	ug/L			08/25/23 03:58	1
1,2,3-Trichlorobenzene	0.525	J	2.0	0.43	ug/L			08/25/23 03:58	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			08/25/23 03:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*		*08/25/23 03:58*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*		*08/25/23 03:58*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*08/25/23 03:58*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*08/25/23 03:58*	*1*

Lab Sample ID: LCS 580-435722/6
Matrix: Water
Analysis Batch: 435722

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Dichlorodifluoromethane	10.0	11.6		ug/L		116	20 - 150
Chloromethane	10.0	9.80		ug/L		98	25 - 150
Vinyl chloride	10.0	9.86		ug/L		99	31 - 150
Bromomethane	10.0	9.95		ug/L		100	36 - 150
Chloroethane	10.0	9.77		ug/L		98	38 - 150
Trichlorofluoromethane	10.0	10.0		ug/L		100	45 - 148
Carbon disulfide	10.0	9.10		ug/L		91	63 - 134
1,1-Dichloroethene	10.0	9.81		ug/L		98	70 - 129
Acetone	50.0	54.3		ug/L		109	44 - 150
Methylene Chloride	10.0	9.15		ug/L		91	77 - 125
Methyl tert-butyl ether	10.0	9.10		ug/L		91	72 - 120
trans-1,2-Dichloroethene	10.0	9.81		ug/L		98	75 - 120
1,1-Dichloroethane	10.0	9.57		ug/L		96	80 - 120
2-Butanone (MEK)	50.0	43.7		ug/L		87	65 - 137
2,2-Dichloropropane	10.0	9.37		ug/L		94	66 - 126
cis-1,2-Dichloroethene	10.0	9.70		ug/L		97	76 - 120
Bromochloromethane	10.0	9.85		ug/L		99	78 - 120
Chloroform	10.0	9.60		ug/L		96	78 - 127
1,1,1-Trichloroethane	10.0	9.70		ug/L		97	74 - 130
Carbon tetrachloride	10.0	9.61		ug/L		96	72 - 129
1,1-Dichloropropene	10.0	9.55		ug/L		95	74 - 120
Benzene	10.0	9.84		ug/L		98	80 - 122
1,2-Dichloroethane	10.0	9.26		ug/L		93	69 - 126
Trichloroethene	10.0	10.2		ug/L		102	80 - 125
1,2-Dichloropropane	10.0	10.0		ug/L		100	80 - 120
4-Methyl-2-pentanone (MIBK)	50.0	42.7		ug/L		85	59 - 141

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

Lab Sample ID: LCS 580-435722/6
Matrix: Water
Analysis Batch: 435722

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Dibromomethane	10.0	9.63		ug/L		96	80 - 120
Bromodichloromethane	10.0	9.38		ug/L		94	75 - 124
cis-1,3-Dichloropropene	10.0	9.68		ug/L		97	77 - 120
Toluene	10.0	10.8		ug/L		108	80 - 120
trans-1,3-Dichloropropene	10.0	8.87		ug/L		89	76 - 122
1,1,2-Trichloroethane	10.0	10.4		ug/L		104	80 - 121
Tetrachloroethene	10.0	10.6		ug/L		106	76 - 125
1,3-Dichloropropane	10.0	10.4		ug/L		104	79 - 120
Dibromochloromethane	10.0	9.23		ug/L		92	73 - 125
1,2-Dibromoethane	10.0	10.3		ug/L		103	79 - 126
Chlorobenzene	10.0	10.4		ug/L		104	80 - 120
1,1,1,2-Tetrachloroethane	10.0	9.81		ug/L		98	79 - 120
Ethylbenzene	10.0	10.3		ug/L		103	80 - 120
m-Xylene & p-Xylene	10.0	10.7		ug/L		107	80 - 120
o-Xylene	10.0	10.1		ug/L		101	80 - 120
Styrene	10.0	10.2		ug/L		102	76 - 122
Bromoform	10.0	8.29		ug/L		83	56 - 139
Isopropylbenzene	10.0	9.58		ug/L		96	80 - 123
Bromobenzene	10.0	10.7		ug/L		107	80 - 120
1,1,2,2-Tetrachloroethane	10.0	9.46		ug/L		95	74 - 124
1,2,3-Trichloropropane	10.0	9.92		ug/L		99	76 - 124
N-Propylbenzene	10.0	10.1		ug/L		101	80 - 122
2-Chlorotoluene	10.0	10.5		ug/L		105	80 - 120
4-Chlorotoluene	10.0	10.2		ug/L		102	73 - 129
t-Butylbenzene	10.0	9.52		ug/L		95	75 - 123
1,2,4-Trimethylbenzene	10.0	10.6		ug/L		106	80 - 120
sec-Butylbenzene	10.0	9.69		ug/L		97	78 - 122
4-Isopropyltoluene	10.0	9.63		ug/L		96	77 - 126
1,3-Dichlorobenzene	10.0	9.40		ug/L		94	77 - 127
1,4-Dichlorobenzene	10.0	10.2		ug/L		102	80 - 120
n-Butylbenzene	10.0	9.31		ug/L		93	57 - 133
1,2-Dichlorobenzene	10.0	10.0		ug/L		100	80 - 120
1,2-Dibromo-3-Chloropropane	10.0	8.45		ug/L		85	65 - 133
1,2,4-Trichlorobenzene	10.0	8.66		ug/L		87	61 - 148
Hexachlorobutadiene	10.0	9.56		ug/L		96	74 - 131
Naphthalene	10.0	9.02		ug/L		90	63 - 150
1,2,3-Trichlorobenzene	10.0	8.72		ug/L		87	65 - 150
1,3,5-Trimethylbenzene	10.0	10.4		ug/L		104	80 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*102*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*90*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*

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

Lab Sample ID: LCSD 580-435722/7
Matrix: Water
Analysis Batch: 435722

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Dichlorodifluoromethane			10.0	10.9		ug/L		109	20 - 150	6	33
Chloromethane			10.0	9.34		ug/L		93	25 - 150	5	26
Vinyl chloride			10.0	9.45		ug/L		95	31 - 150	4	26
Bromomethane			10.0	9.51		ug/L		95	36 - 150	4	33
Chloroethane			10.0	8.91		ug/L		89	38 - 150	9	28
Trichlorofluoromethane			10.0	9.83		ug/L		98	45 - 148	2	35
Carbon disulfide			10.0	8.77		ug/L		88	63 - 134	4	24
1,1-Dichloroethene			10.0	9.56		ug/L		96	70 - 129	3	23
Acetone			50.0	54.0		ug/L		108	44 - 150	1	33
Methylene Chloride			10.0	8.99		ug/L		90	77 - 125	2	18
Methyl tert-butyl ether			10.0	9.14		ug/L		91	72 - 120	0	18
trans-1,2-Dichloroethene			10.0	9.39		ug/L		94	75 - 120	4	21
1,1-Dichloroethane			10.0	9.20		ug/L		92	80 - 120	4	15
2-Butanone (MEK)			50.0	48.0		ug/L		96	65 - 137	9	34
2,2-Dichloropropane			10.0	8.98		ug/L		90	66 - 126	4	22
cis-1,2-Dichloroethene			10.0	9.60		ug/L		96	76 - 120	1	20
Bromochloromethane			10.0	9.63		ug/L		96	78 - 120	2	13
Chloroform			10.0	9.34		ug/L		93	78 - 127	3	14
1,1,1-Trichloroethane			10.0	9.36		ug/L		94	74 - 130	4	19
Carbon tetrachloride			10.0	9.25		ug/L		93	72 - 129	4	19
1,1-Dichloropropene			10.0	9.24		ug/L		92	74 - 120	3	14
Benzene			10.0	9.60		ug/L		96	80 - 122	2	14
1,2-Dichloroethane			10.0	9.10		ug/L		91	69 - 126	2	11
Trichloroethene			10.0	10.3		ug/L		103	80 - 125	0	13
1,2-Dichloropropane			10.0	9.77		ug/L		98	80 - 120	3	14
4-Methyl-2-pentanone (MIBK)			50.0	44.3		ug/L		89	59 - 141	4	22
Dibromomethane			10.0	9.53		ug/L		95	80 - 120	1	11
Bromodichloromethane			10.0	9.15		ug/L		92	75 - 124	3	13
cis-1,3-Dichloropropene			10.0	8.96		ug/L		90	77 - 120	8	35
Toluene			10.0	10.1		ug/L		101	80 - 120	6	13
trans-1,3-Dichloropropene			10.0	8.73		ug/L		87	76 - 122	2	20
1,1,2-Trichloroethane			10.0	10.4		ug/L		104	80 - 121	1	14
Tetrachloroethene			10.0	10.4		ug/L		104	76 - 125	2	13
1,3-Dichloropropane			10.0	10.3		ug/L		103	79 - 120	1	19
Dibromochloromethane			10.0	9.15		ug/L		91	73 - 125	1	13
1,2-Dibromoethane			10.0	10.4		ug/L		104	79 - 126	1	12
Chlorobenzene			10.0	10.2		ug/L		102	80 - 120	1	10
1,1,1,2-Tetrachloroethane			10.0	9.69		ug/L		97	79 - 120	1	16
Ethylbenzene			10.0	10.0		ug/L		100	80 - 120	3	14
m-Xylene & p-Xylene			10.0	10.0		ug/L		100	80 - 120	7	14
o-Xylene			10.0	9.75		ug/L		98	80 - 120	4	16
Styrene			10.0	10.1		ug/L		101	76 - 122	0	16
Bromoform			10.0	8.45		ug/L		85	56 - 139	2	21
Isopropylbenzene			10.0	9.53		ug/L		95	80 - 123	1	19
Bromobenzene			10.0	10.4		ug/L		104	80 - 120	3	24
1,1,2,2-Tetrachloroethane			10.0	9.27		ug/L		93	74 - 124	2	25
1,2,3-Trichloropropane			10.0	9.84		ug/L		98	76 - 124	1	26
N-Propylbenzene			10.0	9.67		ug/L		97	80 - 122	5	22

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

Lab Sample ID: LCSD 580-435722/7
Matrix: Water
Analysis Batch: 435722

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Chlorotoluene			10.0	10.1		ug/L		101	80 - 120	3	20
4-Chlorotoluene			10.0	9.82		ug/L		98	73 - 129	4	29
t-Butylbenzene			10.0	9.21		ug/L		92	75 - 123	3	21
1,2,4-Trimethylbenzene			10.0	9.57		ug/L		96	80 - 120	10	16
sec-Butylbenzene			10.0	9.38		ug/L		94	78 - 122	3	15
4-Isopropyltoluene			10.0	9.34		ug/L		93	77 - 126	3	20
1,3-Dichlorobenzene			10.0	9.67		ug/L		97	77 - 127	3	35
1,4-Dichlorobenzene			10.0	10.1		ug/L		101	80 - 120	1	17
n-Butylbenzene			10.0	9.02		ug/L		90	57 - 133	3	14
1,2-Dichlorobenzene			10.0	9.95		ug/L		99	80 - 120	0	15
1,2-Dibromo-3-Chloropropane			10.0	9.29		ug/L		93	65 - 133	9	25
1,2,4-Trichlorobenzene			10.0	9.63		ug/L		96	61 - 148	11	27
Hexachlorobutadiene			10.0	9.95		ug/L		100	74 - 131	4	22
Naphthalene			10.0	9.64		ug/L		96	63 - 150	7	33
1,2,3-Trichlorobenzene			10.0	9.94		ug/L		99	65 - 150	13	33
1,3,5-Trimethylbenzene			10.0	9.53		ug/L		95	80 - 122	9	21

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*103*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*90*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*

Lab Sample ID: MB 580-436014/7
Matrix: Water
Analysis Batch: 436014

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.53	ug/L			08/29/23 01:03	1
Chloromethane	ND		1.0	0.28	ug/L			08/29/23 01:03	1
Vinyl chloride	ND		1.0	0.22	ug/L			08/29/23 01:03	1
Bromomethane	ND		1.0	0.21	ug/L			08/29/23 01:03	1
Chloroethane	ND		1.0	0.35	ug/L			08/29/23 01:03	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			08/29/23 01:03	1
Carbon disulfide	ND		1.0	0.53	ug/L			08/29/23 01:03	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			08/29/23 01:03	1
Acetone	10.5	J	15	3.2	ug/L			08/29/23 01:03	1
Methylene Chloride	ND		5.0	1.4	ug/L			08/29/23 01:03	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			08/29/23 01:03	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			08/29/23 01:03	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			08/29/23 01:03	1
2-Butanone (MEK)	ND		15	4.7	ug/L			08/29/23 01:03	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			08/29/23 01:03	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			08/29/23 01:03	1
Bromochloromethane	ND		1.0	0.29	ug/L			08/29/23 01:03	1
Chloroform	ND		1.0	0.26	ug/L			08/29/23 01:03	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			08/29/23 01:03	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			08/29/23 01:03	1

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

Lab Sample ID: MB 580-436014/7
Matrix: Water
Analysis Batch: 436014

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloropropene	ND		1.0	0.29	ug/L			08/29/23 01:03	1
Benzene	ND		1.0	0.24	ug/L			08/29/23 01:03	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			08/29/23 01:03	1
Trichloroethene	ND		1.0	0.26	ug/L			08/29/23 01:03	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			08/29/23 01:03	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			08/29/23 01:03	1
Dibromomethane	ND		1.0	0.34	ug/L			08/29/23 01:03	1
Bromodichloromethane	ND		1.0	0.29	ug/L			08/29/23 01:03	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			08/29/23 01:03	1
Toluene	ND		1.0	0.39	ug/L			08/29/23 01:03	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			08/29/23 01:03	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			08/29/23 01:03	1
Tetrachloroethene	ND		1.0	0.41	ug/L			08/29/23 01:03	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			08/29/23 01:03	1
Dibromochloromethane	ND		1.0	0.43	ug/L			08/29/23 01:03	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			08/29/23 01:03	1
Chlorobenzene	ND		1.0	0.44	ug/L			08/29/23 01:03	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			08/29/23 01:03	1
Ethylbenzene	ND		1.0	0.50	ug/L			08/29/23 01:03	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			08/29/23 01:03	1
o-Xylene	ND		1.0	0.39	ug/L			08/29/23 01:03	1
Styrene	ND		1.0	0.53	ug/L			08/29/23 01:03	1
Bromoform	ND		1.0	0.51	ug/L			08/29/23 01:03	1
Isopropylbenzene	ND		1.0	0.44	ug/L			08/29/23 01:03	1
Bromobenzene	ND		1.0	0.43	ug/L			08/29/23 01:03	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			08/29/23 01:03	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			08/29/23 01:03	1
N-Propylbenzene	ND		1.0	0.50	ug/L			08/29/23 01:03	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			08/29/23 01:03	1
4-Chlorotoluene	ND		1.0	0.38	ug/L			08/29/23 01:03	1
t-Butylbenzene	ND		2.0	0.58	ug/L			08/29/23 01:03	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			08/29/23 01:03	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			08/29/23 01:03	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			08/29/23 01:03	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			08/29/23 01:03	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			08/29/23 01:03	1
n-Butylbenzene	ND		1.0	0.44	ug/L			08/29/23 01:03	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			08/29/23 01:03	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			08/29/23 01:03	1
1,2,4-Trichlorobenzene	0.567	J	1.0	0.33	ug/L			08/29/23 01:03	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			08/29/23 01:03	1
Naphthalene	ND		3.0	0.93	ug/L			08/29/23 01:03	1
1,2,3-Trichlorobenzene	1.03	J	2.0	0.43	ug/L			08/29/23 01:03	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			08/29/23 01:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*		*08/29/23 01:03*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*80 - 120*		*08/29/23 01:03*	*1*

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

Lab Sample ID: MB 580-436014/7
Matrix: Water
Analysis Batch: 436014

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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*08/29/23 01:03*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*08/29/23 01:03*	*1*

Lab Sample ID: LCS 580-436014/4
Matrix: Water
Analysis Batch: 436014

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Dichlorodifluoromethane	10.0	12.6		ug/L		126	20 - 150
Chloromethane	10.0	11.0		ug/L		110	25 - 150
Vinyl chloride	10.0	11.0		ug/L		110	31 - 150
Bromomethane	10.0	10.5		ug/L		105	36 - 150
Chloroethane	10.0	10.4		ug/L		104	38 - 150
Trichlorofluoromethane	10.0	10.3		ug/L		103	45 - 148
Carbon disulfide	10.0	9.13		ug/L		91	63 - 134
1,1-Dichloroethene	10.0	9.66		ug/L		97	70 - 129
Acetone	50.0	53.1		ug/L		106	44 - 150
Methylene Chloride	10.0	9.90		ug/L		99	77 - 125
Methyl tert-butyl ether	10.0	9.21		ug/L		92	72 - 120
trans-1,2-Dichloroethene	10.0	9.64		ug/L		96	75 - 120
1,1-Dichloroethane	10.0	9.60		ug/L		96	80 - 120
2-Butanone (MEK)	50.0	44.3		ug/L		89	65 - 137
2,2-Dichloropropane	10.0	9.61		ug/L		96	66 - 126
cis-1,2-Dichloroethene	10.0	9.74		ug/L		97	76 - 120
Bromochloromethane	10.0	9.45		ug/L		95	78 - 120
Chloroform	10.0	9.29		ug/L		93	78 - 127
1,1,1-Trichloroethane	10.0	9.79		ug/L		98	74 - 130
Carbon tetrachloride	10.0	9.71		ug/L		97	72 - 129
1,1-Dichloropropene	10.0	9.64		ug/L		96	74 - 120
Benzene	10.0	9.41		ug/L		94	80 - 122
1,2-Dichloroethane	10.0	9.87		ug/L		99	69 - 126
Trichloroethene	10.0	9.28		ug/L		93	80 - 125
1,2-Dichloropropane	10.0	9.92		ug/L		99	80 - 120
4-Methyl-2-pentanone (MIBK)	50.0	43.8		ug/L		88	59 - 141
Dibromomethane	10.0	9.79		ug/L		98	80 - 120
Bromodichloromethane	10.0	9.02		ug/L		90	75 - 124
cis-1,3-Dichloropropene	10.0	9.31		ug/L		93	77 - 120
Toluene	10.0	10.2		ug/L		102	80 - 120
trans-1,3-Dichloropropene	10.0	8.85		ug/L		89	76 - 122
1,1,2-Trichloroethane	10.0	10.3		ug/L		103	80 - 121
Tetrachloroethene	10.0	10.4		ug/L		104	76 - 125
1,3-Dichloropropane	10.0	10.3		ug/L		103	79 - 120
Dibromochloromethane	10.0	8.74		ug/L		87	73 - 125
1,2-Dibromoethane	10.0	10.2		ug/L		102	79 - 126
Chlorobenzene	10.0	10.2		ug/L		102	80 - 120
1,1,1,2-Tetrachloroethane	10.0	9.30		ug/L		93	79 - 120
Ethylbenzene	10.0	9.84		ug/L		98	80 - 120
m-Xylene & p-Xylene	10.0	10.0		ug/L		100	80 - 120

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

Lab Sample ID: LCS 580-436014/4
Matrix: Water
Analysis Batch: 436014

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
o-Xylene	10.0	9.47		ug/L		95	80 - 120
Styrene	10.0	10.0		ug/L		100	76 - 122
Bromoform	10.0	7.96		ug/L		80	56 - 139
Isopropylbenzene	10.0	9.62		ug/L		96	80 - 123
Bromobenzene	10.0	10.3		ug/L		103	80 - 120
1,1,2,2-Tetrachloroethane	10.0	9.70		ug/L		97	74 - 124
1,2,3-Trichloropropane	10.0	9.69		ug/L		97	76 - 124
N-Propylbenzene	10.0	9.93		ug/L		99	80 - 122
2-Chlorotoluene	10.0	10.2		ug/L		102	80 - 120
4-Chlorotoluene	10.0	10.4		ug/L		104	73 - 129
t-Butylbenzene	10.0	9.72		ug/L		97	75 - 123
1,2,4-Trimethylbenzene	10.0	9.99		ug/L		100	80 - 120
sec-Butylbenzene	10.0	10.2		ug/L		102	78 - 122
4-Isopropyltoluene	10.0	10.2		ug/L		102	77 - 126
1,3-Dichlorobenzene	10.0	10.3		ug/L		103	77 - 127
1,4-Dichlorobenzene	10.0	10.4		ug/L		104	80 - 120
n-Butylbenzene	10.0	10.4		ug/L		104	57 - 133
1,2-Dichlorobenzene	10.0	10.3		ug/L		103	80 - 120
1,2-Dibromo-3-Chloropropane	10.0	8.61		ug/L		86	65 - 133
1,2,4-Trichlorobenzene	10.0	10.4		ug/L		104	61 - 148
Hexachlorobutadiene	10.0	12.7		ug/L		127	74 - 131
Naphthalene	10.0	10.6		ug/L		106	63 - 150
1,2,3-Trichlorobenzene	10.0	11.1		ug/L		111	65 - 150
1,3,5-Trimethylbenzene	10.0	9.95		ug/L		100	80 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*103*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*

Lab Sample ID: LCSD 580-436014/5
Matrix: Water
Analysis Batch: 436014

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Dichlorodifluoromethane	10.0	12.3		ug/L		123	20 - 150	3	33
Chloromethane	10.0	10.4		ug/L		104	25 - 150	6	26
Vinyl chloride	10.0	10.6		ug/L		106	31 - 150	4	26
Bromomethane	10.0	10.3		ug/L		103	36 - 150	2	33
Chloroethane	10.0	9.98		ug/L		100	38 - 150	4	28
Trichlorofluoromethane	10.0	10.2		ug/L		102	45 - 148	1	35
Carbon disulfide	10.0	8.74		ug/L		87	63 - 134	4	24
1,1-Dichloroethene	10.0	9.35		ug/L		94	70 - 129	3	23
Acetone	50.0	49.1		ug/L		98	44 - 150	8	33
Methylene Chloride	10.0	9.69		ug/L		97	77 - 125	2	18
Methyl tert-butyl ether	10.0	8.98		ug/L		90	72 - 120	3	18
trans-1,2-Dichloroethene	10.0	9.60		ug/L		96	75 - 120	0	21

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

Lab Sample ID: LCSD 580-436014/5
Matrix: Water
Analysis Batch: 436014

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethane			10.0	9.38		ug/L		94	80 - 120	2	15
2-Butanone (MEK)			50.0	41.5		ug/L		83	65 - 137	7	34
2,2-Dichloropropane			10.0	9.58		ug/L		96	66 - 126	0	22
cis-1,2-Dichloroethene			10.0	9.53		ug/L		95	76 - 120	2	20
Bromochloromethane			10.0	9.42		ug/L		94	78 - 120	0	13
Chloroform			10.0	9.06		ug/L		91	78 - 127	2	14
1,1,1-Trichloroethane			10.0	9.77		ug/L		98	74 - 130	0	19
Carbon tetrachloride			10.0	9.54		ug/L		95	72 - 129	2	19
1,1-Dichloropropene			10.0	9.40		ug/L		94	74 - 120	3	14
Benzene			10.0	9.16		ug/L		92	80 - 122	3	14
1,2-Dichloroethane			10.0	9.60		ug/L		96	69 - 126	3	11
Trichloroethene			10.0	9.53		ug/L		95	80 - 125	3	13
1,2-Dichloropropane			10.0	9.88		ug/L		99	80 - 120	0	14
4-Methyl-2-pentanone (MIBK)			50.0	40.1		ug/L		80	59 - 141	9	22
Dibromomethane			10.0	9.73		ug/L		97	80 - 120	1	11
Bromodichloromethane			10.0	8.97		ug/L		90	75 - 124	1	13
cis-1,3-Dichloropropene			10.0	8.86		ug/L		89	77 - 120	5	35
Toluene			10.0	9.98		ug/L		100	80 - 120	2	13
trans-1,3-Dichloropropene			10.0	8.35		ug/L		84	76 - 122	6	20
1,1,2-Trichloroethane			10.0	10.1		ug/L		101	80 - 121	2	14
Tetrachloroethene			10.0	10.4		ug/L		104	76 - 125	0	13
1,3-Dichloropropane			10.0	9.99		ug/L		100	79 - 120	3	19
Dibromochloromethane			10.0	8.54		ug/L		85	73 - 125	2	13
1,2-Dibromoethane			10.0	9.93		ug/L		99	79 - 126	2	12
Chlorobenzene			10.0	9.97		ug/L		100	80 - 120	2	10
1,1,1,2-Tetrachloroethane			10.0	9.20		ug/L		92	79 - 120	1	16
Ethylbenzene			10.0	9.77		ug/L		98	80 - 120	1	14
m-Xylene & p-Xylene			10.0	9.76		ug/L		98	80 - 120	2	14
o-Xylene			10.0	9.53		ug/L		95	80 - 120	1	16
Styrene			10.0	9.79		ug/L		98	76 - 122	2	16
Bromoform			10.0	7.30		ug/L		73	56 - 139	9	21
Isopropylbenzene			10.0	9.46		ug/L		95	80 - 123	2	19
Bromobenzene			10.0	9.99		ug/L		100	80 - 120	3	24
1,1,2,2-Tetrachloroethane			10.0	8.75		ug/L		88	74 - 124	10	25
1,2,3-Trichloropropane			10.0	9.21		ug/L		92	76 - 124	5	26
N-Propylbenzene			10.0	9.56		ug/L		96	80 - 122	4	22
2-Chlorotoluene			10.0	9.76		ug/L		98	80 - 120	4	20
4-Chlorotoluene			10.0	9.66		ug/L		97	73 - 129	7	29
t-Butylbenzene			10.0	9.54		ug/L		95	75 - 123	2	21
1,2,4-Trimethylbenzene			10.0	9.54		ug/L		95	80 - 120	5	16
sec-Butylbenzene			10.0	9.55		ug/L		95	78 - 122	6	15
4-Isopropyltoluene			10.0	9.43		ug/L		94	77 - 126	8	20
1,3-Dichlorobenzene			10.0	9.96		ug/L		100	77 - 127	4	35
1,4-Dichlorobenzene			10.0	9.83		ug/L		98	80 - 120	6	17
n-Butylbenzene			10.0	9.37		ug/L		94	57 - 133	11	14
1,2-Dichlorobenzene			10.0	9.67		ug/L		97	80 - 120	7	15
1,2-Dibromo-3-Chloropropane			10.0	7.51		ug/L		75	65 - 133	14	25
1,2,4-Trichlorobenzene			10.0	9.36		ug/L		94	61 - 148	11	27
Hexachlorobutadiene			10.0	11.4		ug/L		114	74 - 131	10	22

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

Lab Sample ID: LCSD 580-436014/5
Matrix: Water
Analysis Batch: 436014

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Naphthalene			10.0	8.63		ug/L		86	63 - 150	20	33
1,2,3-Trichlorobenzene			10.0	9.37		ug/L		94	65 - 150	17	33
1,3,5-Trimethylbenzene			10.0	9.72		ug/L		97	80 - 122	2	21

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*102*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*

Lab Sample ID: MB 580-436121/7
Matrix: Water
Analysis Batch: 436121

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.53	ug/L			08/29/23 22:35	1
Chloromethane	ND		1.0	0.28	ug/L			08/29/23 22:35	1
Vinyl chloride	ND		1.0	0.22	ug/L			08/29/23 22:35	1
Bromomethane	ND		1.0	0.21	ug/L			08/29/23 22:35	1
Chloroethane	ND		1.0	0.35	ug/L			08/29/23 22:35	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			08/29/23 22:35	1
Carbon disulfide	ND		1.0	0.53	ug/L			08/29/23 22:35	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			08/29/23 22:35	1
Acetone	ND		15	3.2	ug/L			08/29/23 22:35	1
Methylene Chloride	ND		5.0	1.4	ug/L			08/29/23 22:35	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			08/29/23 22:35	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			08/29/23 22:35	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			08/29/23 22:35	1
2-Butanone (MEK)	ND		15	4.7	ug/L			08/29/23 22:35	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			08/29/23 22:35	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			08/29/23 22:35	1
Bromochloromethane	ND		1.0	0.29	ug/L			08/29/23 22:35	1
Chloroform	ND		1.0	0.26	ug/L			08/29/23 22:35	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			08/29/23 22:35	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			08/29/23 22:35	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			08/29/23 22:35	1
Benzene	ND		1.0	0.24	ug/L			08/29/23 22:35	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			08/29/23 22:35	1
Trichloroethene	ND		1.0	0.26	ug/L			08/29/23 22:35	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			08/29/23 22:35	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			08/29/23 22:35	1
Dibromomethane	ND		1.0	0.34	ug/L			08/29/23 22:35	1
Bromodichloromethane	ND		1.0	0.29	ug/L			08/29/23 22:35	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			08/29/23 22:35	1
Toluene	ND		1.0	0.39	ug/L			08/29/23 22:35	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			08/29/23 22:35	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			08/29/23 22:35	1
Tetrachloroethene	ND		1.0	0.41	ug/L			08/29/23 22:35	1

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

Lab Sample ID: MB 580-436121/7
Matrix: Water
Analysis Batch: 436121

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichloropropane	ND		1.0	0.35	ug/L			08/29/23 22:35	1
Dibromochloromethane	ND		1.0	0.43	ug/L			08/29/23 22:35	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			08/29/23 22:35	1
Chlorobenzene	ND		1.0	0.44	ug/L			08/29/23 22:35	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			08/29/23 22:35	1
Ethylbenzene	ND		1.0	0.50	ug/L			08/29/23 22:35	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			08/29/23 22:35	1
o-Xylene	ND		1.0	0.39	ug/L			08/29/23 22:35	1
Styrene	ND		1.0	0.53	ug/L			08/29/23 22:35	1
Bromoform	ND		1.0	0.51	ug/L			08/29/23 22:35	1
Isopropylbenzene	ND		1.0	0.44	ug/L			08/29/23 22:35	1
Bromobenzene	ND		1.0	0.43	ug/L			08/29/23 22:35	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			08/29/23 22:35	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			08/29/23 22:35	1
N-Propylbenzene	ND		1.0	0.50	ug/L			08/29/23 22:35	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			08/29/23 22:35	1
4-Chlorotoluene	ND		1.0	0.38	ug/L			08/29/23 22:35	1
t-Butylbenzene	ND		2.0	0.58	ug/L			08/29/23 22:35	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			08/29/23 22:35	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			08/29/23 22:35	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			08/29/23 22:35	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			08/29/23 22:35	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			08/29/23 22:35	1
n-Butylbenzene	ND		1.0	0.44	ug/L			08/29/23 22:35	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			08/29/23 22:35	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			08/29/23 22:35	1
1,2,4-Trichlorobenzene	0.756	J	1.0	0.33	ug/L			08/29/23 22:35	1
Hexachlorobutadiene	0.881	J	3.0	0.79	ug/L			08/29/23 22:35	1
Naphthalene	ND		3.0	0.93	ug/L			08/29/23 22:35	1
1,2,3-Trichlorobenzene	1.14	J	2.0	0.43	ug/L			08/29/23 22:35	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			08/29/23 22:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*		*08/29/23 22:35*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*08/29/23 22:35*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*08/29/23 22:35*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*08/29/23 22:35*	*1*

Lab Sample ID: LCS 580-436121/4
Matrix: Water
Analysis Batch: 436121

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Dichlorodifluoromethane	10.0	14.0		ug/L		140	20 - 150
Chloromethane	10.0	12.8		ug/L		128	25 - 150
Vinyl chloride	10.0	12.7		ug/L		127	31 - 150
Bromomethane	10.0	12.0		ug/L		120	36 - 150
Chloroethane	10.0	12.2		ug/L		122	38 - 150

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

Lab Sample ID: LCS 580-436121/4
Matrix: Water
Analysis Batch: 436121

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichlorofluoromethane	10.0	11.8		ug/L		118	45 - 148
Carbon disulfide	10.0	9.97		ug/L		100	63 - 134
1,1-Dichloroethene	10.0	10.3		ug/L		103	70 - 129
Acetone	50.0	72.1		ug/L		144	44 - 150
Methylene Chloride	10.0	10.7		ug/L		107	77 - 125
Methyl tert-butyl ether	10.0	10.7		ug/L		107	72 - 120
trans-1,2-Dichloroethene	10.0	10.2		ug/L		102	75 - 120
1,1-Dichloroethane	10.0	10.6		ug/L		106	80 - 120
2-Butanone (MEK)	50.0	57.1		ug/L		114	65 - 137
2,2-Dichloropropane	10.0	10.8		ug/L		108	66 - 126
cis-1,2-Dichloroethene	10.0	10.6		ug/L		106	76 - 120
Bromochloromethane	10.0	10.4		ug/L		104	78 - 120
Chloroform	10.0	9.99		ug/L		100	78 - 127
1,1,1-Trichloroethane	10.0	10.7		ug/L		107	74 - 130
Carbon tetrachloride	10.0	10.5		ug/L		105	72 - 129
1,1-Dichloropropene	10.0	10.4		ug/L		104	74 - 120
Benzene	10.0	9.76		ug/L		98	80 - 122
1,2-Dichloroethane	10.0	10.5		ug/L		105	69 - 126
Trichloroethene	10.0	9.69		ug/L		97	80 - 125
1,2-Dichloropropane	10.0	10.1		ug/L		101	80 - 120
4-Methyl-2-pentanone (MIBK)	50.0	55.4		ug/L		111	59 - 141
Dibromomethane	10.0	10.5		ug/L		105	80 - 120
Bromodichloromethane	10.0	9.58		ug/L		96	75 - 124
cis-1,3-Dichloropropene	10.0	9.68		ug/L		97	77 - 120
Toluene	10.0	9.89		ug/L		99	80 - 120
trans-1,3-Dichloropropene	10.0	9.58		ug/L		96	76 - 122
1,1,2-Trichloroethane	10.0	10.6		ug/L		106	80 - 121
Tetrachloroethene	10.0	10.0		ug/L		100	76 - 125
1,3-Dichloropropane	10.0	10.5		ug/L		105	79 - 120
Dibromochloromethane	10.0	9.49		ug/L		95	73 - 125
1,2-Dibromoethane	10.0	10.3		ug/L		103	79 - 126
Chlorobenzene	10.0	10.2		ug/L		102	80 - 120
1,1,1,2-Tetrachloroethane	10.0	9.88		ug/L		99	79 - 120
Ethylbenzene	10.0	10.1		ug/L		101	80 - 120
m-Xylene & p-Xylene	10.0	10.3		ug/L		103	80 - 120
o-Xylene	10.0	10.1		ug/L		101	80 - 120
Styrene	10.0	10.5		ug/L		105	76 - 122
Bromoform	10.0	9.28		ug/L		93	56 - 139
Isopropylbenzene	10.0	10.1		ug/L		101	80 - 123
Bromobenzene	10.0	10.6		ug/L		106	80 - 120
1,1,2,2-Tetrachloroethane	10.0	10.9		ug/L		109	74 - 124
1,2,3-Trichloropropane	10.0	11.5		ug/L		115	76 - 124
N-Propylbenzene	10.0	10.3		ug/L		103	80 - 122
2-Chlorotoluene	10.0	10.5		ug/L		105	80 - 120
4-Chlorotoluene	10.0	11.0		ug/L		110	73 - 129
t-Butylbenzene	10.0	9.98		ug/L		100	75 - 123
1,2,4-Trimethylbenzene	10.0	10.4		ug/L		104	80 - 120
sec-Butylbenzene	10.0	10.2		ug/L		102	78 - 122
4-Isopropyltoluene	10.0	10.1		ug/L		101	77 - 126

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

Lab Sample ID: LCS 580-436121/4
Matrix: Water
Analysis Batch: 436121

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,3-Dichlorobenzene	10.0	11.0		ug/L		110	77 - 127
1,4-Dichlorobenzene	10.0	10.9		ug/L		109	80 - 120
n-Butylbenzene	10.0	10.6		ug/L		106	57 - 133
1,2-Dichlorobenzene	10.0	11.0		ug/L		110	80 - 120
1,2-Dibromo-3-Chloropropane	10.0	11.1		ug/L		111	65 - 133
1,2,4-Trichlorobenzene	10.0	11.4		ug/L		114	61 - 148
Hexachlorobutadiene	10.0	11.2		ug/L		112	74 - 131
Naphthalene	10.0	12.1		ug/L		121	63 - 150
1,2,3-Trichlorobenzene	10.0	12.3		ug/L		123	65 - 150
1,3,5-Trimethylbenzene	10.0	10.4		ug/L		104	80 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 580-436121/5
Matrix: Water
Analysis Batch: 436121

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Dichlorodifluoromethane	10.0	12.8		ug/L		128	20 - 150	8	33
Chloromethane	10.0	11.5		ug/L		115	25 - 150	11	26
Vinyl chloride	10.0	11.5		ug/L		115	31 - 150	11	26
Bromomethane	10.0	11.1		ug/L		111	36 - 150	8	33
Chloroethane	10.0	11.1		ug/L		111	38 - 150	9	28
Trichlorofluoromethane	10.0	10.9		ug/L		109	45 - 148	8	35
Carbon disulfide	10.0	9.44		ug/L		94	63 - 134	5	24
1,1-Dichloroethene	10.0	9.87		ug/L		99	70 - 129	5	23
Acetone	50.0	65.3		ug/L		131	44 - 150	10	33
Methylene Chloride	10.0	10.2		ug/L		102	77 - 125	5	18
Methyl tert-butyl ether	10.0	10.0		ug/L		100	72 - 120	6	18
trans-1,2-Dichloroethene	10.0	9.78		ug/L		98	75 - 120	5	21
1,1-Dichloroethane	10.0	9.88		ug/L		99	80 - 120	7	15
2-Butanone (MEK)	50.0	51.8		ug/L		104	65 - 137	10	34
2,2-Dichloropropane	10.0	10.3		ug/L		103	66 - 126	5	22
cis-1,2-Dichloroethene	10.0	9.76		ug/L		98	76 - 120	8	20
Bromochloromethane	10.0	9.89		ug/L		99	78 - 120	5	13
Chloroform	10.0	9.43		ug/L		94	78 - 127	6	14
1,1,1-Trichloroethane	10.0	10.0		ug/L		100	74 - 130	6	19
Carbon tetrachloride	10.0	9.75		ug/L		97	72 - 129	7	19
1,1-Dichloropropene	10.0	9.85		ug/L		98	74 - 120	6	14
Benzene	10.0	9.20		ug/L		92	80 - 122	6	14
1,2-Dichloroethane	10.0	10.0		ug/L		100	69 - 126	5	11
Trichloroethene	10.0	9.36		ug/L		94	80 - 125	3	13
1,2-Dichloropropane	10.0	9.83		ug/L		98	80 - 120	3	14
4-Methyl-2-pentanone (MIBK)	50.0	50.8		ug/L		102	59 - 141	9	22

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

Lab Sample ID: LCSD 580-436121/5
Matrix: Water
Analysis Batch: 436121

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Dibromomethane			10.0	10.1		ug/L		101	80 - 120	4	11
Bromodichloromethane			10.0	9.29		ug/L		93	75 - 124	3	13
cis-1,3-Dichloropropene			10.0	10.0		ug/L		100	77 - 120	3	35
Toluene			10.0	9.74		ug/L		97	80 - 120	2	13
trans-1,3-Dichloropropene			10.0	9.58		ug/L		96	76 - 122	0	20
1,1,2-Trichloroethane			10.0	10.6		ug/L		106	80 - 121	0	14
Tetrachloroethene			10.0	10.2		ug/L		102	76 - 125	2	13
1,3-Dichloropropane			10.0	10.7		ug/L		107	79 - 120	1	19
Dibromochloromethane			10.0	9.52		ug/L		95	73 - 125	0	13
1,2-Dibromoethane			10.0	10.5		ug/L		105	79 - 126	2	12
Chlorobenzene			10.0	10.2		ug/L		102	80 - 120	1	10
1,1,1,2-Tetrachloroethane			10.0	9.52		ug/L		95	79 - 120	4	16
Ethylbenzene			10.0	9.93		ug/L		99	80 - 120	2	14
m-Xylene & p-Xylene			10.0	9.90		ug/L		99	80 - 120	4	14
o-Xylene			10.0	9.42		ug/L		94	80 - 120	7	16
Styrene			10.0	9.95		ug/L		99	76 - 122	5	16
Bromoform			10.0	9.04		ug/L		90	56 - 139	3	21
Isopropylbenzene			10.0	9.43		ug/L		94	80 - 123	7	19
Bromobenzene			10.0	10.4		ug/L		104	80 - 120	2	24
1,1,2,2-Tetrachloroethane			10.0	10.8		ug/L		108	74 - 124	1	25
1,2,3-Trichloropropane			10.0	11.0		ug/L		110	76 - 124	4	26
N-Propylbenzene			10.0	9.90		ug/L		99	80 - 122	4	22
2-Chlorotoluene			10.0	10.2		ug/L		102	80 - 120	3	20
4-Chlorotoluene			10.0	10.3		ug/L		103	73 - 129	6	29
t-Butylbenzene			10.0	9.43		ug/L		94	75 - 123	6	21
1,2,4-Trimethylbenzene			10.0	10.1		ug/L		101	80 - 120	4	16
sec-Butylbenzene			10.0	9.92		ug/L		99	78 - 122	3	15
4-Isopropyltoluene			10.0	9.82		ug/L		98	77 - 126	3	20
1,3-Dichlorobenzene			10.0	10.1		ug/L		101	77 - 127	8	35
1,4-Dichlorobenzene			10.0	10.1		ug/L		101	80 - 120	7	17
n-Butylbenzene			10.0	9.95		ug/L		99	57 - 133	6	14
1,2-Dichlorobenzene			10.0	10.4		ug/L		104	80 - 120	6	15
1,2-Dibromo-3-Chloropropane			10.0	9.55		ug/L		95	65 - 133	15	25
1,2,4-Trichlorobenzene			10.0	9.88		ug/L		99	61 - 148	14	27
Hexachlorobutadiene			10.0	11.7		ug/L		117	74 - 131	4	22
Naphthalene			10.0	10.4		ug/L		104	63 - 150	15	33
1,2,3-Trichlorobenzene			10.0	11.1		ug/L		111	65 - 150	11	33
1,3,5-Trimethylbenzene			10.0	9.97		ug/L		100	80 - 122	4	21

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 320-703730/5
Matrix: Water
Analysis Batch: 703730
Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	2.0	ug/L			09/05/23 11:29	1

Lab Sample ID: LCS 320-703730/6
Matrix: Water
Analysis Batch: 703730
Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	49.9	52.9		ug/L		106	85 - 115

Lab Sample ID: MRL 320-703730/4
Matrix: Water
Analysis Batch: 703730
Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	3.99	3.85	J	ug/L		96	75 - 125

Lab Sample ID: MB 320-703989/5
Matrix: Water
Analysis Batch: 703989
Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	2.0	ug/L			09/06/23 11:30	1

Lab Sample ID: LCS 320-703989/6
Matrix: Water
Analysis Batch: 703989
Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	49.9	52.4		ug/L		105	85 - 115

Lab Sample ID: MRL 320-703989/4
Matrix: Water
Analysis Batch: 703989
Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	3.99	3.82	J	ug/L		96	75 - 125

Lab Sample ID: 580-130777-10 MS
Matrix: Water
Analysis Batch: 703989
Client Sample ID: PA-44i-082223
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	ND		250	259		ug/L		104	80 - 120

Lab Sample ID: 580-130777-10 MSD
Matrix: Water
Analysis Batch: 703989
Client Sample ID: PA-44i-082223
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	ND		250	259		ug/L		104	80 - 120	0	20

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 320-704634/5
Matrix: Water
Analysis Batch: 704634

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	2.0	ug/L			09/08/23 11:10	1

Lab Sample ID: LCS 320-704634/6
Matrix: Water
Analysis Batch: 704634

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	49.9	53.1		ug/L		106	85 - 115

Lab Sample ID: MRL 320-704634/4
Matrix: Water
Analysis Batch: 704634

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	3.99	3.88	J	ug/L		97	75 - 125

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 580-436083/6
Matrix: Water
Analysis Batch: 436083

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.5	0.43	mg/L			08/28/23 16:35	1

Lab Sample ID: LCS 580-436083/7
Matrix: Water
Analysis Batch: 436083

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	53.0		mg/L		106	90 - 110

Lab Sample ID: LCSD 580-436083/1
Matrix: Water
Analysis Batch: 436083

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	53.0		mg/L		106	90 - 110	0	15

Lab Sample ID: 580-130777-10 MS
Matrix: Water
Analysis Batch: 436083

Client Sample ID: PA-44i-082223
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	370		500	840		mg/L		95	90 - 110

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 580-130777-10 MSD
Matrix: Water
Analysis Batch: 436083

Client Sample ID: PA-44i-082223
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	370		500	867		mg/L		100	90 - 110	3	15

Lab Sample ID: MB 580-436112/3
Matrix: Water
Analysis Batch: 436112

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.5	0.43	mg/L			08/29/23 09:37	1

Lab Sample ID: LCS 580-436112/4
Matrix: Water
Analysis Batch: 436112

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	53.0		mg/L		106	90 - 110

Lab Sample ID: LCSD 580-436112/5
Matrix: Water
Analysis Batch: 436112

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	52.8		mg/L		106	90 - 110	0	15

Lab Chronicle

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: TB-082123
Lab Sample ID: 580-130777-1
Date Collected: 08/21/23 00:01
Matrix: Water
Date Received: 08/23/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435690	ITR	EET SEA	08/24/23 15:25

Client Sample ID: MWA-82-082123
Lab Sample ID: 580-130777-2
Date Collected: 08/21/23 09:44
Matrix: Water
Date Received: 08/23/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435690	ITR	EET SEA	08/24/23 15:47
Total/NA	Analysis	314.0		5	703989	Y1S	EET SAC	09/06/23 12:59
Total/NA	Analysis	300.0		1	436083	CA	EET SEA	08/28/23 17:10

Client Sample ID: MWA-81i-082123
Lab Sample ID: 580-130777-3
Date Collected: 08/21/23 10:33
Matrix: Water
Date Received: 08/23/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435690	ITR	EET SEA	08/24/23 16:09
Total/NA	Analysis	314.0		1	703730	Y1S	EET SAC	09/05/23 17:08
Total/NA	Analysis	300.0		1	436083	CA	EET SEA	08/28/23 17:22

Client Sample ID: MWA-41-082123
Lab Sample ID: 580-130777-4
Date Collected: 08/21/23 11:05
Matrix: Water
Date Received: 08/23/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435690	ITR	EET SEA	08/24/23 16:30
Total/NA	Analysis	314.0		1	703730	Y1S	EET SAC	09/05/23 17:26
Total/NA	Analysis	300.0		1	436083	CA	EET SEA	08/28/23 17:34

Client Sample ID: PA-15i-082123
Lab Sample ID: 580-130777-5
Date Collected: 08/21/23 12:18
Matrix: Water
Date Received: 08/23/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435690	ITR	EET SEA	08/24/23 16:52
Total/NA	Analysis	314.0		5	703730	Y1S	EET SAC	09/05/23 17:44
Total/NA	Analysis	300.0		1	436083	CA	EET SEA	08/28/23 17:46

Client Sample ID: PA-08-082123
Lab Sample ID: 580-130777-6
Date Collected: 08/21/23 10:06
Matrix: Water
Date Received: 08/23/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435690	ITR	EET SEA	08/24/23 17:14
Total/NA	Analysis	314.0		1	703989	Y1S	EET SAC	09/06/23 13:17

Client Sample ID: PA-08-082123
Lab Sample ID: 580-130777-6
Date Collected: 08/21/23 10:06
Matrix: Water
Date Received: 08/23/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	436083	CA	EET SEA	08/28/23 17:57

Client Sample ID: PA-09-082123
Lab Sample ID: 580-130777-7
Date Collected: 08/21/23 11:17
Matrix: Water
Date Received: 08/23/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435690	ITR	EET SEA	08/24/23 17:36
Total/NA	Analysis	314.0		1	703989	Y1S	EET SAC	09/06/23 13:35
Total/NA	Analysis	300.0		1	436083	CA	EET SEA	08/28/23 18:09

Client Sample ID: PA-18d-082123
Lab Sample ID: 580-130777-8
Date Collected: 08/21/23 13:35
Matrix: Water
Date Received: 08/23/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	436014	JBT	EET SEA	08/29/23 07:53
Total/NA	Analysis	314.0		5	703989	Y1S	EET SAC	09/06/23 13:53
Total/NA	Analysis	300.0		1	436083	CA	EET SEA	08/28/23 18:21

Client Sample ID: RB-01-082223
Lab Sample ID: 580-130777-9
Date Collected: 08/22/23 06:45
Matrix: Water
Date Received: 08/23/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435690	ITR	EET SEA	08/24/23 17:57
Total/NA	Analysis	314.0		1	703989	Y1S	EET SAC	09/06/23 14:11
Total/NA	Analysis	300.0		1	436083	CA	EET SEA	08/28/23 18:56

Client Sample ID: PA-44i-082223
Lab Sample ID: 580-130777-10
Date Collected: 08/22/23 07:30
Matrix: Water
Date Received: 08/23/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435690	ITR	EET SEA	08/24/23 18:19
Total/NA	Analysis	314.0		5	703989	Y1S	EET SAC	09/06/23 12:06
Total/NA	Analysis	300.0		10	436083	CA	EET SEA	08/28/23 19:19

Client Sample ID: PA-25d-082223
Lab Sample ID: 580-130777-11
Date Collected: 08/22/23 08:18
Matrix: Water
Date Received: 08/23/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435690	ITR	EET SEA	08/24/23 18:41
Total/NA	Analysis	314.0		1	703989	Y1S	EET SAC	09/06/23 15:05

Lab Chronicle

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-25d-082223
Lab Sample ID: 580-130777-11
Date Collected: 08/22/23 08:18
Matrix: Water
Date Received: 08/23/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	436112	CA	EET SEA	08/29/23 14:54

Client Sample ID: PA-16i-082223
Lab Sample ID: 580-130777-12
Date Collected: 08/22/23 09:22
Matrix: Water
Date Received: 08/23/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435690	ITR	EET SEA	08/24/23 19:02
Total/NA	Analysis	314.0		2	703989	Y1S	EET SAC	09/06/23 15:22
Total/NA	Analysis	300.0		1	436083	CA	EET SEA	08/28/23 20:06

Client Sample ID: PA-26d-082223
Lab Sample ID: 580-130777-13
Date Collected: 08/22/23 10:15
Matrix: Water
Date Received: 08/23/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435690	ITR	EET SEA	08/24/23 19:24
Total/NA	Analysis	314.0		1	703989	Y1S	EET SAC	09/06/23 15:41
Total/NA	Analysis	300.0		1	436083	CA	EET SEA	08/28/23 20:18

Client Sample ID: PA-23d-082223
Lab Sample ID: 580-130777-14
Date Collected: 08/22/23 11:37
Matrix: Water
Date Received: 08/23/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435722	ITR	EET SEA	08/25/23 07:10
Total/NA	Analysis	314.0		200	703989	Y1S	EET SAC	09/06/23 15:58
Total/NA	Analysis	300.0		1000	436083	CA	EET SEA	08/28/23 20:29

Client Sample ID: PA-04-082223
Lab Sample ID: 580-130777-15
Date Collected: 08/22/23 07:20
Matrix: Water
Date Received: 08/23/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435690	ITR	EET SEA	08/24/23 19:46
Total/NA	Analysis	314.0		5	703989	Y1S	EET SAC	09/06/23 16:16
Total/NA	Analysis	300.0		1	436083	CA	EET SEA	08/28/23 20:41

Client Sample ID: PA-10i-082223
Lab Sample ID: 580-130777-16
Date Collected: 08/22/23 08:25
Matrix: Water
Date Received: 08/23/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435690	ITR	EET SEA	08/24/23 20:08
Total/NA	Analysis	314.0		2	703989	Y1S	EET SAC	09/06/23 16:34

Client Sample ID: PA-10i-082223
Lab Sample ID: 580-130777-16
Date Collected: 08/22/23 08:25
Matrix: Water
Date Received: 08/23/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	436083	CA	EET SEA	08/28/23 21:16

Client Sample ID: PA-03-082223
Lab Sample ID: 580-130777-17
Date Collected: 08/22/23 09:20
Matrix: Water
Date Received: 08/23/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435690	ITR	EET SEA	08/24/23 20:29
Total/NA	Analysis	314.0		1	703989	Y1S	EET SAC	09/06/23 16:52
Total/NA	Analysis	300.0		1	436083	CA	EET SEA	08/28/23 21:28

Client Sample ID: PA-17iR-082223
Lab Sample ID: 580-130777-18
Date Collected: 08/22/23 10:16
Matrix: Water
Date Received: 08/23/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435690	ITR	EET SEA	08/24/23 20:51
Total/NA	Analysis	314.0		1	703989	Y1S	EET SAC	09/06/23 17:10
Total/NA	Analysis	300.0		1	436083	CA	EET SEA	08/28/23 21:40

Client Sample ID: Dup-01-082223
Lab Sample ID: 580-130777-19
Date Collected: 08/22/23 10:17
Matrix: Water
Date Received: 08/23/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435690	ITR	EET SEA	08/24/23 21:13
Total/NA	Analysis	314.0		5	703989	Y1S	EET SAC	09/06/23 17:28
Total/NA	Analysis	300.0		1	436083	CA	EET SEA	08/28/23 21:51

Client Sample ID: PA-27d-082223
Lab Sample ID: 580-130777-20
Date Collected: 08/22/23 11:33
Matrix: Water
Date Received: 08/23/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	436121	JBT	EET SEA	08/30/23 03:00
Total/NA	Analysis	314.0		5	703989	Y1S	EET SAC	09/06/23 17:46
Total/NA	Analysis	300.0		10	436083	CA	EET SEA	08/28/23 22:15

Client Sample ID: PA-24d-082223
Lab Sample ID: 580-130777-21
Date Collected: 08/22/23 12:35
Matrix: Water
Date Received: 08/23/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	436121	JBT	EET SEA	08/30/23 02:12
Total/NA	Analysis	314.0		200	704634	Y1S	EET SAC	09/08/23 12:04

Lab Chronicle

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-24d-082223
Lab Sample ID: 580-130777-21

Date Collected: 08/22/23 12:35
Matrix: Water
Date Received: 08/23/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1000	436083	CA	EET SEA	08/28/23 22:26

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Laboratory: Eurofins Seattle

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

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4167	09-06-23

Laboratory: Eurofins Sacramento

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

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4040	01-29-24

Sample Summary

Client: ERM-West
Job ID: 580-130777-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-130777-1	TB-082123	Water	08/21/23 00:01	08/23/23 11:30
580-130777-2	MWA-82-082123	Water	08/21/23 09:44	08/23/23 11:30
580-130777-3	MWA-81i-082123	Water	08/21/23 10:33	08/23/23 11:30
580-130777-4	MWA-41-082123	Water	08/21/23 11:05	08/23/23 11:30
580-130777-5	PA-15i-082123	Water	08/21/23 12:18	08/23/23 11:30
580-130777-6	PA-08-082123	Water	08/21/23 10:06	08/23/23 11:30
580-130777-7	PA-09-082123	Water	08/21/23 11:17	08/23/23 11:30
580-130777-8	PA-18d-082123	Water	08/21/23 13:35	08/23/23 11:30
580-130777-9	RB-01-082223	Water	08/22/23 06:45	08/23/23 11:30
580-130777-10	PA-44i-082223	Water	08/22/23 07:30	08/23/23 11:30
580-130777-11	PA-25d-082223	Water	08/22/23 08:18	08/23/23 11:30
580-130777-12	PA-16i-082223	Water	08/22/23 09:22	08/23/23 11:30
580-130777-13	PA-26d-082223	Water	08/22/23 10:15	08/23/23 11:30
580-130777-14	PA-23d-082223	Water	08/22/23 11:37	08/23/23 11:30
580-130777-15	PA-04-082223	Water	08/22/23 07:20	08/23/23 11:30
580-130777-16	PA-10i-082223	Water	08/22/23 08:25	08/23/23 11:30
580-130777-17	PA-03-082223	Water	08/22/23 09:20	08/23/23 11:30
580-130777-18	PA-17iR-082223	Water	08/22/23 10:16	08/23/23 11:30
580-130777-19	Dup-01-082223	Water	08/22/23 10:17	08/23/23 11:30
580-130777-20	PA-27d-082223	Water	08/22/23 11:33	08/23/23 11:30
580-130777-21	PA-24d-082223	Water	08/22/23 12:35	08/23/23 11:30

Eurofins TestAmerica, Seattle
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record

eurofins Environment Testing TestAmerica

580-130777 Chain of Custody

Client Information	Sampler: ST / PV	Lab PM: Cruz, Sheri L	COC No:
Client Contact: Avery Soplata, Andrew Gardner, and Sarah Seekins	Phone:	E-Mail: sheri.cruz@testamericainc.co...	Page: 1 of 2
Company: ERM-West			Job #:
Address: 1050 SW 6th Avenue Suite 1650	Due Date Requested:		
City: Portland	TAT Requested (days): 15BD		
State, Zip: OR, 97204			
Phone:	PO #: PN 0682894.207		
Email: avery.soplata@erm.com, andrew.gardner@erm.com and sarah.seekins@erm.com	WO #:		
Project Name: 3rd Arkema - Q1 2023 Groundwater event	Project #: 0682894		
Site:	SSOW#:		

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C regular level standard VOA list-Seattle	8260C_LL - Standard VOA list-Seattle	300.0_28D-Chloride-Seattle	314 Perchlorate	MS/MSD	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	A	N	N			
TB-082123	8/21/23		G	Water				X				2	
MWA-82-082123		0944		Water				X	X	X		5	
MWA-81-082123		1033		Water				X	X	X		5	
MWA-41-082123		1105		Water				X	X	X		5	
PA-15i-082123		1218		Water				X	X	X		5	
PA-08-082123		1006		Water				X	X	X		5	
PA-09-082123		1117		Water				X	X	X		5	
PA-18d-082123		1335		Water			X		X	X		5	
RB-01-082223	8/22/23	0645	G	Water				X	X	X		5	
PA-44i-082223		0730						X	X	X	X	15	
PA-25d-082223		0818						X	X	X		5	

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

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

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

Special Instructions/QC Requirements: please run at lowest dilution possible for ND.

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		8/23/23 1105	ERM		8/23/23 1105	M.E.
2		8/23/23 1130	M.E.		8/23/23 1130	EET
3						

Custody Seals Intact: ☐ Yes ☐ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: 1.0

Ver: 01/16/2019

Eurofins TestAmerica, Seattle
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record

eurofins Environment Testing TestAmerica

Client Information	Sampler: ST/RV	Lab PM: Cruz, Sheri L	Carrier Tracking No(s):	COC No:
Client Contact: Avery Soplata, Andrew Gardner, and Sarah Seekins	Phone:	E-Mail: sheri.cruz@testamericainc.com		Page: 2 of 2
Company: ERM-West				Job #:
Address: 1050 SW 6th Avenue Suite 1650	Due Date Requested:	Analysis Requested		Preservation Codes:
City: Portland	TAT Requested (days): 15BD			A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify) Other:
State, Zip: OR, 97204				
Phone:	PO #: PN 0682894.207			
Email: avery.soplata@erm.com, andrew.gardner@erm.com and sarah.seekins@erm.com	WO #:			
Project Name: 3rd Arkema - Q1 2023 Groundwater event	Project #: 0682894			
Site:	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C regular level standard VOA list-Seattle	8260C_LL - Standard VOA list-Seattle	300.0_28D-Chloride-Seattle	314 Perchlorate	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	A	N	N		
PA-16i-082223	8/22/23	0922	G	Water				X	X	X	5	
PA-26d-082223		1015		Water				X	X	X	5	
PA-23d-082223		1137		Water			X		X	X	5	
PA-04-082223		0720		Water				X	X	X	5	
PA-10i-082223		0825		Water				X	X	X	5	
PA-03-082223		0920		Water				X	X	X	5	
PA-17iR-082223		1016		Water				X	X	X	5	
Dup-01-082223		1017		Water				X	X	X	5	
PA-27d-082223		1133		Water			X		X	X	5	
PA-24d-082223		1235					X		X	X	5	

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

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

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

Special Instructions/QC Requirements: please run at lowest dilution possible for ND.

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		8/23/23 1105	ERM		8/23/23 1105	M-E-
2		8/23/23 1130	ME		8/23/23 1130	ERM
3						

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 1-0

Ver: 01/16/2019

Eurofins TestAmerica, Seattle
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record

580-130777 Chain of Custody

eurofins Environment Testing TestAmerica

Client Information	Sampler: ST / PV	Lab PM: Cruz, Sheri L	COC No:
Client Contact: Avery Soplata, Andrew Gardner, and Sarah Seekins	Phone:	E-Mail: sheri.cruz@testamericainc.co...	Page: 1 of 2
Company: ERM-West			Job #:
Address: 1050 SW 6th Avenue Suite 1650	Due Date Requested:		
City: Portland	TAT Requested (days): 15BD		
State, Zip: OR, 97204			
Phone:	PO #: PN 0682894.207		
Email: avery.soplata@erm.com, andrew.gardner@erm.com and sarah.seekins@erm.com	WO #:		
Project Name: 3rd Arkema - Q1 2023 Groundwater event	Project #: 0682894		
Site:	SSOW#:		

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C regular level standard VOA list-Seattle	8260C_LL - Standard VOA list-Seattle	300.0_28D-Chloride-Seattle	314 Perchlorate	MS/MSD	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	A	N	N			
TB-082123	8/21/23		G	Water				X				2	
MWA-82-082123		0944		Water				X	X	X		5	
MWA-81-082123		1033		Water				X	X	X		5	
MWA-41-082123		1105		Water				X	X	X		5	
PA-15i-082123		1218		Water				X	X	X		5	
PA-08-082123		1006		Water				X	X	X		5	
PA-09-082123		1117		Water				X	X	X		5	
PA-18d-082123		1335		Water			X		X	X		5	
RB-01-082223	8/22/23	0645	G	Water				X	X	X		5	
PA-14i-082223		0730						X	X	X	X	15	
PA-25d-082223		0818						X	X	X		5	

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

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

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

Special Instructions/QC Requirements: please run at lowest dilution possible for ND.

Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:	
Relinquished by:	Date/Time: 8/23/23 1105	Company: ERM	Received by:	Date/Time: 8/23/23 1105	Company: M.E.
Relinquished by:	Date/Time: 8/23/23 1130	Company: M.E.	Received by:	Date/Time: 8/23/23 1130	Company: ERM
Relinquished by:	Date/Time: 8/23/23 1700	Company: ERM	Received by:	Date/Time: 8/24/23 0915	Company: AFTN
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: IR11 5.1/4.8	1.0	

9/13/2023

Eurofins TestAmerica, Seattle
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record

eurofins Environment Testing TestAmerica

Client Information
Client Contact: Avery Soplata, Andrew Gardner, and Sarah Seekins
Company: ERM-West
Address: 1050 SW 6th Avenue Suite 1650
City: Portland
State, Zip: OR, 97204
Phone:
Email: avery.soplata@erm.com, andrew.gardner@erm.com and sarah.seekins@erm.com
Project Name: 3rd Arkema - Q1 2023 Groundwater event
Site:

Sampler: ST/RV
Phone:
Lab PM: Cruz, Sheri L
E-Mail: sheri.cruz@testamericainc.com
Carrier Tracking No(s):
COC No:
Page: 2 of 2
Job #:
Due Date Requested:
TAT Requested (days): 15BD
PO #: PN 0682894.207
WO #:
Project #: 0682894
SSOW#:

Analysis Requested

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C regular level standard VOA list-Seattle	8260C_LL - Standard VOA list-Seattle	300.0_28D-Chloride-Seattle	314 Perchlorate	Total Number of containers	Special Instructions/Note:
Preservation Code:							A	A	N	N		
PA-16i-082223	8/22/23	0922	G	Water				X	X	X	5	
PA-26d-082223		1015		Water				X	X	X	5	
PA-23d-082223		1137		Water			X		X	X	5	
PA-24-082223		0720		Water				X	X	X	5	
PA-10i-082223		0825		Water				X	X	X	5	
PA-03-082223		0920		Water				X	X	X	5	
PA-17iR-082223		1016		Water				X	X	X	5	
Dup-01-082223		1017		Water				X	X	X	5	
PA-27d-082223		1133		Water			X		X	X	5	
PA-24d-082223		1235					X		X	X	5	

Possible Hazard Identification
Non-Hazard, Flammable, Skin Irritant, Poison B, Unknown, Radiological
Deliverable Requested: I, II, III, IV, Other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Return To Client, Disposal By Lab, Archive For ____ Months
Special Instructions/QC Requirements: please run at lowest dilution possible for ND.

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		8/23/23 1105	ERM		8/23/23 1105	M-E
		8/23/23 1130	M E		8/23/23 1130	ERM
		8/23/23 1700	ERM		8/24/23 0915	ERM

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: IR11 5/148 1.0

Ver: 01/16/2019

Eurofins Seattle
5755 8th Street East
Tacoma WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cruz, Sheri L	Carrier Tracking No(s):	COC No: 580-123883.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Sheri Cruz@et.eurofinsus.com	State of Origin: Oregon	Page: Page 1 of 3
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): NELAP Oregon		Job #: 580-130777 1
Address: 880 Riverside Parkway	Due Date Requested: 9/13/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Emai	WO #:			
Project Name: Arkema Q3 2023 Groundwater Event	Project #: 58016290			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

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

Other:

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oi BT=Tissue, A=Ai)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	314.0/ Perchlorate	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MWA-82-082123 (580-130777-2)	8/21/23	09:44 Pacific		Water			X	1	
MWA-81i-082123 (580-130777-3)	8/21/23	10:33 Pacific		Water			X	1	
MWA-41-082123 (580-130777-4)	8/21/23	11 05 Pacific		Water			X	1	
PA-15i-082123 (580-130777-5)	8/21/23	12:18 Pacific		Water			X	1	
PA-08-082123 (580-130777-6)	8/21/23	10:06 Pacific		Water			X	1	
PA-09-082123 (580-130777 7)	8/21/23	11 17 Pacific		Water			X	1	
PA-18d-082123 (580-130777-8)	8/21/23	13.35 Pacific		Water			X	1	
RB-01-082223 (580-130777-9)	8/22/23	06:45 Pacific		Water			X	1	
PA-44i-082223 (580-130777 10)	8/22/23	07:30 Pacific		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements.

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		8/23/23 1700	EUN		08/24/23 0930	Eurofins
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks: 0.9

Eurofins Seattle
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Cruz, Sheri L	Carrier Tracking No(s):	COC No: 580-123883.2
Client Contact: Shipping/Receiving	Phone:	E-Mai Sheri Cruz@et.eurofinsus.com	State of Origin: Oregon	Page: Page 2 of 3
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): NELAP Oregon		Job #: 580-130777 1
Address: 880 Riverside Parkway	Due Date Requested: 9/13/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Emai	WO #:			
Project Name: Arkema Q3 2023 Groundwater Event	Project #: 58016290			
Site:	SSOW#:			

Preservation Codes

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

Other:

Analysis Requested

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oi BT=Tissue, A=Al)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	314.0/ Perchlorate	Total Number of containers	Special Instructions/Note
			Preservation Code:						
PA-44i-082223 (580-130777 10MS)	8/22/23	07:30 Pacific	MS	Water			X	1	
PA-44i-082223 (580-130777 10MSD)	8/22/23	07 30 Pacific	MSD	Water			X	1	
PA-25d-082223 (580-130777 11)	8/22/23	08 18 Pacific		Water			X	1	
PA-16i-082223 (580-130777 12)	8/22/23	09:22 Pacific		Water			X	1	
PA-26d-082223 (580-130777 13)	8/22/23	10:15 Pacific		Water			X	1	
PA-23d-082223 (580-130777 14)	8/22/23	11 37 Pacific		Water			X	1	
PA-04-082223 (580-130777 15)	8/22/23	07 20 Pacific		Water			X	1	
PA-10i-082223 (580-130777 16)	8/22/23	08.25 Pacific		Water			X	1	
PA-03-082223 (580-130777 17)	8/22/23	09:20 Pacific		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin isted above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III IV Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 8/23/23 1720	Company: EEN	Received by:	Date/Time: 8/24/23 0930	Company: FEDEX
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks: 0-6

Eurofins Seattle
5755 8th Street East
Tacoma WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cruz, Sheri L	Carrier Tracking No(s):	COC No: 580-123883.3
Client Contact: Shipping/Receiving	Phone:	E-Mail: Sheri.Cruz@et.eurofinsus.com	State of Origin: Oregon	Page: Page 3 of 3
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): NELAP Oregon		Job #: 580-130777 1
Address: 880 Riverside Parkway	Due Date Requested: 9/13/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email	WO #:			
Project Name: Arkema Q3 2023 Groundwater Event	Project #: 58016290			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

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

Other:

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oi BT=Tissue, A=Ai)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	314.0/ Perchlorate	Total Number of containers	Special Instructions/Note
			Preservation Code:						
PA-17iR-082223 (580-130777 18)	8/22/23	10:16 Pacific		Water			X	1	
Dup-01-082223 (580-130777 19)	8/22/23	10:17 Pacific		Water			X	1	
PA-27d-082223 (580-130777-20)	8/22/23	11.33 Pacific		Water			X	1	
PA-24d-082223 (580-130777-21)	8/22/23	12:35 Pacific		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II III IV Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		8/23/23 1720	EETA		8/24/23 0930	Eurofins
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks: 0 C

Login Sample Receipt Checklist

Client: ERM-West

Job Number: 580-130777-1

Login Number: 130777
List Number: 1
Creator: O'Connell, Jason I

List Source: Eurofins Seattle

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

Login Sample Receipt Checklist

Client: ERM-West

Job Number: 580-130777-1

Login Number: 130777
List Number: 2
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 08/24/23 12:37 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	2082148
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.8c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

Sacramento
Sample Receiving Notes

Job ___ 580-130777 Field Sheet

Tracking # 6304 5058 4115

SO / PO / FO / SAT / 2-Day / Ground / UPS / CDO / Courier
GSL / OnTrac / Goldstreak / USPS / Other_____

Use this form to record Sample Custody Seal, Cooler Custody Seal Temperature & corrected Temperature & other observations.
File in the job folder with the COC

Therm ID WR Corr Factor (+ / -) _____ °C

Ice ✓ Wet ✓ Gel _____ Other _____

Cooler Custody Seal 2082148

Cooler ID _____

Temp Observed 0.8 °C Corrected 0.8 °C
From Temp Blank ☐ Sample ☑

Opening/Processing The Shipment	Yes	No	NA
Cooler compromised/tampered with?	☐	☑	☐
Cooler Temperature is acceptable?	☑	☐	☐
Frozen samples show signs of thaw?	☐	☐	☑

Initials MM Date. 8/24/23

Unpacking/Labeling The Samples	Yes	No	NA
Containers are not broken or leaking?	☑	☐	☐
Samples compromised/tampered with?	☐	☑	☐
COC is complete w/o discrepancies	☑	☐	☐
Sample custody seal?	☐	☐	☑
Sample containers have legible labels?	☑	☐	☐
Sample date/times are provided?	☑	☐	☐
Appropriate containers are used?	☑	☐	☐
Sample bottles are completely filled?	☑	☐	☐
Sample preservatives verified?	☐	☐	☑
Is the Field Sampler's name on COC?	☐	☐	☑
Samples w/o discrepancies?	☑	☐	☐
Zero headspace?*	☐	☐	☑
Alkalinity has no headspace?	☐	☐	☑
Perchlorate has headspace? (Methods 314, 331 6850)	☑	☐	☐
Multiphasic samples are not present?	☑	☐	☐

*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Initials _____ Date. 8-24-23

Notes _____

Trizma Lot #(s) _____

Ammonium Acetate Lot #(s) _____

Login Completion	Yes	No	NA
Receipt Temperature on COC?	☑	☐	☐
NCM Filed?	☐	☐	☑
Samples received within hold time?	☐	☐	☑
Log Release checked in TALS?	☐	☐	☑

Initials _____ Date. 8 24 23

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Avery Soplata
ERM-West
1050 SW 6th Avenue
Suite 1650
Portland, Oregon 97204

Generated 9/15/2023 10:26:36 AM

JOB DESCRIPTION

Arkema - Q3 2023 Groundwater Event

JOB NUMBER

580-130868-1

Eurofins Seattle
5755 8th Street East
Tacoma WA 98424

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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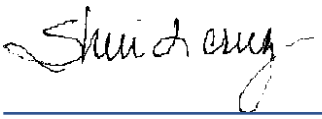
Authorization



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Job ID: 580-130868-1

Laboratory: Eurofins Seattle

Narrative

Job Narrative
580-130868-1

Comments
No additional comments.

Receipt
The samples were received on 8/24/2023 1:45 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.8º C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) associated with batch 580-435936 recovered above the upper control limit for Dichlorodifluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260D: The CCV for analytical batch 580-435936 recovered outside control limits for the following analyte(s): 1,2-Dibromo-3-Chloropropane and Naphthalene . 1,2-Dibromo-3-Chloropropane and Naphthalene have been identified as poor performing analytes when analyzed using this method; therefore, re-analysis was not performed. These results have been reported and qualified.

Method 8260D: The following samples were diluted to bring the concentration of target analytes within the calibration range: PA-19d-082423 (580-130868-2) and PA-30d-082423 (580-130868-3). Elevated reporting limits (RLs) are provided.

Method 8260D: The method blank for analytical batch 580-436121 contained 1,2,4-Trichlorobenzene, Hexachlorobutadiene and 1,2,3-Trichlorobenzene above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-436121 recovered above the upper control limit for Dichlorodifluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: PA-19d-082423 (580-130868-2), PA-30d-082423 (580-130868-3), (CCVIS 580-436121/3) and (580-130869-C-8).

Method 8260D: The CCV for analytical batch 580-436121 recovered outside control limits for the following analyte(s): 1,2,3-Trichlorobenzene and Naphthalene have been identified as poor performing analytes when analyzed using this method; therefore, re-analysis was not performed. These results have been reported and qualified.

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-436121 recovered outside acceptance criteria, low biased, for 1,2,4-Trichlorobenzene and Hexachlorobutadiene. A reporting limit (RL) standard was analyzed, and the target analytes are detected. Since the associated samples were non-detect for the analyte(s), the data are reported.

Method 8260D: The following samples were diluted to bring the concentration of target analytes within the calibration range: PA-19d-082423 (580-130868-2) and PA-30d-082423 (580-130868-3). Elevated reporting limits (RLs) are provided.

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

General Chemistry
Method 314.0: Due to the nature of the matrix and/or the high conductivity measurement for the following samples, the samples in analytical batch 320-704634 were diluted. In order to protect instrumentation, the samples were diluted. Elevated reporting limits (RLs) are provided. PA-19d-082423 (580-130868-2), PA-30d-082423 (580-130868-3), PA-32i-082423 (580-130868-4) and PA-31-082423 (580-130868-5)

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

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

Definitions/Glossary

Client: ERM-West
Job ID: 580-130868-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Qualifiers

GC/MS VOA

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

HPLC/IC

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

Glossary

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

Client Sample ID: TB-082423
Lab Sample ID: 580-130868-1
Date Collected: 08/24/23 00:01
Matrix: Water
Date Received: 08/24/23 13:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			08/28/23 12:27	1
Chloromethane	ND		0.50	0.14	ug/L			08/28/23 12:27	1
Vinyl chloride	ND		0.10	0.040	ug/L			08/28/23 12:27	1
Bromomethane	ND		0.50	0.13	ug/L			08/28/23 12:27	1
Chloroethane	ND		0.50	0.096	ug/L			08/28/23 12:27	1
Carbon disulfide	ND		0.30	0.083	ug/L			08/28/23 12:27	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			08/28/23 12:27	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			08/28/23 12:27	1
Acetone	ND		10	3.1	ug/L			08/28/23 12:27	1
Methylene Chloride	ND		5.0	1.2	ug/L			08/28/23 12:27	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			08/28/23 12:27	1
2-Butanone (MEK)	ND		10	2.5	ug/L			08/28/23 12:27	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			08/28/23 12:27	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			08/28/23 12:27	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			08/28/23 12:27	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			08/28/23 12:27	1
Chlorobromomethane	ND		0.20	0.050	ug/L			08/28/23 12:27	1
Chloroform	ND		0.20	0.030	ug/L			08/28/23 12:27	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			08/28/23 12:27	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			08/28/23 12:27	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			08/28/23 12:27	1
Benzene	ND		0.20	0.030	ug/L			08/28/23 12:27	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			08/28/23 12:27	1
Trichloroethene	ND		0.20	0.066	ug/L			08/28/23 12:27	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			08/28/23 12:27	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			08/28/23 12:27	1
Dibromomethane	ND		0.20	0.062	ug/L			08/28/23 12:27	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			08/28/23 12:27	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			08/28/23 12:27	1
Toluene	ND		0.20	0.050	ug/L			08/28/23 12:27	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			08/28/23 12:27	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			08/28/23 12:27	1
Tetrachloroethene	ND		0.24	0.084	ug/L			08/28/23 12:27	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			08/28/23 12:27	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			08/28/23 12:27	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			08/28/23 12:27	1
Chlorobenzene	ND		0.20	0.060	ug/L			08/28/23 12:27	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			08/28/23 12:27	1
Ethylbenzene	ND		0.20	0.030	ug/L			08/28/23 12:27	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			08/28/23 12:27	1
o-Xylene	ND		0.50	0.15	ug/L			08/28/23 12:27	1
Styrene	ND		1.0	0.19	ug/L			08/28/23 12:27	1
Bromoform	ND		0.50	0.16	ug/L			08/28/23 12:27	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/28/23 12:27	1
Bromobenzene	ND		0.20	0.038	ug/L			08/28/23 12:27	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			08/28/23 12:27	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			08/28/23 12:27	1
N-Propylbenzene	ND		0.30	0.091	ug/L			08/28/23 12:27	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			08/28/23 12:27	1

Client: ERM-West
Job ID: 580-130868-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: TB-082423
Lab Sample ID: 580-130868-1
Date Collected: 08/24/23 00:01
Matrix: Water
Date Received: 08/24/23 13:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			08/28/23 12:27	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			08/28/23 12:27	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			08/28/23 12:27	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			08/28/23 12:27	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			08/28/23 12:27	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			08/28/23 12:27	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			08/28/23 12:27	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			08/28/23 12:27	1
n-Butylbenzene	ND		1.0	0.23	ug/L			08/28/23 12:27	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			08/28/23 12:27	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			08/28/23 12:27	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			08/28/23 12:27	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			08/28/23 12:27	1
Naphthalene	ND		1.0	0.22	ug/L			08/28/23 12:27	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			08/28/23 12:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*87*		*80 - 120*		*08/28/23 12:27*	*1*
Dibromofluoromethane (Surr)	*113*		*80 - 120*		*08/28/23 12:27*	*1*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*		*08/28/23 12:27*	*1*
1,2-Dichloroethane-d4 (Surr)	*115*		*80 - 120*		*08/28/23 12:27*	*1*

Client: ERM-West
Job ID: 580-130868-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-19d-082423
Lab Sample ID: 580-130868-2
Date Collected: 08/24/23 07:02
Matrix: Water
Date Received: 08/24/23 13:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		50	27	ug/L			08/30/23 04:37	50
Chloromethane	ND		50	14	ug/L			08/30/23 04:37	50
Vinyl chloride	ND		50	11	ug/L			08/30/23 04:37	50
Bromomethane	ND		50	11	ug/L			08/30/23 04:37	50
Chloroethane	ND		50	18	ug/L			08/30/23 04:37	50
Trichlorofluoromethane	ND		50	18	ug/L			08/30/23 04:37	50
Carbon disulfide	ND		50	27	ug/L			08/30/23 04:37	50
1,1-Dichloroethene	ND		50	14	ug/L			08/30/23 04:37	50
Acetone	**240**	**J**	750	160	ug/L			08/30/23 04:37	50
Methylene Chloride	ND		250	72	ug/L			08/30/23 04:37	50
Methyl tert-butyl ether	ND		50	22	ug/L			08/30/23 04:37	50
trans-1,2-Dichloroethene	ND		50	20	ug/L			08/30/23 04:37	50
1,1-Dichloroethane	ND		50	11	ug/L			08/30/23 04:37	50
2-Butanone (MEK)	ND		750	240	ug/L			08/30/23 04:37	50
2,2-Dichloropropane	ND		50	16	ug/L			08/30/23 04:37	50
cis-1,2-Dichloroethene	**24**	**J**	50	18	ug/L			08/30/23 04:37	50
Bromochloromethane	ND		50	15	ug/L			08/30/23 04:37	50
Chloroform	ND		50	13	ug/L			08/30/23 04:37	50
1,1,1-Trichloroethane	ND		50	20	ug/L			08/30/23 04:37	50
Carbon tetrachloride	ND		50	15	ug/L			08/30/23 04:37	50
1,1-Dichloropropene	ND		50	15	ug/L			08/30/23 04:37	50
Benzene	**34**	**J**	50	12	ug/L			08/30/23 04:37	50
1,2-Dichloroethane	ND		50	21	ug/L			08/30/23 04:37	50
Trichloroethene	ND		50	13	ug/L			08/30/23 04:37	50
1,2-Dichloropropane	ND		50	9.0	ug/L			08/30/23 04:37	50
4-Methyl-2-pentanone (MIBK)	ND		250	130	ug/L			08/30/23 04:37	50
Dibromomethane	ND		50	17	ug/L			08/30/23 04:37	50
Bromodichloromethane	ND		50	15	ug/L			08/30/23 04:37	50
cis-1,3-Dichloropropene	ND		50	21	ug/L			08/30/23 04:37	50
Toluene	ND		50	20	ug/L			08/30/23 04:37	50
trans-1,3-Dichloropropene	ND		50	21	ug/L			08/30/23 04:37	50
1,1,2-Trichloroethane	ND		50	12	ug/L			08/30/23 04:37	50
Tetrachloroethene	ND		50	21	ug/L			08/30/23 04:37	50
1,3-Dichloropropane	ND		50	18	ug/L			08/30/23 04:37	50
Dibromochloromethane	ND		50	22	ug/L			08/30/23 04:37	50
1,2-Dibromoethane	ND		50	20	ug/L			08/30/23 04:37	50
1,1,1,2-Tetrachloroethane	ND		50	9.0	ug/L			08/30/23 04:37	50
Ethylbenzene	ND		50	25	ug/L			08/30/23 04:37	50
m-Xylene & p-Xylene	ND		100	27	ug/L			08/30/23 04:37	50
o-Xylene	ND		50	20	ug/L			08/30/23 04:37	50
Styrene	ND		50	27	ug/L			08/30/23 04:37	50
Bromoform	ND		50	26	ug/L			08/30/23 04:37	50
Isopropylbenzene	ND		50	22	ug/L			08/30/23 04:37	50
Bromobenzene	ND		50	22	ug/L			08/30/23 04:37	50
1,1,2,2-Tetrachloroethane	ND		50	26	ug/L			08/30/23 04:37	50
1,2,3-Trichloropropane	ND		50	21	ug/L			08/30/23 04:37	50
N-Propylbenzene	ND		50	25	ug/L			08/30/23 04:37	50
2-Chlorotoluene	ND		50	26	ug/L			08/30/23 04:37	50
4-Chlorotoluene	ND		50	19	ug/L			08/30/23 04:37	50

Client Sample ID: PA-19d-082423
Lab Sample ID: 580-130868-2

Date Collected: 08/24/23 07:02
Matrix: Water

Date Received: 08/24/23 13:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
t-Butylbenzene	ND		100	29	ug/L			08/30/23 04:37	50
1,2,4-Trimethylbenzene	ND		150	31	ug/L			08/30/23 04:37	50
sec-Butylbenzene	ND		50	25	ug/L			08/30/23 04:37	50
4-Isopropyltoluene	ND		50	14	ug/L			08/30/23 04:37	50
1,3-Dichlorobenzene	ND		50	24	ug/L			08/30/23 04:37	50
1,4-Dichlorobenzene	ND		50	23	ug/L			08/30/23 04:37	50
n-Butylbenzene	ND		50	22	ug/L			08/30/23 04:37	50
1,2-Dichlorobenzene	ND		50	23	ug/L			08/30/23 04:37	50
1,2-Dibromo-3-Chloropropane	ND		150	29	ug/L			08/30/23 04:37	50
1,2,4-Trichlorobenzene	ND		50	17	ug/L			08/30/23 04:37	50
Hexachlorobutadiene	ND		150	40	ug/L			08/30/23 04:37	50
Naphthalene	ND		150	47	ug/L			08/30/23 04:37	50
1,2,3-Trichlorobenzene	ND		100	22	ug/L			08/30/23 04:37	50
1,3,5-Trimethylbenzene	ND		50	28	ug/L			08/30/23 04:37	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*		*08/30/23 04:37*	*50*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*08/30/23 04:37*	*50*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*08/30/23 04:37*	*50*
Dibromofluoromethane (Surr)	*105*		*80 - 120*		*08/30/23 04:37*	*50*

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	**6600**		500	220	ug/L			08/30/23 22:18	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*80 - 120*		*08/30/23 22:18*	*500*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*08/30/23 22:18*	*500*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*08/30/23 22:18*	*500*
Dibromofluoromethane (Surr)	*90*		*80 - 120*		*08/30/23 22:18*	*500*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		40	20	ug/L			09/08/23 13:15	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**320**		15	4.3	mg/L			08/29/23 10:24	10

Client: ERM-West
Job ID: 580-130868-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-30d-082423
Lab Sample ID: 580-130868-3
Date Collected: 08/24/23 08:01
Matrix: Water
Date Received: 08/24/23 13:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		50	27	ug/L			08/30/23 05:01	50
Chloromethane	ND		50	14	ug/L			08/30/23 05:01	50
Vinyl chloride	ND		50	11	ug/L			08/30/23 05:01	50
Bromomethane	ND		50	11	ug/L			08/30/23 05:01	50
Chloroethane	ND		50	18	ug/L			08/30/23 05:01	50
Trichlorofluoromethane	ND		50	18	ug/L			08/30/23 05:01	50
Carbon disulfide	ND		50	27	ug/L			08/30/23 05:01	50
1,1-Dichloroethene	ND		50	14	ug/L			08/30/23 05:01	50
Acetone	**230**	**J**	750	160	ug/L			08/30/23 05:01	50
Methylene Chloride	ND		250	72	ug/L			08/30/23 05:01	50
Methyl tert-butyl ether	ND		50	22	ug/L			08/30/23 05:01	50
trans-1,2-Dichloroethene	ND		50	20	ug/L			08/30/23 05:01	50
1,1-Dichloroethane	ND		50	11	ug/L			08/30/23 05:01	50
2-Butanone (MEK)	ND		750	240	ug/L			08/30/23 05:01	50
2,2-Dichloropropane	ND		50	16	ug/L			08/30/23 05:01	50
cis-1,2-Dichloroethene	ND		50	18	ug/L			08/30/23 05:01	50
Bromochloromethane	ND		50	15	ug/L			08/30/23 05:01	50
Chloroform	ND		50	13	ug/L			08/30/23 05:01	50
1,1,1-Trichloroethane	ND		50	20	ug/L			08/30/23 05:01	50
Carbon tetrachloride	ND		50	15	ug/L			08/30/23 05:01	50
1,1-Dichloropropene	ND		50	15	ug/L			08/30/23 05:01	50
Benzene	**19**	**J**	50	12	ug/L			08/30/23 05:01	50
1,2-Dichloroethane	ND		50	21	ug/L			08/30/23 05:01	50
Trichloroethene	ND		50	13	ug/L			08/30/23 05:01	50
1,2-Dichloropropane	ND		50	9.0	ug/L			08/30/23 05:01	50
4-Methyl-2-pentanone (MIBK)	ND		250	130	ug/L			08/30/23 05:01	50
Dibromomethane	ND		50	17	ug/L			08/30/23 05:01	50
Bromodichloromethane	ND		50	15	ug/L			08/30/23 05:01	50
cis-1,3-Dichloropropene	ND		50	21	ug/L			08/30/23 05:01	50
Toluene	ND		50	20	ug/L			08/30/23 05:01	50
trans-1,3-Dichloropropene	ND		50	21	ug/L			08/30/23 05:01	50
1,1,2-Trichloroethane	ND		50	12	ug/L			08/30/23 05:01	50
Tetrachloroethene	ND		50	21	ug/L			08/30/23 05:01	50
1,3-Dichloropropane	ND		50	18	ug/L			08/30/23 05:01	50
Dibromochloromethane	ND		50	22	ug/L			08/30/23 05:01	50
1,2-Dibromoethane	ND		50	20	ug/L			08/30/23 05:01	50
1,1,1,2-Tetrachloroethane	ND		50	9.0	ug/L			08/30/23 05:01	50
Ethylbenzene	ND		50	25	ug/L			08/30/23 05:01	50
m-Xylene & p-Xylene	ND		100	27	ug/L			08/30/23 05:01	50
o-Xylene	ND		50	20	ug/L			08/30/23 05:01	50
Styrene	ND		50	27	ug/L			08/30/23 05:01	50
Bromoform	ND		50	26	ug/L			08/30/23 05:01	50
Isopropylbenzene	ND		50	22	ug/L			08/30/23 05:01	50
Bromobenzene	ND		50	22	ug/L			08/30/23 05:01	50
1,1,2,2-Tetrachloroethane	ND		50	26	ug/L			08/30/23 05:01	50
1,2,3-Trichloropropane	ND		50	21	ug/L			08/30/23 05:01	50
N-Propylbenzene	ND		50	25	ug/L			08/30/23 05:01	50
2-Chlorotoluene	ND		50	26	ug/L			08/30/23 05:01	50
4-Chlorotoluene	ND		50	19	ug/L			08/30/23 05:01	50

Client Sample ID: PA-30d-082423
Lab Sample ID: 580-130868-3
Date Collected: 08/24/23 08:01
Matrix: Water
Date Received: 08/24/23 13:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
t-Butylbenzene	ND		100	29	ug/L			08/30/23 05:01	50
1,2,4-Trimethylbenzene	ND		150	31	ug/L			08/30/23 05:01	50
sec-Butylbenzene	ND		50	25	ug/L			08/30/23 05:01	50
4-Isopropyltoluene	ND		50	14	ug/L			08/30/23 05:01	50
1,3-Dichlorobenzene	ND		50	24	ug/L			08/30/23 05:01	50
1,4-Dichlorobenzene	ND		50	23	ug/L			08/30/23 05:01	50
n-Butylbenzene	ND		50	22	ug/L			08/30/23 05:01	50
1,2-Dichlorobenzene	ND		50	23	ug/L			08/30/23 05:01	50
1,2-Dibromo-3-Chloropropane	ND		150	29	ug/L			08/30/23 05:01	50
1,2,4-Trichlorobenzene	ND		50	17	ug/L			08/30/23 05:01	50
Hexachlorobutadiene	ND		150	40	ug/L			08/30/23 05:01	50
Naphthalene	ND		150	47	ug/L			08/30/23 05:01	50
1,2,3-Trichlorobenzene	ND		100	22	ug/L			08/30/23 05:01	50
1,3,5-Trimethylbenzene	ND		50	28	ug/L			08/30/23 05:01	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*93*		*80 - 120*		*08/30/23 05:01*	*50*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*08/30/23 05:01*	*50*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*08/30/23 05:01*	*50*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*08/30/23 05:01*	*50*

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	**20000**		1000	440	ug/L			08/30/23 22:42	1000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*103*		*80 - 120*		*08/30/23 22:42*	*1000*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*08/30/23 22:42*	*1000*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*08/30/23 22:42*	*1000*
Dibromofluoromethane (Surr)	*85*		*80 - 120*		*08/30/23 22:42*	*1000*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		40	20	ug/L			09/08/23 13:33	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**320**		15	4.3	mg/L			08/29/23 15:29	10

Client: ERM-West
Job ID: 580-130868-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-32i-082423
Lab Sample ID: 580-130868-4
Date Collected: 08/24/23 06:59
Matrix: Water
Date Received: 08/24/23 13:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			08/28/23 13:33	1
Chloromethane	ND		0.50	0.14	ug/L			08/28/23 13:33	1
Vinyl chloride	**0.055**	**J**	0.10	0.040	ug/L			08/28/23 13:33	1
Bromomethane	ND		0.50	0.13	ug/L			08/28/23 13:33	1
Chloroethane	**0.31**	**J**	0.50	0.096	ug/L			08/28/23 13:33	1
Carbon disulfide	ND		0.30	0.083	ug/L			08/28/23 13:33	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			08/28/23 13:33	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			08/28/23 13:33	1
Acetone	ND		10	3.1	ug/L			08/28/23 13:33	1
Methylene Chloride	ND		5.0	1.2	ug/L			08/28/23 13:33	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			08/28/23 13:33	1
2-Butanone (MEK)	ND		10	2.5	ug/L			08/28/23 13:33	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			08/28/23 13:33	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			08/28/23 13:33	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			08/28/23 13:33	1
cis-1,2-Dichloroethene	**0.061**	**J**	0.20	0.055	ug/L			08/28/23 13:33	1
Chlorobromomethane	ND		0.20	0.050	ug/L			08/28/23 13:33	1
Chloroform	ND		0.20	0.030	ug/L			08/28/23 13:33	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			08/28/23 13:33	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			08/28/23 13:33	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			08/28/23 13:33	1
Benzene	ND		0.20	0.030	ug/L			08/28/23 13:33	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			08/28/23 13:33	1
Trichloroethene	ND		0.20	0.066	ug/L			08/28/23 13:33	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			08/28/23 13:33	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			08/28/23 13:33	1
Dibromomethane	ND		0.20	0.062	ug/L			08/28/23 13:33	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			08/28/23 13:33	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			08/28/23 13:33	1
Toluene	ND		0.20	0.050	ug/L			08/28/23 13:33	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			08/28/23 13:33	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			08/28/23 13:33	1
Tetrachloroethene	ND		0.24	0.084	ug/L			08/28/23 13:33	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			08/28/23 13:33	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			08/28/23 13:33	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			08/28/23 13:33	1
Chlorobenzene	**0.13**	**J**	0.20	0.060	ug/L			08/28/23 13:33	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			08/28/23 13:33	1
Ethylbenzene	ND		0.20	0.030	ug/L			08/28/23 13:33	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			08/28/23 13:33	1
o-Xylene	ND		0.50	0.15	ug/L			08/28/23 13:33	1
Styrene	ND		1.0	0.19	ug/L			08/28/23 13:33	1
Bromoform	ND		0.50	0.16	ug/L			08/28/23 13:33	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/28/23 13:33	1
Bromobenzene	ND		0.20	0.038	ug/L			08/28/23 13:33	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			08/28/23 13:33	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			08/28/23 13:33	1
N-Propylbenzene	ND		0.30	0.091	ug/L			08/28/23 13:33	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			08/28/23 13:33	1

Client: ERM-West
Job ID: 580-130868-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-32i-082423
Lab Sample ID: 580-130868-4
Date Collected: 08/24/23 06:59
Matrix: Water
Date Received: 08/24/23 13:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			08/28/23 13:33	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			08/28/23 13:33	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			08/28/23 13:33	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			08/28/23 13:33	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			08/28/23 13:33	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			08/28/23 13:33	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			08/28/23 13:33	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			08/28/23 13:33	1
n-Butylbenzene	ND		1.0	0.23	ug/L			08/28/23 13:33	1
1,2-Dichlorobenzene	**0.15**	**J**	0.30	0.038	ug/L			08/28/23 13:33	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			08/28/23 13:33	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			08/28/23 13:33	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			08/28/23 13:33	1
Naphthalene	ND		1.0	0.22	ug/L			08/28/23 13:33	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			08/28/23 13:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*85*		*80 - 120*		*08/28/23 13:33*	*1*
Dibromofluoromethane (Surr)	*117*		*80 - 120*		*08/28/23 13:33*	*1*
4-Bromofluorobenzene (Surr)	*88*		*80 - 120*		*08/28/23 13:33*	*1*
1,2-Dichloroethane-d4 (Surr)	*118*		*80 - 120*		*08/28/23 13:33*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		40	20	ug/L			09/08/23 13:51	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**71**		1.5	0.43	mg/L			08/29/23 10:48	1

Client: ERM-West
Job ID: 580-130868-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-31-082423
Lab Sample ID: 580-130868-5
Date Collected: 08/24/23 08:04
Matrix: Water
Date Received: 08/24/23 13:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			08/28/23 13:54	1
Chloromethane	ND		0.50	0.14	ug/L			08/28/23 13:54	1
Vinyl chloride	ND		0.10	0.040	ug/L			08/28/23 13:54	1
Bromomethane	ND		0.50	0.13	ug/L			08/28/23 13:54	1
Chloroethane	ND		0.50	0.096	ug/L			08/28/23 13:54	1
Carbon disulfide	ND		0.30	0.083	ug/L			08/28/23 13:54	1
Trichlorofluoromethane	**0.14**	**J**	0.50	0.12	ug/L			08/28/23 13:54	1
1,1-Dichloroethene	**1.1**		0.20	0.035	ug/L			08/28/23 13:54	1
Acetone	ND		10	3.1	ug/L			08/28/23 13:54	1
Methylene Chloride	ND		5.0	1.2	ug/L			08/28/23 13:54	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			08/28/23 13:54	1
2-Butanone (MEK)	ND		10	2.5	ug/L			08/28/23 13:54	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			08/28/23 13:54	1
1,1-Dichloroethane	**0.36**		0.20	0.025	ug/L			08/28/23 13:54	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			08/28/23 13:54	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			08/28/23 13:54	1
Chlorobromomethane	ND		0.20	0.050	ug/L			08/28/23 13:54	1
Chloroform	**0.11**	**J**	0.20	0.030	ug/L			08/28/23 13:54	1
1,1,1-Trichloroethane	**0.25**		0.20	0.025	ug/L			08/28/23 13:54	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			08/28/23 13:54	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			08/28/23 13:54	1
Benzene	ND		0.20	0.030	ug/L			08/28/23 13:54	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			08/28/23 13:54	1
Trichloroethene	**0.089**	**J**	0.20	0.066	ug/L			08/28/23 13:54	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			08/28/23 13:54	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			08/28/23 13:54	1
Dibromomethane	ND		0.20	0.062	ug/L			08/28/23 13:54	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			08/28/23 13:54	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			08/28/23 13:54	1
Toluene	ND		0.20	0.050	ug/L			08/28/23 13:54	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			08/28/23 13:54	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			08/28/23 13:54	1
Tetrachloroethene	**0.22**	**J**	0.24	0.084	ug/L			08/28/23 13:54	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			08/28/23 13:54	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			08/28/23 13:54	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			08/28/23 13:54	1
Chlorobenzene	ND		0.20	0.060	ug/L			08/28/23 13:54	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			08/28/23 13:54	1
Ethylbenzene	ND		0.20	0.030	ug/L			08/28/23 13:54	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			08/28/23 13:54	1
o-Xylene	ND		0.50	0.15	ug/L			08/28/23 13:54	1
Styrene	ND		1.0	0.19	ug/L			08/28/23 13:54	1
Bromoform	ND		0.50	0.16	ug/L			08/28/23 13:54	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/28/23 13:54	1
Bromobenzene	ND		0.20	0.038	ug/L			08/28/23 13:54	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			08/28/23 13:54	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			08/28/23 13:54	1
N-Propylbenzene	ND		0.30	0.091	ug/L			08/28/23 13:54	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			08/28/23 13:54	1

Client: ERM-West
Job ID: 580-130868-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-31-082423
Lab Sample ID: 580-130868-5
Date Collected: 08/24/23 08:04
Matrix: Water
Date Received: 08/24/23 13:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			08/28/23 13:54	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			08/28/23 13:54	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			08/28/23 13:54	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			08/28/23 13:54	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			08/28/23 13:54	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			08/28/23 13:54	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			08/28/23 13:54	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			08/28/23 13:54	1
n-Butylbenzene	ND		1.0	0.23	ug/L			08/28/23 13:54	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			08/28/23 13:54	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			08/28/23 13:54	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			08/28/23 13:54	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			08/28/23 13:54	1
Naphthalene	ND		1.0	0.22	ug/L			08/28/23 13:54	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			08/28/23 13:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*86*		*80 - 120*		*08/28/23 13:54*	*1*
Dibromofluoromethane (Surr)	*117*		*80 - 120*		*08/28/23 13:54*	*1*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*		*08/28/23 13:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*119*		*80 - 120*		*08/28/23 13:54*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		8.0	4.0	ug/L			09/08/23 14:45	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**4.6**		1.5	0.43	mg/L			08/29/23 10:59	1

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

Lab Sample ID: MB 580-435936/7
Matrix: Water
Analysis Batch: 435936

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			08/28/23 11:22	1
Chloromethane	ND		0.50	0.14	ug/L			08/28/23 11:22	1
Vinyl chloride	ND		0.10	0.040	ug/L			08/28/23 11:22	1
Bromomethane	ND		0.50	0.13	ug/L			08/28/23 11:22	1
Chloroethane	ND		0.50	0.096	ug/L			08/28/23 11:22	1
Carbon disulfide	ND		0.30	0.083	ug/L			08/28/23 11:22	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			08/28/23 11:22	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			08/28/23 11:22	1
Acetone	ND		10	3.1	ug/L			08/28/23 11:22	1
Methylene Chloride	ND		5.0	1.2	ug/L			08/28/23 11:22	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			08/28/23 11:22	1
2-Butanone (MEK)	ND		10	2.5	ug/L			08/28/23 11:22	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			08/28/23 11:22	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			08/28/23 11:22	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			08/28/23 11:22	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			08/28/23 11:22	1
Chlorobromomethane	ND		0.20	0.050	ug/L			08/28/23 11:22	1
Chloroform	ND		0.20	0.030	ug/L			08/28/23 11:22	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			08/28/23 11:22	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			08/28/23 11:22	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			08/28/23 11:22	1
Benzene	ND		0.20	0.030	ug/L			08/28/23 11:22	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			08/28/23 11:22	1
Trichloroethene	ND		0.20	0.066	ug/L			08/28/23 11:22	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			08/28/23 11:22	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			08/28/23 11:22	1
Dibromomethane	ND		0.20	0.062	ug/L			08/28/23 11:22	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			08/28/23 11:22	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			08/28/23 11:22	1
Toluene	ND		0.20	0.050	ug/L			08/28/23 11:22	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			08/28/23 11:22	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			08/28/23 11:22	1
Tetrachloroethene	ND		0.24	0.084	ug/L			08/28/23 11:22	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			08/28/23 11:22	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			08/28/23 11:22	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			08/28/23 11:22	1
Chlorobenzene	ND		0.20	0.060	ug/L			08/28/23 11:22	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			08/28/23 11:22	1
Ethylbenzene	ND		0.20	0.030	ug/L			08/28/23 11:22	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			08/28/23 11:22	1
o-Xylene	ND		0.50	0.15	ug/L			08/28/23 11:22	1
Styrene	ND		1.0	0.19	ug/L			08/28/23 11:22	1
Bromoform	ND		0.50	0.16	ug/L			08/28/23 11:22	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/28/23 11:22	1
Bromobenzene	ND		0.20	0.038	ug/L			08/28/23 11:22	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			08/28/23 11:22	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			08/28/23 11:22	1
N-Propylbenzene	ND		0.30	0.091	ug/L			08/28/23 11:22	1

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

Lab Sample ID: MB 580-435936/7
Matrix: Water
Analysis Batch: 435936

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorotoluene	ND		0.50	0.12	ug/L			08/28/23 11:22	1
4-Chlorotoluene	ND		0.30	0.12	ug/L			08/28/23 11:22	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			08/28/23 11:22	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			08/28/23 11:22	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			08/28/23 11:22	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			08/28/23 11:22	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			08/28/23 11:22	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			08/28/23 11:22	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			08/28/23 11:22	1
n-Butylbenzene	ND		1.0	0.23	ug/L			08/28/23 11:22	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			08/28/23 11:22	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			08/28/23 11:22	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			08/28/23 11:22	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			08/28/23 11:22	1
Naphthalene	ND		1.0	0.22	ug/L			08/28/23 11:22	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			08/28/23 11:22	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*89*		*80 - 120*		*08/28/23 11:22*	*1*
Dibromofluoromethane (Surr)	*112*		*80 - 120*		*08/28/23 11:22*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*08/28/23 11:22*	*1*
1,2-Dichloroethane-d4 (Surr)	*113*		*80 - 120*		*08/28/23 11:22*	*1*

Lab Sample ID: LCS 580-435936/4
Matrix: Water
Analysis Batch: 435936

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Dichlorodifluoromethane	5.00	5.50		ug/L		110	20 - 150
Chloromethane	5.00	5.29		ug/L		106	32 - 150
Vinyl chloride	5.00	5.18		ug/L		104	41 - 150
Bromomethane	5.00	4.76		ug/L		95	51 - 148
Chloroethane	5.00	5.14		ug/L		103	54 - 140
Carbon disulfide	5.00	5.08		ug/L		102	54 - 142
Trichlorofluoromethane	5.00	5.04		ug/L		101	60 - 132
1,1-Dichloroethene	5.00	4.88		ug/L		98	60 - 129
Acetone	25.0	27.1		ug/L		108	49 - 150
Methylene Chloride	5.00	5.04		ug/L		101	40 - 142
Methyl tert-butyl ether	5.00	4.99		ug/L		100	61 - 131
2-Butanone (MEK)	25.0	25.8		ug/L		103	37 - 150
trans-1,2-Dichloroethene	5.00	5.26		ug/L		105	69 - 121
1,1-Dichloroethane	5.00	5.28		ug/L		106	74 - 120
2,2-Dichloropropane	5.00	5.45		ug/L		109	55 - 140
cis-1,2-Dichloroethene	5.00	5.33		ug/L		107	72 - 120
Chlorobromomethane	5.00	5.14		ug/L		103	79 - 121
Chloroform	5.00	5.31		ug/L		106	75 - 120
1,1,1-Trichloroethane	5.00	5.42		ug/L		108	70 - 121
Carbon tetrachloride	5.00	4.99		ug/L		100	66 - 130

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

Lab Sample ID: LCS 580-435936/4
Matrix: Water
Analysis Batch: 435936

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloropropene	5.00	5.24		ug/L		105	72 - 125
Benzene	5.00	5.20		ug/L		104	80 - 120
1,2-Dichloroethane	5.00	5.15		ug/L		103	74 - 127
Trichloroethene	5.00	5.13		ug/L		103	72 - 120
1,2-Dichloropropane	5.00	5.44		ug/L		109	69 - 130
4-Methyl-2-pentanone (MIBK)	25.0	20.1		ug/L		80	63 - 137
Dibromomethane	5.00	5.09		ug/L		102	65 - 141
Dichlorobromomethane	5.00	5.23		ug/L		105	74 - 131
cis-1,3-Dichloropropene	5.00	4.41		ug/L		88	77 - 131
Toluene	5.00	4.33		ug/L		87	80 - 126
trans-1,3-Dichloropropene	5.00	4.49		ug/L		90	71 - 138
1,1,2-Trichloroethane	5.00	4.30		ug/L		86	73 - 127
Tetrachloroethene	5.00	4.10		ug/L		82	75 - 124
1,3-Dichloropropane	5.00	4.30		ug/L		86	69 - 138
Chlorodibromomethane	5.00	4.34		ug/L		87	62 - 141
Ethylene Dibromide	5.00	4.42		ug/L		88	61 - 143
Chlorobenzene	5.00	4.25		ug/L		85	74 - 123
1,1,1,2-Tetrachloroethane	5.00	4.35		ug/L		87	69 - 127
Ethylbenzene	5.00	4.46		ug/L		89	80 - 124
m-Xylene & p-Xylene	5.00	4.46		ug/L		89	75 - 124
o-Xylene	5.00	4.44		ug/L		89	71 - 124
Styrene	5.00	4.47		ug/L		89	74 - 127
Bromoform	5.00	4.24		ug/L		85	48 - 127
Isopropylbenzene	5.00	4.43		ug/L		89	71 - 123
Bromobenzene	5.00	4.28		ug/L		86	74 - 130
1,1,2,2-Tetrachloroethane	5.00	4.12		ug/L		82	67 - 136
1,2,3-Trichloropropane	5.00	4.07		ug/L		81	67 - 135
N-Propylbenzene	5.00	4.38		ug/L		88	72 - 126
2-Chlorotoluene	5.00	4.42		ug/L		88	73 - 120
4-Chlorotoluene	5.00	4.58		ug/L		92	75 - 124
1,3,5-Trimethylbenzene	5.00	4.44		ug/L		89	75 - 123
tert-Butylbenzene	5.00	4.25		ug/L		85	70 - 129
1,2,4-Trimethylbenzene	5.00	4.57		ug/L		91	71 - 127
sec-Butylbenzene	5.00	4.49		ug/L		90	75 - 126
4-Isopropyltoluene	5.00	4.42		ug/L		88	78 - 125
1,3-Dichlorobenzene	5.00	4.26		ug/L		85	72 - 125
1,4-Dichlorobenzene	5.00	4.33		ug/L		87	71 - 129
n-Butylbenzene	5.00	4.24		ug/L		85	69 - 127
1,2-Dichlorobenzene	5.00	4.22		ug/L		84	72 - 129
1,2-Dibromo-3-Chloropropane	5.00	4.00		ug/L		80	55 - 135
1,2,4-Trichlorobenzene	5.00	4.09		ug/L		82	60 - 130
Hexachlorobutadiene	5.00	4.02		ug/L		80	63 - 130
Naphthalene	5.00	3.72		ug/L		74	54 - 137
1,2,3-Trichlorobenzene	5.00	4.09		ug/L		82	60 - 136

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*93*		*80 - 120*
Dibromofluoromethane (Surr)	*105*		*80 - 120*

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

Lab Sample ID: LCS 580-435936/4
Matrix: Water
Analysis Batch: 435936

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCSD 580-435936/5
Matrix: Water
Analysis Batch: 435936

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Dichlorodifluoromethane			5.00	5.72		ug/L		114	20 - 150	4	30
Chloromethane			5.00	5.52		ug/L		110	32 - 150	4	33
Vinyl chloride			5.00	5.33		ug/L		107	41 - 150	3	32
Bromomethane			5.00	5.04		ug/L		101	51 - 148	6	35
Chloroethane			5.00	5.27		ug/L		105	54 - 140	3	33
Carbon disulfide			5.00	5.16		ug/L		103	54 - 142	2	34
Trichlorofluoromethane			5.00	5.32		ug/L		106	60 - 132	5	32
1,1-Dichloroethene			5.00	5.07		ug/L		101	60 - 129	4	29
Acetone			25.0	29.4		ug/L		118	49 - 150	8	24
Methylene Chloride			5.00	5.17		ug/L		103	40 - 142	2	25
Methyl tert-butyl ether			5.00	5.60		ug/L		112	61 - 131	12	27
2-Butanone (MEK)			25.0	28.5		ug/L		114	37 - 150	10	35
trans-1,2-Dichloroethene			5.00	5.27		ug/L		105	69 - 121	0	27
1,1-Dichloroethane			5.00	5.46		ug/L		109	74 - 120	3	26
2,2-Dichloropropane			5.00	5.53		ug/L		111	55 - 140	1	31
cis-1,2-Dichloroethene			5.00	5.63		ug/L		113	72 - 120	5	22
Chlorobromomethane			5.00	5.42		ug/L		108	79 - 121	5	20
Chloroform			5.00	5.52		ug/L		110	75 - 120	4	21
1,1,1-Trichloroethane			5.00	5.50		ug/L		110	70 - 121	1	24
Carbon tetrachloride			5.00	5.14		ug/L		103	66 - 130	3	24
1,1-Dichloropropene			5.00	5.43		ug/L		109	72 - 125	4	23
Benzene			5.00	5.38		ug/L		108	80 - 120	3	22
1,2-Dichloroethane			5.00	5.53		ug/L		111	74 - 127	7	21
Trichloroethene			5.00	5.37		ug/L		107	72 - 120	5	22
1,2-Dichloropropane			5.00	5.68		ug/L		114	69 - 130	4	22
4-Methyl-2-pentanone (MIBK)			25.0	22.2		ug/L		89	63 - 137	10	26
Dibromomethane			5.00	5.30		ug/L		106	65 - 141	4	22
Dichlorobromomethane			5.00	5.40		ug/L		108	74 - 131	3	21
cis-1,3-Dichloropropene			5.00	4.68		ug/L		94	77 - 131	6	24
Toluene			5.00	4.53		ug/L		91	80 - 126	4	20
trans-1,3-Dichloropropene			5.00	4.69		ug/L		94	71 - 138	4	26
1,1,2-Trichloroethane			5.00	4.45		ug/L		89	73 - 127	3	22
Tetrachloroethene			5.00	4.18		ug/L		84	75 - 124	2	20
1,3-Dichloropropane			5.00	4.62		ug/L		92	69 - 138	7	19
Chlorodibromomethane			5.00	4.51		ug/L		90	62 - 141	4	22
Ethylene Dibromide			5.00	4.59		ug/L		92	61 - 143	4	22
Chlorobenzene			5.00	4.41		ug/L		88	74 - 123	4	21
1,1,1,2-Tetrachloroethane			5.00	4.56		ug/L		91	69 - 127	5	22
Ethylbenzene			5.00	4.65		ug/L		93	80 - 124	4	22
m-Xylene & p-Xylene			5.00	4.60		ug/L		92	75 - 124	3	22

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

Lab Sample ID: LCSD 580-435936/5
Matrix: Water
Analysis Batch: 435936

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
o-Xylene			5.00	4.61		ug/L		92	71 - 124	4	23
Styrene			5.00	4.63		ug/L		93	74 - 127	4	22
Bromoform			5.00	4.44		ug/L		89	48 - 127	5	23
Isopropylbenzene			5.00	4.61		ug/L		92	71 - 123	4	23
Bromobenzene			5.00	4.57		ug/L		91	74 - 130	7	23
1,1,2,2-Tetrachloroethane			5.00	4.51		ug/L		90	67 - 136	9	24
1,2,3-Trichloropropane			5.00	4.49		ug/L		90	67 - 135	10	25
N-Propylbenzene			5.00	4.56		ug/L		91	72 - 126	4	20
2-Chlorotoluene			5.00	4.63		ug/L		93	73 - 120	5	22
4-Chlorotoluene			5.00	4.87		ug/L		97	75 - 124	6	23
1,3,5-Trimethylbenzene			5.00	4.65		ug/L		93	75 - 123	4	23
tert-Butylbenzene			5.00	4.47		ug/L		89	70 - 129	5	24
1,2,4-Trimethylbenzene			5.00	4.74		ug/L		95	71 - 127	4	23
sec-Butylbenzene			5.00	4.70		ug/L		94	75 - 126	5	23
4-Isopropyltoluene			5.00	4.58		ug/L		92	78 - 125	4	24
1,3-Dichlorobenzene			5.00	4.60		ug/L		92	72 - 125	8	22
1,4-Dichlorobenzene			5.00	4.60		ug/L		92	71 - 129	6	22
n-Butylbenzene			5.00	4.42		ug/L		88	69 - 127	4	24
1,2-Dichlorobenzene			5.00	4.52		ug/L		90	72 - 129	7	22
1,2-Dibromo-3-Chloropropane			5.00	4.33		ug/L		87	55 - 135	8	29
1,2,4-Trichlorobenzene			5.00	4.26		ug/L		85	60 - 130	4	26
Hexachlorobutadiene			5.00	4.23		ug/L		85	63 - 130	5	26
Naphthalene			5.00	4.11		ug/L		82	54 - 137	10	28
1,2,3-Trichlorobenzene			5.00	4.37		ug/L		87	60 - 136	7	28

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*93*		*80 - 120*
Dibromofluoromethane (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*

Lab Sample ID: MB 580-436121/7
Matrix: Water
Analysis Batch: 436121

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.53	ug/L			08/29/23 22:35	1
Chloromethane	ND		1.0	0.28	ug/L			08/29/23 22:35	1
Vinyl chloride	ND		1.0	0.22	ug/L			08/29/23 22:35	1
Bromomethane	ND		1.0	0.21	ug/L			08/29/23 22:35	1
Chloroethane	ND		1.0	0.35	ug/L			08/29/23 22:35	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			08/29/23 22:35	1
Carbon disulfide	ND		1.0	0.53	ug/L			08/29/23 22:35	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			08/29/23 22:35	1
Acetone	ND		15	3.2	ug/L			08/29/23 22:35	1
Methylene Chloride	ND		5.0	1.4	ug/L			08/29/23 22:35	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			08/29/23 22:35	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			08/29/23 22:35	1

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

Lab Sample ID: MB 580-436121/7
Matrix: Water
Analysis Batch: 436121

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	ND		1.0	0.22	ug/L			08/29/23 22:35	1
2-Butanone (MEK)	ND		15	4.7	ug/L			08/29/23 22:35	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			08/29/23 22:35	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			08/29/23 22:35	1
Bromochloromethane	ND		1.0	0.29	ug/L			08/29/23 22:35	1
Chloroform	ND		1.0	0.26	ug/L			08/29/23 22:35	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			08/29/23 22:35	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			08/29/23 22:35	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			08/29/23 22:35	1
Benzene	ND		1.0	0.24	ug/L			08/29/23 22:35	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			08/29/23 22:35	1
Trichloroethene	ND		1.0	0.26	ug/L			08/29/23 22:35	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			08/29/23 22:35	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			08/29/23 22:35	1
Dibromomethane	ND		1.0	0.34	ug/L			08/29/23 22:35	1
Bromodichloromethane	ND		1.0	0.29	ug/L			08/29/23 22:35	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			08/29/23 22:35	1
Toluene	ND		1.0	0.39	ug/L			08/29/23 22:35	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			08/29/23 22:35	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			08/29/23 22:35	1
Tetrachloroethene	ND		1.0	0.41	ug/L			08/29/23 22:35	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			08/29/23 22:35	1
Dibromochloromethane	ND		1.0	0.43	ug/L			08/29/23 22:35	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			08/29/23 22:35	1
Chlorobenzene	ND		1.0	0.44	ug/L			08/29/23 22:35	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			08/29/23 22:35	1
Ethylbenzene	ND		1.0	0.50	ug/L			08/29/23 22:35	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			08/29/23 22:35	1
o-Xylene	ND		1.0	0.39	ug/L			08/29/23 22:35	1
Styrene	ND		1.0	0.53	ug/L			08/29/23 22:35	1
Bromoform	ND		1.0	0.51	ug/L			08/29/23 22:35	1
Isopropylbenzene	ND		1.0	0.44	ug/L			08/29/23 22:35	1
Bromobenzene	ND		1.0	0.43	ug/L			08/29/23 22:35	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			08/29/23 22:35	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			08/29/23 22:35	1
N-Propylbenzene	ND		1.0	0.50	ug/L			08/29/23 22:35	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			08/29/23 22:35	1
4-Chlorotoluene	ND		1.0	0.38	ug/L			08/29/23 22:35	1
t-Butylbenzene	ND		2.0	0.58	ug/L			08/29/23 22:35	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			08/29/23 22:35	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			08/29/23 22:35	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			08/29/23 22:35	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			08/29/23 22:35	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			08/29/23 22:35	1
n-Butylbenzene	ND		1.0	0.44	ug/L			08/29/23 22:35	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			08/29/23 22:35	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			08/29/23 22:35	1
1,2,4-Trichlorobenzene	0.756	J	1.0	0.33	ug/L			08/29/23 22:35	1
Hexachlorobutadiene	0.881	J	3.0	0.79	ug/L			08/29/23 22:35	1

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

Lab Sample ID: MB 580-436121/7
Matrix: Water
Analysis Batch: 436121

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		3.0	0.93	ug/L			08/29/23 22:35	1
1,2,3-Trichlorobenzene	1.14	J	2.0	0.43	ug/L			08/29/23 22:35	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			08/29/23 22:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*		*08/29/23 22:35*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*08/29/23 22:35*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*08/29/23 22:35*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*08/29/23 22:35*	*1*

Lab Sample ID: LCS 580-436121/4
Matrix: Water
Analysis Batch: 436121

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Dichlorodifluoromethane	10.0	14.0		ug/L		140	20 - 150
Chloromethane	10.0	12.8		ug/L		128	25 - 150
Vinyl chloride	10.0	12.7		ug/L		127	31 - 150
Bromomethane	10.0	12.0		ug/L		120	36 - 150
Chloroethane	10.0	12.2		ug/L		122	38 - 150
Trichlorofluoromethane	10.0	11.8		ug/L		118	45 - 148
Carbon disulfide	10.0	9.97		ug/L		100	63 - 134
1,1-Dichloroethene	10.0	10.3		ug/L		103	70 - 129
Acetone	50.0	72.1		ug/L		144	44 - 150
Methylene Chloride	10.0	10.7		ug/L		107	77 - 125
Methyl tert-butyl ether	10.0	10.7		ug/L		107	72 - 120
trans-1,2-Dichloroethene	10.0	10.2		ug/L		102	75 - 120
1,1-Dichloroethane	10.0	10.6		ug/L		106	80 - 120
2-Butanone (MEK)	50.0	57.1		ug/L		114	65 - 137
2,2-Dichloropropane	10.0	10.8		ug/L		108	66 - 126
cis-1,2-Dichloroethene	10.0	10.6		ug/L		106	76 - 120
Bromochloromethane	10.0	10.4		ug/L		104	78 - 120
Chloroform	10.0	9.99		ug/L		100	78 - 127
1,1,1-Trichloroethane	10.0	10.7		ug/L		107	74 - 130
Carbon tetrachloride	10.0	10.5		ug/L		105	72 - 129
1,1-Dichloropropene	10.0	10.4		ug/L		104	74 - 120
Benzene	10.0	9.76		ug/L		98	80 - 122
1,2-Dichloroethane	10.0	10.5		ug/L		105	69 - 126
Trichloroethene	10.0	9.69		ug/L		97	80 - 125
1,2-Dichloropropane	10.0	10.1		ug/L		101	80 - 120
4-Methyl-2-pentanone (MIBK)	50.0	55.4		ug/L		111	59 - 141
Dibromomethane	10.0	10.5		ug/L		105	80 - 120
Bromodichloromethane	10.0	9.58		ug/L		96	75 - 124
cis-1,3-Dichloropropene	10.0	9.68		ug/L		97	77 - 120
Toluene	10.0	9.89		ug/L		99	80 - 120
trans-1,3-Dichloropropene	10.0	9.58		ug/L		96	76 - 122
1,1,2-Trichloroethane	10.0	10.6		ug/L		106	80 - 121
Tetrachloroethene	10.0	10.0		ug/L		100	76 - 125

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

Lab Sample ID: LCS 580-436121/4
Matrix: Water
Analysis Batch: 436121

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,3-Dichloropropane	10.0	10.5		ug/L		105	79 - 120
Dibromochloromethane	10.0	9.49		ug/L		95	73 - 125
1,2-Dibromoethane	10.0	10.3		ug/L		103	79 - 126
Chlorobenzene	10.0	10.2		ug/L		102	80 - 120
1,1,1,2-Tetrachloroethane	10.0	9.88		ug/L		99	79 - 120
Ethylbenzene	10.0	10.1		ug/L		101	80 - 120
m-Xylene & p-Xylene	10.0	10.3		ug/L		103	80 - 120
o-Xylene	10.0	10.1		ug/L		101	80 - 120
Styrene	10.0	10.5		ug/L		105	76 - 122
Bromoform	10.0	9.28		ug/L		93	56 - 139
Isopropylbenzene	10.0	10.1		ug/L		101	80 - 123
Bromobenzene	10.0	10.6		ug/L		106	80 - 120
1,1,2,2-Tetrachloroethane	10.0	10.9		ug/L		109	74 - 124
1,2,3-Trichloropropane	10.0	11.5		ug/L		115	76 - 124
N-Propylbenzene	10.0	10.3		ug/L		103	80 - 122
2-Chlorotoluene	10.0	10.5		ug/L		105	80 - 120
4-Chlorotoluene	10.0	11.0		ug/L		110	73 - 129
t-Butylbenzene	10.0	9.98		ug/L		100	75 - 123
1,2,4-Trimethylbenzene	10.0	10.4		ug/L		104	80 - 120
sec-Butylbenzene	10.0	10.2		ug/L		102	78 - 122
4-Isopropyltoluene	10.0	10.1		ug/L		101	77 - 126
1,3-Dichlorobenzene	10.0	11.0		ug/L		110	77 - 127
1,4-Dichlorobenzene	10.0	10.9		ug/L		109	80 - 120
n-Butylbenzene	10.0	10.6		ug/L		106	57 - 133
1,2-Dichlorobenzene	10.0	11.0		ug/L		110	80 - 120
1,2-Dibromo-3-Chloropropane	10.0	11.1		ug/L		111	65 - 133
1,2,4-Trichlorobenzene	10.0	11.4		ug/L		114	61 - 148
Hexachlorobutadiene	10.0	11.2		ug/L		112	74 - 131
Naphthalene	10.0	12.1		ug/L		121	63 - 150
1,2,3-Trichlorobenzene	10.0	12.3		ug/L		123	65 - 150
1,3,5-Trimethylbenzene	10.0	10.4		ug/L		104	80 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 580-436121/5
Matrix: Water
Analysis Batch: 436121

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Dichlorodifluoromethane	10.0	12.8		ug/L		128	20 - 150	8	33
Chloromethane	10.0	11.5		ug/L		115	25 - 150	11	26
Vinyl chloride	10.0	11.5		ug/L		115	31 - 150	11	26
Bromomethane	10.0	11.1		ug/L		111	36 - 150	8	33
Chloroethane	10.0	11.1		ug/L		111	38 - 150	9	28

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

Lab Sample ID: LCSD 580-436121/5
Matrix: Water
Analysis Batch: 436121

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Trichlorofluoromethane			10.0	10.9		ug/L		109	45 - 148	8	35
Carbon disulfide			10.0	9.44		ug/L		94	63 - 134	5	24
1,1-Dichloroethene			10.0	9.87		ug/L		99	70 - 129	5	23
Acetone			50.0	65.3		ug/L		131	44 - 150	10	33
Methylene Chloride			10.0	10.2		ug/L		102	77 - 125	5	18
Methyl tert-butyl ether			10.0	10.0		ug/L		100	72 - 120	6	18
trans-1,2-Dichloroethene			10.0	9.78		ug/L		98	75 - 120	5	21
1,1-Dichloroethane			10.0	9.88		ug/L		99	80 - 120	7	15
2-Butanone (MEK)			50.0	51.8		ug/L		104	65 - 137	10	34
2,2-Dichloropropane			10.0	10.3		ug/L		103	66 - 126	5	22
cis-1,2-Dichloroethene			10.0	9.76		ug/L		98	76 - 120	8	20
Bromochloromethane			10.0	9.89		ug/L		99	78 - 120	5	13
Chloroform			10.0	9.43		ug/L		94	78 - 127	6	14
1,1,1-Trichloroethane			10.0	10.0		ug/L		100	74 - 130	6	19
Carbon tetrachloride			10.0	9.75		ug/L		97	72 - 129	7	19
1,1-Dichloropropene			10.0	9.85		ug/L		98	74 - 120	6	14
Benzene			10.0	9.20		ug/L		92	80 - 122	6	14
1,2-Dichloroethane			10.0	10.0		ug/L		100	69 - 126	5	11
Trichloroethene			10.0	9.36		ug/L		94	80 - 125	3	13
1,2-Dichloropropane			10.0	9.83		ug/L		98	80 - 120	3	14
4-Methyl-2-pentanone (MIBK)			50.0	50.8		ug/L		102	59 - 141	9	22
Dibromomethane			10.0	10.1		ug/L		101	80 - 120	4	11
Bromodichloromethane			10.0	9.29		ug/L		93	75 - 124	3	13
cis-1,3-Dichloropropene			10.0	10.0		ug/L		100	77 - 120	3	35
Toluene			10.0	9.74		ug/L		97	80 - 120	2	13
trans-1,3-Dichloropropene			10.0	9.58		ug/L		96	76 - 122	0	20
1,1,2-Trichloroethane			10.0	10.6		ug/L		106	80 - 121	0	14
Tetrachloroethene			10.0	10.2		ug/L		102	76 - 125	2	13
1,3-Dichloropropane			10.0	10.7		ug/L		107	79 - 120	1	19
Dibromochloromethane			10.0	9.52		ug/L		95	73 - 125	0	13
1,2-Dibromoethane			10.0	10.5		ug/L		105	79 - 126	2	12
Chlorobenzene			10.0	10.2		ug/L		102	80 - 120	1	10
1,1,1,2-Tetrachloroethane			10.0	9.52		ug/L		95	79 - 120	4	16
Ethylbenzene			10.0	9.93		ug/L		99	80 - 120	2	14
m-Xylene & p-Xylene			10.0	9.90		ug/L		99	80 - 120	4	14
o-Xylene			10.0	9.42		ug/L		94	80 - 120	7	16
Styrene			10.0	9.95		ug/L		99	76 - 122	5	16
Bromoform			10.0	9.04		ug/L		90	56 - 139	3	21
Isopropylbenzene			10.0	9.43		ug/L		94	80 - 123	7	19
Bromobenzene			10.0	10.4		ug/L		104	80 - 120	2	24
1,1,2,2-Tetrachloroethane			10.0	10.8		ug/L		108	74 - 124	1	25
1,2,3-Trichloropropane			10.0	11.0		ug/L		110	76 - 124	4	26
N-Propylbenzene			10.0	9.90		ug/L		99	80 - 122	4	22
2-Chlorotoluene			10.0	10.2		ug/L		102	80 - 120	3	20
4-Chlorotoluene			10.0	10.3		ug/L		103	73 - 129	6	29
t-Butylbenzene			10.0	9.43		ug/L		94	75 - 123	6	21
1,2,4-Trimethylbenzene			10.0	10.1		ug/L		101	80 - 120	4	16
sec-Butylbenzene			10.0	9.92		ug/L		99	78 - 122	3	15
4-Isopropyltoluene			10.0	9.82		ug/L		98	77 - 126	3	20

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

Lab Sample ID: LCSD 580-436121/5
Matrix: Water
Analysis Batch: 436121

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,3-Dichlorobenzene			10.0	10.1		ug/L		101	77 - 127	8	35
1,4-Dichlorobenzene			10.0	10.1		ug/L		101	80 - 120	7	17
n-Butylbenzene			10.0	9.95		ug/L		99	57 - 133	6	14
1,2-Dichlorobenzene			10.0	10.4		ug/L		104	80 - 120	6	15
1,2-Dibromo-3-Chloropropane			10.0	9.55		ug/L		95	65 - 133	15	25
1,2,4-Trichlorobenzene			10.0	9.88		ug/L		99	61 - 148	14	27
Hexachlorobutadiene			10.0	11.7		ug/L		117	74 - 131	4	22
Naphthalene			10.0	10.4		ug/L		104	63 - 150	15	33
1,2,3-Trichlorobenzene			10.0	11.1		ug/L		111	65 - 150	11	33
1,3,5-Trimethylbenzene			10.0	9.97		ug/L		100	80 - 122	4	21

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*

Lab Sample ID: MB 580-436229/8
Matrix: Water
Analysis Batch: 436229

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	ND		1.0	0.44	ug/L			08/30/23 17:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*92*		*80 - 120*		*08/30/23 17:05*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*80 - 120*		*08/30/23 17:05*	*1*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*		*08/30/23 17:05*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*08/30/23 17:05*	*1*

Lab Sample ID: LCS 580-436229/4
Matrix: Water
Analysis Batch: 436229

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorobenzene			5.00	4.94		ug/L		99	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*92*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*91*		*80 - 120*
4-Bromofluorobenzene (Surr)	*107*		*80 - 120*
Dibromofluoromethane (Surr)	*105*		*80 - 120*

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

Lab Sample ID: LCSD 580-436229/5
Matrix: Water
Analysis Batch: 436229

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorobenzene			5.00	4.83		ug/L		97	80 - 120	2	10

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*96*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 320-704634/5
Matrix: Water
Analysis Batch: 704634

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	2.0	ug/L			09/08/23 11:10	1

Lab Sample ID: LCS 320-704634/6
Matrix: Water
Analysis Batch: 704634

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			49.9	53.1		ug/L		106	85 - 115		

Lab Sample ID: MRL 320-704634/4
Matrix: Water
Analysis Batch: 704634

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

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			3.99	3.88	J	ug/L		97	75 - 125		

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 580-436112/3
Matrix: Water
Analysis Batch: 436112

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.5	0.43	mg/L			08/29/23 09:37	1

Lab Sample ID: LCS 580-436112/4
Matrix: Water
Analysis Batch: 436112

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			50.0	53.0		mg/L		106	90 - 110		

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 580-436112/5
Matrix: Water
Analysis Batch: 436112

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			50.0	52.8		mg/L		106	90 - 110	0	15

Lab Chronicle

Client: ERM-West
Job ID: 580-130868-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: TB-082423
Lab Sample ID: 580-130868-1
Date Collected: 08/24/23 00:01
Matrix: Water
Date Received: 08/24/23 13:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435936	ITR	EET SEA	08/28/23 12:27

Client Sample ID: PA-19d-082423
Lab Sample ID: 580-130868-2
Date Collected: 08/24/23 07:02
Matrix: Water
Date Received: 08/24/23 13:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		50	436121	JBT	EET SEA	08/30/23 04:37
Total/NA	Analysis	8260D	DL	500	436229	JBT	EET SEA	08/30/23 22:18
Total/NA	Analysis	314.0		10	704634	Y1S	EET SAC	09/08/23 13:15
Total/NA	Analysis	300.0		10	436112	CA	EET SEA	08/29/23 10:24

Client Sample ID: PA-30d-082423
Lab Sample ID: 580-130868-3
Date Collected: 08/24/23 08:01
Matrix: Water
Date Received: 08/24/23 13:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		50	436121	JBT	EET SEA	08/30/23 05:01
Total/NA	Analysis	8260D	DL	1000	436229	JBT	EET SEA	08/30/23 22:42
Total/NA	Analysis	314.0		10	704634	Y1S	EET SAC	09/08/23 13:33
Total/NA	Analysis	300.0		10	436112	CA	EET SEA	08/29/23 15:29

Client Sample ID: PA-32i-082423
Lab Sample ID: 580-130868-4
Date Collected: 08/24/23 06:59
Matrix: Water
Date Received: 08/24/23 13:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435936	ITR	EET SEA	08/28/23 13:33
Total/NA	Analysis	314.0		10	704634	Y1S	EET SAC	09/08/23 13:51
Total/NA	Analysis	300.0		1	436112	CA	EET SEA	08/29/23 10:48

Client Sample ID: PA-31-082423
Lab Sample ID: 580-130868-5
Date Collected: 08/24/23 08:04
Matrix: Water
Date Received: 08/24/23 13:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435936	ITR	EET SEA	08/28/23 13:54
Total/NA	Analysis	314.0		2	704634	Y1S	EET SAC	09/08/23 14:45
Total/NA	Analysis	300.0		1	436112	CA	EET SEA	08/29/23 10:59

Laboratory References:
EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600
EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: ERM-West
Job ID: 580-130868-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Laboratory: Eurofins Seattle

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

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4167	09-06-23

Laboratory: Eurofins Sacramento

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

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4040	01-29-24

Sample Summary

Client: ERM-West
Job ID: 580-130868-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-130868-1	TB-082423	Water	08/24/23 00:01	08/24/23 13:45
580-130868-2	PA-19d-082423	Water	08/24/23 07:02	08/24/23 13:45
580-130868-3	PA-30d-082423	Water	08/24/23 08:01	08/24/23 13:45
580-130868-4	PA-32i-082423	Water	08/24/23 06:59	08/24/23 13:45
580-130868-5	PA-31-082423	Water	08/24/23 08:04	08/24/23 13:45

Eurofins TestAmerica, Seattle
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record

eurofins Environment Testing TestAmerica

Client Information	Sampler: ST/PV	Lab PM: Cruz, Sheri L	Carrier Tracking No(s):	COC No:
Client Contact: Avery Soplata, Andrew Gardner, and Sarah Seekins	Phone:	E-Mail: sheri.cruz@testamericainc.com		Page: 1 of 1
Company: ERM-West				Job #:
Address: 1050 SW 6th Avenue Suite 1650	Due Date Requested:			
City: Portland	TAT Requested (days): 15BD			
State, Zip: OR, 97204				
Phone:	PO #: PN 0682894.207			
Email: avery.soplata@erm.com, andrew.gardner@erm.com and sarah.seekins@erm.com	WO #:			
Project Name: 3rd Arkema - Q1 2023 Groundwater event	Project #: 0682894			
Site:	SSOW#:			

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C regular level standard VOA list-Seattle	8260C_LL - Standard VOA list-Seattle	300.0_28D-Chloride-Seattle	314 Perchlorate	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	A	N	N		
TB-082423	8/24/23			Water				X			2	
PA-19d-082423		0702	G	Water			X		X	X	6	Dil VOC
PA-30d-082423		0801		Water			X		X	X	6	Dil VOC
PA-32i-082423		0659		Water				X	X	X	5	
PA-31-082423		0804		Water				X	X	X	5	
				Water								
				Water								
				Water								
				Water								

Preservation Codes:

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

Other:

580-130868 Chain of Custody

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

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

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

Special Instructions/QC Requirements: please run at lowest dilution possible for ND.

Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:	
Relinquished by:	Date/Time: 8/24/23	Company ERM	Received by:	Date/Time: 8/24/23 1345	Company EEN		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company		

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 3.8

Eurofins TestAmerica, Seattle
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record

eurofins Environment Testing TestAmerica

Client Information
Client Contact: Avery Soplata, Andrew Gardner, and Sarah Seekins
Company: ERM-West
Address: 1050 SW 6th Avenue Suite 1650
City: Portland
State, Zip: OR, 97204
Phone:
Email: avery.soplata@erm.com, andrew.gardner@erm.com and sarah.seekins@erm.com
Project Name: 3rd Arkema - Q1 2023 Groundwater event
Site:

Sampler: ST/PV
Phone:
Lab PM: Cruz, Sheri L
E-Mail: sheri.cruz@testamericainc.com
Carrier Tracking No(s):
Due Date Requested:
TAT Requested (days): 15BD
PO #: PN 0682894.207
WO #:
Project #: 0682894
SSOW#:

COC No:
Page: 1 of 1
Job #:

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

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C regular level standard VOA list-Seattle	8260C_LL - Standard VOA list-Seattle	300.0_28D-Chloride-Seattle	314 Perchlorate	Total Number of containers	Special Instructions/Note:
Preservation Code:					X	X	A	A	N	N	X	
TB-082423	8/24/23			Water				X			2	
PA-19d-082423		0702	G	Water			X		X	X	8	Dil VOC
PA-30d-082423		0801		Water			X		X	X	8	Dil VOC
PA-32-082423		0659		Water				X	X	X	5	
PA-31-082423		0804		Water				X	X	X	5	
				Water								
				Water								
				Water								
				Water								

580-130868 Chain of Custody

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

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

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

Special Instructions/QC Requirements: please run at lowest dilution possible for ND.

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		8/24/23	ERM		8/24/23 1345	EETN
		8/24/23 1700	EETN		8/25/23 0935	EETN
		Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: IR9 4.7/5.0 3.8

Eurofins Seattle
5755 8th Street East
Tacoma WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cruz, Sheri L	Carrier Tracking No(s):	COC No: 580-123940 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Sheri.Cruz@et.eurofinsus.com	State of Origin: Oregon	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): NELAP Oregon		Job #: 580-130868-1
Address: 880 Riverside Parkway	Due Date Requested: 9/14/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Arkema Q3 2023 Groundwater Event	Project #: 58016290			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

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

Other:

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	314.0/ Perchlorate	Total Number of containers	Special Instructions/Note
			Preservation Code:						
PA-19d-082423 (580-130868-2)	8/24/23	07:02 Pacific		Water			X	1	
PA-30d-082423 (580-130868-3)	8/24/23	08:01 Pacific		Water			X	1	
PA-32i-082423 (580-130868-4)	8/24/23	06:59 Pacific		Water			X	1	
PA-31-082423 (580-130868-5)	8/24/23	08:04 Pacific		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II III IV Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company
1		8/24/23 1700	EETNC		08/25/23 0930	EESOE
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No. 20821162	Cooler Temperature(s) °C and Other Remarks: 1.4°C

9/15/2023

Login Sample Receipt Checklist

Client: ERM-West

Job Number: 580-130868-1

Login Number: 130868
List Number: 1
Creator: O'Connell, Jason I

List Source: Eurofins Seattle

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

Login Sample Receipt Checklist

Client: ERM-West

Job Number: 580-130868-1

Login Number: 130868
List Number: 2
Creator: Morazzini, Dominic S

List Source: Eurofins Sacramento
List Creation: 08/25/23 05:59 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	2082162
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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Sacramento
Sample Receiving Notes

580-130868 Field Sheet

Tracking # 685884992006

Job _____

SO / PO / FO / SAT / 2-Day / Ground / UPS / CDO / Courier
GSL / OnTrac / Goldstreak / USPS / Other_____

Use this form to record Sample Custody Seal Cooler Custody Seal Temperature & corrected Temperature & other observations.
File in the job folder with the COC.

Therm ID L06 Corr Factor (+/-) NA °C

Ice ✓ Wet ✓ Gel ✓ Other _____

Cooler Custody Seal 7082162

Cooler ID _____

Temp Observed 1.4 °C Corrected 1.4 °C
From Temp Blank ☐ Sample ☑

Opening/Processing The Shipment	Yes	No	NA
Cooler compromised/tampered with?	☐	☑	☐
Cooler Temperature is acceptable?	☑	☐	☐
Frozen samples show signs of thaw?	☐	☐	☑

Initials DM Date 08/25/23

Unpacking/Labeling The Samples	Yes	No	NA
Containers are not broken or leaking?	☑	☐	☐
Samples compromised/tampered with?	☐	☑	☐
COC is complete w/o discrepancies	☑	☐	☐
Sample custody seal?	☐	☐	☑
Sample containers have legible labels?	☑	☐	☐
Sample date/times are provided?	☑	☐	☐
Appropriate containers are used?	☑	☐	☐
Sample bottles are completely filled?	☐	☑	☐
Sample preservatives verified?	☐	☐	☑
Is the Field Sampler's name on COC?	☐	☐	☑
Samples w/o discrepancies?	☑	☐	☐
Zero headspace?*	☐	☑	☐
Alkalinity has no headspace?	☐	☐	☑
Perchlorate has headspace? (Methods 314 331 6850)	☑	☐	☐
Multiphasic samples are not present?	☑	☐	☐

Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Initials DM Date 08/25/23

Notes _____

Trizma Lot #(s) _____

Ammonium
Acetate Lot #(s) _____

Login Completion	Yes	No	NA
Receipt Temperature on COC?	☑	☐	☐
NCM Filed?	☐	☐	☑
Samples received within hold time?	☐	☐	☑
Log Release checked in TALS?	☐	☐	☑

Initials DM Date 08/25/23

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ANALYTICAL REPORT

PREPARED FOR

Attn: Avery Soplata
ERM-West
1050 SW 6th Avenue
Suite 1650
Portland, Oregon 97204

Generated 9/15/2023 11:52:48 AM

JOB DESCRIPTION

Arkema - Q3 2023 Groundwater Event

JOB NUMBER

580-130869-1

Eurofins Seattle
5755 8th Street East
Tacoma WA 98424

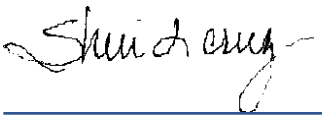
See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northwest, LLC Project Manager.

Authorization



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9/15/2023 11:52:48 AM

Authorized for release by
Sheri Cruz, Project Manager I
Sheri.Cruz@et.eurofinsus.com
(253)922-2310

Table of Contents

Job ID: 580-130869-1

Laboratory: Eurofins Seattle

Narrative

Job Narrative
580-130869-1

Comments
No additional comments.

Receipt
The samples were received on 8/24/2023 12:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.9º C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) associated with batch 580-436121 recovered above the upper control limit for Dichlorodifluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: PA-22d-082323 (580-130869-2), MWA-63-082323 (580-130869-3), RB-02-082323 (580-130869-4), PA-20d-082323 (580-130869-5), Dup-02-082323 (580-130869-6), PA-21d-082323 (580-130869-7), MWA-56d-082323 (580-130869-8), MWA-31i(d)-082323 (580-130869-9), MWA-58d-082323 (580-130869-10) and (CCVIS 580-436121/3).

Method 8260D: The CCV for analytical batch 580-436121 recovered outside control limits for the following analyte(s): 1,2,3-Trichlorobenzene and Naphthalene have been identified as poor performing analytes when analyzed using this method; therefore, re-analysis was not performed. These results have been reported and qualified.

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-436121 recovered outside acceptance criteria, low biased, for 1,2,4-Trichlorobenzene and Hexachlorobutadiene. A reporting limit (RL) standard was analyzed, and the target analytes are detected. Since the associated samples were non-detect for the analyte(s), the data are reported.

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-435936 recovered above the upper control limit for Dichlorodifluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260D: The CCV for analytical batch 580-435936 recovered outside control limits for the following analyte(s): 1,2-Dibromo-3-Chloropropane and Naphthalene . 1,2-Dibromo-3-Chloropropane and Naphthalene have been identified as poor performing analytes when analyzed using this method; therefore, re-analysis was not performed. These results have been reported and qualified.

Method 8260D: The method blank for analytical batch 580-436121 contained 1,2,4-Trichlorobenzene, Hexachlorobutadiene and 1,2,3-Trichlorobenzene above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8260D: The following samples were diluted to bring the concentration of target analytes within the calibration range: PA-21d-082323 (580-130869-7), MWA-56d-082323 (580-130869-8) and MWA-58d-082323 (580-130869-10). Elevated reporting limits (RLs) are provided.

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

General Chemistry
Method 314.0: The following samples in analytical batch 320-704634 were diluted to bring the concentration of target analytes within the calibration range: PA-22d-082323 (580-130869-2), MWA-56d-082323 (580-130869-8), MWA-56d-082323 (580-130869-8[MS]), MWA-56d-082323 (580-130869-8[MSD]), MWA-31i(d)-082323 (580-130869-9) and MWA-58d-082323 (580-130869-10). Elevated reporting limits (RLs) are provided.

Method 314.0: Due to the nature of the matrix and/or the high conductivity measurement for the following samples, the samples in analytical batch 320-704634 were diluted. In order to protect instrumentation, the samples were diluted. Elevated reporting limits (RLs) are provided. PA-20d-082323 (580-130869-5), Dup-02-082323 (580-130869-6), PA-21d-082323 (580-130869-7) and MW-11i(d)-082323 (580-130869-11)

Job ID: 580-130869-1 (Continued)

Laboratory: Eurofins Seattle (Continued)

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

VOA Prep

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

Definitions/Glossary

Client: ERM-West
Job ID: 580-130869-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Qualifiers

GC/MS VOA

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

HPLC/IC

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

Glossary

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

Client: ERM-West
Job ID: 580-130869-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: TB-082323-A
Lab Sample ID: 580-130869-1
Date Collected: 08/23/23 00:01
Matrix: Water
Date Received: 08/24/23 12:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			08/28/23 11:44	1
Chloromethane	ND		0.50	0.14	ug/L			08/28/23 11:44	1
Vinyl chloride	ND		0.10	0.040	ug/L			08/28/23 11:44	1
Bromomethane	ND		0.50	0.13	ug/L			08/28/23 11:44	1
Chloroethane	ND		0.50	0.096	ug/L			08/28/23 11:44	1
Carbon disulfide	ND		0.30	0.083	ug/L			08/28/23 11:44	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			08/28/23 11:44	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			08/28/23 11:44	1
Acetone	ND		10	3.1	ug/L			08/28/23 11:44	1
Methylene Chloride	ND		5.0	1.2	ug/L			08/28/23 11:44	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			08/28/23 11:44	1
2-Butanone (MEK)	ND		10	2.5	ug/L			08/28/23 11:44	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			08/28/23 11:44	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			08/28/23 11:44	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			08/28/23 11:44	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			08/28/23 11:44	1
Chlorobromomethane	ND		0.20	0.050	ug/L			08/28/23 11:44	1
Chloroform	ND		0.20	0.030	ug/L			08/28/23 11:44	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			08/28/23 11:44	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			08/28/23 11:44	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			08/28/23 11:44	1
Benzene	ND		0.20	0.030	ug/L			08/28/23 11:44	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			08/28/23 11:44	1
Trichloroethene	ND		0.20	0.066	ug/L			08/28/23 11:44	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			08/28/23 11:44	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			08/28/23 11:44	1
Dibromomethane	ND		0.20	0.062	ug/L			08/28/23 11:44	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			08/28/23 11:44	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			08/28/23 11:44	1
Toluene	ND		0.20	0.050	ug/L			08/28/23 11:44	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			08/28/23 11:44	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			08/28/23 11:44	1
Tetrachloroethene	ND		0.24	0.084	ug/L			08/28/23 11:44	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			08/28/23 11:44	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			08/28/23 11:44	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			08/28/23 11:44	1
Chlorobenzene	ND		0.20	0.060	ug/L			08/28/23 11:44	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			08/28/23 11:44	1
Ethylbenzene	ND		0.20	0.030	ug/L			08/28/23 11:44	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			08/28/23 11:44	1
o-Xylene	ND		0.50	0.15	ug/L			08/28/23 11:44	1
Styrene	ND		1.0	0.19	ug/L			08/28/23 11:44	1
Bromoform	ND		0.50	0.16	ug/L			08/28/23 11:44	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/28/23 11:44	1
Bromobenzene	ND		0.20	0.038	ug/L			08/28/23 11:44	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			08/28/23 11:44	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			08/28/23 11:44	1
N-Propylbenzene	ND		0.30	0.091	ug/L			08/28/23 11:44	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			08/28/23 11:44	1

Client: ERM-West
Job ID: 580-130869-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: TB-082323-A
Lab Sample ID: 580-130869-1
Date Collected: 08/23/23 00:01
Matrix: Water
Date Received: 08/24/23 12:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			08/28/23 11:44	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			08/28/23 11:44	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			08/28/23 11:44	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			08/28/23 11:44	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			08/28/23 11:44	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			08/28/23 11:44	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			08/28/23 11:44	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			08/28/23 11:44	1
n-Butylbenzene	ND		1.0	0.23	ug/L			08/28/23 11:44	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			08/28/23 11:44	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			08/28/23 11:44	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			08/28/23 11:44	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			08/28/23 11:44	1
Naphthalene	ND		1.0	0.22	ug/L			08/28/23 11:44	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			08/28/23 11:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*88*		*80 - 120*		*08/28/23 11:44*	*1*
Dibromofluoromethane (Surr)	*112*		*80 - 120*		*08/28/23 11:44*	*1*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*		*08/28/23 11:44*	*1*
1,2-Dichloroethane-d4 (Surr)	*111*		*80 - 120*		*08/28/23 11:44*	*1*

Client Sample ID: PA-22d-082323
Lab Sample ID: 580-130869-2

Date Collected: 08/23/23 08:18
Matrix: Water

Date Received: 08/24/23 12:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.53	ug/L			08/30/23 00:36	1
Chloromethane	ND		1.0	0.28	ug/L			08/30/23 00:36	1
Vinyl chloride	ND		1.0	0.22	ug/L			08/30/23 00:36	1
Bromomethane	ND		1.0	0.21	ug/L			08/30/23 00:36	1
Chloroethane	ND		1.0	0.35	ug/L			08/30/23 00:36	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			08/30/23 00:36	1
Carbon disulfide	ND		1.0	0.53	ug/L			08/30/23 00:36	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			08/30/23 00:36	1
Acetone	ND		15	3.2	ug/L			08/30/23 00:36	1
Methylene Chloride	ND		5.0	1.4	ug/L			08/30/23 00:36	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			08/30/23 00:36	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			08/30/23 00:36	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			08/30/23 00:36	1
2-Butanone (MEK)	ND		15	4.7	ug/L			08/30/23 00:36	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			08/30/23 00:36	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			08/30/23 00:36	1
Bromochloromethane	ND		1.0	0.29	ug/L			08/30/23 00:36	1
Chloroform	**10**		1.0	0.26	ug/L			08/30/23 00:36	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			08/30/23 00:36	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			08/30/23 00:36	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			08/30/23 00:36	1
Benzene	ND		1.0	0.24	ug/L			08/30/23 00:36	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			08/30/23 00:36	1
Trichloroethene	ND		1.0	0.26	ug/L			08/30/23 00:36	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			08/30/23 00:36	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			08/30/23 00:36	1
Dibromomethane	ND		1.0	0.34	ug/L			08/30/23 00:36	1
Bromodichloromethane	ND		1.0	0.29	ug/L			08/30/23 00:36	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			08/30/23 00:36	1
Toluene	ND		1.0	0.39	ug/L			08/30/23 00:36	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			08/30/23 00:36	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			08/30/23 00:36	1
Tetrachloroethene	ND		1.0	0.41	ug/L			08/30/23 00:36	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			08/30/23 00:36	1
Dibromochloromethane	ND		1.0	0.43	ug/L			08/30/23 00:36	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			08/30/23 00:36	1
Chlorobenzene	ND		1.0	0.44	ug/L			08/30/23 00:36	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			08/30/23 00:36	1
Ethylbenzene	ND		1.0	0.50	ug/L			08/30/23 00:36	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			08/30/23 00:36	1
o-Xylene	ND		1.0	0.39	ug/L			08/30/23 00:36	1
Styrene	ND		1.0	0.53	ug/L			08/30/23 00:36	1
Bromoform	ND		1.0	0.51	ug/L			08/30/23 00:36	1
Isopropylbenzene	ND		1.0	0.44	ug/L			08/30/23 00:36	1
Bromobenzene	ND		1.0	0.43	ug/L			08/30/23 00:36	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			08/30/23 00:36	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			08/30/23 00:36	1
N-Propylbenzene	ND		1.0	0.50	ug/L			08/30/23 00:36	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			08/30/23 00:36	1

Client: ERM-West
Job ID: 580-130869-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-22d-082323
Lab Sample ID: 580-130869-2
Date Collected: 08/23/23 08:18
Matrix: Water
Date Received: 08/24/23 12:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		1.0	0.38	ug/L			08/30/23 00:36	1
t-Butylbenzene	ND		2.0	0.58	ug/L			08/30/23 00:36	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			08/30/23 00:36	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			08/30/23 00:36	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			08/30/23 00:36	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			08/30/23 00:36	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			08/30/23 00:36	1
n-Butylbenzene	ND		1.0	0.44	ug/L			08/30/23 00:36	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			08/30/23 00:36	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			08/30/23 00:36	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			08/30/23 00:36	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			08/30/23 00:36	1
Naphthalene	ND		3.0	0.93	ug/L			08/30/23 00:36	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			08/30/23 00:36	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			08/30/23 00:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/30/23 00:36*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*08/30/23 00:36*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*08/30/23 00:36*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*08/30/23 00:36*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**13000**		4000	2000	ug/L			09/08/23 15:03	1000

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**4800**		1500	430	mg/L			08/29/23 11:11	1000

Client: ERM-West
Job ID: 580-130869-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: MWA-63-082323
Lab Sample ID: 580-130869-3
Date Collected: 08/23/23 09:10
Matrix: Water
Date Received: 08/24/23 12:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.53	ug/L			08/30/23 02:36	1
Chloromethane	ND		1.0	0.28	ug/L			08/30/23 02:36	1
Vinyl chloride	ND		1.0	0.22	ug/L			08/30/23 02:36	1
Bromomethane	ND		1.0	0.21	ug/L			08/30/23 02:36	1
Chloroethane	ND		1.0	0.35	ug/L			08/30/23 02:36	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			08/30/23 02:36	1
Carbon disulfide	ND		1.0	0.53	ug/L			08/30/23 02:36	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			08/30/23 02:36	1
Acetone	ND		15	3.2	ug/L			08/30/23 02:36	1
Methylene Chloride	ND		5.0	1.4	ug/L			08/30/23 02:36	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			08/30/23 02:36	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			08/30/23 02:36	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			08/30/23 02:36	1
2-Butanone (MEK)	ND		15	4.7	ug/L			08/30/23 02:36	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			08/30/23 02:36	1
cis-1,2-Dichloroethene	**2.5**		1.0	0.35	ug/L			08/30/23 02:36	1
Bromochloromethane	ND		1.0	0.29	ug/L			08/30/23 02:36	1
Chloroform	**84**		1.0	0.26	ug/L			08/30/23 02:36	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			08/30/23 02:36	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			08/30/23 02:36	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			08/30/23 02:36	1
Benzene	ND		1.0	0.24	ug/L			08/30/23 02:36	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			08/30/23 02:36	1
Trichloroethene	**2.9**		1.0	0.26	ug/L			08/30/23 02:36	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			08/30/23 02:36	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			08/30/23 02:36	1
Dibromomethane	ND		1.0	0.34	ug/L			08/30/23 02:36	1
Bromodichloromethane	ND		1.0	0.29	ug/L			08/30/23 02:36	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			08/30/23 02:36	1
Toluene	ND		1.0	0.39	ug/L			08/30/23 02:36	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			08/30/23 02:36	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			08/30/23 02:36	1
Tetrachloroethene	**13**		1.0	0.41	ug/L			08/30/23 02:36	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			08/30/23 02:36	1
Dibromochloromethane	ND		1.0	0.43	ug/L			08/30/23 02:36	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			08/30/23 02:36	1
Chlorobenzene	ND		1.0	0.44	ug/L			08/30/23 02:36	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			08/30/23 02:36	1
Ethylbenzene	ND		1.0	0.50	ug/L			08/30/23 02:36	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			08/30/23 02:36	1
o-Xylene	ND		1.0	0.39	ug/L			08/30/23 02:36	1
Styrene	ND		1.0	0.53	ug/L			08/30/23 02:36	1
Bromoform	ND		1.0	0.51	ug/L			08/30/23 02:36	1
Isopropylbenzene	ND		1.0	0.44	ug/L			08/30/23 02:36	1
Bromobenzene	ND		1.0	0.43	ug/L			08/30/23 02:36	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			08/30/23 02:36	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			08/30/23 02:36	1
N-Propylbenzene	ND		1.0	0.50	ug/L			08/30/23 02:36	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			08/30/23 02:36	1

Client Sample ID: MWA-63-082323
Lab Sample ID: 580-130869-3
Date Collected: 08/23/23 09:10
Matrix: Water
Date Received: 08/24/23 12:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		1.0	0.38	ug/L			08/30/23 02:36	1
t-Butylbenzene	ND		2.0	0.58	ug/L			08/30/23 02:36	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			08/30/23 02:36	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			08/30/23 02:36	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			08/30/23 02:36	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			08/30/23 02:36	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			08/30/23 02:36	1
n-Butylbenzene	ND		1.0	0.44	ug/L			08/30/23 02:36	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			08/30/23 02:36	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			08/30/23 02:36	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			08/30/23 02:36	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			08/30/23 02:36	1
Naphthalene	ND		3.0	0.93	ug/L			08/30/23 02:36	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			08/30/23 02:36	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			08/30/23 02:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*		*08/30/23 02:36*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*08/30/23 02:36*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*08/30/23 02:36*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 120*		*08/30/23 02:36*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	2.0	ug/L			09/08/23 15:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**17**		1.5	0.43	mg/L			08/29/23 11:23	1

Client: ERM-West
Job ID: 580-130869-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: RB-02-082323
Lab Sample ID: 580-130869-4
Date Collected: 08/23/23 09:35
Matrix: Water
Date Received: 08/24/23 12:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.53	ug/L			08/29/23 22:59	1
Chloromethane	ND		1.0	0.28	ug/L			08/29/23 22:59	1
Vinyl chloride	ND		1.0	0.22	ug/L			08/29/23 22:59	1
Bromomethane	ND		1.0	0.21	ug/L			08/29/23 22:59	1
Chloroethane	ND		1.0	0.35	ug/L			08/29/23 22:59	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			08/29/23 22:59	1
Carbon disulfide	ND		1.0	0.53	ug/L			08/29/23 22:59	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			08/29/23 22:59	1
Acetone	ND		15	3.2	ug/L			08/29/23 22:59	1
Methylene Chloride	ND		5.0	1.4	ug/L			08/29/23 22:59	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			08/29/23 22:59	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			08/29/23 22:59	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			08/29/23 22:59	1
2-Butanone (MEK)	ND		15	4.7	ug/L			08/29/23 22:59	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			08/29/23 22:59	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			08/29/23 22:59	1
Bromochloromethane	ND		1.0	0.29	ug/L			08/29/23 22:59	1
Chloroform	ND		1.0	0.26	ug/L			08/29/23 22:59	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			08/29/23 22:59	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			08/29/23 22:59	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			08/29/23 22:59	1
Benzene	ND		1.0	0.24	ug/L			08/29/23 22:59	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			08/29/23 22:59	1
Trichloroethene	ND		1.0	0.26	ug/L			08/29/23 22:59	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			08/29/23 22:59	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			08/29/23 22:59	1
Dibromomethane	ND		1.0	0.34	ug/L			08/29/23 22:59	1
Bromodichloromethane	ND		1.0	0.29	ug/L			08/29/23 22:59	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			08/29/23 22:59	1
Toluene	ND		1.0	0.39	ug/L			08/29/23 22:59	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			08/29/23 22:59	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			08/29/23 22:59	1
Tetrachloroethene	ND		1.0	0.41	ug/L			08/29/23 22:59	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			08/29/23 22:59	1
Dibromochloromethane	ND		1.0	0.43	ug/L			08/29/23 22:59	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			08/29/23 22:59	1
Chlorobenzene	ND		1.0	0.44	ug/L			08/29/23 22:59	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			08/29/23 22:59	1
Ethylbenzene	ND		1.0	0.50	ug/L			08/29/23 22:59	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			08/29/23 22:59	1
o-Xylene	ND		1.0	0.39	ug/L			08/29/23 22:59	1
Styrene	ND		1.0	0.53	ug/L			08/29/23 22:59	1
Bromoform	ND		1.0	0.51	ug/L			08/29/23 22:59	1
Isopropylbenzene	ND		1.0	0.44	ug/L			08/29/23 22:59	1
Bromobenzene	ND		1.0	0.43	ug/L			08/29/23 22:59	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			08/29/23 22:59	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			08/29/23 22:59	1
N-Propylbenzene	ND		1.0	0.50	ug/L			08/29/23 22:59	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			08/29/23 22:59	1

Client: ERM-West
Job ID: 580-130869-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: RB-02-082323
Lab Sample ID: 580-130869-4
Date Collected: 08/23/23 09:35
Matrix: Water
Date Received: 08/24/23 12:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		1.0	0.38	ug/L			08/29/23 22:59	1
t-Butylbenzene	ND		2.0	0.58	ug/L			08/29/23 22:59	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			08/29/23 22:59	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			08/29/23 22:59	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			08/29/23 22:59	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			08/29/23 22:59	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			08/29/23 22:59	1
n-Butylbenzene	ND		1.0	0.44	ug/L			08/29/23 22:59	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			08/29/23 22:59	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			08/29/23 22:59	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			08/29/23 22:59	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			08/29/23 22:59	1
Naphthalene	ND		3.0	0.93	ug/L			08/29/23 22:59	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			08/29/23 22:59	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			08/29/23 22:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*		*08/29/23 22:59*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*80 - 120*		*08/29/23 22:59*	*1*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*08/29/23 22:59*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 120*		*08/29/23 22:59*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	2.0	ug/L			09/08/23 15:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	ND		1.5	0.43	mg/L			08/29/23 11:58	1

Client Sample ID: PA-20d-082323
Lab Sample ID: 580-130869-5
Date Collected: 08/23/23 10:17
Matrix: Water
Date Received: 08/24/23 12:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.53	ug/L			08/30/23 01:00	1
Chloromethane	ND		1.0	0.28	ug/L			08/30/23 01:00	1
Vinyl chloride	ND		1.0	0.22	ug/L			08/30/23 01:00	1
Bromomethane	ND		1.0	0.21	ug/L			08/30/23 01:00	1
Chloroethane	ND		1.0	0.35	ug/L			08/30/23 01:00	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			08/30/23 01:00	1
Carbon disulfide	ND		1.0	0.53	ug/L			08/30/23 01:00	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			08/30/23 01:00	1
Acetone	ND		15	3.2	ug/L			08/30/23 01:00	1
Methylene Chloride	ND		5.0	1.4	ug/L			08/30/23 01:00	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			08/30/23 01:00	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			08/30/23 01:00	1
1,1-Dichloroethane	**3.3**		1.0	0.22	ug/L			08/30/23 01:00	1
2-Butanone (MEK)	ND		15	4.7	ug/L			08/30/23 01:00	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			08/30/23 01:00	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			08/30/23 01:00	1
Bromochloromethane	ND		1.0	0.29	ug/L			08/30/23 01:00	1
Chloroform	ND		1.0	0.26	ug/L			08/30/23 01:00	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			08/30/23 01:00	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			08/30/23 01:00	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			08/30/23 01:00	1
Benzene	**4.0**		1.0	0.24	ug/L			08/30/23 01:00	1
1,2-Dichloroethane	**0.59**	**J**	1.0	0.42	ug/L			08/30/23 01:00	1
Trichloroethene	ND		1.0	0.26	ug/L			08/30/23 01:00	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			08/30/23 01:00	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			08/30/23 01:00	1
Dibromomethane	ND		1.0	0.34	ug/L			08/30/23 01:00	1
Bromodichloromethane	ND		1.0	0.29	ug/L			08/30/23 01:00	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			08/30/23 01:00	1
Toluene	ND		1.0	0.39	ug/L			08/30/23 01:00	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			08/30/23 01:00	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			08/30/23 01:00	1
Tetrachloroethene	ND		1.0	0.41	ug/L			08/30/23 01:00	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			08/30/23 01:00	1
Dibromochloromethane	ND		1.0	0.43	ug/L			08/30/23 01:00	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			08/30/23 01:00	1
Chlorobenzene	**20**		1.0	0.44	ug/L			08/30/23 01:00	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			08/30/23 01:00	1
Ethylbenzene	ND		1.0	0.50	ug/L			08/30/23 01:00	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			08/30/23 01:00	1
o-Xylene	ND		1.0	0.39	ug/L			08/30/23 01:00	1
Styrene	ND		1.0	0.53	ug/L			08/30/23 01:00	1
Bromoform	ND		1.0	0.51	ug/L			08/30/23 01:00	1
Isopropylbenzene	ND		1.0	0.44	ug/L			08/30/23 01:00	1
Bromobenzene	ND		1.0	0.43	ug/L			08/30/23 01:00	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			08/30/23 01:00	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			08/30/23 01:00	1
N-Propylbenzene	ND		1.0	0.50	ug/L			08/30/23 01:00	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			08/30/23 01:00	1

Client: ERM-West
Job ID: 580-130869-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-20d-082323
Lab Sample ID: 580-130869-5
Date Collected: 08/23/23 10:17
Matrix: Water
Date Received: 08/24/23 12:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		1.0	0.38	ug/L			08/30/23 01:00	1
t-Butylbenzene	ND		2.0	0.58	ug/L			08/30/23 01:00	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			08/30/23 01:00	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			08/30/23 01:00	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			08/30/23 01:00	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			08/30/23 01:00	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			08/30/23 01:00	1
n-Butylbenzene	ND		1.0	0.44	ug/L			08/30/23 01:00	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			08/30/23 01:00	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			08/30/23 01:00	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			08/30/23 01:00	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			08/30/23 01:00	1
Naphthalene	ND		3.0	0.93	ug/L			08/30/23 01:00	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			08/30/23 01:00	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			08/30/23 01:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*		*08/30/23 01:00*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*08/30/23 01:00*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*08/30/23 01:00*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*08/30/23 01:00*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	10	ug/L			09/08/23 15:56	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**840**		30	8.6	mg/L			08/29/23 12:21	20

Client: ERM-West
Job ID: 580-130869-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: Dup-02-082323
Lab Sample ID: 580-130869-6
Date Collected: 08/23/23 10:18
Matrix: Water
Date Received: 08/24/23 12:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.53	ug/L			08/30/23 01:24	1
Chloromethane	ND		1.0	0.28	ug/L			08/30/23 01:24	1
Vinyl chloride	ND		1.0	0.22	ug/L			08/30/23 01:24	1
Bromomethane	ND		1.0	0.21	ug/L			08/30/23 01:24	1
Chloroethane	ND		1.0	0.35	ug/L			08/30/23 01:24	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			08/30/23 01:24	1
Carbon disulfide	ND		1.0	0.53	ug/L			08/30/23 01:24	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			08/30/23 01:24	1
Acetone	ND		15	3.2	ug/L			08/30/23 01:24	1
Methylene Chloride	ND		5.0	1.4	ug/L			08/30/23 01:24	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			08/30/23 01:24	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			08/30/23 01:24	1
1,1-Dichloroethane	**3.3**		1.0	0.22	ug/L			08/30/23 01:24	1
2-Butanone (MEK)	ND		15	4.7	ug/L			08/30/23 01:24	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			08/30/23 01:24	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			08/30/23 01:24	1
Bromochloromethane	ND		1.0	0.29	ug/L			08/30/23 01:24	1
Chloroform	ND		1.0	0.26	ug/L			08/30/23 01:24	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			08/30/23 01:24	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			08/30/23 01:24	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			08/30/23 01:24	1
Benzene	**4.2**		1.0	0.24	ug/L			08/30/23 01:24	1
1,2-Dichloroethane	**0.50**	**J**	1.0	0.42	ug/L			08/30/23 01:24	1
Trichloroethene	ND		1.0	0.26	ug/L			08/30/23 01:24	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			08/30/23 01:24	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			08/30/23 01:24	1
Dibromomethane	ND		1.0	0.34	ug/L			08/30/23 01:24	1
Bromodichloromethane	ND		1.0	0.29	ug/L			08/30/23 01:24	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			08/30/23 01:24	1
Toluene	ND		1.0	0.39	ug/L			08/30/23 01:24	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			08/30/23 01:24	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			08/30/23 01:24	1
Tetrachloroethene	ND		1.0	0.41	ug/L			08/30/23 01:24	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			08/30/23 01:24	1
Dibromochloromethane	ND		1.0	0.43	ug/L			08/30/23 01:24	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			08/30/23 01:24	1
Chlorobenzene	**22**		1.0	0.44	ug/L			08/30/23 01:24	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			08/30/23 01:24	1
Ethylbenzene	ND		1.0	0.50	ug/L			08/30/23 01:24	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			08/30/23 01:24	1
o-Xylene	ND		1.0	0.39	ug/L			08/30/23 01:24	1
Styrene	ND		1.0	0.53	ug/L			08/30/23 01:24	1
Bromoform	ND		1.0	0.51	ug/L			08/30/23 01:24	1
Isopropylbenzene	ND		1.0	0.44	ug/L			08/30/23 01:24	1
Bromobenzene	ND		1.0	0.43	ug/L			08/30/23 01:24	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			08/30/23 01:24	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			08/30/23 01:24	1
N-Propylbenzene	ND		1.0	0.50	ug/L			08/30/23 01:24	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			08/30/23 01:24	1

Client Sample ID: Dup-02-082323
Lab Sample ID: 580-130869-6
Date Collected: 08/23/23 10:18
Matrix: Water
Date Received: 08/24/23 12:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		1.0	0.38	ug/L			08/30/23 01:24	1
t-Butylbenzene	ND		2.0	0.58	ug/L			08/30/23 01:24	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			08/30/23 01:24	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			08/30/23 01:24	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			08/30/23 01:24	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			08/30/23 01:24	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			08/30/23 01:24	1
n-Butylbenzene	ND		1.0	0.44	ug/L			08/30/23 01:24	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			08/30/23 01:24	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			08/30/23 01:24	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			08/30/23 01:24	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			08/30/23 01:24	1
Naphthalene	ND		3.0	0.93	ug/L			08/30/23 01:24	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			08/30/23 01:24	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			08/30/23 01:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/30/23 01:24*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*08/30/23 01:24*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*08/30/23 01:24*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*08/30/23 01:24*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	10	ug/L			09/08/23 16:14	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**840**		30	8.6	mg/L			08/29/23 12:45	20

Client Sample ID: PA-21d-082323
Lab Sample ID: 580-130869-7

Date Collected: 08/23/23 11:39
Matrix: Water

Date Received: 08/24/23 12:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		500	270	ug/L			08/30/23 05:25	500
Chloromethane	ND		500	140	ug/L			08/30/23 05:25	500
Vinyl chloride	ND		500	110	ug/L			08/30/23 05:25	500
Bromomethane	ND		500	110	ug/L			08/30/23 05:25	500
Chloroethane	ND		500	180	ug/L			08/30/23 05:25	500
Trichlorofluoromethane	ND		500	180	ug/L			08/30/23 05:25	500
Carbon disulfide	ND		500	270	ug/L			08/30/23 05:25	500
1,1-Dichloroethene	ND		500	140	ug/L			08/30/23 05:25	500
Acetone	**2600**	**J**	7500	1600	ug/L			08/30/23 05:25	500
Methylene Chloride	ND		2500	720	ug/L			08/30/23 05:25	500
Methyl tert-butyl ether	ND		500	220	ug/L			08/30/23 05:25	500
trans-1,2-Dichloroethene	ND		500	200	ug/L			08/30/23 05:25	500
1,1-Dichloroethane	ND		500	110	ug/L			08/30/23 05:25	500
2-Butanone (MEK)	ND		7500	2400	ug/L			08/30/23 05:25	500
2,2-Dichloropropane	ND		500	160	ug/L			08/30/23 05:25	500
cis-1,2-Dichloroethene	ND		500	180	ug/L			08/30/23 05:25	500
Bromochloromethane	ND		500	150	ug/L			08/30/23 05:25	500
Chloroform	ND		500	130	ug/L			08/30/23 05:25	500
1,1,1-Trichloroethane	ND		500	200	ug/L			08/30/23 05:25	500
Carbon tetrachloride	ND		500	150	ug/L			08/30/23 05:25	500
1,1-Dichloropropene	ND		500	150	ug/L			08/30/23 05:25	500
Benzene	ND		500	120	ug/L			08/30/23 05:25	500
1,2-Dichloroethane	ND		500	210	ug/L			08/30/23 05:25	500
Trichloroethene	ND		500	130	ug/L			08/30/23 05:25	500
1,2-Dichloropropane	ND		500	90	ug/L			08/30/23 05:25	500
4-Methyl-2-pentanone (MIBK)	ND		2500	1300	ug/L			08/30/23 05:25	500
Dibromomethane	ND		500	170	ug/L			08/30/23 05:25	500
Bromodichloromethane	ND		500	150	ug/L			08/30/23 05:25	500
cis-1,3-Dichloropropene	ND		500	210	ug/L			08/30/23 05:25	500
Toluene	ND		500	200	ug/L			08/30/23 05:25	500
trans-1,3-Dichloropropene	ND		500	210	ug/L			08/30/23 05:25	500
1,1,2-Trichloroethane	ND		500	120	ug/L			08/30/23 05:25	500
Tetrachloroethene	ND		500	210	ug/L			08/30/23 05:25	500
1,3-Dichloropropane	ND		500	180	ug/L			08/30/23 05:25	500
Dibromochloromethane	ND		500	220	ug/L			08/30/23 05:25	500
1,2-Dibromoethane	ND		500	200	ug/L			08/30/23 05:25	500
Chlorobenzene	**26000**		500	220	ug/L			08/30/23 05:25	500
1,1,1,2-Tetrachloroethane	ND		500	90	ug/L			08/30/23 05:25	500
Ethylbenzene	ND		500	250	ug/L			08/30/23 05:25	500
m-Xylene & p-Xylene	ND		1000	270	ug/L			08/30/23 05:25	500
o-Xylene	ND		500	200	ug/L			08/30/23 05:25	500
Styrene	ND		500	270	ug/L			08/30/23 05:25	500
Bromoform	ND		500	260	ug/L			08/30/23 05:25	500
Isopropylbenzene	ND		500	220	ug/L			08/30/23 05:25	500
Bromobenzene	ND		500	220	ug/L			08/30/23 05:25	500
1,1,2,2-Tetrachloroethane	ND		500	260	ug/L			08/30/23 05:25	500
1,2,3-Trichloropropane	ND		500	210	ug/L			08/30/23 05:25	500
N-Propylbenzene	ND		500	250	ug/L			08/30/23 05:25	500
2-Chlorotoluene	ND		500	260	ug/L			08/30/23 05:25	500

Client: ERM-West
Job ID: 580-130869-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: PA-21d-082323
Lab Sample ID: 580-130869-7
Date Collected: 08/23/23 11:39
Matrix: Water
Date Received: 08/24/23 12:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		500	190	ug/L			08/30/23 05:25	500
t-Butylbenzene	ND		1000	290	ug/L			08/30/23 05:25	500
1,2,4-Trimethylbenzene	ND		1500	310	ug/L			08/30/23 05:25	500
sec-Butylbenzene	ND		500	250	ug/L			08/30/23 05:25	500
4-Isopropyltoluene	ND		500	140	ug/L			08/30/23 05:25	500
1,3-Dichlorobenzene	ND		500	240	ug/L			08/30/23 05:25	500
1,4-Dichlorobenzene	ND		500	230	ug/L			08/30/23 05:25	500
n-Butylbenzene	ND		500	220	ug/L			08/30/23 05:25	500
1,2-Dichlorobenzene	ND		500	230	ug/L			08/30/23 05:25	500
1,2-Dibromo-3-Chloropropane	ND		1500	290	ug/L			08/30/23 05:25	500
1,2,4-Trichlorobenzene	ND		500	170	ug/L			08/30/23 05:25	500
Hexachlorobutadiene	ND		1500	400	ug/L			08/30/23 05:25	500
Naphthalene	ND		1500	470	ug/L			08/30/23 05:25	500
1,2,3-Trichlorobenzene	ND		1000	220	ug/L			08/30/23 05:25	500
1,3,5-Trimethylbenzene	ND		500	280	ug/L			08/30/23 05:25	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*		*08/30/23 05:25*	*500*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*08/30/23 05:25*	*500*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*08/30/23 05:25*	*500*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*08/30/23 05:25*	*500*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		200	100	ug/L			09/08/23 16:32	50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**330**		15	4.3	mg/L			08/29/23 13:08	10

Client: ERM-West
Job ID: 580-130869-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: MWA-56d-082323
Lab Sample ID: 580-130869-8
Date Collected: 08/23/23 10:44
Matrix: Water
Date Received: 08/24/23 12:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		10	5.3	ug/L			08/30/23 04:13	10
Chloromethane	ND		10	2.8	ug/L			08/30/23 04:13	10
Vinyl chloride	ND		10	2.2	ug/L			08/30/23 04:13	10
Bromomethane	ND		10	2.1	ug/L			08/30/23 04:13	10
Chloroethane	ND		10	3.5	ug/L			08/30/23 04:13	10
Trichlorofluoromethane	ND		10	3.6	ug/L			08/30/23 04:13	10
Carbon disulfide	ND		10	5.3	ug/L			08/30/23 04:13	10
1,1-Dichloroethene	ND		10	2.8	ug/L			08/30/23 04:13	10
Acetone	**51**	**J**	150	32	ug/L			08/30/23 04:13	10
Methylene Chloride	ND		50	14	ug/L			08/30/23 04:13	10
Methyl tert-butyl ether	ND		10	4.4	ug/L			08/30/23 04:13	10
trans-1,2-Dichloroethene	ND		10	3.9	ug/L			08/30/23 04:13	10
1,1-Dichloroethane	ND		10	2.2	ug/L			08/30/23 04:13	10
2-Butanone (MEK)	ND		150	47	ug/L			08/30/23 04:13	10
2,2-Dichloropropane	ND		10	3.2	ug/L			08/30/23 04:13	10
cis-1,2-Dichloroethene	ND		10	3.5	ug/L			08/30/23 04:13	10
Bromochloromethane	ND		10	2.9	ug/L			08/30/23 04:13	10
Chloroform	**150**		10	2.6	ug/L			08/30/23 04:13	10
1,1,1-Trichloroethane	ND		10	3.9	ug/L			08/30/23 04:13	10
Carbon tetrachloride	ND		10	3.0	ug/L			08/30/23 04:13	10
1,1-Dichloropropene	ND		10	2.9	ug/L			08/30/23 04:13	10
Benzene	ND		10	2.4	ug/L			08/30/23 04:13	10
1,2-Dichloroethane	ND		10	4.2	ug/L			08/30/23 04:13	10
Trichloroethene	ND		10	2.6	ug/L			08/30/23 04:13	10
1,2-Dichloropropane	ND		10	1.8	ug/L			08/30/23 04:13	10
4-Methyl-2-pentanone (MIBK)	ND		50	25	ug/L			08/30/23 04:13	10
Dibromomethane	ND		10	3.4	ug/L			08/30/23 04:13	10
Bromodichloromethane	ND		10	2.9	ug/L			08/30/23 04:13	10
cis-1,3-Dichloropropene	ND		10	4.2	ug/L			08/30/23 04:13	10
Toluene	ND		10	3.9	ug/L			08/30/23 04:13	10
trans-1,3-Dichloropropene	ND		10	4.1	ug/L			08/30/23 04:13	10
1,1,2-Trichloroethane	ND		10	2.4	ug/L			08/30/23 04:13	10
Tetrachloroethene	ND		10	4.1	ug/L			08/30/23 04:13	10
1,3-Dichloropropane	ND		10	3.5	ug/L			08/30/23 04:13	10
Dibromochloromethane	ND		10	4.3	ug/L			08/30/23 04:13	10
1,2-Dibromoethane	ND		10	4.0	ug/L			08/30/23 04:13	10
Chlorobenzene	ND		10	4.4	ug/L			08/30/23 04:13	10
1,1,1,2-Tetrachloroethane	ND		10	1.8	ug/L			08/30/23 04:13	10
Ethylbenzene	ND		10	5.0	ug/L			08/30/23 04:13	10
m-Xylene & p-Xylene	ND		20	5.3	ug/L			08/30/23 04:13	10
o-Xylene	ND		10	3.9	ug/L			08/30/23 04:13	10
Styrene	ND		10	5.3	ug/L			08/30/23 04:13	10
Bromoform	ND		10	5.1	ug/L			08/30/23 04:13	10
Isopropylbenzene	ND		10	4.4	ug/L			08/30/23 04:13	10
Bromobenzene	ND		10	4.3	ug/L			08/30/23 04:13	10
1,1,2,2-Tetrachloroethane	ND		10	5.2	ug/L			08/30/23 04:13	10
1,2,3-Trichloropropane	ND		10	4.1	ug/L			08/30/23 04:13	10
N-Propylbenzene	ND		10	5.0	ug/L			08/30/23 04:13	10
2-Chlorotoluene	ND		10	5.1	ug/L			08/30/23 04:13	10

Client: ERM-West
Job ID: 580-130869-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: MWA-56d-082323
Lab Sample ID: 580-130869-8
Date Collected: 08/23/23 10:44
Matrix: Water
Date Received: 08/24/23 12:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		10	3.8	ug/L			08/30/23 04:13	10
t-Butylbenzene	ND		20	5.8	ug/L			08/30/23 04:13	10
1,2,4-Trimethylbenzene	ND		30	6.1	ug/L			08/30/23 04:13	10
sec-Butylbenzene	ND		10	4.9	ug/L			08/30/23 04:13	10
4-Isopropyltoluene	ND		10	2.8	ug/L			08/30/23 04:13	10
1,3-Dichlorobenzene	ND		10	4.8	ug/L			08/30/23 04:13	10
1,4-Dichlorobenzene	ND		10	4.6	ug/L			08/30/23 04:13	10
n-Butylbenzene	ND		10	4.4	ug/L			08/30/23 04:13	10
1,2-Dichlorobenzene	ND		10	4.6	ug/L			08/30/23 04:13	10
1,2-Dibromo-3-Chloropropane	ND		30	5.7	ug/L			08/30/23 04:13	10
1,2,4-Trichlorobenzene	ND		10	3.3	ug/L			08/30/23 04:13	10
Hexachlorobutadiene	ND		30	7.9	ug/L			08/30/23 04:13	10
Naphthalene	ND		30	9.3	ug/L			08/30/23 04:13	10
1,2,3-Trichlorobenzene	ND		20	4.3	ug/L			08/30/23 04:13	10
1,3,5-Trimethylbenzene	ND		10	5.5	ug/L			08/30/23 04:13	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*		*08/30/23 04:13*	*10*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*08/30/23 04:13*	*10*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*08/30/23 04:13*	*10*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*08/30/23 04:13*	*10*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**14000**		4000	2000	ug/L			09/08/23 18:19	1000

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**14000**		1500	430	mg/L			08/29/23 13:20	1000

Client Sample ID: MWA-31i(d)-082323
Lab Sample ID: 580-130869-9
Date Collected: 08/23/23 07:55
Matrix: Water
Date Received: 08/24/23 12:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.53	ug/L			08/30/23 01:48	1
Chloromethane	ND		1.0	0.28	ug/L			08/30/23 01:48	1
Vinyl chloride	ND		1.0	0.22	ug/L			08/30/23 01:48	1
Bromomethane	ND		1.0	0.21	ug/L			08/30/23 01:48	1
Chloroethane	ND		1.0	0.35	ug/L			08/30/23 01:48	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			08/30/23 01:48	1
Carbon disulfide	**0.54**	**J**	1.0	0.53	ug/L			08/30/23 01:48	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			08/30/23 01:48	1
Acetone	ND		15	3.2	ug/L			08/30/23 01:48	1
Methylene Chloride	ND		5.0	1.4	ug/L			08/30/23 01:48	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			08/30/23 01:48	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			08/30/23 01:48	1
1,1-Dichloroethane	**0.39**	**J**	1.0	0.22	ug/L			08/30/23 01:48	1
2-Butanone (MEK)	ND		15	4.7	ug/L			08/30/23 01:48	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			08/30/23 01:48	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			08/30/23 01:48	1
Bromochloromethane	ND		1.0	0.29	ug/L			08/30/23 01:48	1
Chloroform	**76**		1.0	0.26	ug/L			08/30/23 01:48	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			08/30/23 01:48	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			08/30/23 01:48	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			08/30/23 01:48	1
Benzene	ND		1.0	0.24	ug/L			08/30/23 01:48	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			08/30/23 01:48	1
Trichloroethene	ND		1.0	0.26	ug/L			08/30/23 01:48	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			08/30/23 01:48	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			08/30/23 01:48	1
Dibromomethane	ND		1.0	0.34	ug/L			08/30/23 01:48	1
Bromodichloromethane	**0.41**	**J**	1.0	0.29	ug/L			08/30/23 01:48	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			08/30/23 01:48	1
Toluene	ND		1.0	0.39	ug/L			08/30/23 01:48	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			08/30/23 01:48	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			08/30/23 01:48	1
Tetrachloroethene	ND		1.0	0.41	ug/L			08/30/23 01:48	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			08/30/23 01:48	1
Dibromochloromethane	ND		1.0	0.43	ug/L			08/30/23 01:48	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			08/30/23 01:48	1
Chlorobenzene	ND		1.0	0.44	ug/L			08/30/23 01:48	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			08/30/23 01:48	1
Ethylbenzene	ND		1.0	0.50	ug/L			08/30/23 01:48	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			08/30/23 01:48	1
o-Xylene	ND		1.0	0.39	ug/L			08/30/23 01:48	1
Styrene	ND		1.0	0.53	ug/L			08/30/23 01:48	1
Bromoform	ND		1.0	0.51	ug/L			08/30/23 01:48	1
Isopropylbenzene	ND		1.0	0.44	ug/L			08/30/23 01:48	1
Bromobenzene	ND		1.0	0.43	ug/L			08/30/23 01:48	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			08/30/23 01:48	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			08/30/23 01:48	1
N-Propylbenzene	ND		1.0	0.50	ug/L			08/30/23 01:48	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			08/30/23 01:48	1

Client: ERM-West
Job ID: 580-130869-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: MWA-31i(d)-082323
Lab Sample ID: 580-130869-9
Date Collected: 08/23/23 07:55
Matrix: Water
Date Received: 08/24/23 12:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		1.0	0.38	ug/L			08/30/23 01:48	1
t-Butylbenzene	ND		2.0	0.58	ug/L			08/30/23 01:48	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			08/30/23 01:48	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			08/30/23 01:48	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			08/30/23 01:48	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			08/30/23 01:48	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			08/30/23 01:48	1
n-Butylbenzene	ND		1.0	0.44	ug/L			08/30/23 01:48	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			08/30/23 01:48	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			08/30/23 01:48	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			08/30/23 01:48	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			08/30/23 01:48	1
Naphthalene	ND		3.0	0.93	ug/L			08/30/23 01:48	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			08/30/23 01:48	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			08/30/23 01:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*		*08/30/23 01:48*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*08/30/23 01:48*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*08/30/23 01:48*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*08/30/23 01:48*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**98000**		8000	4000	ug/L			09/08/23 16:50	2000

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**27000**		1500	430	mg/L			08/29/23 14:18	1000

Client Sample ID: MWA-58d-082323
Lab Sample ID: 580-130869-10
Date Collected: 08/23/23 09:12
Matrix: Water
Date Received: 08/24/23 12:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		5.0	2.7	ug/L			08/30/23 03:25	5
Chloromethane	ND		5.0	1.4	ug/L			08/30/23 03:25	5
Vinyl chloride	ND		5.0	1.1	ug/L			08/30/23 03:25	5
Bromomethane	ND		5.0	1.1	ug/L			08/30/23 03:25	5
Chloroethane	ND		5.0	1.8	ug/L			08/30/23 03:25	5
Trichlorofluoromethane	ND		5.0	1.8	ug/L			08/30/23 03:25	5
Carbon disulfide	ND		5.0	2.7	ug/L			08/30/23 03:25	5
1,1-Dichloroethene	ND		5.0	1.4	ug/L			08/30/23 03:25	5
Acetone	**26**	**J**	75	16	ug/L			08/30/23 03:25	5
Methylene Chloride	ND		25	7.2	ug/L			08/30/23 03:25	5
Methyl tert-butyl ether	ND		5.0	2.2	ug/L			08/30/23 03:25	5
trans-1,2-Dichloroethene	ND		5.0	2.0	ug/L			08/30/23 03:25	5
1,1-Dichloroethane	ND		5.0	1.1	ug/L			08/30/23 03:25	5
2-Butanone (MEK)	ND		75	24	ug/L			08/30/23 03:25	5
2,2-Dichloropropane	ND		5.0	1.6	ug/L			08/30/23 03:25	5
cis-1,2-Dichloroethene	ND		5.0	1.8	ug/L			08/30/23 03:25	5
Bromochloromethane	ND		5.0	1.5	ug/L			08/30/23 03:25	5
Chloroform	**160**		5.0	1.3	ug/L			08/30/23 03:25	5
1,1,1-Trichloroethane	ND		5.0	2.0	ug/L			08/30/23 03:25	5
Carbon tetrachloride	ND		5.0	1.5	ug/L			08/30/23 03:25	5
1,1-Dichloropropene	ND		5.0	1.5	ug/L			08/30/23 03:25	5
Benzene	ND		5.0	1.2	ug/L			08/30/23 03:25	5
1,2-Dichloroethane	ND		5.0	2.1	ug/L			08/30/23 03:25	5
Trichloroethene	ND		5.0	1.3	ug/L			08/30/23 03:25	5
1,2-Dichloropropane	ND		5.0	0.90	ug/L			08/30/23 03:25	5
4-Methyl-2-pentanone (MIBK)	ND		25	13	ug/L			08/30/23 03:25	5
Dibromomethane	ND		5.0	1.7	ug/L			08/30/23 03:25	5
Bromodichloromethane	ND		5.0	1.5	ug/L			08/30/23 03:25	5
cis-1,3-Dichloropropene	ND		5.0	2.1	ug/L			08/30/23 03:25	5
Toluene	ND		5.0	2.0	ug/L			08/30/23 03:25	5
trans-1,3-Dichloropropene	ND		5.0	2.1	ug/L			08/30/23 03:25	5
1,1,2-Trichloroethane	ND		5.0	1.2	ug/L			08/30/23 03:25	5
Tetrachloroethene	ND		5.0	2.1	ug/L			08/30/23 03:25	5
1,3-Dichloropropane	ND		5.0	1.8	ug/L			08/30/23 03:25	5
Dibromochloromethane	ND		5.0	2.2	ug/L			08/30/23 03:25	5
1,2-Dibromoethane	ND		5.0	2.0	ug/L			08/30/23 03:25	5
Chlorobenzene	ND		5.0	2.2	ug/L			08/30/23 03:25	5
1,1,1,2-Tetrachloroethane	ND		5.0	0.90	ug/L			08/30/23 03:25	5
Ethylbenzene	ND		5.0	2.5	ug/L			08/30/23 03:25	5
m-Xylene & p-Xylene	ND		10	2.7	ug/L			08/30/23 03:25	5
o-Xylene	ND		5.0	2.0	ug/L			08/30/23 03:25	5
Styrene	ND		5.0	2.7	ug/L			08/30/23 03:25	5
Bromoform	ND		5.0	2.6	ug/L			08/30/23 03:25	5
Isopropylbenzene	ND		5.0	2.2	ug/L			08/30/23 03:25	5
Bromobenzene	ND		5.0	2.2	ug/L			08/30/23 03:25	5
1,1,2,2-Tetrachloroethane	ND		5.0	2.6	ug/L			08/30/23 03:25	5
1,2,3-Trichloropropane	ND		5.0	2.1	ug/L			08/30/23 03:25	5
N-Propylbenzene	ND		5.0	2.5	ug/L			08/30/23 03:25	5
2-Chlorotoluene	ND		5.0	2.6	ug/L			08/30/23 03:25	5

Client: ERM-West
Job ID: 580-130869-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: MWA-58d-082323
Lab Sample ID: 580-130869-10
Date Collected: 08/23/23 09:12
Matrix: Water
Date Received: 08/24/23 12:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		5.0	1.9	ug/L			08/30/23 03:25	5
t-Butylbenzene	ND		10	2.9	ug/L			08/30/23 03:25	5
1,2,4-Trimethylbenzene	ND		15	3.1	ug/L			08/30/23 03:25	5
sec-Butylbenzene	ND		5.0	2.5	ug/L			08/30/23 03:25	5
4-Isopropyltoluene	ND		5.0	1.4	ug/L			08/30/23 03:25	5
1,3-Dichlorobenzene	ND		5.0	2.4	ug/L			08/30/23 03:25	5
1,4-Dichlorobenzene	ND		5.0	2.3	ug/L			08/30/23 03:25	5
n-Butylbenzene	ND		5.0	2.2	ug/L			08/30/23 03:25	5
1,2-Dichlorobenzene	ND		5.0	2.3	ug/L			08/30/23 03:25	5
1,2-Dibromo-3-Chloropropane	ND		15	2.9	ug/L			08/30/23 03:25	5
1,2,4-Trichlorobenzene	ND		5.0	1.7	ug/L			08/30/23 03:25	5
Hexachlorobutadiene	ND		15	4.0	ug/L			08/30/23 03:25	5
Naphthalene	ND		15	4.7	ug/L			08/30/23 03:25	5
1,2,3-Trichlorobenzene	ND		10	2.2	ug/L			08/30/23 03:25	5
1,3,5-Trimethylbenzene	ND		5.0	2.8	ug/L			08/30/23 03:25	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*80 - 120*		*08/30/23 03:25*	*5*
1,2-Dichloroethane-d4 (Surr)	*109*		*80 - 120*		*08/30/23 03:25*	*5*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*08/30/23 03:25*	*5*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*08/30/23 03:25*	*5*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**50000**		4000	2000	ug/L			09/08/23 17:08	1000

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**20000**		1500	430	mg/L			08/29/23 14:30	1000

Client: ERM-West
Job ID: 580-130869-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: MW-11i(d)-082323
Lab Sample ID: 580-130869-11
Date Collected: 08/23/23 12:38
Matrix: Water
Date Received: 08/24/23 12:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			08/28/23 13:11	1
Chloromethane	ND		0.50	0.14	ug/L			08/28/23 13:11	1
Vinyl chloride	ND		0.10	0.040	ug/L			08/28/23 13:11	1
Bromomethane	ND		0.50	0.13	ug/L			08/28/23 13:11	1
Chloroethane	ND		0.50	0.096	ug/L			08/28/23 13:11	1
Carbon disulfide	ND		0.30	0.083	ug/L			08/28/23 13:11	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			08/28/23 13:11	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			08/28/23 13:11	1
Acetone	ND		10	3.1	ug/L			08/28/23 13:11	1
Methylene Chloride	ND		5.0	1.2	ug/L			08/28/23 13:11	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			08/28/23 13:11	1
2-Butanone (MEK)	ND		10	2.5	ug/L			08/28/23 13:11	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			08/28/23 13:11	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			08/28/23 13:11	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			08/28/23 13:11	1
cis-1,2-Dichloroethene	**0.25**		0.20	0.055	ug/L			08/28/23 13:11	1
Chlorobromomethane	ND		0.20	0.050	ug/L			08/28/23 13:11	1
Chloroform	ND		0.20	0.030	ug/L			08/28/23 13:11	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			08/28/23 13:11	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			08/28/23 13:11	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			08/28/23 13:11	1
Benzene	ND		0.20	0.030	ug/L			08/28/23 13:11	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			08/28/23 13:11	1
Trichloroethene	ND		0.20	0.066	ug/L			08/28/23 13:11	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			08/28/23 13:11	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			08/28/23 13:11	1
Dibromomethane	ND		0.20	0.062	ug/L			08/28/23 13:11	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			08/28/23 13:11	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			08/28/23 13:11	1
Toluene	ND		0.20	0.050	ug/L			08/28/23 13:11	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			08/28/23 13:11	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			08/28/23 13:11	1
Tetrachloroethene	ND		0.24	0.084	ug/L			08/28/23 13:11	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			08/28/23 13:11	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			08/28/23 13:11	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			08/28/23 13:11	1
Chlorobenzene	ND		0.20	0.060	ug/L			08/28/23 13:11	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			08/28/23 13:11	1
Ethylbenzene	ND		0.20	0.030	ug/L			08/28/23 13:11	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			08/28/23 13:11	1
o-Xylene	ND		0.50	0.15	ug/L			08/28/23 13:11	1
Styrene	ND		1.0	0.19	ug/L			08/28/23 13:11	1
Bromoform	ND		0.50	0.16	ug/L			08/28/23 13:11	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/28/23 13:11	1
Bromobenzene	ND		0.20	0.038	ug/L			08/28/23 13:11	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			08/28/23 13:11	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			08/28/23 13:11	1
N-Propylbenzene	ND		0.30	0.091	ug/L			08/28/23 13:11	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			08/28/23 13:11	1

Client: ERM-West
Job ID: 580-130869-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: MW-11i(d)-082323
Lab Sample ID: 580-130869-11
Date Collected: 08/23/23 12:38
Matrix: Water
Date Received: 08/24/23 12:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		0.30	0.12	ug/L			08/28/23 13:11	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			08/28/23 13:11	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			08/28/23 13:11	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			08/28/23 13:11	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			08/28/23 13:11	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			08/28/23 13:11	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			08/28/23 13:11	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			08/28/23 13:11	1
n-Butylbenzene	ND		1.0	0.23	ug/L			08/28/23 13:11	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			08/28/23 13:11	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			08/28/23 13:11	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			08/28/23 13:11	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			08/28/23 13:11	1
Naphthalene	ND		1.0	0.22	ug/L			08/28/23 13:11	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			08/28/23 13:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*86*		*80 - 120*		*08/28/23 13:11*	*1*
Dibromofluoromethane (Surr)	*119*		*80 - 120*		*08/28/23 13:11*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*08/28/23 13:11*	*1*
1,2-Dichloroethane-d4 (Surr)	*118*		*80 - 120*		*08/28/23 13:11*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	10	ug/L			09/08/23 17:26	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**830**		150	43	mg/L			08/29/23 14:42	100

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

Lab Sample ID: MB 580-435936/7
Matrix: Water
Analysis Batch: 435936

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			08/28/23 11:22	1
Chloromethane	ND		0.50	0.14	ug/L			08/28/23 11:22	1
Vinyl chloride	ND		0.10	0.040	ug/L			08/28/23 11:22	1
Bromomethane	ND		0.50	0.13	ug/L			08/28/23 11:22	1
Chloroethane	ND		0.50	0.096	ug/L			08/28/23 11:22	1
Carbon disulfide	ND		0.30	0.083	ug/L			08/28/23 11:22	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			08/28/23 11:22	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			08/28/23 11:22	1
Acetone	ND		10	3.1	ug/L			08/28/23 11:22	1
Methylene Chloride	ND		5.0	1.2	ug/L			08/28/23 11:22	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			08/28/23 11:22	1
2-Butanone (MEK)	ND		10	2.5	ug/L			08/28/23 11:22	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			08/28/23 11:22	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			08/28/23 11:22	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			08/28/23 11:22	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			08/28/23 11:22	1
Chlorobromomethane	ND		0.20	0.050	ug/L			08/28/23 11:22	1
Chloroform	ND		0.20	0.030	ug/L			08/28/23 11:22	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			08/28/23 11:22	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			08/28/23 11:22	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			08/28/23 11:22	1
Benzene	ND		0.20	0.030	ug/L			08/28/23 11:22	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			08/28/23 11:22	1
Trichloroethene	ND		0.20	0.066	ug/L			08/28/23 11:22	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			08/28/23 11:22	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			08/28/23 11:22	1
Dibromomethane	ND		0.20	0.062	ug/L			08/28/23 11:22	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			08/28/23 11:22	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			08/28/23 11:22	1
Toluene	ND		0.20	0.050	ug/L			08/28/23 11:22	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			08/28/23 11:22	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			08/28/23 11:22	1
Tetrachloroethene	ND		0.24	0.084	ug/L			08/28/23 11:22	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			08/28/23 11:22	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			08/28/23 11:22	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			08/28/23 11:22	1
Chlorobenzene	ND		0.20	0.060	ug/L			08/28/23 11:22	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			08/28/23 11:22	1
Ethylbenzene	ND		0.20	0.030	ug/L			08/28/23 11:22	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			08/28/23 11:22	1
o-Xylene	ND		0.50	0.15	ug/L			08/28/23 11:22	1
Styrene	ND		1.0	0.19	ug/L			08/28/23 11:22	1
Bromoform	ND		0.50	0.16	ug/L			08/28/23 11:22	1
Isopropylbenzene	ND		1.0	0.19	ug/L			08/28/23 11:22	1
Bromobenzene	ND		0.20	0.038	ug/L			08/28/23 11:22	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			08/28/23 11:22	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			08/28/23 11:22	1
N-Propylbenzene	ND		0.30	0.091	ug/L			08/28/23 11:22	1

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

Lab Sample ID: MB 580-435936/7
Matrix: Water
Analysis Batch: 435936

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorotoluene	ND		0.50	0.12	ug/L			08/28/23 11:22	1
4-Chlorotoluene	ND		0.30	0.12	ug/L			08/28/23 11:22	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			08/28/23 11:22	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			08/28/23 11:22	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			08/28/23 11:22	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			08/28/23 11:22	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			08/28/23 11:22	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			08/28/23 11:22	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			08/28/23 11:22	1
n-Butylbenzene	ND		1.0	0.23	ug/L			08/28/23 11:22	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			08/28/23 11:22	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			08/28/23 11:22	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			08/28/23 11:22	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			08/28/23 11:22	1
Naphthalene	ND		1.0	0.22	ug/L			08/28/23 11:22	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			08/28/23 11:22	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*89*		*80 - 120*		*08/28/23 11:22*	*1*
Dibromofluoromethane (Surr)	*112*		*80 - 120*		*08/28/23 11:22*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*08/28/23 11:22*	*1*
1,2-Dichloroethane-d4 (Surr)	*113*		*80 - 120*		*08/28/23 11:22*	*1*

Lab Sample ID: LCS 580-435936/4
Matrix: Water
Analysis Batch: 435936

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Dichlorodifluoromethane	5.00	5.50		ug/L		110	20 - 150
Chloromethane	5.00	5.29		ug/L		106	32 - 150
Vinyl chloride	5.00	5.18		ug/L		104	41 - 150
Bromomethane	5.00	4.76		ug/L		95	51 - 148
Chloroethane	5.00	5.14		ug/L		103	54 - 140
Carbon disulfide	5.00	5.08		ug/L		102	54 - 142
Trichlorofluoromethane	5.00	5.04		ug/L		101	60 - 132
1,1-Dichloroethene	5.00	4.88		ug/L		98	60 - 129
Acetone	25.0	27.1		ug/L		108	49 - 150
Methylene Chloride	5.00	5.04		ug/L		101	40 - 142
Methyl tert-butyl ether	5.00	4.99		ug/L		100	61 - 131
2-Butanone (MEK)	25.0	25.8		ug/L		103	37 - 150
trans-1,2-Dichloroethene	5.00	5.26		ug/L		105	69 - 121
1,1-Dichloroethane	5.00	5.28		ug/L		106	74 - 120
2,2-Dichloropropane	5.00	5.45		ug/L		109	55 - 140
cis-1,2-Dichloroethene	5.00	5.33		ug/L		107	72 - 120
Chlorobromomethane	5.00	5.14		ug/L		103	79 - 121
Chloroform	5.00	5.31		ug/L		106	75 - 120
1,1,1-Trichloroethane	5.00	5.42		ug/L		108	70 - 121
Carbon tetrachloride	5.00	4.99		ug/L		100	66 - 130

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

Lab Sample ID: LCS 580-435936/4
Matrix: Water
Analysis Batch: 435936

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloropropene	5.00	5.24		ug/L		105	72 - 125
Benzene	5.00	5.20		ug/L		104	80 - 120
1,2-Dichloroethane	5.00	5.15		ug/L		103	74 - 127
Trichloroethene	5.00	5.13		ug/L		103	72 - 120
1,2-Dichloropropane	5.00	5.44		ug/L		109	69 - 130
4-Methyl-2-pentanone (MIBK)	25.0	20.1		ug/L		80	63 - 137
Dibromomethane	5.00	5.09		ug/L		102	65 - 141
Dichlorobromomethane	5.00	5.23		ug/L		105	74 - 131
cis-1,3-Dichloropropene	5.00	4.41		ug/L		88	77 - 131
Toluene	5.00	4.33		ug/L		87	80 - 126
trans-1,3-Dichloropropene	5.00	4.49		ug/L		90	71 - 138
1,1,2-Trichloroethane	5.00	4.30		ug/L		86	73 - 127
Tetrachloroethene	5.00	4.10		ug/L		82	75 - 124
1,3-Dichloropropane	5.00	4.30		ug/L		86	69 - 138
Chlorodibromomethane	5.00	4.34		ug/L		87	62 - 141
Ethylene Dibromide	5.00	4.42		ug/L		88	61 - 143
Chlorobenzene	5.00	4.25		ug/L		85	74 - 123
1,1,1,2-Tetrachloroethane	5.00	4.35		ug/L		87	69 - 127
Ethylbenzene	5.00	4.46		ug/L		89	80 - 124
m-Xylene & p-Xylene	5.00	4.46		ug/L		89	75 - 124
o-Xylene	5.00	4.44		ug/L		89	71 - 124
Styrene	5.00	4.47		ug/L		89	74 - 127
Bromoform	5.00	4.24		ug/L		85	48 - 127
Isopropylbenzene	5.00	4.43		ug/L		89	71 - 123
Bromobenzene	5.00	4.28		ug/L		86	74 - 130
1,1,2,2-Tetrachloroethane	5.00	4.12		ug/L		82	67 - 136
1,2,3-Trichloropropane	5.00	4.07		ug/L		81	67 - 135
N-Propylbenzene	5.00	4.38		ug/L		88	72 - 126
2-Chlorotoluene	5.00	4.42		ug/L		88	73 - 120
4-Chlorotoluene	5.00	4.58		ug/L		92	75 - 124
1,3,5-Trimethylbenzene	5.00	4.44		ug/L		89	75 - 123
tert-Butylbenzene	5.00	4.25		ug/L		85	70 - 129
1,2,4-Trimethylbenzene	5.00	4.57		ug/L		91	71 - 127
sec-Butylbenzene	5.00	4.49		ug/L		90	75 - 126
4-Isopropyltoluene	5.00	4.42		ug/L		88	78 - 125
1,3-Dichlorobenzene	5.00	4.26		ug/L		85	72 - 125
1,4-Dichlorobenzene	5.00	4.33		ug/L		87	71 - 129
n-Butylbenzene	5.00	4.24		ug/L		85	69 - 127
1,2-Dichlorobenzene	5.00	4.22		ug/L		84	72 - 129
1,2-Dibromo-3-Chloropropane	5.00	4.00		ug/L		80	55 - 135
1,2,4-Trichlorobenzene	5.00	4.09		ug/L		82	60 - 130
Hexachlorobutadiene	5.00	4.02		ug/L		80	63 - 130
Naphthalene	5.00	3.72		ug/L		74	54 - 137
1,2,3-Trichlorobenzene	5.00	4.09		ug/L		82	60 - 136

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*93*		*80 - 120*
Dibromofluoromethane (Surr)	*105*		*80 - 120*

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

Lab Sample ID: LCS 580-435936/4
Matrix: Water
Analysis Batch: 435936

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCSD 580-435936/5
Matrix: Water
Analysis Batch: 435936

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Dichlorodifluoromethane			5.00	5.72		ug/L		114	20 - 150	4	30
Chloromethane			5.00	5.52		ug/L		110	32 - 150	4	33
Vinyl chloride			5.00	5.33		ug/L		107	41 - 150	3	32
Bromomethane			5.00	5.04		ug/L		101	51 - 148	6	35
Chloroethane			5.00	5.27		ug/L		105	54 - 140	3	33
Carbon disulfide			5.00	5.16		ug/L		103	54 - 142	2	34
Trichlorofluoromethane			5.00	5.32		ug/L		106	60 - 132	5	32
1,1-Dichloroethene			5.00	5.07		ug/L		101	60 - 129	4	29
Acetone			25.0	29.4		ug/L		118	49 - 150	8	24
Methylene Chloride			5.00	5.17		ug/L		103	40 - 142	2	25
Methyl tert-butyl ether			5.00	5.60		ug/L		112	61 - 131	12	27
2-Butanone (MEK)			25.0	28.5		ug/L		114	37 - 150	10	35
trans-1,2-Dichloroethene			5.00	5.27		ug/L		105	69 - 121	0	27
1,1-Dichloroethane			5.00	5.46		ug/L		109	74 - 120	3	26
2,2-Dichloropropane			5.00	5.53		ug/L		111	55 - 140	1	31
cis-1,2-Dichloroethene			5.00	5.63		ug/L		113	72 - 120	5	22
Chlorobromomethane			5.00	5.42		ug/L		108	79 - 121	5	20
Chloroform			5.00	5.52		ug/L		110	75 - 120	4	21
1,1,1-Trichloroethane			5.00	5.50		ug/L		110	70 - 121	1	24
Carbon tetrachloride			5.00	5.14		ug/L		103	66 - 130	3	24
1,1-Dichloropropene			5.00	5.43		ug/L		109	72 - 125	4	23
Benzene			5.00	5.38		ug/L		108	80 - 120	3	22
1,2-Dichloroethane			5.00	5.53		ug/L		111	74 - 127	7	21
Trichloroethene			5.00	5.37		ug/L		107	72 - 120	5	22
1,2-Dichloropropane			5.00	5.68		ug/L		114	69 - 130	4	22
4-Methyl-2-pentanone (MIBK)			25.0	22.2		ug/L		89	63 - 137	10	26
Dibromomethane			5.00	5.30		ug/L		106	65 - 141	4	22
Dichlorobromomethane			5.00	5.40		ug/L		108	74 - 131	3	21
cis-1,3-Dichloropropene			5.00	4.68		ug/L		94	77 - 131	6	24
Toluene			5.00	4.53		ug/L		91	80 - 126	4	20
trans-1,3-Dichloropropene			5.00	4.69		ug/L		94	71 - 138	4	26
1,1,2-Trichloroethane			5.00	4.45		ug/L		89	73 - 127	3	22
Tetrachloroethene			5.00	4.18		ug/L		84	75 - 124	2	20
1,3-Dichloropropane			5.00	4.62		ug/L		92	69 - 138	7	19
Chlorodibromomethane			5.00	4.51		ug/L		90	62 - 141	4	22
Ethylene Dibromide			5.00	4.59		ug/L		92	61 - 143	4	22
Chlorobenzene			5.00	4.41		ug/L		88	74 - 123	4	21
1,1,1,2-Tetrachloroethane			5.00	4.56		ug/L		91	69 - 127	5	22
Ethylbenzene			5.00	4.65		ug/L		93	80 - 124	4	22
m-Xylene & p-Xylene			5.00	4.60		ug/L		92	75 - 124	3	22

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

Lab Sample ID: LCSD 580-435936/5
Matrix: Water
Analysis Batch: 435936

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
o-Xylene			5.00	4.61		ug/L		92	71 - 124	4	23
Styrene			5.00	4.63		ug/L		93	74 - 127	4	22
Bromoform			5.00	4.44		ug/L		89	48 - 127	5	23
Isopropylbenzene			5.00	4.61		ug/L		92	71 - 123	4	23
Bromobenzene			5.00	4.57		ug/L		91	74 - 130	7	23
1,1,2,2-Tetrachloroethane			5.00	4.51		ug/L		90	67 - 136	9	24
1,2,3-Trichloropropane			5.00	4.49		ug/L		90	67 - 135	10	25
N-Propylbenzene			5.00	4.56		ug/L		91	72 - 126	4	20
2-Chlorotoluene			5.00	4.63		ug/L		93	73 - 120	5	22
4-Chlorotoluene			5.00	4.87		ug/L		97	75 - 124	6	23
1,3,5-Trimethylbenzene			5.00	4.65		ug/L		93	75 - 123	4	23
tert-Butylbenzene			5.00	4.47		ug/L		89	70 - 129	5	24
1,2,4-Trimethylbenzene			5.00	4.74		ug/L		95	71 - 127	4	23
sec-Butylbenzene			5.00	4.70		ug/L		94	75 - 126	5	23
4-Isopropyltoluene			5.00	4.58		ug/L		92	78 - 125	4	24
1,3-Dichlorobenzene			5.00	4.60		ug/L		92	72 - 125	8	22
1,4-Dichlorobenzene			5.00	4.60		ug/L		92	71 - 129	6	22
n-Butylbenzene			5.00	4.42		ug/L		88	69 - 127	4	24
1,2-Dichlorobenzene			5.00	4.52		ug/L		90	72 - 129	7	22
1,2-Dibromo-3-Chloropropane			5.00	4.33		ug/L		87	55 - 135	8	29
1,2,4-Trichlorobenzene			5.00	4.26		ug/L		85	60 - 130	4	26
Hexachlorobutadiene			5.00	4.23		ug/L		85	63 - 130	5	26
Naphthalene			5.00	4.11		ug/L		82	54 - 137	10	28
1,2,3-Trichlorobenzene			5.00	4.37		ug/L		87	60 - 136	7	28

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*93*		*80 - 120*
Dibromofluoromethane (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*

Lab Sample ID: MB 580-436121/7
Matrix: Water
Analysis Batch: 436121

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.53	ug/L			08/29/23 22:35	1
Chloromethane	ND		1.0	0.28	ug/L			08/29/23 22:35	1
Vinyl chloride	ND		1.0	0.22	ug/L			08/29/23 22:35	1
Bromomethane	ND		1.0	0.21	ug/L			08/29/23 22:35	1
Chloroethane	ND		1.0	0.35	ug/L			08/29/23 22:35	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			08/29/23 22:35	1
Carbon disulfide	ND		1.0	0.53	ug/L			08/29/23 22:35	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			08/29/23 22:35	1
Acetone	ND		15	3.2	ug/L			08/29/23 22:35	1
Methylene Chloride	ND		5.0	1.4	ug/L			08/29/23 22:35	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			08/29/23 22:35	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			08/29/23 22:35	1

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

Lab Sample ID: MB 580-436121/7
Matrix: Water
Analysis Batch: 436121

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	ND		1.0	0.22	ug/L			08/29/23 22:35	1
2-Butanone (MEK)	ND		15	4.7	ug/L			08/29/23 22:35	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			08/29/23 22:35	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			08/29/23 22:35	1
Bromochloromethane	ND		1.0	0.29	ug/L			08/29/23 22:35	1
Chloroform	ND		1.0	0.26	ug/L			08/29/23 22:35	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			08/29/23 22:35	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			08/29/23 22:35	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			08/29/23 22:35	1
Benzene	ND		1.0	0.24	ug/L			08/29/23 22:35	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			08/29/23 22:35	1
Trichloroethene	ND		1.0	0.26	ug/L			08/29/23 22:35	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			08/29/23 22:35	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			08/29/23 22:35	1
Dibromomethane	ND		1.0	0.34	ug/L			08/29/23 22:35	1
Bromodichloromethane	ND		1.0	0.29	ug/L			08/29/23 22:35	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			08/29/23 22:35	1
Toluene	ND		1.0	0.39	ug/L			08/29/23 22:35	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			08/29/23 22:35	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			08/29/23 22:35	1
Tetrachloroethene	ND		1.0	0.41	ug/L			08/29/23 22:35	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			08/29/23 22:35	1
Dibromochloromethane	ND		1.0	0.43	ug/L			08/29/23 22:35	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			08/29/23 22:35	1
Chlorobenzene	ND		1.0	0.44	ug/L			08/29/23 22:35	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			08/29/23 22:35	1
Ethylbenzene	ND		1.0	0.50	ug/L			08/29/23 22:35	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			08/29/23 22:35	1
o-Xylene	ND		1.0	0.39	ug/L			08/29/23 22:35	1
Styrene	ND		1.0	0.53	ug/L			08/29/23 22:35	1
Bromoform	ND		1.0	0.51	ug/L			08/29/23 22:35	1
Isopropylbenzene	ND		1.0	0.44	ug/L			08/29/23 22:35	1
Bromobenzene	ND		1.0	0.43	ug/L			08/29/23 22:35	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			08/29/23 22:35	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			08/29/23 22:35	1
N-Propylbenzene	ND		1.0	0.50	ug/L			08/29/23 22:35	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			08/29/23 22:35	1
4-Chlorotoluene	ND		1.0	0.38	ug/L			08/29/23 22:35	1
t-Butylbenzene	ND		2.0	0.58	ug/L			08/29/23 22:35	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			08/29/23 22:35	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			08/29/23 22:35	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			08/29/23 22:35	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			08/29/23 22:35	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			08/29/23 22:35	1
n-Butylbenzene	ND		1.0	0.44	ug/L			08/29/23 22:35	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			08/29/23 22:35	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			08/29/23 22:35	1
1,2,4-Trichlorobenzene	0.756	J	1.0	0.33	ug/L			08/29/23 22:35	1
Hexachlorobutadiene	0.881	J	3.0	0.79	ug/L			08/29/23 22:35	1

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

Lab Sample ID: MB 580-436121/7
Matrix: Water
Analysis Batch: 436121

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		3.0	0.93	ug/L			08/29/23 22:35	1
1,2,3-Trichlorobenzene	1.14	J	2.0	0.43	ug/L			08/29/23 22:35	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			08/29/23 22:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*		*08/29/23 22:35*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*08/29/23 22:35*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*08/29/23 22:35*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*08/29/23 22:35*	*1*

Lab Sample ID: LCS 580-436121/4
Matrix: Water
Analysis Batch: 436121

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Dichlorodifluoromethane	10.0	14.0		ug/L		140	20 - 150
Chloromethane	10.0	12.8		ug/L		128	25 - 150
Vinyl chloride	10.0	12.7		ug/L		127	31 - 150
Bromomethane	10.0	12.0		ug/L		120	36 - 150
Chloroethane	10.0	12.2		ug/L		122	38 - 150
Trichlorofluoromethane	10.0	11.8		ug/L		118	45 - 148
Carbon disulfide	10.0	9.97		ug/L		100	63 - 134
1,1-Dichloroethene	10.0	10.3		ug/L		103	70 - 129
Acetone	50.0	72.1		ug/L		144	44 - 150
Methylene Chloride	10.0	10.7		ug/L		107	77 - 125
Methyl tert-butyl ether	10.0	10.7		ug/L		107	72 - 120
trans-1,2-Dichloroethene	10.0	10.2		ug/L		102	75 - 120
1,1-Dichloroethane	10.0	10.6		ug/L		106	80 - 120
2-Butanone (MEK)	50.0	57.1		ug/L		114	65 - 137
2,2-Dichloropropane	10.0	10.8		ug/L		108	66 - 126
cis-1,2-Dichloroethene	10.0	10.6		ug/L		106	76 - 120
Bromochloromethane	10.0	10.4		ug/L		104	78 - 120
Chloroform	10.0	9.99		ug/L		100	78 - 127
1,1,1-Trichloroethane	10.0	10.7		ug/L		107	74 - 130
Carbon tetrachloride	10.0	10.5		ug/L		105	72 - 129
1,1-Dichloropropene	10.0	10.4		ug/L		104	74 - 120
Benzene	10.0	9.76		ug/L		98	80 - 122
1,2-Dichloroethane	10.0	10.5		ug/L		105	69 - 126
Trichloroethene	10.0	9.69		ug/L		97	80 - 125
1,2-Dichloropropane	10.0	10.1		ug/L		101	80 - 120
4-Methyl-2-pentanone (MIBK)	50.0	55.4		ug/L		111	59 - 141
Dibromomethane	10.0	10.5		ug/L		105	80 - 120
Bromodichloromethane	10.0	9.58		ug/L		96	75 - 124
cis-1,3-Dichloropropene	10.0	9.68		ug/L		97	77 - 120
Toluene	10.0	9.89		ug/L		99	80 - 120
trans-1,3-Dichloropropene	10.0	9.58		ug/L		96	76 - 122
1,1,2-Trichloroethane	10.0	10.6		ug/L		106	80 - 121
Tetrachloroethene	10.0	10.0		ug/L		100	76 - 125

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

Lab Sample ID: LCS 580-436121/4
Matrix: Water
Analysis Batch: 436121

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,3-Dichloropropane	10.0	10.5		ug/L		105	79 - 120
Dibromochloromethane	10.0	9.49		ug/L		95	73 - 125
1,2-Dibromoethane	10.0	10.3		ug/L		103	79 - 126
Chlorobenzene	10.0	10.2		ug/L		102	80 - 120
1,1,1,2-Tetrachloroethane	10.0	9.88		ug/L		99	79 - 120
Ethylbenzene	10.0	10.1		ug/L		101	80 - 120
m-Xylene & p-Xylene	10.0	10.3		ug/L		103	80 - 120
o-Xylene	10.0	10.1		ug/L		101	80 - 120
Styrene	10.0	10.5		ug/L		105	76 - 122
Bromoform	10.0	9.28		ug/L		93	56 - 139
Isopropylbenzene	10.0	10.1		ug/L		101	80 - 123
Bromobenzene	10.0	10.6		ug/L		106	80 - 120
1,1,2,2-Tetrachloroethane	10.0	10.9		ug/L		109	74 - 124
1,2,3-Trichloropropane	10.0	11.5		ug/L		115	76 - 124
N-Propylbenzene	10.0	10.3		ug/L		103	80 - 122
2-Chlorotoluene	10.0	10.5		ug/L		105	80 - 120
4-Chlorotoluene	10.0	11.0		ug/L		110	73 - 129
t-Butylbenzene	10.0	9.98		ug/L		100	75 - 123
1,2,4-Trimethylbenzene	10.0	10.4		ug/L		104	80 - 120
sec-Butylbenzene	10.0	10.2		ug/L		102	78 - 122
4-Isopropyltoluene	10.0	10.1		ug/L		101	77 - 126
1,3-Dichlorobenzene	10.0	11.0		ug/L		110	77 - 127
1,4-Dichlorobenzene	10.0	10.9		ug/L		109	80 - 120
n-Butylbenzene	10.0	10.6		ug/L		106	57 - 133
1,2-Dichlorobenzene	10.0	11.0		ug/L		110	80 - 120
1,2-Dibromo-3-Chloropropane	10.0	11.1		ug/L		111	65 - 133
1,2,4-Trichlorobenzene	10.0	11.4		ug/L		114	61 - 148
Hexachlorobutadiene	10.0	11.2		ug/L		112	74 - 131
Naphthalene	10.0	12.1		ug/L		121	63 - 150
1,2,3-Trichlorobenzene	10.0	12.3		ug/L		123	65 - 150
1,3,5-Trimethylbenzene	10.0	10.4		ug/L		104	80 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 580-436121/5
Matrix: Water
Analysis Batch: 436121

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Dichlorodifluoromethane	10.0	12.8		ug/L		128	20 - 150	8	33
Chloromethane	10.0	11.5		ug/L		115	25 - 150	11	26
Vinyl chloride	10.0	11.5		ug/L		115	31 - 150	11	26
Bromomethane	10.0	11.1		ug/L		111	36 - 150	8	33
Chloroethane	10.0	11.1		ug/L		111	38 - 150	9	28

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

Lab Sample ID: LCSD 580-436121/5
Matrix: Water
Analysis Batch: 436121

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Trichlorofluoromethane			10.0	10.9		ug/L		109	45 - 148	8	35
Carbon disulfide			10.0	9.44		ug/L		94	63 - 134	5	24
1,1-Dichloroethene			10.0	9.87		ug/L		99	70 - 129	5	23
Acetone			50.0	65.3		ug/L		131	44 - 150	10	33
Methylene Chloride			10.0	10.2		ug/L		102	77 - 125	5	18
Methyl tert-butyl ether			10.0	10.0		ug/L		100	72 - 120	6	18
trans-1,2-Dichloroethene			10.0	9.78		ug/L		98	75 - 120	5	21
1,1-Dichloroethane			10.0	9.88		ug/L		99	80 - 120	7	15
2-Butanone (MEK)			50.0	51.8		ug/L		104	65 - 137	10	34
2,2-Dichloropropane			10.0	10.3		ug/L		103	66 - 126	5	22
cis-1,2-Dichloroethene			10.0	9.76		ug/L		98	76 - 120	8	20
Bromochloromethane			10.0	9.89		ug/L		99	78 - 120	5	13
Chloroform			10.0	9.43		ug/L		94	78 - 127	6	14
1,1,1-Trichloroethane			10.0	10.0		ug/L		100	74 - 130	6	19
Carbon tetrachloride			10.0	9.75		ug/L		97	72 - 129	7	19
1,1-Dichloropropene			10.0	9.85		ug/L		98	74 - 120	6	14
Benzene			10.0	9.20		ug/L		92	80 - 122	6	14
1,2-Dichloroethane			10.0	10.0		ug/L		100	69 - 126	5	11
Trichloroethene			10.0	9.36		ug/L		94	80 - 125	3	13
1,2-Dichloropropane			10.0	9.83		ug/L		98	80 - 120	3	14
4-Methyl-2-pentanone (MIBK)			50.0	50.8		ug/L		102	59 - 141	9	22
Dibromomethane			10.0	10.1		ug/L		101	80 - 120	4	11
Bromodichloromethane			10.0	9.29		ug/L		93	75 - 124	3	13
cis-1,3-Dichloropropene			10.0	10.0		ug/L		100	77 - 120	3	35
Toluene			10.0	9.74		ug/L		97	80 - 120	2	13
trans-1,3-Dichloropropene			10.0	9.58		ug/L		96	76 - 122	0	20
1,1,2-Trichloroethane			10.0	10.6		ug/L		106	80 - 121	0	14
Tetrachloroethene			10.0	10.2		ug/L		102	76 - 125	2	13
1,3-Dichloropropane			10.0	10.7		ug/L		107	79 - 120	1	19
Dibromochloromethane			10.0	9.52		ug/L		95	73 - 125	0	13
1,2-Dibromoethane			10.0	10.5		ug/L		105	79 - 126	2	12
Chlorobenzene			10.0	10.2		ug/L		102	80 - 120	1	10
1,1,1,2-Tetrachloroethane			10.0	9.52		ug/L		95	79 - 120	4	16
Ethylbenzene			10.0	9.93		ug/L		99	80 - 120	2	14
m-Xylene & p-Xylene			10.0	9.90		ug/L		99	80 - 120	4	14
o-Xylene			10.0	9.42		ug/L		94	80 - 120	7	16
Styrene			10.0	9.95		ug/L		99	76 - 122	5	16
Bromoform			10.0	9.04		ug/L		90	56 - 139	3	21
Isopropylbenzene			10.0	9.43		ug/L		94	80 - 123	7	19
Bromobenzene			10.0	10.4		ug/L		104	80 - 120	2	24
1,1,2,2-Tetrachloroethane			10.0	10.8		ug/L		108	74 - 124	1	25
1,2,3-Trichloropropane			10.0	11.0		ug/L		110	76 - 124	4	26
N-Propylbenzene			10.0	9.90		ug/L		99	80 - 122	4	22
2-Chlorotoluene			10.0	10.2		ug/L		102	80 - 120	3	20
4-Chlorotoluene			10.0	10.3		ug/L		103	73 - 129	6	29
t-Butylbenzene			10.0	9.43		ug/L		94	75 - 123	6	21
1,2,4-Trimethylbenzene			10.0	10.1		ug/L		101	80 - 120	4	16
sec-Butylbenzene			10.0	9.92		ug/L		99	78 - 122	3	15
4-Isopropyltoluene			10.0	9.82		ug/L		98	77 - 126	3	20

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

Lab Sample ID: LCSD 580-436121/5
Matrix: Water
Analysis Batch: 436121

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,3-Dichlorobenzene			10.0	10.1		ug/L		101	77 - 127	8	35
1,4-Dichlorobenzene			10.0	10.1		ug/L		101	80 - 120	7	17
n-Butylbenzene			10.0	9.95		ug/L		99	57 - 133	6	14
1,2-Dichlorobenzene			10.0	10.4		ug/L		104	80 - 120	6	15
1,2-Dibromo-3-Chloropropane			10.0	9.55		ug/L		95	65 - 133	15	25
1,2,4-Trichlorobenzene			10.0	9.88		ug/L		99	61 - 148	14	27
Hexachlorobutadiene			10.0	11.7		ug/L		117	74 - 131	4	22
Naphthalene			10.0	10.4		ug/L		104	63 - 150	15	33
1,2,3-Trichlorobenzene			10.0	11.1		ug/L		111	65 - 150	11	33
1,3,5-Trimethylbenzene			10.0	9.97		ug/L		100	80 - 122	4	21

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*

Lab Sample ID: 580-130869-8 MS
Matrix: Water
Analysis Batch: 436121

Client Sample ID: MWA-56d-082323
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Dichlorodifluoromethane	ND		100	142		ug/L		142	20 - 150		
Chloromethane	ND		100	125		ug/L		125	25 - 150		
Vinyl chloride	ND		100	126		ug/L		126	31 - 150		
Bromomethane	ND		100	115		ug/L		115	36 - 150		
Chloroethane	ND		100	120		ug/L		120	38 - 150		
Trichlorofluoromethane	ND		100	121		ug/L		121	45 - 148		
Carbon disulfide	ND		100	104		ug/L		104	63 - 134		
1,1-Dichloroethene	ND		100	109		ug/L		109	70 - 129		
Acetone	51	J	500	407		ug/L		71	44 - 150		
Methylene Chloride	ND		100	99.4		ug/L		99	77 - 125		
Methyl tert-butyl ether	ND		100	97.1		ug/L		97	72 - 120		
trans-1,2-Dichloroethene	ND		100	104		ug/L		104	75 - 120		
1,1-Dichloroethane	ND		100	104		ug/L		104	80 - 120		
2-Butanone (MEK)	ND		500	431		ug/L		86	65 - 137		
2,2-Dichloropropane	ND		100	93.6		ug/L		94	66 - 126		
cis-1,2-Dichloroethene	ND		100	103		ug/L		103	76 - 120		
Bromochloromethane	ND		100	102		ug/L		102	78 - 120		
Chloroform	150		100	240		ug/L		93	78 - 127		
1,1,1-Trichloroethane	ND		100	110		ug/L		110	74 - 130		
Carbon tetrachloride	ND		100	108		ug/L		108	72 - 129		
1,1-Dichloropropene	ND		100	108		ug/L		108	74 - 120		
Benzene	ND		100	102		ug/L		102	80 - 122		
1,2-Dichloroethane	ND		100	103		ug/L		103	69 - 126		
Trichloroethene	ND		100	100		ug/L		100	80 - 125		
1,2-Dichloropropane	ND		100	106		ug/L		106	80 - 120		
4-Methyl-2-pentanone (MIBK)	ND		500	456		ug/L		91	59 - 141		

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

Lab Sample ID: 580-130869-8 MS
Matrix: Water
Analysis Batch: 436121

Client Sample ID: MWA-56d-082323
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Dibromomethane	ND		100	104		ug/L		104	80 - 120
Bromodichloromethane	ND		100	100		ug/L		100	75 - 124
cis-1,3-Dichloropropene	ND		100	103		ug/L		103	77 - 120
Toluene	ND		100	107		ug/L		107	80 - 120
trans-1,3-Dichloropropene	ND		100	94.1		ug/L		94	76 - 122
1,1,2-Trichloroethane	ND		100	109		ug/L		109	80 - 121
Tetrachloroethene	ND		100	113		ug/L		113	76 - 125
1,3-Dichloropropane	ND		100	108		ug/L		108	79 - 120
Dibromochloromethane	ND		100	97.7		ug/L		98	73 - 125
1,2-Dibromoethane	ND		100	105		ug/L		105	79 - 126
Chlorobenzene	ND		100	112		ug/L		112	80 - 120
1,1,1,2-Tetrachloroethane	ND		100	98.4		ug/L		98	79 - 120
Ethylbenzene	ND		100	104		ug/L		104	80 - 120
m-Xylene & p-Xylene	ND		100	104		ug/L		104	80 - 120
o-Xylene	ND		100	99.8		ug/L		100	80 - 120
Styrene	ND		100	102		ug/L		102	76 - 122
Bromoform	ND		100	90.3		ug/L		90	56 - 139
Isopropylbenzene	ND		100	99.7		ug/L		100	80 - 123
Bromobenzene	ND		100	108		ug/L		108	80 - 120
1,1,2,2-Tetrachloroethane	ND		100	106		ug/L		106	74 - 124
1,2,3-Trichloropropane	ND		100	104		ug/L		104	76 - 124
N-Propylbenzene	ND		100	106		ug/L		106	80 - 122
2-Chlorotoluene	ND		100	106		ug/L		106	80 - 120
4-Chlorotoluene	ND		100	110		ug/L		110	73 - 129
t-Butylbenzene	ND		100	103		ug/L		103	75 - 123
1,2,4-Trimethylbenzene	ND		100	105		ug/L		105	80 - 120
sec-Butylbenzene	ND		100	103		ug/L		103	78 - 122
4-Isopropyltoluene	ND		100	98.8		ug/L		99	77 - 126
1,3-Dichlorobenzene	ND		100	97.0		ug/L		97	77 - 127
1,4-Dichlorobenzene	ND		100	103		ug/L		103	80 - 120
n-Butylbenzene	ND		100	94.2		ug/L		94	57 - 133
1,2-Dichlorobenzene	ND		100	101		ug/L		101	80 - 120
1,2-Dibromo-3-Chloropropane	ND		100	82.4		ug/L		82	65 - 133
1,2,4-Trichlorobenzene	ND		100	66.8		ug/L		67	61 - 148
Hexachlorobutadiene	ND		100	85.7		ug/L		86	74 - 131
Naphthalene	ND		100	65.4		ug/L		65	63 - 150
1,2,3-Trichlorobenzene	ND		100	72.5		ug/L		72	65 - 150
1,3,5-Trimethylbenzene	ND		100	105		ug/L		105	80 - 122

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*

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

Lab Sample ID: 580-130869-8 MSD
Client Sample ID: MWA-56d-082323
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 436121

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Dichlorodifluoromethane	ND		100	145		ug/L		145	20 - 150	2	33
Chloromethane	ND		100	123		ug/L		123	25 - 150	1	26
Vinyl chloride	ND		100	128		ug/L		128	31 - 150	2	26
Bromomethane	ND		100	119		ug/L		119	36 - 150	3	33
Chloroethane	ND		100	119		ug/L		119	38 - 150	0	28
Trichlorofluoromethane	ND		100	121		ug/L		121	45 - 148	0	35
Carbon disulfide	ND		100	104		ug/L		104	63 - 134	0	24
1,1-Dichloroethene	ND		100	110		ug/L		110	70 - 129	1	23
Acetone	51	J	500	444		ug/L		79	44 - 150	9	33
Methylene Chloride	ND		100	102		ug/L		102	77 - 125	3	18
Methyl tert-butyl ether	ND		100	98.3		ug/L		98	72 - 120	1	18
trans-1,2-Dichloroethene	ND		100	109		ug/L		109	75 - 120	5	21
1,1-Dichloroethane	ND		100	106		ug/L		106	80 - 120	2	15
2-Butanone (MEK)	ND		500	419		ug/L		84	65 - 137	3	34
2,2-Dichloropropane	ND		100	96.2		ug/L		96	66 - 126	3	22
cis-1,2-Dichloroethene	ND		100	105		ug/L		105	76 - 120	2	20
Bromochloromethane	ND		100	105		ug/L		105	78 - 120	3	13
Chloroform	150		100	236		ug/L		89	78 - 127	2	14
1,1,1-Trichloroethane	ND		100	113		ug/L		113	74 - 130	3	19
Carbon tetrachloride	ND		100	113		ug/L		113	72 - 129	5	19
1,1-Dichloropropene	ND		100	110		ug/L		110	74 - 120	2	14
Benzene	ND		100	102		ug/L		102	80 - 122	1	14
1,2-Dichloroethane	ND		100	105		ug/L		105	69 - 126	2	11
Trichloroethene	ND		100	103		ug/L		103	80 - 125	3	13
1,2-Dichloropropane	ND		100	104		ug/L		104	80 - 120	2	14
4-Methyl-2-pentanone (MIBK)	ND		500	439		ug/L		88	59 - 141	4	22
Dibromomethane	ND		100	106		ug/L		106	80 - 120	2	11
Bromodichloromethane	ND		100	99.4		ug/L		99	75 - 124	1	13
cis-1,3-Dichloropropene	ND		100	101		ug/L		101	77 - 120	2	35
Toluene	ND		100	109		ug/L		109	80 - 120	2	13
trans-1,3-Dichloropropene	ND		100	93.0		ug/L		93	76 - 122	1	20
1,1,2-Trichloroethane	ND		100	108		ug/L		108	80 - 121	1	14
Tetrachloroethene	ND		100	117		ug/L		117	76 - 125	4	13
1,3-Dichloropropane	ND		100	108		ug/L		108	79 - 120	0	19
Dibromochloromethane	ND		100	97.3		ug/L		97	73 - 125	0	13
1,2-Dibromoethane	ND		100	106		ug/L		106	79 - 126	1	12
Chlorobenzene	ND		100	110		ug/L		110	80 - 120	2	10
1,1,1,2-Tetrachloroethane	ND		100	99.3		ug/L		99	79 - 120	1	16
Ethylbenzene	ND		100	106		ug/L		106	80 - 120	3	14
m-Xylene & p-Xylene	ND		100	107		ug/L		107	80 - 120	2	14
o-Xylene	ND		100	101		ug/L		101	80 - 120	1	16
Styrene	ND		100	95.7		ug/L		96	76 - 122	6	16
Bromoform	ND		100	89.9		ug/L		90	56 - 139	1	21
Isopropylbenzene	ND		100	103		ug/L		103	80 - 123	3	19
Bromobenzene	ND		100	109		ug/L		109	80 - 120	1	24
1,1,2,2-Tetrachloroethane	ND		100	101		ug/L		101	74 - 124	4	25
1,2,3-Trichloropropane	ND		100	103		ug/L		103	76 - 124	2	26
N-Propylbenzene	ND		100	110		ug/L		110	80 - 122	4	22

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

Lab Sample ID: 580-130869-8 MSD
Client Sample ID: MWA-56d-082323
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 436121

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Chlorotoluene	ND		100	111		ug/L		111	80 - 120	4	20
4-Chlorotoluene	ND		100	111		ug/L		111	73 - 129	1	29
t-Butylbenzene	ND		100	106		ug/L		106	75 - 123	3	21
1,2,4-Trimethylbenzene	ND		100	107		ug/L		107	80 - 120	2	16
sec-Butylbenzene	ND		100	108		ug/L		108	78 - 122	4	15
4-Isopropyltoluene	ND		100	105		ug/L		105	77 - 126	6	20
1,3-Dichlorobenzene	ND		100	107		ug/L		107	77 - 127	10	35
1,4-Dichlorobenzene	ND		100	108		ug/L		108	80 - 120	5	17
n-Butylbenzene	ND		100	101		ug/L		101	57 - 133	7	14
1,2-Dichlorobenzene	ND		100	106		ug/L		106	80 - 120	5	15
1,2-Dibromo-3-Chloropropane	ND		100	86.8		ug/L		87	65 - 133	5	25
1,2,4-Trichlorobenzene	ND		100	86.4		ug/L		86	61 - 148	25	27
Hexachlorobutadiene	ND		100	104		ug/L		104	74 - 131	19	22
Naphthalene	ND		100	86.9		ug/L		87	63 - 150	28	33
1,2,3-Trichlorobenzene	ND		100	92.9		ug/L		93	65 - 150	25	33
1,3,5-Trimethylbenzene	ND		100	107		ug/L		107	80 - 122	2	21

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 320-704634/5
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 704634

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	2.0	ug/L			09/08/23 11:10	1

Lab Sample ID: LCS 320-704634/6
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 704634

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	49.9	53.1		ug/L		106	85 - 115

Lab Sample ID: MRL 320-704634/4
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 704634

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	3.99	3.88	J	ug/L		97	75 - 125

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: 580-130869-8 MS
Matrix: Water
Analysis Batch: 704634

Client Sample ID: MWA-56d-082323
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	14000		49900	68200		ug/L		108	80 - 120		

Lab Sample ID: 580-130869-8 MSD
Matrix: Water
Analysis Batch: 704634

Client Sample ID: MWA-56d-082323
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	14000		49900	68900		ug/L		109	80 - 120	1	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 580-436112/3
Matrix: Water
Analysis Batch: 436112

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.5	0.43	mg/L			08/29/23 09:37	1

Lab Sample ID: LCS 580-436112/4
Matrix: Water
Analysis Batch: 436112

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			50.0	53.0		mg/L		106	90 - 110		

Lab Sample ID: LCSD 580-436112/5
Matrix: Water
Analysis Batch: 436112

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			50.0	52.8		mg/L		106	90 - 110	0	15

Lab Sample ID: 580-130869-8 MS
Matrix: Water
Analysis Batch: 436112

Client Sample ID: MWA-56d-082323
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	14000		50000	67900		mg/L		108	90 - 110		

Lab Sample ID: 580-130869-8 MSD
Matrix: Water
Analysis Batch: 436112

Client Sample ID: MWA-56d-082323
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	14000		50000	66600		mg/L		105	90 - 110	2	15

Lab Chronicle

Client: ERM-West
Job ID: 580-130869-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: TB-082323-A
Lab Sample ID: 580-130869-1
Date Collected: 08/23/23 00:01
Matrix: Water
Date Received: 08/24/23 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435936	ITR	EET SEA	08/28/23 11:44

Client Sample ID: PA-22d-082323
Lab Sample ID: 580-130869-2
Date Collected: 08/23/23 08:18
Matrix: Water
Date Received: 08/24/23 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	436121	JBT	EET SEA	08/30/23 00:36
Total/NA	Analysis	314.0		1000	704634	Y1S	EET SAC	09/08/23 15:03
Total/NA	Analysis	300.0		1000	436112	CA	EET SEA	08/29/23 11:11

Client Sample ID: MWA-63-082323
Lab Sample ID: 580-130869-3
Date Collected: 08/23/23 09:10
Matrix: Water
Date Received: 08/24/23 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	436121	JBT	EET SEA	08/30/23 02:36
Total/NA	Analysis	314.0		1	704634	Y1S	EET SAC	09/08/23 15:21
Total/NA	Analysis	300.0		1	436112	CA	EET SEA	08/29/23 11:23

Client Sample ID: RB-02-082323
Lab Sample ID: 580-130869-4
Date Collected: 08/23/23 09:35
Matrix: Water
Date Received: 08/24/23 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	436121	JBT	EET SEA	08/29/23 22:59
Total/NA	Analysis	314.0		1	704634	Y1S	EET SAC	09/08/23 15:38
Total/NA	Analysis	300.0		1	436112	CA	EET SEA	08/29/23 11:58

Client Sample ID: PA-20d-082323
Lab Sample ID: 580-130869-5
Date Collected: 08/23/23 10:17
Matrix: Water
Date Received: 08/24/23 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	436121	JBT	EET SEA	08/30/23 01:00
Total/NA	Analysis	314.0		5	704634	Y1S	EET SAC	09/08/23 15:56
Total/NA	Analysis	300.0		20	436112	CA	EET SEA	08/29/23 12:21

Client Sample ID: Dup-02-082323
Lab Sample ID: 580-130869-6
Date Collected: 08/23/23 10:18
Matrix: Water
Date Received: 08/24/23 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	436121	JBT	EET SEA	08/30/23 01:24
Total/NA	Analysis	314.0		5	704634	Y1S	EET SAC	09/08/23 16:14

Client Sample ID: Dup-02-082323
Lab Sample ID: 580-130869-6
Date Collected: 08/23/23 10:18
Matrix: Water
Date Received: 08/24/23 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		20	436112	CA	EET SEA	08/29/23 12:45

Client Sample ID: PA-21d-082323
Lab Sample ID: 580-130869-7
Date Collected: 08/23/23 11:39
Matrix: Water
Date Received: 08/24/23 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		500	436121	JBT	EET SEA	08/30/23 05:25
Total/NA	Analysis	314.0		50	704634	Y1S	EET SAC	09/08/23 16:32
Total/NA	Analysis	300.0		10	436112	CA	EET SEA	08/29/23 13:08

Client Sample ID: MWA-56d-082323
Lab Sample ID: 580-130869-8
Date Collected: 08/23/23 10:44
Matrix: Water
Date Received: 08/24/23 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		10	436121	JBT	EET SEA	08/30/23 04:13
Total/NA	Analysis	314.0		1000	704634	Y1S	EET SAC	09/08/23 18:19
Total/NA	Analysis	300.0		1000	436112	CA	EET SEA	08/29/23 13:20

Client Sample ID: MWA-31i(d)-082323
Lab Sample ID: 580-130869-9
Date Collected: 08/23/23 07:55
Matrix: Water
Date Received: 08/24/23 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	436121	JBT	EET SEA	08/30/23 01:48
Total/NA	Analysis	314.0		2000	704634	Y1S	EET SAC	09/08/23 16:50
Total/NA	Analysis	300.0		1000	436112	CA	EET SEA	08/29/23 14:18

Client Sample ID: MWA-58d-082323
Lab Sample ID: 580-130869-10
Date Collected: 08/23/23 09:12
Matrix: Water
Date Received: 08/24/23 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		5	436121	JBT	EET SEA	08/30/23 03:25
Total/NA	Analysis	314.0		1000	704634	Y1S	EET SAC	09/08/23 17:08
Total/NA	Analysis	300.0		1000	436112	CA	EET SEA	08/29/23 14:30

Client Sample ID: MW-11i(d)-082323
Lab Sample ID: 580-130869-11
Date Collected: 08/23/23 12:38
Matrix: Water
Date Received: 08/24/23 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	435936	ITR	EET SEA	08/28/23 13:11
Total/NA	Analysis	314.0		5	704634	Y1S	EET SAC	09/08/23 17:26

Lab Chronicle

Client: ERM-West
Job ID: 580-130869-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Client Sample ID: MW-11i(d)-082323
Lab Sample ID: 580-130869-11

Date Collected: 08/23/23 12:38
Matrix: Water
Date Received: 08/24/23 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		100	436112	CA	EET SEA	08/29/23 14:42

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: ERM-West
Job ID: 580-130869-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Laboratory: Eurofins Seattle

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

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4167	09-06-23

Laboratory: Eurofins Sacramento

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

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4040	01-29-24

Sample Summary

Client: ERM-West
Job ID: 580-130869-1
Project/Site: Arkema - Q3 2023 Groundwater Event

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-130869-1	TB-082323-A	Water	08/23/23 00:01	08/24/23 12:20
580-130869-2	PA-22d-082323	Water	08/23/23 08:18	08/24/23 12:20
580-130869-3	MWA-63-082323	Water	08/23/23 09:10	08/24/23 12:20
580-130869-4	RB-02-082323	Water	08/23/23 09:35	08/24/23 12:20
580-130869-5	PA-20d-082323	Water	08/23/23 10:17	08/24/23 12:20
580-130869-6	Dup-02-082323	Water	08/23/23 10:18	08/24/23 12:20
580-130869-7	PA-21d-082323	Water	08/23/23 11:39	08/24/23 12:20
580-130869-8	MWA-56d-082323	Water	08/23/23 10:44	08/24/23 12:20
580-130869-9	MWA-31i(d)-082323	Water	08/23/23 07:55	08/24/23 12:20
580-130869-10	MWA-58d-082323	Water	08/23/23 09:12	08/24/23 12:20
580-130869-11	MW-11i(d)-082323	Water	08/23/23 12:38	08/24/23 12:20

Eurofins TestAmerica, Seattle
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record

580-130869 Chain of Custody

eurofins Environment Testing TestAmerica

Client Information	Sampler: ST / PV	Lab PM: Cruz, Sheri L	COC No:
Client Contact: Avery Soplata, Andrew Gardner, and Sarah Seekins	Phone:	E-Mail: sheri.cruz@testamericainc.com	Page: 1 of 1
Company: ERM-West			Job #:
Address: 1050 SW 6th Avenue Suite 1650	Due Date Requested:		
City: Portland	TAT Requested (days): 15BD		
State, Zip: OR, 97204			
Phone:	PO #: PN 0682894.207		
Email: avery.soplata@erm.com, andrew.gardner@erm.com and sarah.seekins@erm.com	WO #:		
Project Name: 3rd Arkema - Q1 2023 Groundwater event	Project #: 0682894		
Site:	SSOW#:		

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C regular level standard VOA list-Seattle	8260C_LL - Standard VOA list-Seattle	300.0_28D-Chloride-Seattle	314 Perchlorate	MS/MSD	Total Number of containers	Special Instructions/Note:
Preservation Code:							A	A	N	N			
TB-082323-A	8/23/23			Water				X				2	
PA-22d-082323		0818	G	Water			X		X	X		5	
MWA-63-082323		0910		Water			X		X	X		5	
RB-02-082323		0935		Water			X		X	X		5	
PA-20d-082323		1017		Water			X		X	X		5	
Dup-02-082323		1018		Water			X		X	X		5	
PA-21d-082323		1139		Water			X		X	X		5	
MWA-56d-082323		1044		Water			X		X	X		8	pH Voc
MWA-31i(d)-082323		0755		Water			X		X	X	X	15	
MWA-58d-082323		0912					X		X	X		5	
MW-11i(d)-082323		1238					X	X	X	X		5	

Preservation Codes:

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

Other:

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

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

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

Special Instructions/QC Requirements: please run at lowest dilution possible for ND.

Empty Kit Relinquished by: Date: Time:

Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		8/24/23 1125	ERM		8/24/23 1125	M.E.
2		8/24/23 1220	M.E.		8/24/23 1220	ERM
3						

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 3.9

Eurofins TestAmerica, Seattle
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record

580-130869 Chain of Custody

eurofins Environment Testing TestAmerica

Client Information	Sampler: ST / PV	Lab PM: Cruz, Sheri L	COC No:
Client Contact: Avery Soplata, Andrew Gardner, and Sarah Seekins	Phone:	E-Mail: sheri.cruz@testamericainc.com	Page: 1 of 1
Company: ERM-West			Job #:
Address: 1050 SW 6th Avenue Suite 1650	Due Date Requested:		
City: Portland	TAT Requested (days): 15BD		
State, Zip: OR, 97204			
Phone:	PO #: PN 0682894.207		
Email: avery.soplata@erm.com, andrew.gardner@erm.com and sarah.seekins@erm.com	WO #:		
Project Name: 3rd Arkema - Q1 2023 Groundwater event	Project #: 0682894		
Site:	SSOW#:		

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C regular level standard VOA list-Seattle	8260C_LL - Standard VOA list-Seattle	300.0_28D-Chloride-Seattle	314 Perchlorate	MS/MSD	Total Number of containers	Special Instructions/Note:
Preservation Code:							A	A	N	N			
TB-082323-A	8/23/23			Water				X				2	
PA-22d-082323		0818	G	Water			X		X	X		5	
MWA-63-082323		0910		Water			X		X	X		5	
RB-02-082323		0935		Water			X		X	X		5	
PA-20d-082323		1017		Water			X		X	X		5	
Dup-02-082323		1018		Water			X		X	X		5	
PA-21d-082323		1139		Water			X		X	X		8	D:1 VOC
MWA-56d-082323		1044		Water			X		X	X	X	15	
MWA-31i(d)-082323		0755		Water			X		X	X		5	
MWA-58d-082323		0912					X		X	X		5	
MW-11i(d)-082323		1238						X	X	X		5	

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

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

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

Special Instructions/QC Requirements: please run at lowest dilution possible for ND.

Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:			
Relinquished by:	Date/Time: 8/24/23	1125	Company ERM	Received by:	Date/Time: 8/24/23	1125	Company M.E.
Relinquished by:	Date/Time: 8/24/23	1220	Company M.E.	Received by:	Date/Time: 8/24/23	1220	Company E-ETN
Relinquished by:	Date/Time: 8/24/23	1700	Company EER	Received by:	Date/Time: 8/25/23	0935	Company EETN
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:			Cooler Temperature(s) °C and Other Remarks:	3.4 IR9 4.7/5.0		

Eurofins Seattle
5755 8th Street East
Tacoma WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cruz, Sheri L	Carrier Tracking No(s):	COC No: 580-123940.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Sheri.Cruz@et.eurofinsus.com	State of Origin: Oregon	Page: Page 1 of 2
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): NELAP Oregon		Job #: 580-130869-1
Address: 880 Riverside Parkway	Due Date Requested: 9/14/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Arkema Q3 2023 Groundwater Event	Project #: 58016290			
Site:	SSOW#:			

Analysis Requested

Preservation Codes.

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

Other:

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	314.0/ Perchlorate	Total Number of containers	Special Instructions/Note
			Preservation Code:						
PA-22d-082323 (580-130869-2)	8/23/23	08.18 Pacific		Water			X	1	
MWA-63-082323 (580-130869-3)	8/23/23	09:10 Pacific		Water			X	1	
RB-02-082323 (580-130869-4)	8/23/23	09:35 Pacific		Water			X	1	
PA-20d-082323 (580-130869-5)	8/23/23	10:17 Pacific		Water			X	1	
Dup-02-082323 (580-130869-6)	8/23/23	10:18 Pacific		Water			X	1	
PA-21d-082323 (580-130869-7)	8/23/23	11 39 Pacific		Water			X	1	
MWA-56d-082323 (580-130869-8)	8/23/23	10:44 Pacific		Water			X	1	
MWA-56d-082323 (580-130869-8MS)	8/23/23	10:44 Pacific	MS	Water			X	1	
MWA-56d-082323 (580-130869-8MSD)	8/23/23	10:44 Pacific	MSD	Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 8/24/23 1700	Company: EET	Received by:	Date/Time: 8/25/23 0970	Company: EETSac
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No. 20821162	Cooler Temperature(s) °C and Other Remarks: 1.4°C

9/15/2023

Eurofins Seattle
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cruz, Sheri L	Carrier Tracking No(s):	COC No: 580-123940.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Sheri.Cruz@et.eurofinsus.com	State of Origin: Oregon	Page: Page 2 of 2
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): NELAP Oregon		Job #: 580-130869-1
Address: 880 Riverside Parkway	Due Date Requested: 9/14/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Arkema Q3 2023 Groundwater Event	Project #: 58016290			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

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

Other:

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	314.0/ Perchlorate	Total Number of containers	Special Instructions/Note
			Preservation Code:		X	X		X	
MWA-31i(d)-082323 (580-130869-9)	8/23/23	07:55 Pacific		Water			X	1	
MWA-58d-082323 (580-130869-10)	8/23/23	09:12 Pacific		Water			X	1	
MW-11i(d)-082323 (580-130869-11)	8/23/23	12:38 Pacific		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		8/24/23 1400			08/25/23 0930	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No. 20821162	Cooler Temperature(s) °C and Other Remarks: 1.4°C

Login Sample Receipt Checklist

Client: ERM-West

Job Number: 580-130869-1

Login Number: 130869
List Number: 1
Creator: O'Connell, Jason I

List Source: Eurofins Seattle

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

Login Sample Receipt Checklist

Client: ERM-West

Job Number: 580-130869-1

Login Number: 130869
List Number: 2
Creator: Morazzini, Dominic S

List Source: Eurofins Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	2082162
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

Sacramento
Sample Receiving Notes

580-130869 Field Sheet

Job _____

Tracking # 685884992006

SO / PO / FO / SAT / 2-Day / Ground / UPS / CDO / Courier

GSL / OnTrac / Goldstreak / USPS / Other _____

Use this form to record Sample Custody Seal Cooler Custody Seal Temperature & corrected Temperature & other observations.
File in the job folder with the COC.

Therm ID L06 Corr Factor (+/-) NA °C

Ice ✓ Wet ✓ Gel ✓ Other _____

Cooler Custody Seal 2082162

Cooler ID _____

Temp Observed 1.4 °C Corrected 1.4 °C

From Temp Blank ☐ Sample ☑

Opening/Processing The Shipment	Yes	No	NA
Cooler compromised/tampered with?	☐	☑	☐
Cooler Temperature is acceptable?	☑	☐	☐
Frozen samples show signs of thaw?	☐	☐	☑

Initials DM Date 08/25/23

Unpacking/Labeling The Samples	Yes	No	NA
Containers are not broken or leaking?	☑	☐	☐
Samples compromised/tampered with?	☐	☑	☐
COC is complete w/o discrepancies	☑	☐	☐
Sample custody seal?	☐	☐	☑
Sample containers have legible labels?	☑	☐	☐
Sample date/times are provided?	☑	☐	☐
Appropriate containers are used?	☑	☐	☐
Sample bottles are completely filled?	☐	☑	☐
Sample preservatives verified?	☐	☐	☑
Is the Field Sampler's name on COC?	☐	☐	☑
Samples w/o discrepancies?	☑	☐	☐
Zero headspace?*	☐	☑	☐
Alkalinity has no headspace?	☐	☐	☑
Perchlorate has headspace? (Methods 314, 331 6850)	☑	☐	☐
Multiphasic samples are not present?	☑	☐	☐

*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Initials DM Date 08/25/23

Notes _____

Trizma Lot #(s) _____

Ammonium Acetate Lot #(s) _____

Login Completion	Yes	No	NA
Receipt Temperature on COC?	☑	☐	☐
NCM Filed?	☐	☐	☑
Samples received within hold time?	☐	☐	☑
Log Release checked in TALS?	☐	☐	☑

Initials: DM Date 08/25/23

APPENDIX C DATA VALIDATION MEMOS

ERM

1050 SW 6th Avenue
Suite 1650
Portland, OR 97204

Telephone: +1 503 488-5282

www.erm.com

Memo

To	Sarah Seekins
From	Jack James
Date	2 October 2023
Reference	0682868
Subject	Data Review of Arkema Third Quarter 2023 Groundwater Samples: Eurofins Data Packages: 580-130777-1, 580-130868-1, and 580-130869-1.

The data quality was assessed and any necessary qualifiers were applied following the *USEPA National Functional Guidelines for Organic Superfund Methods Data Review,* November 2020 and the *USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review,* November 2020. Field duplicates were assessed following *Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures*, September 2020.

HOLDING TIME AND PRESERVATION EVALUATION

The samples were prepared and analyzed within the method-prescribed time period from the date of collection. The sample shipments were received at the laboratory within the method-prescribed temperature preservation requirements of less than six degrees Celsius. No qualifications were necessary.

BLANK EVALUATION

The method, rinse, and trip blank sample results were non-detected for each of the target analytes, with the exceptions noted in Table 1. Non-detected results were considered not affected by the blank contamination and were not qualified. Associated sample results less than the report limit (RL) and less were qualified as non-detect (U) at the reporting limit. One result was qualified as an estimated non-detect (UJ) result due to an additional continuing calibration verification (CCV) outlier discussed below.

CONTINUING CALIBRATION VERIFICATION EVALUATION

The CCV recoveries were within the laboratory's limits of acceptance, with the exceptions noted in Table 2. Sample results associated with CCV recoveries that were described as "out" with no bias indicated were qualified. Non-detect results were qualified as estimated non-detects (UJ).

BLANK SPIKE EVALUATION

The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) recoveries and relative percent differences (RPDs) were within the laboratory's limits of acceptance. The LCS and LCSD recoveries and RPDs indicate acceptable laboratory accuracy and precision.

MATRIX SPIKE EVALUATION

The matrix spike and matrix spike duplicate recoveries and RPDs were within the laboratory's limits of acceptance for samples prepared from project samples, indicating acceptable laboratory accuracy and precision and minimal matrix interference.

SURROGATE SPIKE EVALUATION

The surrogate recoveries were within acceptable limits. No qualifications were required based on surrogate recoveries. The surrogate recoveries indicate minimal matrix interference in the samples.

FIELD DUPLICATE EVALUATION

Two samples were submitted in duplicate. ERM calculated the differences or RPDs between detected results in Table 3. An RPD control limit of 30 was used when both the sample and the field duplicate results were greater than or equal to five times the RL. A control limit of ± two times the reporting limit was used when at least one of the results was less than five times the RL. The control limits were not applicable when both results were below the RLs or if one result was not detected and the other was less than the RL. All analytes in the parent sample/field duplicate pairs met the control limits, with a single exception. In sample pair PA-17iR-082223/DUP-01-082223, the RPD for chloride exceeded the limit and the results in the parent and field duplicate were qualified as estimated with no bias (J).

OVERALL ASSESSMENT

No results were rejected. All of the data, including qualified data, can be used for decision-making purposes; however, the limitations indicated by the applied qualifiers should be considered when using the data. The quality of the data generated during this investigation is acceptable for the preparation of technically defensible documents.

Table 1
Blank and Associated Suspect Sample Detections
Third Quarter 2023 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	Blank ID	Associated Sample	Detected Analyte	Reported Blank Concentration	Blank Report Limit	Associated Sample Result	Associated Sample Report Limit	Units	ERM Qualifier
580-130777-1	MB 580-435722/11	None for qualification, sample ND	1,2,4-Trichlorobenzene	0.371	1.0	--	--	µg/L	--
			1,2,3-Trichlorobenzene	0.525	2.0	--	--	µg/L	--
		PA-23D-082223	Acetone	10.4	15	11	15	µg/L	15 U
	MB 580-436014/7	None for qualification, sample ND	1,2,4-Trichlorobenzene	0.567	1.0	--	--	µg/L	--
			1,2,3-Trichlorobenzene	1.03	2.0	--	--	µg/L	--
		PA-18D-082123	Acetone	10.5	15	4.9	15	µg/L	15 UJ[1]
	MB 580-436121/7	None for qualification, samples ND	1,2,4-Trichlorobenzene	0.756	1.0	--	--	µg/L	--
			Hexachlorobutadiene	0.881	3.0	--	--	µg/L	--
			1,2,3-Trichlorobenzene	1.14	2.0	--	--	µg/L	--
580-130868-1	MB 580-436121/7	None for qualification, samples ND	1,2,4-Trichlorobenzene	0.756	1.0	--	--	µg/L	--
			Hexachlorobutadiene	0.881	3.0	--	--	µg/L	--
			1,2,3-Trichlorobenzene	1.14	2.0	--	--	µg/L	--
580-130869-1	MB 580-436121/7	None for qualification, samples ND	1,2,4-Trichlorobenzene	0.756	1.0	--	--	µg/L	--
			Hexachlorobutadiene	0.881	3.0	--	--	µg/L	--
			1,2,3-Trichlorobenzene	1.14	2.0	--	--	µg/L	--

Lab packages reviewed: 580-130777-1, 580-130868-1, and 580 130869-1

Notes:
1 = Result qualified for additional continuing calibration verification outlier
MB = Method blank
ND = Not detected
U = Non-detect
UJ = Non-detected, estimated report limit
µg/L = Micrograms per liter

Table 2
Calibration Verification Recoveries Outside of Acceptable Limits
Third Quarter 2023 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	CCV Sample ID	Analyte	CCV Result	CCV Limits	Associated Sample	Reported Concentration	Units	ERM Qualifier
580-130777-1	Batch 580-435722 CCV	Naphthalene	Out	NR	PA-23D-082223	ND	µg/L	UJ
		1,2,3-Trichlorobenzene	Out	NR	PA-23D-082223	ND	µg/L	UJ
		Hexachlorobutadiene	Low	NR	PA-23D-082223	ND	µg/L	UJ
	Batch 580-436014 CCV	Dichlorodifluoromethane	High	NR	None for qualification, sample ND	--	--	--
		Acetone	Out	NR	PA-18D-082123	4.9	µg/L	15 UJ[1]
		1,2-Dibromo-3-Chloropropane	Out	NR		ND	µg/L	UJ
		1,2,3-Trichlorobenzene	Out	NR		ND	µg/L	UJ
		Naphthalene	Out	NR		ND	µg/L	UJ
		1,2,4-Trichlorobenzene	Low	NR		ND	µg/L	UJ
	Batch 580-436121 CCV	Dichlorodifluoromethane	High	NR	None for qualification, samples ND	--	--	--
		Naphthalene	Out	NR	PA-24D-082223	ND	µg/L	UJ
					PA-27D-082223	ND	µg/L	UJ
		1,2,3-Trichlorobenzene	Out	NR	PA-24D-082223	ND	µg/L	UJ
					PA-27D-082223	ND	µg/L	UJ
		1,2,4-Trichlorobenzene	Low	NR	PA-24D-082223	ND	µg/L	UJ
					PA-27D-082223	ND	µg/L	UJ
		Hexachlorobutadiene	Low	NR	PA-24D-082223	ND	µg/L	UJ
					PA-27D-082223	ND	µg/L	UJ
		Dichlorodifluoromethane	High	NR	None for qualification, samples ND	--	--	--
		1,2-Dibromo-3-			PA-31-082423	ND	µg/L	UJ

Table 2
Calibration Verification Recoveries Outside of Acceptable Limits
Third Quarter 2023 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	CCV Sample ID	Analyte	CCV Result	CCV Limits	Associated Sample	Reported Concentration	Units	ERM Qualifier
580-130868-1	Batch 580-435936 CCV	1,2-Dibromo-3-Chloropropane	Out	NR	PA-32I-082423	ND	µg/L	UJ
					TB-082423	ND	µg/L	UJ
		Naphthalene	Out	NR	PA-31-082423	ND	µg/L	UJ
					PA-32I-082423	ND	µg/L	UJ
					TB-082423	ND	µg/L	UJ
	Batch 580-436121 CCV	Dichlorodifluoromethane	High	NR	None for qualification, samples ND	--	--	--
		Naphthalene	Out	NR	PA-19D-082423	ND	µg/L	UJ
					PA-30D-082423	ND	µg/L	UJ
		1,2,3-Trichlorobenzene	Out	NR	PA-19D-082423	ND	µg/L	UJ
					PA-30D-082423	ND	µg/L	UJ
		1,2,4-Trichlorobenzene	Low	NR	PA-19D-082423	ND	µg/L	UJ
					PA-30D-082423	ND	µg/L	UJ
		Hexachlorobutadiene	Low	NR	PA-19D-082423	ND	µg/L	UJ
					PA-30D-082423	ND	µg/L	UJ
		Dichlorodifluoromethane	High	NR	None for qualification, samples ND	--	--	--
		Naphthalene	Out	NR	MWA-31I(D)-082323	ND	µg/L	UJ
					MWA-58D-082323	ND	µg/L	UJ
					MWA-63-082323	ND	µg/L	UJ
					PA-20D-082323	ND	µg/L	UJ
					PA-21D-082323	ND	µg/L	UJ
					RB-02-082323	ND	µg/L	UJ
					MWA-63-082323	ND	µg/L	UJ

Table 2
Calibration Verification Recoveries Outside of Acceptable Limits
Third Quarter 2023 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	CCV Sample ID	Analyte	CCV Result	CCV Limits	Associated Sample	Reported Concentration	Units	ERM Qualifier
580-130869-1	Batch 580-436121 CCV				DUP-02-082323	ND	µg/L	UJ
					PA-22D-082323	ND	µg/L	UJ
		1,2,3-Trichlorobenzene	Out	NR	MWA-31I(D)-082323	ND	µg/L	UJ
					MWA-58D-082323	ND	µg/L	UJ
					MWA-63-082323	ND	µg/L	UJ
					PA-20D-082323	ND	µg/L	UJ
					PA-21D-082323	ND	µg/L	UJ
					RB-02-082323	ND	µg/L	UJ
					MWA-63-082323	ND	µg/L	UJ
					DUP-02-082323	ND	µg/L	UJ
					PA-22D-082323	ND	µg/L	UJ
		1,2,4-Trichlorobenzene	Low	NR	MWA-31I(D)-082323	ND	µg/L	UJ
					MWA-58D-082323	ND	µg/L	UJ
					MWA-63-082323	ND	µg/L	UJ
					PA-20D-082323	ND	µg/L	UJ
					PA-21D-082323	ND	µg/L	UJ
					RB-02-082323	ND	µg/L	UJ
					MWA-63-082323	ND	µg/L	UJ
					DUP-02-082323	ND	µg/L	UJ
					PA-22D-082323	ND	µg/L	UJ
		Hexachlorobutadiene	Low	NR	MWA-31I(D)-082323	ND	µg/L	UJ
					MWA-58D-082323	ND	µg/L	UJ
					MWA-63-082323	ND	µg/L	UJ
					PA-20D-082323	ND	µg/L	UJ
					PA-21D-082323	ND	µg/L	UJ

Table 2
Calibration Verification Recoveries Outside of Acceptable Limits
Third Quarter 2023 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	CCV Sample ID	Analyte	CCV Result	CCV Limits	Associated Sample	Reported Concentration	Units	ERM Qualifier
					RB-02-082323	ND	µg/L	UJ
					MWA-63-082323	ND	µg/L	UJ
					DUP-02-082323	ND	µg/L	UJ
					PA-22D-082323	ND	µg/L	UJ
	Batch 580-435936 CCV	Dichlorodifluoromethane	High	NR	None for qualification, samples ND	--	--	--
		1,2-Dibromo-3-Chloropropane	Out	NR	MWA-11I(D)-082323	ND	µg/L	UJ
		Naphthalene	Out	NR	MWA-11I(D)-082323	ND	µg/L	UJ

Lab packages reviewed: 580-130777-1, 580-130868-1, and 580 130869-1

Notes:
1 = Sample qualifed as not detected due to laboratory introduced contamination
CCV = Continuing calibration verification
ND = Not detected
NR = Not reported
Out = Result was outside of control limits
UJ = Non-detected, estimated report limit

Table 3
Field Duplicate Evaluation
Third Quarter 2023 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	Primary/Duplicate Sample ID	Analyte	Concentration		Report Limit		Difference	Difference Limit	Units	RPD	RPD Limit	ERM Qualifier
			Sample	Duplicate	Sample	Duplicate						
580-130777-1	PA-17iR-082223 DUP-01-082223	Chloride	8.8	32	1.5	1.5	--	NA	mg/L	114	30	J
		1,1-Dichloroethane	ND	0.075	0.20	0.20	--	NA	µg/L	--	NA	--
		1,1-Dichloroethene	0.15	0.24	0.20	0.20	--	NA	µg/L	--	NA	--
		1,4-Dichlorobenzene	ND	0.052	0.30	0.30	--	NA	µg/L	--	NA	--
		Benzene	0.095	0.096	0.20	0.20	--	NA	µg/L	--	NA	--
		Carbon disulfide	0.12	0.48	0.30	0.30	--	NA	µg/L	--	NA	--
		Chlorobenzene	ND	0.065	0.20	0.20	--	NA	µg/L	--	NA	--
		cis-1,2-Dichloroethene	ND	0.10	0.20	0.20	--	NA	µg/L	--	NA	--
		Toluene	0.050	ND	0.20	0.20	--	NA	µg/L	--	NA	--
580-130869-1	PA-20d-082323 DUP-02-082323	Chloride	840	840	30	30	--	NA	mg/L	0	30	--
		1,1-Dichloroethane	3.3	3.3	1.0	1.0	0.0	2.0	mg/L	--	NA	--
		1,2-Dichloroethane	0.59	0.50	1.0	1.0	--	NA	µg/L	--	NA	--
		Benzene	4.0	4.2	1.0	1.0	0.2	2.0	µg/L	--	NA	--
		Chlorobenzene	20	22	1.0	1.0	--	NA	µg/L	9.5	30	--

Lab packages reviewed: 580-130777-1, 580-130868-1, and 580 130869-1

Notes:
µg/L = Micrograms per liter
mg/L = Milligrams per liter
NA = Not applicable, both results below reporting limits
ND = Not detected
J = Detected results are estimated

APPENDIX D PRIOR GROUNDWATER MONITORING PROGRAM DATA TABLES AND GRAPHS

Appendix D
Prior Groundwater Monitoring Plan Data Table
Arkema Quarter 3, 2023, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Aquifer	Well ID	Cluster	Sample ID	Date	Chloride ug/L	Chlorobenzene ug/L	Perchlorate ug/L
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-102319	10/23/2019	**5,900**	*< 0.44 U*	*< 0.95 U*
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-021220	02/12/2020	**10,900**	**0.16 j**	*< 0.95 U*
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-051820	05/18/2020	**14,000**	*< 0.025 U*	*< 0.95 U*
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-081820	08/18/2020	**16,000**	*< 0.025 U*	*< 0.95 U*
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-102720	10/27/2020	**5,800**	*< 0.025 U*	*< 0.95 U*
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-031821	03/18/2021	**18,000**	*< 0.025 U*	*< 2.0 U*
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-092221	09/22/2021	**10,000**	*< 0.025 U*	*< 2.0 U*
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-121421	12/14/2021	**5,300**	*< 0.025*	*< 2.0*
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-031422	03/14/2022	**14,000 J-**	*< 0.060 U*	*< 2.0 U*
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-060622	06/06/2022	**9,600**	*< 0.060 U*	*< 2.0 U*
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-110722	11/07/2022	**21,000**	*< 0.060 U*	*< 2.0 U*
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-030623	03/06/2023	**7,800**	*< 0.060 U*	*< 2.0 UJ*
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-061323	06/13/2023	**7,500**	*< 0.060*	*< 2.0*
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-082123	08/21/2023	**7,100**	*< 0.060 U*	*< 2.0 U*
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-110619	11/06/2019	**83,000**	*< 44 U*	*< 0.95 U*
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-021720	02/17/2020	**8,400**	*< 0.44 U*	*< 0.95 U*
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-052620	05/26/2020	**13,000**	*< 0.44 U*	*< 0.95 U*
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-082420	08/24/2020	**29,000**	*< 0.44 U*	*< 0.95 U*
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-110320	11/03/2020	**71,000**	*< 0.44 U*	*< 4.8 U*
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-032921	03/29/2021	**7,200 J**	*< 0.44 U*	*< 2.0 U*
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-092321	09/23/2021	**58,000 J**	*< 0.44 UJ*	*< 2.0 U*
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-121521	12/15/2021	**14,000**	*< 0.44*	*< 2.0*
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-031522	03/15/2022	**5,500 J-**	*< 4.4 UJ*	*< 2.0 U*
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-060822	06/08/2022	**4,900**	*< 0.30 U*	**13**
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-110922	11/09/2022	**33,000**	*< 0.44 U*	*< 2.0 U*
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-030923	03/09/2023	**5,500**	**5.6 j**	*< 10 UJ*
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-061523	06/15/2023	**5,700 j**	*< 0.44*	*< 2.0*
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-082323	08/23/2023	**17,000**	*< 0.44 U*	*< 2.0 U*
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-102319	10/23/2019	**14,700**	*< 0.44 U*	**190**
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-021120	02/11/2020	**34,800**	**0.24**	*< 48 U*
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-051920	05/19/2020	**10,000**	*< 0.025 U*	**71 j**
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-081820	08/18/2020	**15,000**	**0.030 j**	**530**
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-102720	10/27/2020	**14,000**	*< 0.20 U*	**77**
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-031821	03/18/2021	**11,000 J**	*< 0.025 U*	**290**
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-092121	09/21/2021	**14,000**	*< 0.025 U*	**56**
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-121421	12/14/2021	**13,000**	*< 0.025*	**150**
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-031422	03/14/2022	**11,000 J-**	*< 0.060 U*	**52**
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-060622	06/06/2022	**11,000**	*< 0.060 U*	**340**
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-110722	11/07/2022	**9,000**	*< 0.060 U*	**120**
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-030623	03/06/2023	**11,000**	*< 0.060 U*	**210 J-**
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-061323	06/13/2023	**9,900**	*< 0.060*	**150**
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-082123	08/21/2023	**9,700**	*< 0.060 U*	**210**
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-102519	10/25/2019	**9,700**	*< 0.44 U*	*< 4.8 U*
Shallow	PA-03	GCC1 & Proximal Wells	Pa-03-021420	02/14/2020	**9,700**	**0.29**	*< 48 U*
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-052120	05/21/2020	**8,300**	*< 0.025 U*	*< 48 U*
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-081820	08/18/2020	**10,000**	*< 0.025 U*	*< 95 U*
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-102820	10/28/2020	*< 9,000 U*	*< 0.025 U*	*< 19 U*
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-032221	03/22/2021	**9,600 J**	*< 0.025 U*	*< 20 U*
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-092221	09/22/2021	**7,800**	*< 0.025 U*	*< 20 U*
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-121321	12/13/2021	**7,300**	*< 0.025*	*< 20*
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-031622	03/16/2022	**7,300**	*< 0.060 U*	*< 20 U*
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-060822	06/08/2022	**5,500**	*< 0.070 U*	*< 4.0 U*
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-110822	11/08/2022	**6,200**	*< 0.060 U*	*< 4.0 U*
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-030723	03/07/2023	**6,500**	*< 0.060 U*	*< 4.0 UJ*
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-061423	06/14/2023	**4,500**	*< 0.060*	*< 2.0*
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-082223	08/22/2023	**4,500**	*< 0.060 U*	*< 2.0 U*
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-102819	10/28/2019	**14,300**	*< 2.0 U*	*< 4.8 U*
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-021720	02/17/2020	**13,700**	**0.14 j**	*< 48 U*
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-052220	05/22/2020	**12,000**	*< 0.025 U*	*< 4.8 U*
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-081920	08/19/2020	**14,000 J+**	*< 0.025 U*	*< 19 U*
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-102920	10/29/2020	**12,000**	*< 0.025 U*	*< 4.8 U*
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-032421	03/24/2021	**7,900 J**	*< 0.025 U*	*< 20 U*
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-092221	09/22/2021	**11,000**	*< 0.025 U*	*< 10 U*
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-121321	12/13/2021	**7,000**	*< 0.025*	*< 20*
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-031722	03/17/2022	**6,500**	*< 0.060 U*	*< 2.0 U*
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-060822	06/08/2022	**7,900**	*< 0.35 U*	*< 2.0 U*
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-110922	11/09/2022	**4,600**	*< 0.060 U*	*< 4.0 U*
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-030823	03/08/2023	**5,400**	*< 0.060 U*	*< 10 UJ*
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-061523	06/15/2023	**6,900 j**	*< 0.060*	*< 4.0*
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-082223	08/22/2023	**5,900**	*< 0.060 U*	*< 10 U*
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-102219	10/22/2019	**201,000**	*< 0.44 U*	*< 19 U*
Shallow	PA-08	GCC6 & Proximal Wells	Pa-08-021320	02/13/2020	**197,000**	**0.53**	*< 48 U*
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-051920	05/19/2020	**130,000**	**0.11 j**	*< 48 U*
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-081820	08/18/2020	**100,000**	*< 0.025 U*	*< 48 U*
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-102720	10/27/2020	**130,000**	**0.092 j**	*< 19 U*
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-031821	03/18/2021	**110,000**	*< 0.025 U*	*< 20 U*
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-092121	09/21/2021	**200,000**	*< 0.25 U*	*< 20 U*
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-121321	12/13/2021	**130,000**	**0.084**	*< 20*

Appendix D
Prior Groundwater Monitoring Plan Data Table
Arkema Quarter 3, 2023, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Aquifer	Well ID	Cluster	Sample ID	Date	Chloride ug/L	Chlorobenzene ug/L	Perchlorate ug/L
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-031422	03/14/2022	**250,000 J-**	*< 0.060 U*	*< 20 U*
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-060622	06/06/2022	**330,000**	*< 0.60 U*	*< 20 U*
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-110722	11/07/2022	**770,000**	*< 0.060 U*	*< 10 U*
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-030723	03/07/2023	**380,000**	**0.24**	*< 10 UJ*
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-061323	06/13/2023	**110,000**	*< 0.060*	**11**
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-082123	08/21/2023	**53,000**	*< 0.060 U*	**17**
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-110119	11/01/2019	**23,600**	*< 0.44 U*	*< 48 U*
Shallow	PA-09	GCC6 & Proximal Wells	Pa-09-021220	02/12/2020	**199,000**	**0.16 j**	*< 0.95 U*
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-051820	05/18/2020	**14,000**	*< 0.025 U*	*< 19 U*
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-081820	08/18/2020	**160,000 J+**	*< 0.025 U*	*< 19 U*
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-102820	10/28/2020	**14,000 J+**	*< 0.20 U*	**40**
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-031621	03/16/2021	**19,000**	*< 0.025 U*	**36**
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-092121	09/21/2021	**61,000**	*< 0.25 U*	*< 20 U*
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-121321	12/13/2021	**13,000**	*< 0.25*	*< 20*
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-031522	03/15/2022	**24,000 J-**	*< 0.060 U*	**20**
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-060722	06/07/2022	**19,000**	*< 0.060 U*	**120**
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-110822	11/08/2022	**68,000**	*< 0.060 U*	*< 10 U*
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-030723	03/07/2023	**120,000 j**	**0.39**	*< 4.0 UJ*
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-061323	06/13/2023	**110,000**	*< 0.060*	**6.2**
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-082123	08/21/2023	**5,700**	*< 0.060 U*	*< 2.0 U*
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-103019	10/30/2019	**9,300**	*< 0.44 U*	*< 9.5 U*
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-021820	02/18/2020	**10,500**	**0.15 j**	*< 48 U*
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-052720	05/27/2020	**9,500**	*< 0.025 U*	*< 9.5 U*
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-082420	08/24/2020	**8,800 J+**	*< 0.025 U*	*< 9.5 U*
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-110220	11/02/2020	**8,200 j**	*< 0.025 U*	*< 4.8 U*
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-032921	03/29/2021	**5,500 J**	*< 0.025 U*	*< 20 U*
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-092321	09/23/2021	**8,700**	*< 0.025 U*	*< 10 U*
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-121521	12/15/2021	**7,000**	*< 0.025*	*< 20*
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-031522	03/15/2022	**4,500 J-**	*< 0.060 U*	*< 10 U*
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-060922	06/09/2022	**4,300**	*< 0.070 U*	*< 100 U*
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-110822	11/08/2022	**5,900**	*< 0.060 U*	*< 4.0 U*
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-030723	03/07/2023	**5,800 J+**	*< 0.060 U*	*< 2.0 UJ*
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-061623	06/16/2023	**2,500**	*< 0.060*	*< 40*
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-082423	08/24/2023	**4,600**	*< 0.060 U*	*< 4.0 U*
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81i-102319	10/23/2019	**49,800**	*< 0.44 U*	*< 0.95 U*
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81i-021220	02/12/2020	**37,300**	**0.26**	*< 0.95 U*
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81I-051820	05/18/2020	**95,000**	*< 0.025 U*	*< 0.95 U*
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81I-081820	08/18/2020	**190,000**	*< 0.025 U*	*< 0.95 U*
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81i-102720	10/27/2020	**66,000**	*< 0.025 U*	*< 0.95 U*
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81I-031821	03/18/2021	**42,000**	*< 0.025 U*	*< 2.0 U*
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81I-092221	09/22/2021	**130,000**	*< 0.025 U*	*< 2.0 U*
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81I-121421	12/14/2021	**58,000**	*< 0.025*	*< 4.0*
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81I-031422	03/14/2022	**14,000 J-**	*< 0.060 U*	*< 2.0 U*
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81I-060622	06/06/2022	**34,000**	*< 0.060 U*	*< 2.0 U*
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81I-110722	11/07/2022	**610,000**	*< 0.060 U*	*< 10 U*
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81I-030623	03/06/2023	**95,000**	*< 0.060 U*	*< 2.0 UJ*
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81I-061323	06/13/2023	**27,000**	*< 0.060*	*< 2.0*
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81I-082123	08/21/2023	**19,000**	*< 0.060 U*	*< 2.0 U*
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10i-102519	10/25/2019	**119,000**	*< 0.44 U*	*< 4.8 U*
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10i-021720	02/17/2020	**98,600**	**0.52**	*< 48 U*
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10I-052620	05/26/2020	**82,000**	**0.51**	*< 48 U*
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10I-081920	08/19/2020	**67,000**	**0.52**	*< 95 U*
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10i-102920	10/29/2020	**82,000**	**0.70**	*< 4.8 U*
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10I-032421	03/24/2021	**1,300,000**	*< 0.44 U*	*< 20 U*
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10I-092221	09/22/2021	**76,000**	**0.67**	*< 20 U*
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10I-121321	12/13/2021	**72,000**	**0.65**	*< 20*
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10I-031722	03/17/2022	**90,000**	*< 0.060 U*	*< 20 U*
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10I-060822	06/08/2022	**84,000**	**0.37 j**	*< 2.0 U*
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10I-110922	11/09/2022	**45,000**	**1.5**	*< 10 U*
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10I-030823	03/08/2023	**41,000**	**5.7**	*< 10 UJ*
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10I-061623	06/16/2023	**35,000**	**1.3 J+**	*< 20*
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10I-082223	08/22/2023	**53,000**	**0.67**	*< 4.0 U*
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15i-110519	11/05/2019	**115,000**	*< 0.44 U*	*< 48 U*
Intermediate	PA-15i	GCC6 & Proximal Wells	Pa-15i-021820	02/18/2020	**249,000**	*< 0.025 U*	*< 48 U*
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15I-051820	05/18/2020	**270,000**	*< 0.025 U*	*< 48 U*
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15I-081720	08/17/2020	**250,000**	*< 0.025 U*	*< 48 U*
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15i-102620	10/26/2020	**230,000**	*< 2.5 U*	*< 4.8 U*
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15I-031721	03/17/2021	**260,000**	*< 0.025 U*	*< 20 U*
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15I-092121	09/21/2021	**360,000**	*< 0.25 U*	*< 20 U*
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15I-121421	12/14/2021	**340,000**	*< 0.025*	*< 20*
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15I-031422	03/14/2022	**250,000 J-**	*< 0.060 U*	*< 20 U*
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15I-060622	06/06/2022	**300,000**	*< 0.60 U*	*< 20 U*
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15I-110722	11/07/2022	**850,000**	**0.29**	*< 10 U*
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15I-030823	03/08/2023	**290,000**	*< 0.060 U*	*< 10 UJ*
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15I-061323	06/13/2023	**290,000**	**0.073 j**	*< 4.0*
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15I-082123	08/21/2023	**41,000**	*< 0.060 U*	*< 10 U*
Intermediate	PA-16i	GCC6 & Proximal Wells	PA-16i-110419	11/04/2019	**319,000**	*< 0.44 U*	*< 48 U*
Intermediate	PA-16i	GCC6 & Proximal Wells	PA-16i-021220	02/12/2020	**186,000**	**0.22**	*< 48 U*

Appendix D
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Aquifer	Well ID	Cluster	Sample ID	Date	Chloride ug/L	Chlorobenzene ug/L	Perchlorate ug/L
Intermediate	PA-16i	GCC6 & Proximal Wells	PA-16i-051920	05/19/2020	**150,000**	**0.073 j**	*< 48 U*
Intermediate	PA-16i	GCC6 & Proximal Wells	PA-16I-081920	08/19/2020	**95,000 J+**	**0.13 j**	*< 48 U*
Intermediate	PA-16i	GCC6 & Proximal Wells	PA-16i-102720	10/27/2020	**69,000**	**0.31**	*< 4.8 U*
Intermediate	PA-16i	GCC6 & Proximal Wells	PA-16I-031721	03/17/2021	**140,000**	*< 0.025 U*	*< 20 U*
Intermediate	PA-16i	GCC6 & Proximal Wells	PA-16I-092121	09/21/2021	**50,000**	*< 0.25 U*	*< 10 U*
Intermediate	PA-16i	GCC6 & Proximal Wells	PA-16I-121421	12/14/2021	**95,000**	**0.21**	*< 20*
Intermediate	PA-16i	GCC6 & Proximal Wells	PA-16I-031522	03/15/2022	**110,000 J-**	*< 0.060 U*	*< 10 U*
Intermediate	PA-16i	GCC6 & Proximal Wells	PA-16I-060722	06/07/2022	**110,000**	*< 0.30 U*	*< 20 U*
Intermediate	PA-16i	GCC6 & Proximal Wells	PA-16I-110822	11/08/2022	**270,000**	*< 0.060 U*	*< 4.0 U*
Intermediate	PA-16i	GCC6 & Proximal Wells	PA-16I-030823	03/08/2023	**530,000**	*< 0.060 U*	*< 20 UJ*
Intermediate	PA-16i	GCC6 & Proximal Wells	PA-16I-061423	06/14/2023	**120,000 J-**	*< 0.060*	*< 4.0*
Intermediate	PA-16i	GCC6 & Proximal Wells	PA-16I-082223	08/22/2023	**35,000**	*< 0.060 U*	*< 4.0 U*
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17iR-102819	10/28/2019	**73,600**	**0.57 j**	*< 48 U*
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17iR-021920	02/19/2020	**65,400**	**24**	*< 190 U*
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17IR-052120	05/21/2020	**60,000**	**0.16 j**	*< 48 U*
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17iR-082420	08/24/2020	**62,000**	*< 0.025 U*	*< 95 U*
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17iR-102820	10/28/2020	**50,000**	*< 0.20 U*	*< 4.8 U*
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17IR-032321	03/23/2021	**43,000**	**0.15 J**	*< 20 U*
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17IR-092221	09/22/2021	**35,000**	*< 0.025 U*	*< 20 U*
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17IR-121321	12/13/2021	**30,000**	*< 0.025*	*< 20*
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17IR-031622	03/16/2022	**23,000**	**0.072 j**	*< 20 U*
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17IR-060822	06/08/2022	**26,000**	*< 0.70 U*	*< 10 U*
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17IR-110822	11/08/2022	**13,000**	*< 0.60 U*	*< 10 U*
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17IR-030823	03/08/2023	**25,000**	*< 0.060 U*	*< 10 UJ*
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17IR-061423	06/14/2023	**15,000**	**0.073 j**	*< 4.0*
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17IR-082223	08/22/2023	**8,800 J**	*< 0.060 U*	*< 2.0 U*
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32i-103019	10/30/2019	**161,000**	*< 0.44 U*	*< 48 U*
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32i-021820	02/18/2020	**170,000**	**0.50 J+**	*< 190 U*
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32I-052220	05/22/2020	**160,000**	**0.28**	*< 48 U*
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32I-082120	08/21/2020	**150,000 J+**	**0.30**	*< 95 U*
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32i-110220	11/02/2020	**170,000**	*< 0.025 U*	*< 48 U*
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32I-040121	04/01/2021	**130,000**	**0.43**	*< 20 U*
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32I-092321	09/23/2021	**100,000**	*< 0.025 U*	*< 20 U*
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32I-121521	12/15/2021	**93,000**	**0.29**	*< 20*
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32I-031522	03/15/2022	**89,000 J-**	**0.28 J+**	*< 20 U*
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32I-060922	06/09/2022	**87,000**	*< 0.70 U*	*< 20 U*
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32I-110822	11/08/2022	**75,000 J-**	**0.28**	*< 20 U*
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32I-030723	03/07/2023	**83,000 j**	*< 0.060 U*	*< 20 UJ*
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32I-061623	06/16/2023	**31,000**	*< 0.29 U*	*< 40*
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32I-082423	08/24/2023	**71,000**	**0.13 j**	*< 20 U*
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44i-102919	10/29/2019	**243,000**	*< 0.44 U*	*< 4.8 U*
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44i-021220	02/12/2020	**99,200**	**0.18 j**	*< 48 U*
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44I-051920	05/19/2020	**53,000**	*< 0.025 U*	*< 95 U*
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44I-081820	08/18/2020	**76,000**	*< 0.025 U*	*< 48 U*
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44i-102720	10/27/2020	**34,000**	*< 0.025 U*	*< 4.8 U*
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44I-031621	03/16/2021	**60,000**	*< 0.025 U*	**7.1 J**
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44I-092321	09/23/2021	**39,000**	*< 0.025 U*	**390**
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44I-121421	12/14/2021	**51,000**	*< 0.025*	**130**
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44I-031522	03/15/2022	**23,000 J-**	*< 0.060 U*	**270**
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44I-060622	06/06/2022	**47,000**	*< 0.30 U*	**66**
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44I-110722	11/07/2022	**75,000**	*< 0.060 U*	*< 2.0 U*
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44I-030623	03/06/2023	**15,000**	*< 0.060 U*	*< 2.0 UJ*
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44I-061323	06/13/2023	**20,000**	*< 0.060*	*< 2.0*
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44I-082223	08/22/2023	**370,000**	*< 0.060 U*	*< 10 U*
Deep	MWA-11i(d)	Well Distal from BW and GCCs	MWA-11I(D)-110519	11/05/2019	**1,640,000**	*< 0.44 U*	*< 48 U*
Deep	MWA-11i(d)	Well Distal from BW and GCCs	MWA-11i(d)-022620	02/26/2020	**1,480,000**	**2.4**	*< 0.95 U*
Deep	MWA-11i(d)	Well Distal from BW and GCCs	MWA-11i(d)-052920	05/29/2020	**1,600,000**	*< 0.025 U*	*< 9.5 U*
Deep	MWA-11i(d)	Well Distal from BW and GCCs	MWA-11i(d)-082720	08/27/2020	**1,500,000**	**0.071 j**	*< 0.95 U*
Deep	MWA-11i(d)	Well Distal from BW and GCCs	MWA-11i(d)-110420	11/04/2020	**1,500,000**	**0.64 J**	*< 4.8 U*
Deep	MWA-11i(d)	Well Distal from BW and GCCs	MWA-11I(D)-040221	04/02/2021	**180,000**	**0.039 J**	*< 20 U*
Deep	MWA-11i(d)	Well Distal from BW and GCCs	MWA-11I(D)-092421	09/24/2021	**1,700,000**	**0.047 j**	*< 10 U*
Deep	MWA-11i(d)	Well Distal from BW and GCCs	MWA-11I(D)-121621	12/16/2021	**1,500,000**	*< 0.025*	*< 20*
Deep	MWA-11i(d)	Well Distal from BW and GCCs	MWA-11I(D)-031722	03/17/2022	**2,200,000**	**0.060 j**	*< 20 U*
Deep	MWA-11i(d)	Well Distal from BW and GCCs	MWA-11I(D)-060922	06/09/2022	**2,000,000**	*< 0.70 U*	*< 20 U*
Deep	MWA-11i(d)	Well Distal from BW and GCCs	MWA-11I(D)-111022	11/10/2022	**1,600,000**	**1.1**	*< 40 U*
Deep	MWA-11i(d)	Well Distal from BW and GCCs	MWA-11I(D)-030923	03/09/2023	**1,200,000**	*< 0.060 U*	*< 20 UJ*
Deep	MWA-11i(d)	Well Distal from BW and GCCs	MWA-11I(D)-061623	06/16/2023	**450,000**	**7.0**	*< 10*
Deep	MWA-11i(d)	Well Distal from BW and GCCs	MWA-11I(D)-082323	08/23/2023	**830,000**	*< 0.060 U*	*< 10 U*
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31i(d)-102419	10/24/2019	**25,900,000**	**0.57 j**	**100,000**
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31i(D)-021320	02/13/2020	**27,700,000**	**0.58 j**	**91,000**
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31I(D)-052020	05/20/2020	**27,000,000**	*< 0.44 U*	**100,000**
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31I(D)-081920	08/19/2020	**23,000,000**	**0.52 j**	**89,000**
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31i(d)-103020	10/30/2020	**30,000,000**	*< 0.44 U*	**91,000**
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31I(D)-032421	03/24/2021	**27,000,000**	*< 0.44 U*	**91,000**
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31I(D)-092321	09/23/2021	**29,000,000**	*< 0.44 U*	**91,000**
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31I(D)-121521	12/15/2021	**18,000,000**	*< 0.44*	**99,000**
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31I(D)-031622	03/16/2022	**20,000,000**	*< 0.44 U*	**97,000**
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31I(D)-060722	06/07/2022	**28,000,000**	**0.32 j**	**100,000**

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Aquifer	Well ID	Cluster	Sample ID	Date	Chloride ug/L	Chlorobenzene ug/L	Perchlorate ug/L
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31I(D)-111022	11/10/2022	**19,000,000**	**0.55 J**	**97,000**
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31I(D)-030923	03/09/2023	**25,000,000**	**0.58 j**	**97,000 J-**
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31I(D)-061523	06/15/2023	**16,000,000**	*< 1.0 U*	**86,000**
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31I(D)-082323	08/23/2023	**27,000,000**	*< 0.44 U*	**98,000**
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56D-102419	10/24/2019	**20,100,000**	*< 0.44 U*	**3,300**
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56D-021420	02/14/2020	**22,300,000**	*< 2.0 U*	**3,500**
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56D-052120	05/21/2020	**21,000,000**	*< 0.44 U*	**5,700**
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56D-082020	08/20/2020	**24,000,000**	*< 0.44 U*	**6,400**
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56d-102920	10/29/2020	**22,000,000**	*< 0.44 U*	**7,100**
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56D-032521	03/25/2021	**26,000,000**	*< 4.4 U*	**6,500**
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56D-092421	09/24/2021	**21,000,000**	*< 0.44 U*	**8,100**
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56D-121621	12/16/2021	**18,000,000**	*< 0.44*	**8,400**
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56D-031722	03/17/2022	**19,000,000**	*< 0.44 U*	**9,200**
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56D-060822	06/08/2022	**18,000,000**	*< 0.30 U*	**11,000**
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56D-110922	11/09/2022	**15,000,000**	*< 0.44 U*	**12,000**
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56D-030923	03/09/2023	**16,000,000**	*< 0.44 U*	**15,000 J-**
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56D-061523	06/15/2023	**15,000,000**	*< 4.4*	**13,000**
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56D-082323	08/23/2023	**14,000,000**	*< 4.4 U*	**14,000**
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58d-102519	10/25/2019	**18,900,000**	*< 0.44 U*	**61,000**
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58D-021320	02/13/2020	**21,100,000**	*< 0.44 U*	**49,000**
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58D-052120	05/21/2020	**19,000,000**	*< 0.44 U*	**46,000**
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58D-082020	08/20/2020	**20,000,000**	*< 0.44 U*	**45,000**
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58d-102920	10/29/2020	**20,000,000**	*< 0.44 U*	**44,000**
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58D-032621	03/26/2021	**29,000,000 J-**	*< 0.44 U*	**43,000**
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58D-092421	09/24/2021	**23,000,000**	*< 0.44 U*	**43,000**
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58D-121621	12/16/2021	**23,000,000**	*< 4.4*	**38,000**
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58D-031722	03/17/2022	**26,000,000**	*< 4.4 U*	**44,000**
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58D-060822	06/08/2022	**23,000,000**	*< 0.30 U*	**47,000**
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58D-110922	11/09/2022	**19,000,000**	*< 0.44 UJ*	**49,000**
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58D-030923	03/09/2023	**22,000,000**	*< 2.2 U*	**49,000 J-**
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58D-061523	06/15/2023	**19,000,000**	*< 2.2*	**50,000**
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58D-082323	08/23/2023	**20,000,000**	*< 2.2 U*	**50,000**
Deep	PA-18d	GCC1 & Proximal Wells	PA-18D-032921	03/29/2021	**110,000**	--	*< 20 U*
Deep	PA-18d	GCC1 & Proximal Wells	PA-18D-030923	03/09/2023	**50,000**	*< 0.44 U*	*< 20 UJ*
Deep	PA-18d	GCC1 & Proximal Wells	PA-18D-061623	06/16/2023	**27,000 J-**	*< 0.44*	*< 40*
Deep	PA-18d	GCC1 & Proximal Wells	PA-18D-082123	08/21/2023	**80,000**	*< 0.44 U*	*< 10 U*
Deep	PA-19d	GCC2	Pa-19d-110619	11/06/2019	**94,000**	**9,300 J-**	*< 48 U*
Deep	PA-19d	GCC2	Pa-19d-022620	02/26/2020	**111,000**	**8,300**	*< 48 U*
Deep	PA-19d	GCC2	PA-19d-052920	05/29/2020	**140,000**	**8,200**	*< 48 U*
Deep	PA-19d	GCC2	PA-19D-082620	08/26/2020	**160,000**	**5,200**	*< 95 U*
Deep	PA-19d	GCC2	PA-19d-110520	11/05/2020	**180,000**	**3,800**	*< 48 U*
Deep	PA-19d	GCC2	PA-19D-040521	04/05/2021	**340,000**	**7,100**	*< 20 U*
Deep	PA-19d	GCC2	PA-19D-092321	09/23/2021	**320,000 J**	*< 0.44 R*	*< 20 U*
Deep	PA-19d	GCC2	PA-19D-121621	12/16/2021	**330,000**	**2,700 J**	*< 200*
Deep	PA-19d	GCC2	PA-19D-031722	03/17/2022	**340,000**	**2,600**	*< 20 U*
Deep	PA-19d	GCC2	PA-19D-060922	06/09/2022	**360,000**	**3,200**	*< 20 U*
Deep	PA-19d	GCC2	PA-19D-111022	11/10/2022	**280,000**	**2,500**	*< 20 U*
Deep	PA-19d	GCC2	PA-19D-030923	03/09/2023	**350,000**	**12,000 J**	*< 10 UJ*
Deep	PA-19d	GCC2	PA-19D-061623	06/16/2023	**320,000**	**9,000**	*< 40*
Deep	PA-19d	GCC2	PA-19D-082423	08/24/2023	**320,000**	**6,600**	*< 20 U*
Deep	PA-20d	GCC3	PA-20d-110719	11/07/2019	**570,000**	**41**	**56 J+**
Deep	PA-20d	GCC3	Pa-20d-022420	02/24/2020	**789,000**	**39**	**58**
Deep	PA-20d	GCC3	PA-20d-052120	05/21/2020	**840,000**	**40**	**46**
Deep	PA-20d	GCC3	PA-20D-082520	08/25/2020	**800,000 J+**	**31**	**58**
Deep	PA-20d	GCC3	PA-20d-110320	11/03/2020	**840,000**	**37 J**	**61**
Deep	PA-20d	GCC3	PA-20D-032521	03/25/2021	**1,100,000**	**23**	**76**
Deep	PA-20d	GCC3	PA-20D-092221	09/22/2021	**1,100,000**	**24**	**99**
Deep	PA-20d	GCC3	PA-20D-121521	12/15/2021	**1,000,000**	**23**	*< 100*
Deep	PA-20d	GCC3	PA-20D-031722	03/17/2022	**1,200,000**	**12**	**140**
Deep	PA-20d	GCC3	PA-20D-060922	06/09/2022	**1,100,000**	**18**	*< 20 U*
Deep	PA-20d	GCC3	PA-20D-111022	11/10/2022	**1,000,000**	**9.3**	*< 20 U*
Deep	PA-20d	GCC3	PA-20D-030923	03/09/2023	**1,100,000**	**13**	*< 10 UJ*
Deep	PA-20d	GCC3	PA-20D-061523	06/15/2023	**880,000**	**14**	*< 20*
Deep	PA-20d	GCC3	PA-20D-082323	08/23/2023	**840,000**	**20**	*< 10 U*
Deep	PA-21d	GCC3	Pa-21d-110719	11/07/2019	**347,000**	**27,000**	**2,400**
Deep	PA-21d	GCC3	Pa-21d-022620	02/26/2020	**463,000**	**38,000**	**1,300**
Deep	PA-21d	GCC3	PA-21D-052120	05/21/2020	**420,000**	**49,000 J**	**1,200**
Deep	PA-21d	GCC3	PA-21D-082520	08/25/2020	**360,000**	**36,000**	**1,300**
Deep	PA-21d	GCC3	PA-21d-110420	11/04/2020	**370,000**	**40,000 J+**	**1,300**
Deep	PA-21d	GCC3	PA-21D-040121	04/01/2021	**430,000**	**47,000**	*< 20 U*
Deep	PA-21d	GCC3	PA-21D-092421	09/24/2021	**350,000**	**39,000 J**	**1,800**
Deep	PA-21d	GCC3	PA-21D-121521	12/15/2021	**320,000**	**49,000 J**	**1,200**
Deep	PA-21d	GCC3	PA-21D-031722	03/17/2022	**360,000**	**16,000**	**1,100**
Deep	PA-21d	GCC3	PA-21D-060922	06/09/2022	**360,000**	**27,000**	*< 20 U*
Deep	PA-21d	GCC3	PA-21D-111022	11/10/2022	**290,000**	**15,000**	*< 100 U*
Deep	PA-21d	GCC3	PA-21D-030923	03/09/2023	**340,000**	**30,000 J**	**110 J-**
Deep	PA-21d	GCC3	PA-21D-061623	06/16/2023	**330,000**	**23,000**	*< 100*
Deep	PA-21d	GCC3	PA-21D-082323	08/23/2023	**330,000**	**26,000**	*< 100 U*

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Aquifer	Well ID	Cluster	Sample ID	Date	Chloride ug/L	Chlorobenzene ug/L	Perchlorate ug/L
Deep	PA-22d	GCC4 & Proximal Wells	PA-22d-102419	10/24/2019	**10,200,000**	*< 0.44 U*	**54,000**
Deep	PA-22d	GCC4 & Proximal Wells	Pa-22d-022120	02/21/2020	**9,190,000**	*< 0.44 U*	**38,000**
Deep	PA-22d	GCC4 & Proximal Wells	PA-22d-052020	05/20/2020	**9,800,000**	*< 0.44 U*	**40,000**
Deep	PA-22d	GCC4 & Proximal Wells	PA-22D-082120	08/21/2020	**9,200,000 J+**	*< 0.44 U*	**38,000**
Deep	PA-22d	GCC4 & Proximal Wells	PA-22d-110320	11/03/2020	**9,100,000**	*< 0.44 U*	**37,000**
Deep	PA-22d	GCC4 & Proximal Wells	PA-22D-032421	03/24/2021	**8,200,000**	*< 0.44 U*	**33,000**
Deep	PA-22d	GCC4 & Proximal Wells	PA-22D-092221	09/22/2021	**7,400,000**	*< 0.44 U*	**26,000**
Deep	PA-22d	GCC4 & Proximal Wells	PA-22D-121521	12/15/2021	**7,100,000**	*< 0.44*	**24,000**
Deep	PA-22d	GCC4 & Proximal Wells	PA-22D-031622	03/16/2022	**8,000,000**	*< 0.44 U*	**23,000**
Deep	PA-22d	GCC4 & Proximal Wells	PA-22D-060822	06/08/2022	**7,300,000**	*< 0.30 U*	**22,000**
Deep	PA-22d	GCC4 & Proximal Wells	PA-22D-110922	11/09/2022	**6,000,000**	*< 0.44 U*	**17,000**
Deep	PA-22d	GCC4 & Proximal Wells	PA-22D-030823	03/08/2023	**6,000,000**	*< 0.44 U*	**17,000 J-**
Deep	PA-22d	GCC4 & Proximal Wells	PA-22D-061523	06/15/2023	**5,600,000**	*< 0.44*	**15,000**
Deep	PA-22d	GCC4 & Proximal Wells	PA-22D-082323	08/23/2023	**4,800,000**	*< 0.44 U*	**13,000**
Deep	PA-23d	GCC5 & Proximal Wells	PA-23d-110519	11/05/2019	**12,500**	**2.8**	*< 0.95 U*
Deep	PA-23d	GCC5 & Proximal Wells	Pa-23d-021920	02/19/2020	**5,690,000**	*< 0.44 U*	*< 0.95 U*
Deep	PA-23d	GCC5 & Proximal Wells	PA-23d-052020	05/20/2020	**12,000,000**	**1.3 j**	*< 4.8 U*
Deep	PA-23d	GCC5 & Proximal Wells	PA-23D-082020	08/20/2020	**22,000,000**	*< 0.44 U*	*< 4.8 U*
Deep	PA-23d	GCC5 & Proximal Wells	PA-23d-102920	10/29/2020	**27,000,000**	*< 0.44 U*	*< 0.95 U*
Deep	PA-23d	GCC5 & Proximal Wells	PA-23D-032521	03/25/2021	**16,000,000**	*< 0.44 U*	*< 1,000 U*
Deep	PA-23d	GCC5 & Proximal Wells	PA-23D-092321	09/23/2021	**17,000,000**	*< 0.44 U*	*< 100 U*
Deep	PA-23d	GCC5 & Proximal Wells	PA-23D-121421	12/14/2021	**5,700,000**	*< 0.44*	*< 50*
Deep	PA-23d	GCC5 & Proximal Wells	PA-23D-031622	03/16/2022	**89,000**	*< 0.44 U*	*< 2.0 U*
Deep	PA-23d	GCC5 & Proximal Wells	PA-23D-060722	06/07/2022	**9,700,000**	*< 0.30 U*	*< 100 U*
Deep	PA-23d	GCC5 & Proximal Wells	PA-23D-111022	11/10/2022	**6,900,000**	*< 0.44 U*	*< 200 U*
Deep	PA-23d	GCC5 & Proximal Wells	PA-23D-030823	03/08/2023	**17,000,000**	*< 0.44 U*	*< 200 UJ*
Deep	PA-23d	GCC5 & Proximal Wells	PA-23D-061523	06/15/2023	**25,000,000**	*< 0.44*	*< 400*
Deep	PA-23d	GCC5 & Proximal Wells	PA-23D-082223	08/22/2023	**29,000,000**	*< 0.44 U*	*< 400 U*
Deep	PA-24d	GCC5 & Proximal Wells	PA-24d-110619	11/06/2019	**42,300,000**	*< 0.44 U*	*< 48 U*
Deep	PA-24d	GCC5 & Proximal Wells	Pa-24d-022020	02/20/2020	**41,500,000**	*< 0.44 U*	*< 48 U*
Deep	PA-24d	GCC5 & Proximal Wells	PA-24d-051920	05/19/2020	**46,000,000**	*< 0.44 U*	*< 48 U*
Deep	PA-24d	GCC5 & Proximal Wells	PA-24D-082020	08/20/2020	**43,000,000**	*< 0.44 U*	*< 19 U*
Deep	PA-24d	GCC5 & Proximal Wells	PA-24d-102920	10/29/2020	**44,000,000**	*< 0.44 U*	*< 4.8 U*
Deep	PA-24d	GCC5 & Proximal Wells	PA-24D-031821	03/18/2021	**44,000,000**	*< 0.44 U*	*< 200 U*
Deep	PA-24d	GCC5 & Proximal Wells	PA-24D-092221	09/22/2021	**38,000,000**	*< 0.44 U*	*< 100 U*
Deep	PA-24d	GCC5 & Proximal Wells	PA-24D-121521	12/15/2021	**35,000,000**	*< 0.44*	*< 200*
Deep	PA-24d	GCC5 & Proximal Wells	PA-24D-031622	03/16/2022	**38,000,000**	*< 0.44 U*	*< 200 U*
Deep	PA-24d	GCC5 & Proximal Wells	PA-24D-060722	06/07/2022	**35,000,000**	*< 0.30 U*	*< 400 U*
Deep	PA-24d	GCC5 & Proximal Wells	PA-24D-111022	11/10/2022	**32,000,000**	*< 0.44 U*	*< 200 U*
Deep	PA-24d	GCC5 & Proximal Wells	PA-24D-030823	03/08/2023	**33,000,000**	*< 0.44 U*	*< 400 UJ*
Deep	PA-24d	GCC5 & Proximal Wells	PA-24D-061523	06/15/2023	**33,000,000**	*< 0.44*	*< 400*
Deep	PA-24d	GCC5 & Proximal Wells	PA-24D-082223	08/22/2023	**31,000,000**	*< 0.44 U*	*< 400 U*
Deep	PA-25d	GCC6 & Proximal Wells	PA-25d-110519	11/05/2019	**1,100**	*< 0.44 U*	*< 0.95 U*
Deep	PA-25d	GCC6 & Proximal Wells	Pa-25d-021820	02/18/2020	**22,100**	*< 0.025 U*	*< 0.95 U*
Deep	PA-25d	GCC6 & Proximal Wells	Pa-25d-051820	05/18/2020	**23,000**	*< 0.025 U*	*< 0.95 U*
Deep	PA-25d	GCC6 & Proximal Wells	PA-25D-081820	08/18/2020	**24,000**	*< 0.025 U*	*< 9.5 U*
Deep	PA-25d	GCC6 & Proximal Wells	PA-25d-102720	10/27/2020	**20,000**	*< 0.20 U*	*< 0.95 U*
Deep	PA-25d	GCC6 & Proximal Wells	PA-25D-031821	03/18/2021	**20,000**	*< 0.025 U*	*< 2.0 U*
Deep	PA-25d	GCC6 & Proximal Wells	PA-25D-092121	09/22/2021	**24,000**	*< 0.025 U*	*< 2.0 U*
Deep	PA-25d	GCC6 & Proximal Wells	PA-25D-121421	12/14/2021	**23,000**	*< 0.025*	*< 2.0*
Deep	PA-25d	GCC6 & Proximal Wells	PA-25D-031422	03/14/2022	**18,000 J-**	*< 0.060 U*	*< 2.0 U*
Deep	PA-25d	GCC6 & Proximal Wells	PA-25D-060722	06/07/2022	**23,000**	*< 0.060 U*	*< 2.0 U*
Deep	PA-25d	GCC6 & Proximal Wells	PA-25D-110722	11/07/2022	**34,000**	*< 0.060 U*	*< 2.0 U*
Deep	PA-25d	GCC6 & Proximal Wells	PA-25D-030823	03/08/2023	**11,000 J+**	*< 0.060 U*	*< 2.0 UJ*
Deep	PA-25d	GCC6 & Proximal Wells	PA-25D-061323	06/13/2023	**10,000**	*< 0.060*	*< 2.0*
Deep	PA-25d	GCC6 & Proximal Wells	PA-25D-082223	08/22/2023	**24,000**	*< 0.060 U*	*< 2.0 U*
Deep	PA-26d	GCC6 & Proximal Wells	PA-26d-110419	11/04/2019	**7,400**	*< 0.44 U*	*< 0.95 U*
Deep	PA-26d	GCC6 & Proximal Wells	Pa-26d-021320	02/13/2020	**46,000**	**0.71**	*< 0.95 U*
Deep	PA-26d	GCC6 & Proximal Wells	PA-26D-051820	05/18/2020	**48,000**	*< 0.025 U*	*< 0.95 U*
Deep	PA-26d	GCC6 & Proximal Wells	PA-26D-081920	08/19/2020	**48,000**	*< 0.025 U*	*< 9.5 U*
Deep	PA-26d	GCC6 & Proximal Wells	PA-26d-102820	10/28/2020	**52,000**	*< 0.025 U*	**1.1 j**
Deep	PA-26d	GCC6 & Proximal Wells	PA-26D-031621	03/16/2021	**37,000**	*< 0.025 U*	*< 2.0 U*
Deep	PA-26d	GCC6 & Proximal Wells	PA-26D-092321	09/23/2021	**60,000**	*< 0.025 U*	*< 2.0 U*
Deep	PA-26d	GCC6 & Proximal Wells	PA-26D-121321	12/13/2021	**62,000**	*< 0.025*	*< 4.0*
Deep	PA-26d	GCC6 & Proximal Wells	PA-26D-031522	03/15/2022	**72,000 J-**	*< 0.060 U*	*< 2.0 U*
Deep	PA-26d	GCC6 & Proximal Wells	PA-26D-060722	06/07/2022	**63,000**	*< 0.060 U*	*< 2.0 U*
Deep	PA-26d	GCC6 & Proximal Wells	PA-26D-110822	11/08/2022	**6,500**	*< 0.060 U*	*< 2.0 U*
Deep	PA-26d	GCC6 & Proximal Wells	PA-26D-030823	03/08/2023	**69,000**	*< 0.060 U*	*< 2.0 UJ*
Deep	PA-26d	GCC6 & Proximal Wells	PA-26D-061423	06/14/2023	**67,000 J**	*< 0.060*	*< 2.0*
Deep	PA-26d	GCC6 & Proximal Wells	PA-26D-082223	08/22/2023	**74,000**	*< 0.060 U*	*< 2.0 U*
Deep	PA-27d	GCC1 & Proximal Wells	PA-27d-102519	10/25/2019	**1,150,000**	*< 0.44 U*	*< 4.8 U*
Deep	PA-27d	GCC1 & Proximal Wells	Pa-27d-021420	02/14/2020	**824,000**	**0.84 j**	*< 48 U*
Deep	PA-27d	GCC1 & Proximal Wells	PA-27D-052120	05/21/2020	**870,000**	*< 0.44 U*	*< 48 U*
Deep	PA-27d	GCC1 & Proximal Wells	PA-27D-081820	08/18/2020	**810,000 J+**	**0.52 j**	*< 95 U*
Deep	PA-27d	GCC1 & Proximal Wells	PA-27d-110420	11/04/2020	**1,100,000**	**3.5 J**	*< 19 U*
Deep	PA-27d	GCC1 & Proximal Wells	PA-27D-032321	03/23/2021	**710,000 J-**	*< 0.44 U*	*< 20 U*
Deep	PA-27d	GCC1 & Proximal Wells	PA-27D-092221	09/22/2021	**840,000**	*< 0.44 U*	*< 20 U*
Deep	PA-27d	GCC1 & Proximal Wells	PA-27D-121321	12/13/2021	**930,000**	*< 0.44*	*< 20*

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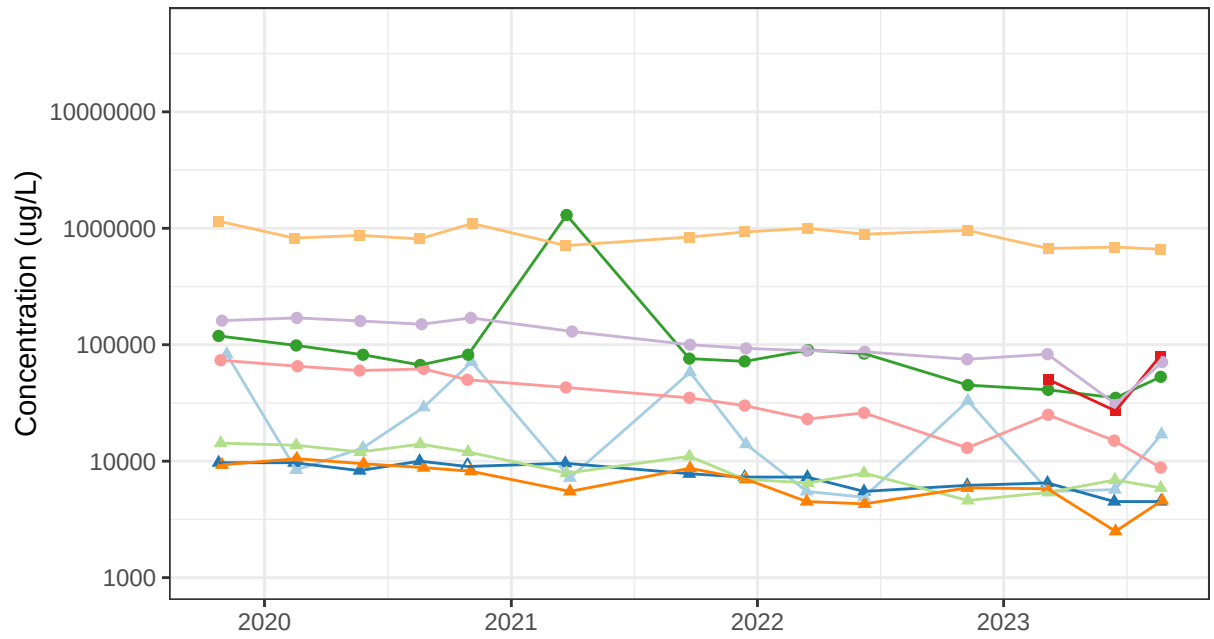
Arkema Inc. Facility
Portland, Oregon

Aquifer	Well ID	Cluster	Sample ID	Date	Chloride ug/L	Chlorobenzene ug/L	Perchlorate ug/L
Deep	PA-27d	GCC1 & Proximal Wells	PA-27D-031622	03/16/2022	**1,000,000**	*< 0.44 U*	*< 20 U*
Deep	PA-27d	GCC1 & Proximal Wells	PA-27D-060822	06/08/2022	**890,000**	*< 0.30 U*	*< 20 U*
Deep	PA-27d	GCC1 & Proximal Wells	PA-27D-110822	11/08/2022	**960,000**	*< 0.44 U*	*< 10 U*
Deep	PA-27d	GCC1 & Proximal Wells	PA-27D-030823	03/08/2023	**670,000**	*< 0.44 U*	*< 20 UJ*
Deep	PA-27d	GCC1 & Proximal Wells	PA-27D-061423	06/14/2023	**690,000**	*< 0.44*	*< 20*
Deep	PA-27d	GCC1 & Proximal Wells	PA-27D-082223	08/22/2023	**660,000**	*< 0.44 U*	*< 10 U*
Deep	PA-30d	GCC2	PA-30d-103119	10/31/2019	**170,000**	**4,900 J-**	*< 48 U*
Deep	PA-30d	GCC2	Pa-30d-022520	02/25/2020	**207,000**	**5,700**	*< 190 U*
Deep	PA-30d	GCC2	PA-30d-052120	05/21/2020	**280,000**	**5,800**	*< 48 U*
Deep	PA-30d	GCC2	PA-30D-082720	08/27/2020	**320,000**	**5,800**	*< 95 U*
Deep	PA-30d	GCC2	PA-30d-110520	11/05/2020	**440,000**	**4,700**	*< 48 U*
Deep	PA-30d	GCC2	PA-30D-040221	04/02/2021	**56,000**	**4,600**	*< 100 U*
Deep	PA-30d	GCC2	PA-30D-092421	09/24/2021	**540,000**	*< 0.44 R*	*< 20 U*
Deep	PA-30d	GCC2	PA-30D-121621	12/16/2021	**490,000**	**3,500**	*< 200*
Deep	PA-30d	GCC2	PA-30D-031722	03/17/2022	**490,000**	**4,700**	*< 20 U*
Deep	PA-30d	GCC2	PA-30D-060922	06/09/2022	**460,000**	**6,600**	*< 20 U*
Deep	PA-30d	GCC2	PA-30D-111022	11/10/2022	**270,000**	**26,000**	*< 20 U*
Deep	PA-30d	GCC2	PA-30D-030923	03/09/2023	**300,000**	**24,000**	*< 20 UJ*
Deep	PA-30d	GCC2	PA-30D-061623	06/16/2023	**310,000**	**19,000**	*< 40*
Deep	PA-30d	GCC2	PA-30D-082423	08/24/2023	**320,000**	**20,000**	*< 20 U*

Notes:
Bolded values indicate concentrations above the Reportable Detection Limit.
< = Compound not detected. Reportable detection limit shown.
µg/L = micrograms per liter

Qualifiers:
j = The analyte was positively identified; associated numerical value is the approximate concentration of the analyte in the sample.
J = The analyte was positively identified; associated numerical value is the approximate concentration of the analyte in the sample.
J+ = The concentration of the sample is considered to be biased high, as the associated QC results exceed the upper control limits.
J- = The concentration of the sample is considered to be biased low, as the associated QC results are outside the lower control limits.
U = Compound not detected based on quality assurance review.
UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.
R = Rejected. Quality control indicates that the data are unusable (compound may or not be present).

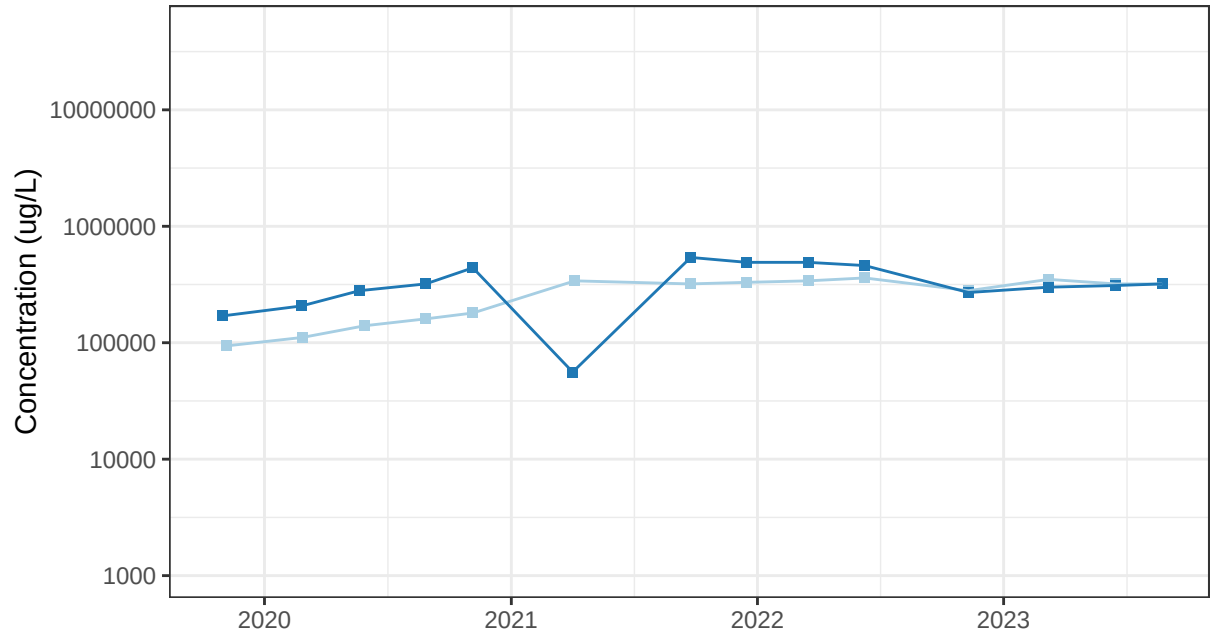
Chloride in GCC1 & Proximal Wells



Aquifer Depth
- Shallow, Detect
- Shallow, ND
- Intermediate, Detect
- Intermediate, ND
- Deep, Detect
- Deep, ND

Well
- MWA−63
- PA−03
- PA−04
- PA−10I
- PA−17IR
- PA−18D
- PA−27D
- PA−31
- PA−32I

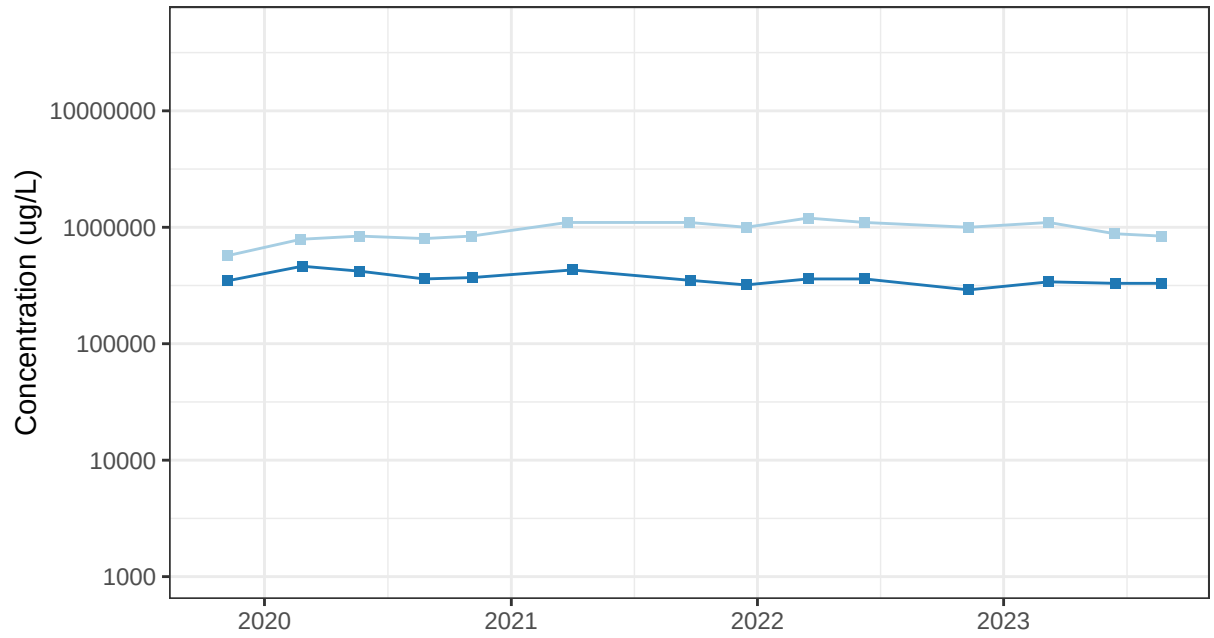
Chloride in GCC2



Aquifer Depth
- Shallow, Detect
- Shallow, ND
- Intermediate, Detect
- Intermediate, ND
- Deep, Detect
- Deep, ND

Well
- PA−19D
- PA−30D

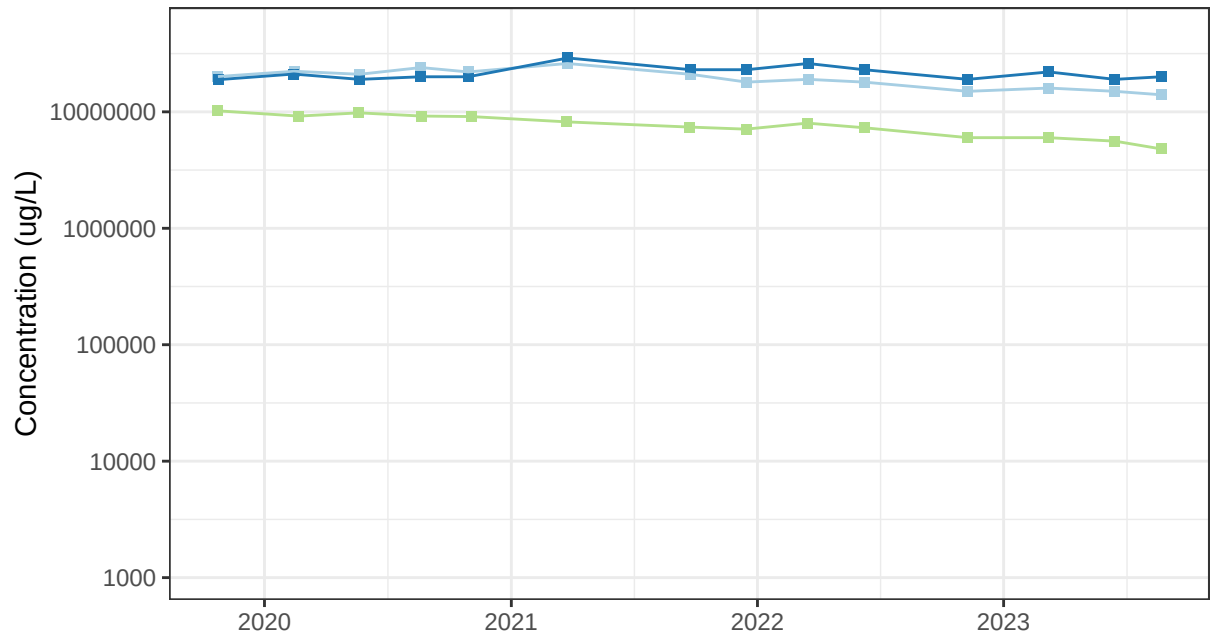
Chloride in GCC3



Aquifer Depth
- Shallow, Detect
- Shallow, ND
- Intermediate, Detect
- Intermediate, ND
- Deep, Detect
- Deep, ND

Well
- PA−20D
- PA−21D

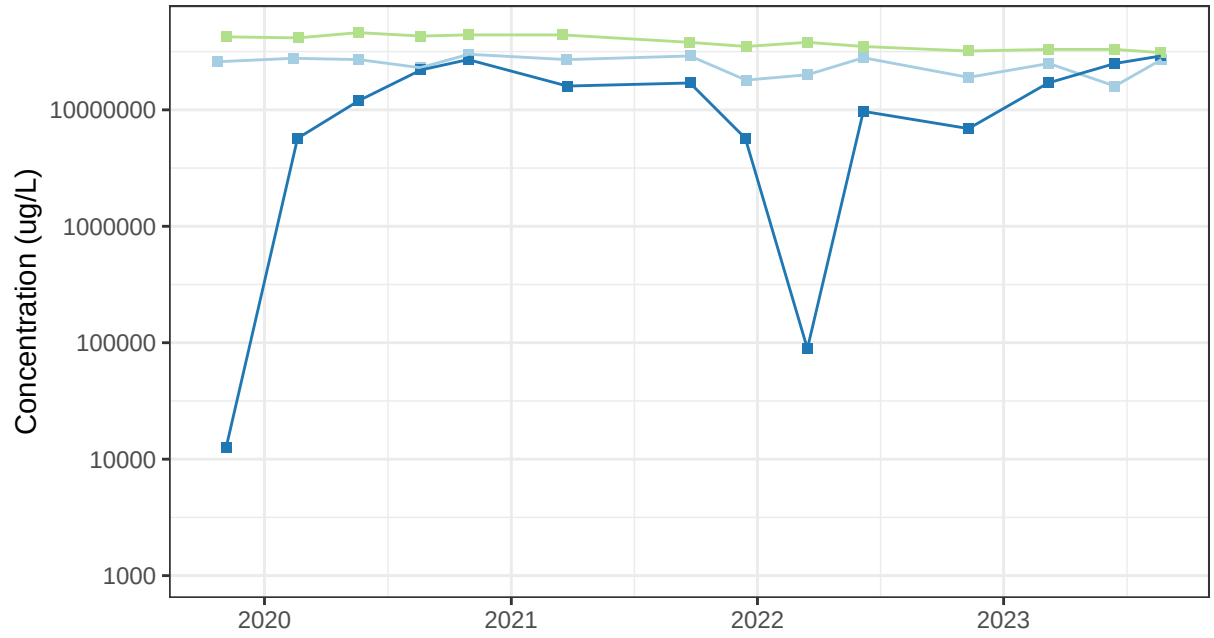
Chloride in GCC4 & Proximal Wells



Aquifer Depth
- Shallow, Detect
- Shallow, ND
- Intermediate, Detect
- Intermediate, ND
- Deep, Detect
- Deep, ND

Well
- MWA−56D
- MWA−58D
- PA−22D

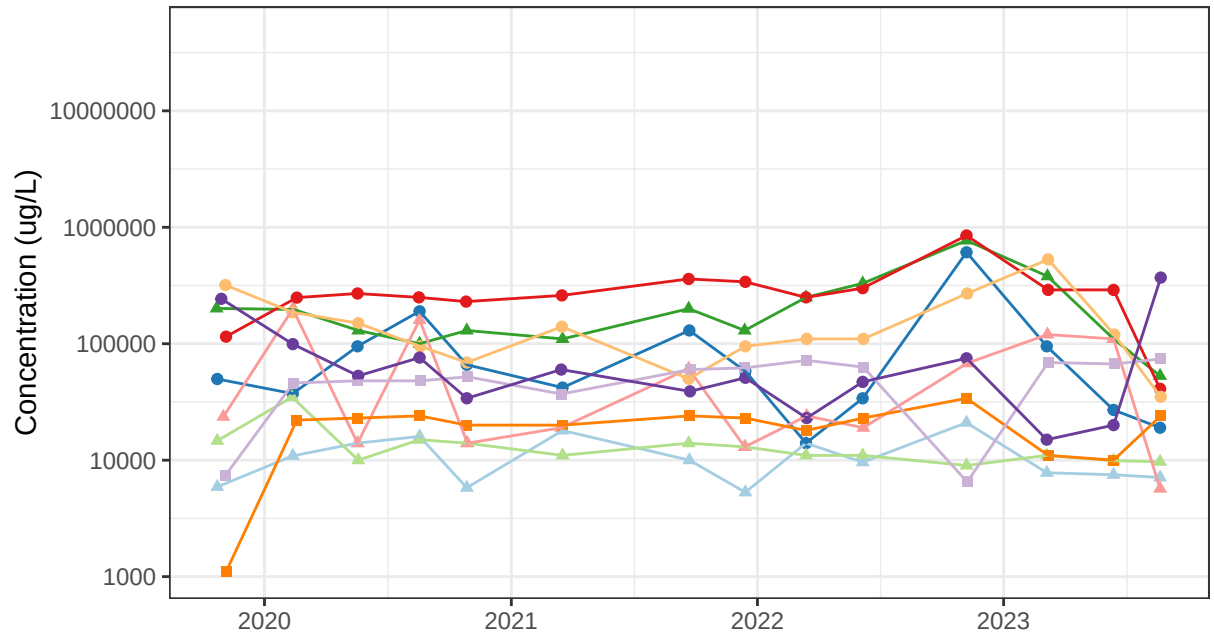
Chloride in GCC5 & Proximal Wells



Aquifer Depth
- Shallow, Detect
- Shallow, ND
- Intermediate, Detect
- Intermediate, ND
- Deep, Detect
- Deep, ND

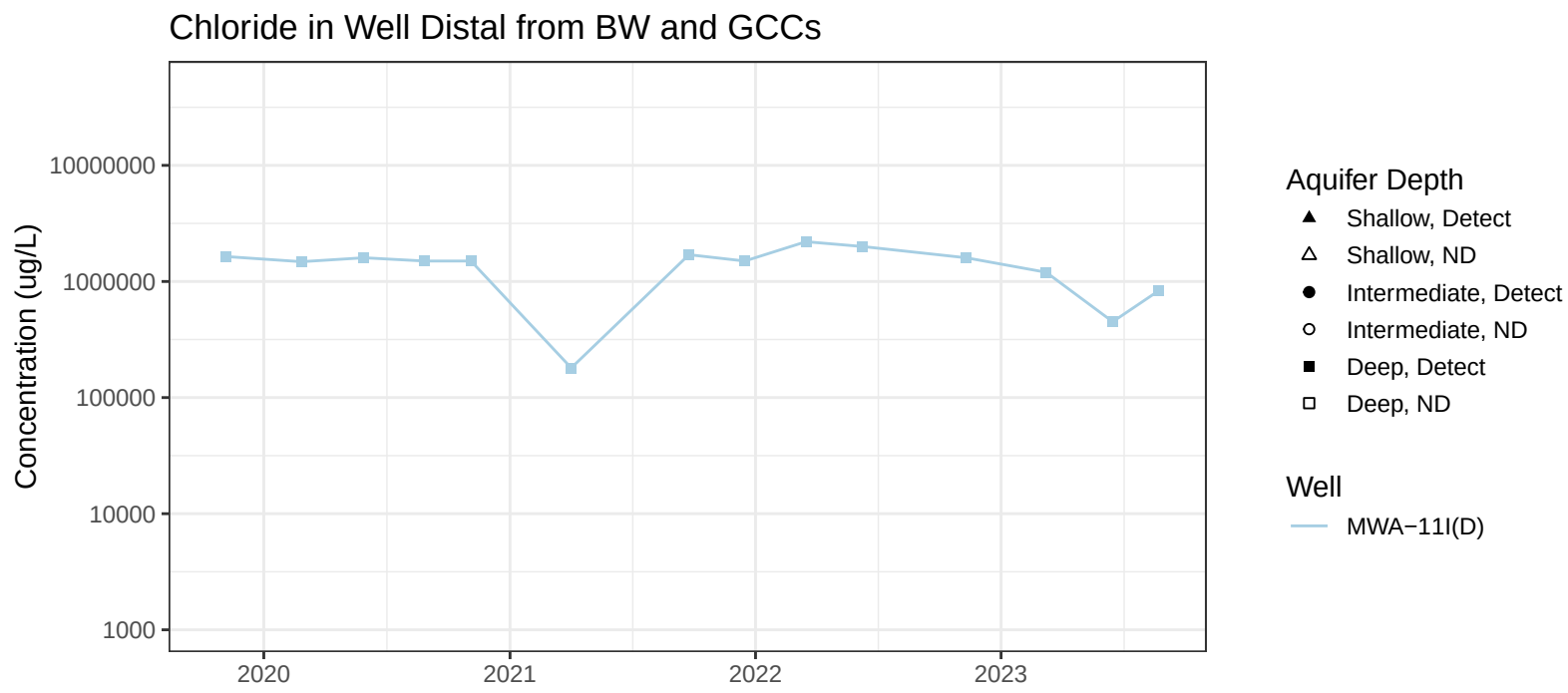
Well
- MWA−31I(D)
- PA−23D
- PA−24D

Chloride in GCC6 & Proximal Wells

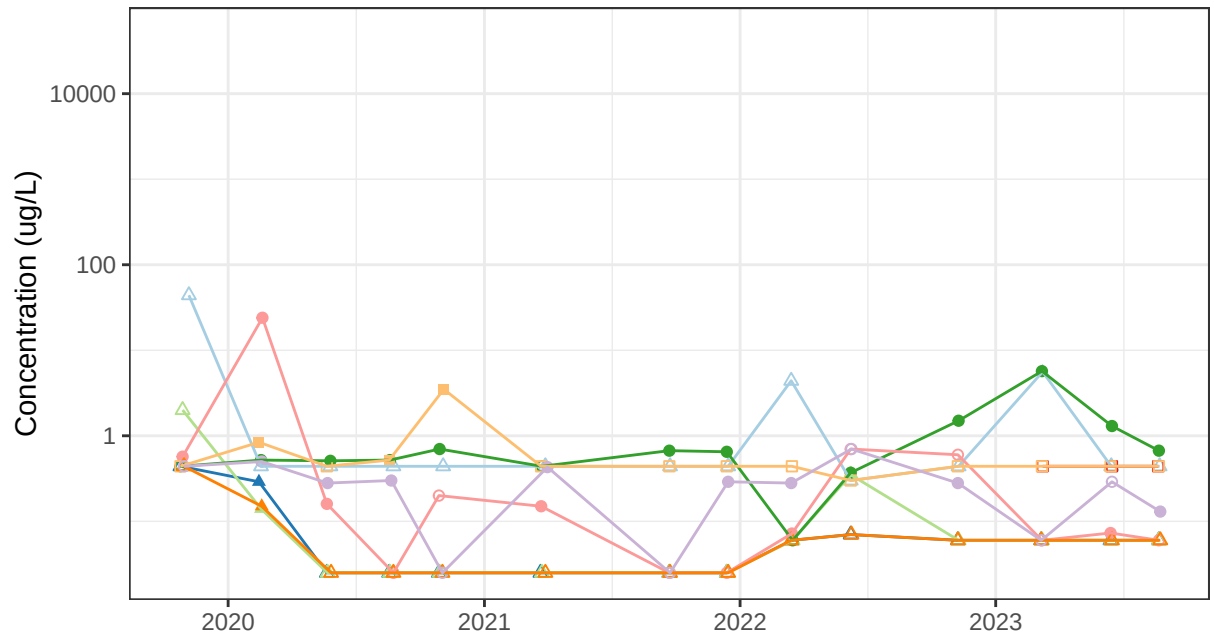


Aquifer Depth
- Shallow, Detect
- Shallow, ND
- Intermediate, Detect
- Intermediate, ND
- Deep, Detect
- Deep, ND

Well
- MWA−41
- MWA−81I
- MWA−82
- PA−08
- PA−09
- PA−15I
- PA−16I
- PA−25D
- PA−26D
- PA−44I


Chloride in Well Distal from BW and GCCs
Concentration (ug/L)
10000000
1000000
100000
10000
1000
2020
2021
2022
2023
Aquifer Depth
Shallow, Detect
Shallow, ND
Intermediate, Detect
Intermediate, ND
Deep, Detect
Deep, ND
Well
MWA−11I(D)

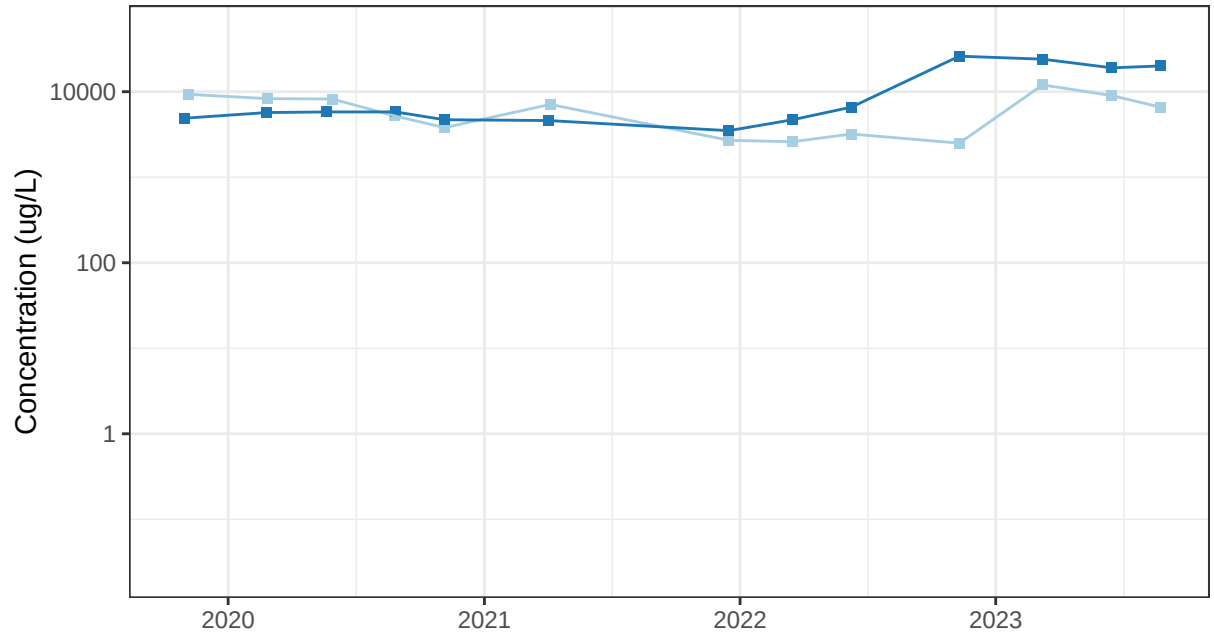
Chlorobenzene in GCC1 & Proximal Wells



Aquifer Depth
- Shallow, Detect
- Shallow, ND
- Intermediate, Detect
- Intermediate, ND
- Deep, Detect
- Deep, ND

Well
- MWA−63
- PA−03
- PA−04
- PA−10I
- PA−17IR
- PA−18D
- PA−27D
- PA−31
- PA−32I

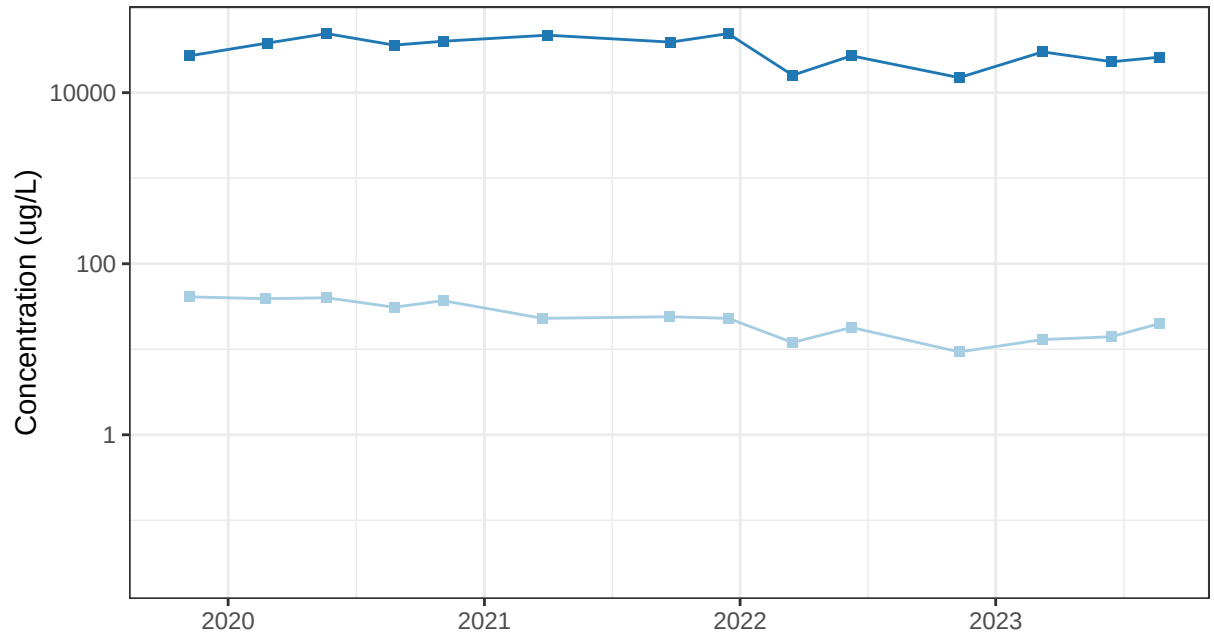
Chlorobenzene in GCC2



Aquifer Depth
- Shallow, Detect
- Shallow, ND
- Intermediate, Detect
- Intermediate, ND
- Deep, Detect
- Deep, ND

Well
- PA−19D
- PA−30D

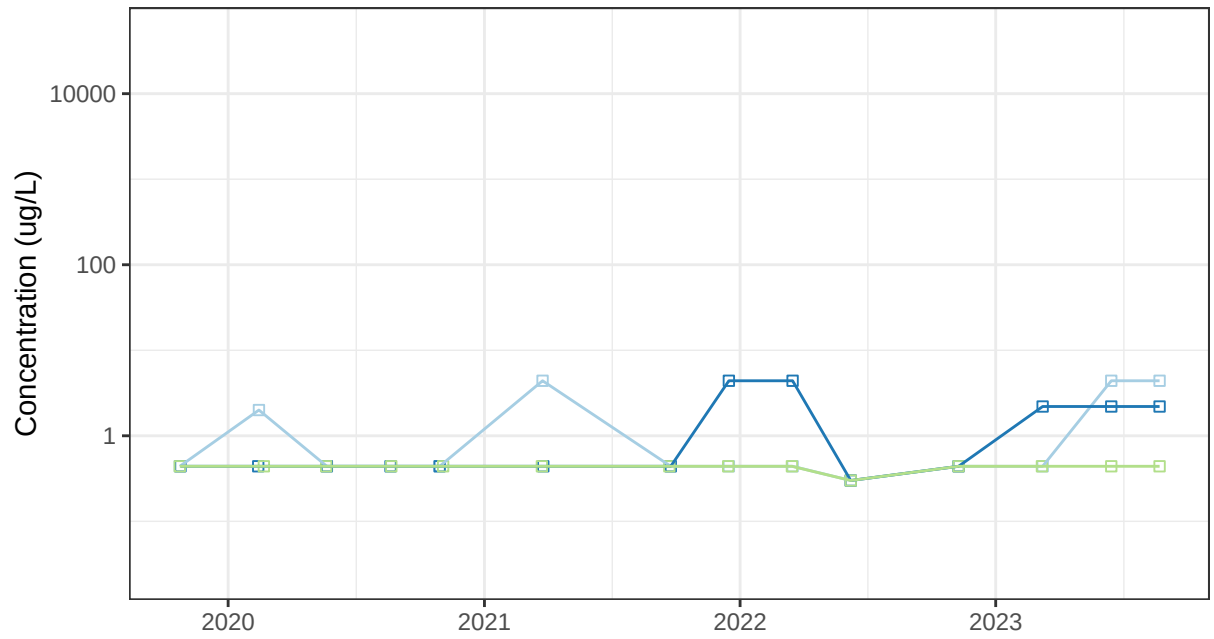
Chlorobenzene in GCC3



Aquifer Depth
- Shallow, Detect
- Shallow, ND
- Intermediate, Detect
- Intermediate, ND
- Deep, Detect
- Deep, ND

Well
- PA−20D
- PA−21D

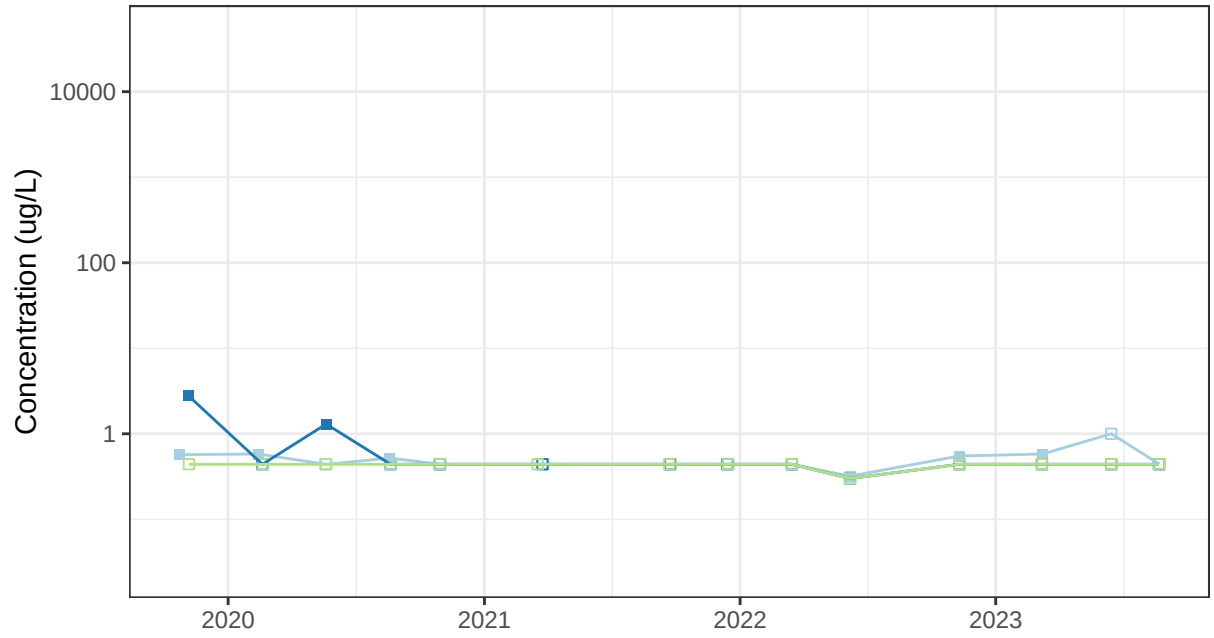
Chlorobenzene in GCC4 & Proximal Wells



Aquifer Depth
- Shallow, Detect
- Shallow, ND
- Intermediate, Detect
- Intermediate, ND
- Deep, Detect
- Deep, ND

Well
- MWA−56D
- MWA−58D
- PA−22D

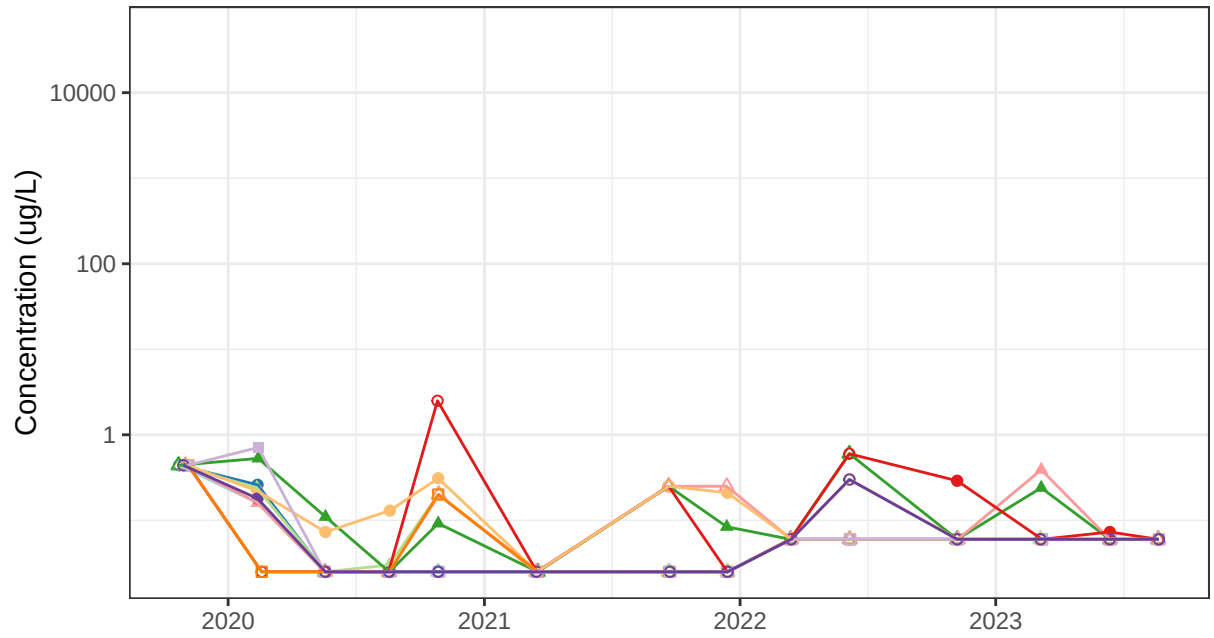
Chlorobenzene in GCC5 & Proximal Wells



Aquifer Depth
- Shallow, Detect
- Shallow, ND
- Intermediate, Detect
- Intermediate, ND
- Deep, Detect
- Deep, ND

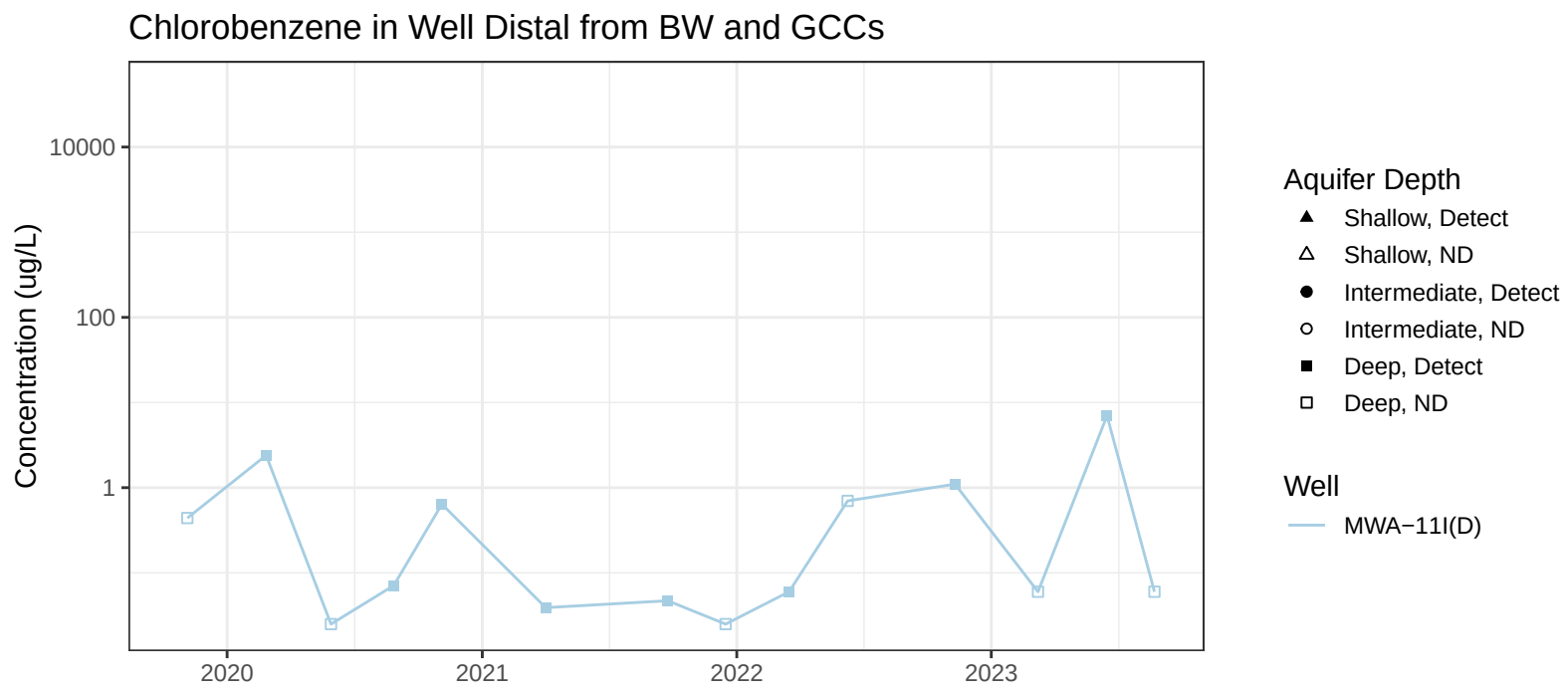
Well
- MWA−31I(D)
- PA−23D
- PA−24D

Chlorobenzene in GCC6 & Proximal Wells

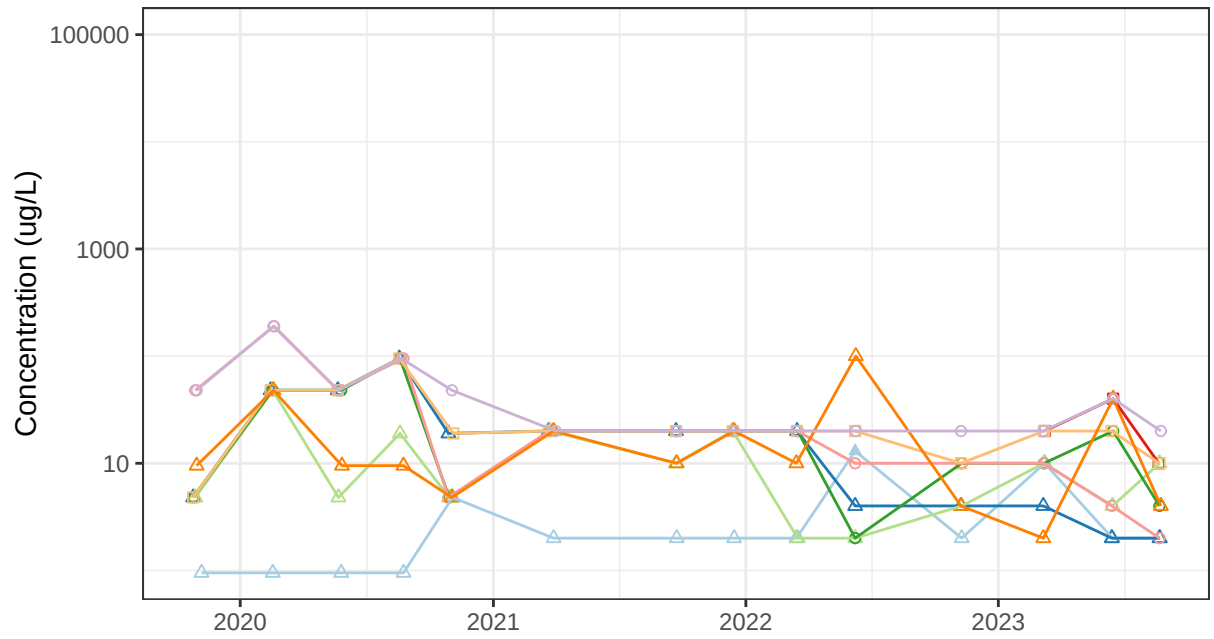


Aquifer Depth
- Shallow, Detect
- Shallow, ND
- Intermediate, Detect
- Intermediate, ND
- Deep, Detect
- Deep, ND

Well
- MWA−41
- MWA−81I
- MWA−82
- PA−08
- PA−09
- PA−15I
- PA−16I
- PA−25D
- PA−26D
- PA−44I


Chlorobenzene in Well Distal from BW and GCCs
Concentration (ug/L)
10000
100
1
2020
2021
2022
2023
Aquifer Depth
Shallow, Detect
Shallow, ND
Intermediate, Detect
Intermediate, ND
Deep, Detect
Deep, ND
Well
MWA−11I(D)

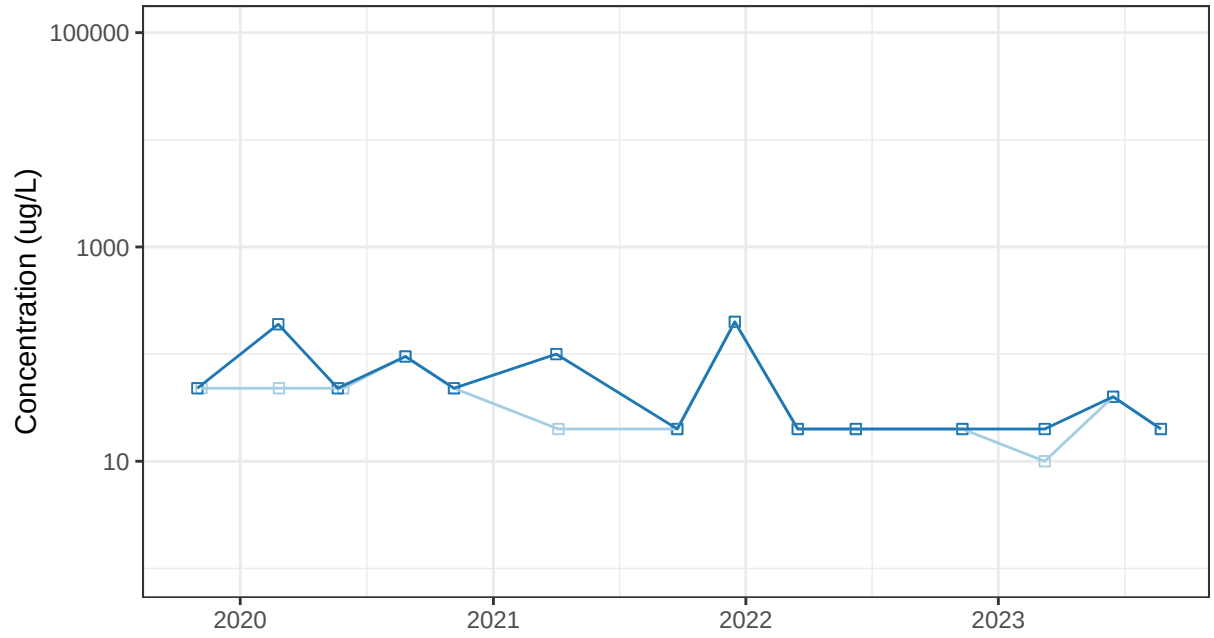
Perchlorate in GCC1 & Proximal Wells



Aquifer Depth
- Shallow, Detect
- Shallow, ND
- Intermediate, Detect
- Intermediate, ND
- Deep, Detect
- Deep, ND

Well
- MWA−63
- PA−03
- PA−04
- PA−10I
- PA−17IR
- PA−18D
- PA−27D
- PA−31
- PA−32I

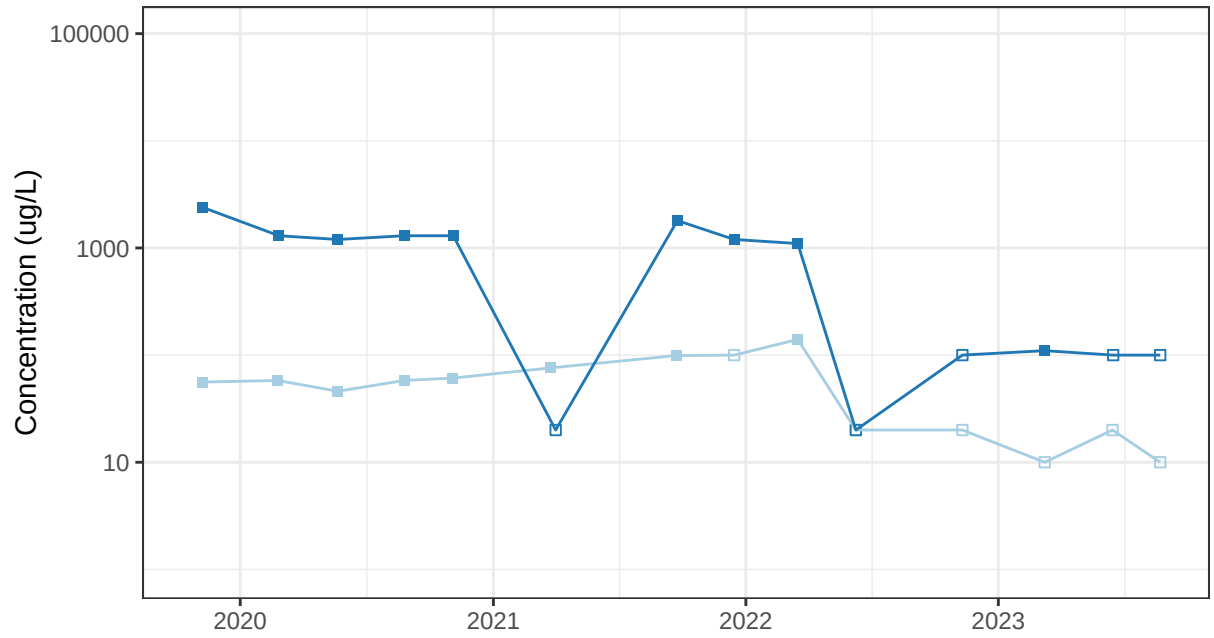
Perchlorate in GCC2



Aquifer Depth
- Shallow, Detect
- Shallow, ND
- Intermediate, Detect
- Intermediate, ND
- Deep, Detect
- Deep, ND

Well
- PA−19D
- PA−30D

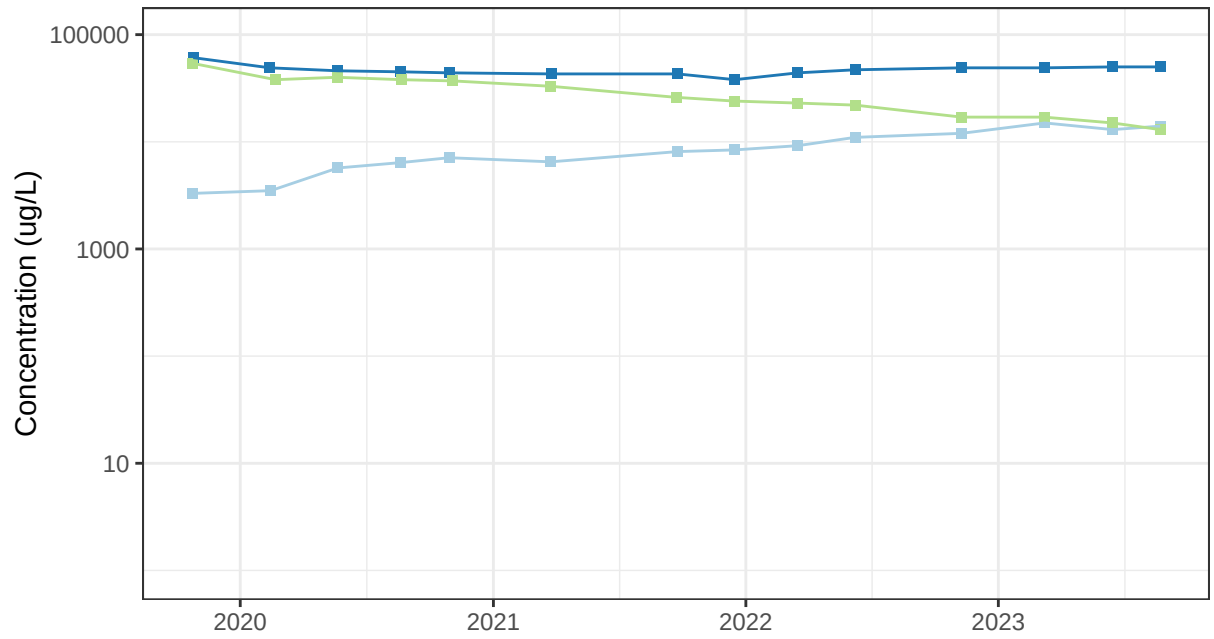
Perchlorate in GCC3



Aquifer Depth
- Shallow, Detect
- Shallow, ND
- Intermediate, Detect
- Intermediate, ND
- Deep, Detect
- Deep, ND

Well
- PA−20D
- PA−21D

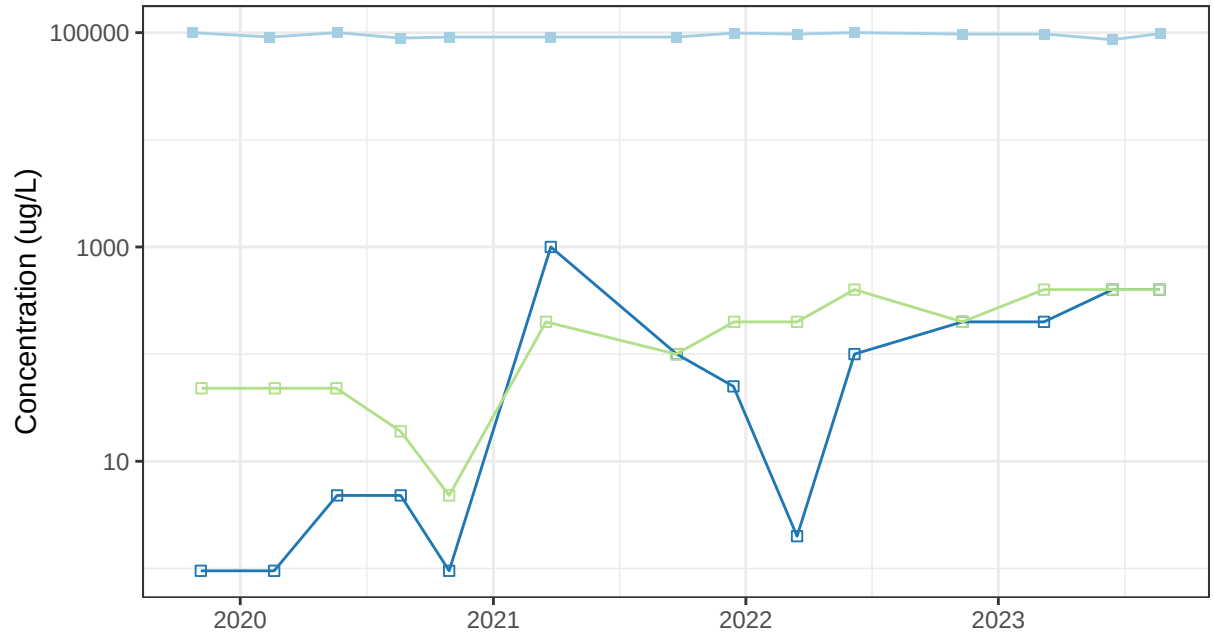
Perchlorate in GCC4 & Proximal Wells



Aquifer Depth
- Shallow, Detect
- Shallow, ND
- Intermediate, Detect
- Intermediate, ND
- Deep, Detect
- Deep, ND

Well
- MWA−56D
- MWA−58D
- PA−22D

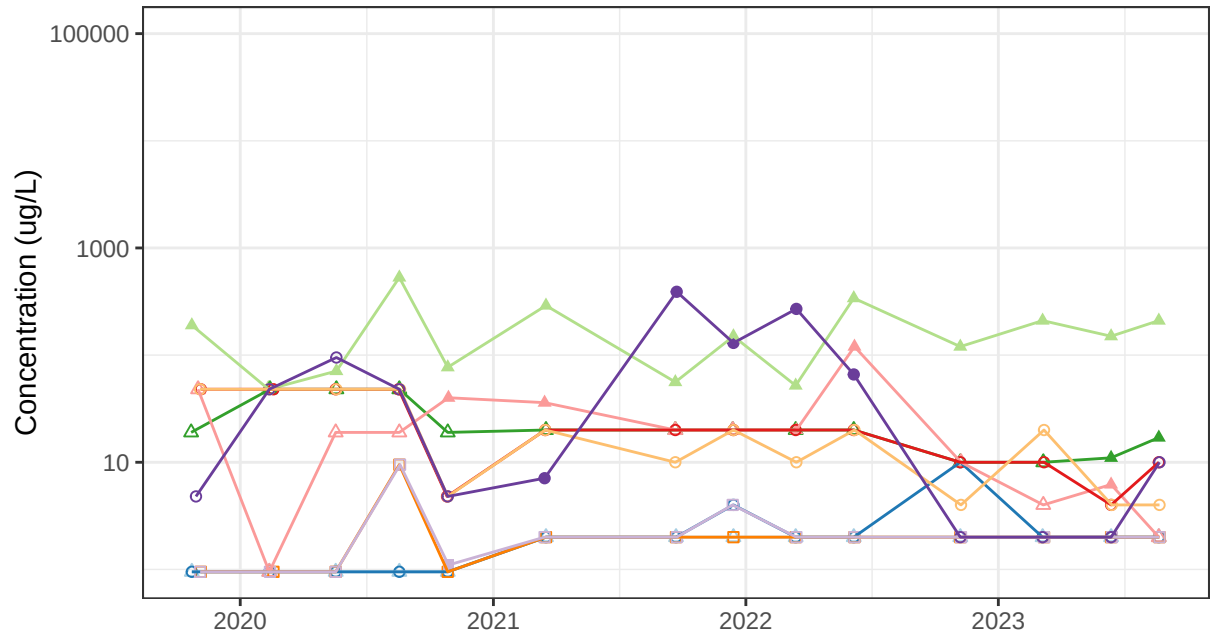
Perchlorate in GCC5 & Proximal Wells



Aquifer Depth
- Shallow, Detect
- Shallow, ND
- Intermediate, Detect
- Intermediate, ND
- Deep, Detect
- Deep, ND

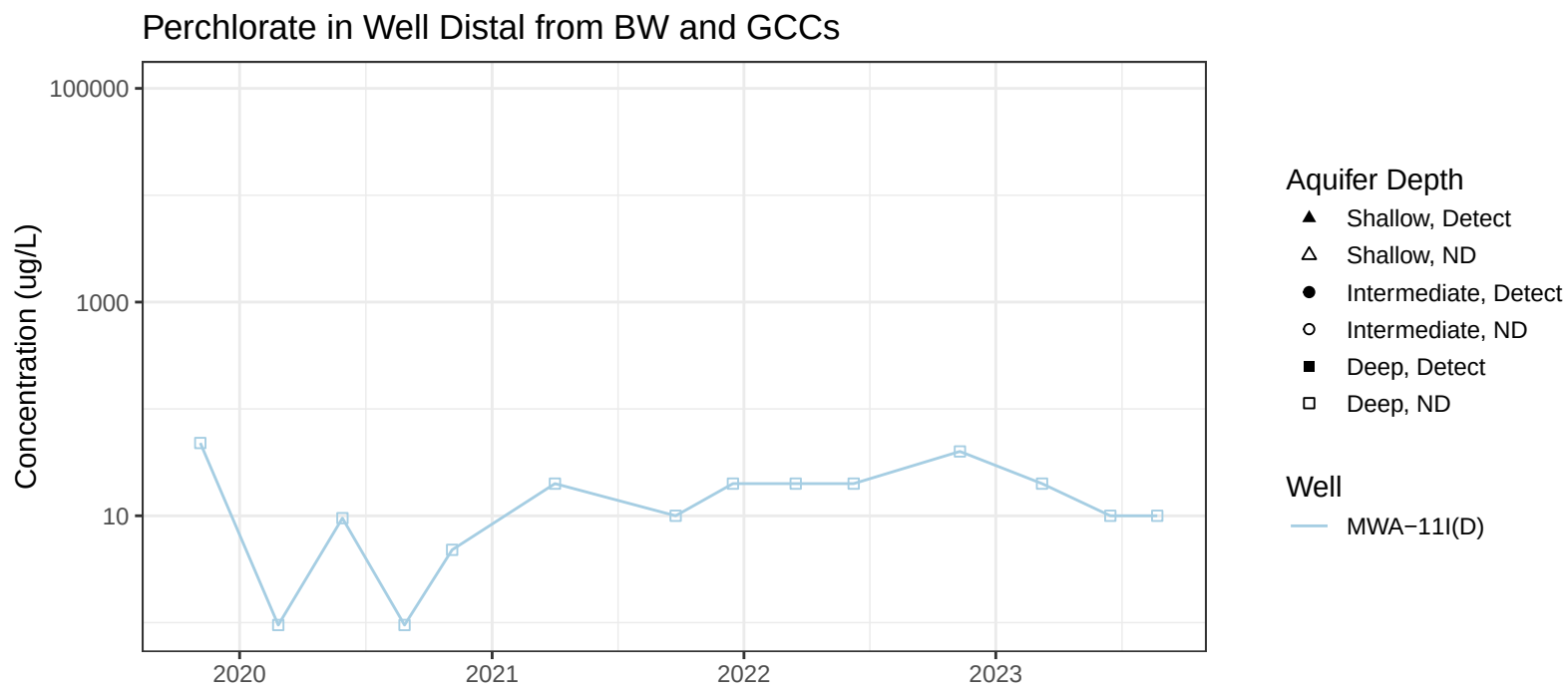
Well
- MWA−31I(D)
- PA−23D
- PA−24D

Perchlorate in GCC6 & Proximal Wells



Aquifer Depth
- Shallow, Detect
- Shallow, ND
- Intermediate, Detect
- Intermediate, ND
- Deep, Detect
- Deep, ND

Well
- MWA−41
- MWA−81I
- MWA−82
- PA−08
- PA−09
- PA−15I
- PA−16I
- PA−25D
- PA−26D
- PA−44I


Perchlorate in Well Distal from BW and GCCs
Concentration (ug/L)
100000
1000
10
2020
2021
2022
2023
Aquifer Depth
Shallow, Detect
Shallow, ND
Intermediate, Detect
Intermediate, ND
Deep, Detect
Deep, ND
Well
MWA−11I(D)

APPENDIX E HISTORICAL DATA TABLE

Appendix E
Historical Data Table
Arkema Quarter 3, 2023, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Aquifer	Well ID	Sample ID	Date	2,4'-DDD	4,4'-DDD	2,4'-DDE	4,4'-DDE	2,4'-DDT	4,4'-DDT	Total of 2,4' and 4,4'-DDD, -DDE, -DDT	Chloride	Chlorobenzene	Chromium (VI)	Perchlorate
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Shallow	MWA-2	GAMWA210297	1/2/1997		< 0.1 U		< 0.1 U		**0.12**	**0.12 T**		< 5 U		
Shallow	MWA-2	GAMWA210397	3/12/1997		< 0.1 UJ		< 0.1 UJ		< 0.1 UJ	< 0.1 UJT		**7**		
Shallow	MWA-2	GAMWA210697	6/24/1997		< 0.1 UJ		< 0.1 UJ		< 0.1 UJ	< 0.1 UJT		**6,000**		
Shallow	MWA-2	GAMWA210997	9/30/1997		**0.17 J**		< 0.1 UJ		< 0.1 UJ	**0.17 JT**		**9,000**		
Shallow	MWA-2	GW059801	5/28/1998		**0.25 J**		< 0.04 U		**0.33 J**	**0.58 JT**	**10,400**	**4**		
Shallow	MWA-2	GW019907	1/27/1999		**0.32**		**0.04**		**0.18**	**0.54 T**	**41,100 T**	**94**		
Shallow	MWA-2	GW029906	4/27/1999		**0.8**		< 0.04 U		**0.6**	**1.4 T**	**16,800**	**970 J**		
Shallow	MWA-2	GW039907	8/24/1999		**0.7**		< 0.4 UJ		< 0.4 UJ	**0.7 T**	**33,800**	**4,400**		
Shallow	MWA-2	GW049905	11/16/1999		**0.39 J**		< 0.04 UJ		< 0.24 U	**0.39 JT**	**41,700**	**2,100**		
Shallow	MWA-2	GW010111	3/29/2001		**0.57**		< 0.1 U		< 0.1 U	**0.57 T**	**158,000 J**	**4,300**		
Shallow	MWA-2	GW020106	6/12/2001		**0.4**		**0.055**		< 0.05 UJ	**0.455 T**	**384,000**	**4,600**		
Shallow	MWA-2	GW04100205	4/10/2002		**0.41**		< 0.099 U		< 0.099 U	**0.41 T**	**1,400,000**	**27,000**		
Shallow	MWA-2	GW-060903-01	6/9/2003		< 1.70 U		< 1.70 U		< 2.80 U	< 2.8 UT	**981,000**	**13,700**		**1,400**
Shallow	MWA-2	MWA-2-111004	11/10/2004		< 0.500 UJ		< 0.500 UJ		< 0.500 UJ	< 0.5 UJT		**30,200**		
Shallow	MWA-2	MWA-2-031005	3/10/2005		< 2.50 UJ		< 2.50 UJ		< 2.50 UJ	< 2.5 UJT		**15,400**		
Shallow	MWA-2	MWA-2-062205	6/22/2005		**3.35**		< 0.500 UJ		< 0.500 UJ	**3.35 T**		**12,200**		
Shallow	MWA-2	MWA-2-091505	9/15/2005		**0.543 J**		< 0.184 U		**0.0789 J**	**0.8089 JT**		**21,900**		
Shallow	MWA-2	MWA-2-102705	10/27/2005		**0.477**		**0.0965**		< 0.236 UJ	**0.5735 T**		**23,500**		
Shallow	MWA-2	MWA-2-122005	12/20/2005		**0.312**		< 0.239 UJ		< 0.239 UJ	**0.312 T**		**16,200**		
Shallow	MWA-2	MWA-2-011306	1/13/2006		**0.510**		< 0.0971 UJ		< 0.0971 UJ	**0.51 T**		**4**		
Shallow	MWA-2	MWA-2-032906	3/29/2006		**0.240**		< 0.0952 UJ		**0.190**	**0.43 T**		**4,050**		
Shallow	MWA-2	MWA-2-040407	4/4/2007		**0.292**		< 0.287 U		< 0.191 U	**0.292 A**	**376,000**	**2,570**		**73.8**
Shallow	MWA-2	MWA-2-080609	8/6/2009		< 0.286 U		< 0.286 U		**0.191**	**0.191 A**	**340,000**	**18,200**		**3.9**
Shallow	MWA-15R	GW010117	3/30/2001		**37**		< 10 U		**450**	**487 T**	**1960,000 J**	**260,000**		
Shallow	MWA-15R	GW020121	6/15/2001		**7.4**		< 0.96 U		**73 J**	**80.4 JT**	**1,560,000**	**210,000**		
Shallow	MWA-15R	GW04160201	4/16/2002		**25**		**4.2 J**		**75 J**	**104 JT**	**407,000**	**48,000**		
Shallow	MWA-15R	GW-061003-04	6/10/2003		**28.4 J**		< 3.40 U		**113**	**141 JT**	**388,000**	**13,300**		**350**
Shallow	MWA-15R	MWA-15R-100203	10/2/2003									**27,200**		
Shallow	MWA-15R	MWA-15R-111403	11/14/2003									**163,000**		
Shallow	MWA-15R	MWA-15R-011304	1/13/2004									**64,400**		
Shallow	MWA-15R	MWA-15R-013004	1/30/2004									**24,600**		
Shallow	MWA-15R	MWA-15R-030204	3/2/2004									**2,450**		
Shallow	MWA-15R	MWA-15R-111004	11/10/2004		**27.7**		< 5.00 UJ		**86.2**	**113 T**		**154,000**		
Shallow	MWA-15R	MWA-15R-031005	3/10/2005		**79.7**		< 25.0 UJ		**534**	**613.7 T**		**97,000**		
Shallow	MWA-15R	MWA-15R-062205	6/22/2005		**40.9**		**9.88**		**193**	**243.78 T**		**87,700**		
Shallow	MWA-15R	MWA-15R-091605	9/16/2005		**73.2**		**11.2 J**		**619 J**	**703 JT**		**240,000**		
Shallow	MWA-15R	MWA-15R-122105	12/21/2005		**10.1**		**1.53**		**86.5**	**98.13 T**		**217,000**		
Shallow	MWA-15R	MWA-15R-033006	3/30/2006		**124**		**24**		**458**	**606 T**		**72,900**		
Shallow	MWA-15R	MWA-15R-041707	4/17/2007		**48.3 J**		**7.71**		**207**	**263 JA**	**129,000**	**34**		
Shallow	MWA-15R	MWA-15R-081909	8/19/2009		**111**		**21.9**		**702**	**835 A**	**156,000**	**23,500**	< 25 UJ	
Shallow	MWA-15R	MWA-15R-090309	9/3/2009		**377**		**52.1**		**5,210**	**5,640 A**				
Shallow	MWA-18	GW010105	3/27/2001						**0.046 J**	**0.046 JT**	**1,200,000**	**41**		
Shallow	MWA-18	GW020110	6/13/2001		**0.015 J**		< 0.0094 U		< 0.026 U	**0.015 JT**	**894,000 J**	**34**	< 50 UJ	
Shallow	MWA-18	GW04040203	4/4/2002		< 0.0096 U		< 0.0096 U		< 0.019 U	< 0.019 UT	**2,210,000**	**8**		
Shallow	MWA-18	GW-060603-03	6/6/2003		< 0.0170 U		< 0.0170 U		< 0.0280 U	< 0.028 UT	**1,410,000**	< 3.06 U		< 25 U
Shallow	MWA-18	MWA-18-050505	5/5/2005								**612,000**		**833**	
Shallow	MWA-18	MWA-18-071405	7/14/2005										**676**	
Shallow	MWA-18	MWA-18	8/3/2005		< 0.0500 U		< 0.0500 U		< 0.0500 U	< 0.05 UT		**0.580**		
Shallow	MWA-18	MWA-18-081605	8/16/2005										**248**	
Shallow	MWA-18	MWA-18-091205	9/12/2005								**410,000**		**1,180**	**3.4**
Shallow	MWA-18	MWA-18-120805	12/8/2005										**5.90 J**	
Shallow	MWA-18	MWA-18-011006	1/10/2006										**30.0**	
Shallow	MWA-18	MWA-18-021306	2/13/2006										< 4.55 U	
Shallow	MWA-18	MWA-18-072606	7/26/2006										**3.4**	
Shallow	MWA-18	MWA-18-041107	4/11/2007		< 0.0971 U		< 0.0971 U		< 0.0971 U	< 0.0971 UA	**233,000**	**1.33**	**2.2 J**	< 8.0 U

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Aquifer	Well ID	Sample ID	Date	2,4'-DDD	4,4'-DDD	2,4'-DDE	4,4'-DDE	2,4'-DDT	4,4'-DDT	Total of 2,4' and 4,4'-DDD, -DDE, -DDT	Chloride	Chlorobenzene	Chromium (VI)	Perchlorate
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Shallow	MWA-18	MWA-18-081009	8/10/2009		**0.0155**		**0.00671 J**		**0.00789 J**	**0.0301 JA**	**270,000**	**0.930 J**	**340 J**	< 4 U
Shallow	MWA-19	GW010104	3/27/2001		< 0.02 UJ		< 0.02 UJ		**0.095 J**	**0.095 JT**	**5,540,000**	< 0.5 U		
Shallow	MWA-19	GW020112	6/13/2001		< 0.0099 U		< 0.0099 U		< 0.016 U	< 0.016 UT	**12,700,000 J**	< 0.5 U	< 50 UJ	
Shallow	MWA-19	GW04040204	4/4/2002		< 0.0097 U		< 0.0097 U		**0.1**	**0.1 T**	**13,100,000**	< 0.5 U		
Shallow	MWA-19	GW-060603-04	6/6/2003		**0.0935**		< 0.0170 U		**0.23**	**0.324 T**	**5,180,000**	< 0.64 U		< 82 U
Shallow	MWA-19	MWA-19-050605	5/6/2005								**2,100,000**		**2,680**	
Shallow	MWA-19	MWA-19-071305	7/13/2005										**159**	
Shallow	MWA-19	MWA-19	8/3/2005		**0.114**		< 0.0500 U		**0.576**	**0.69 T**		**3.14**		
Shallow	MWA-19	MWA-19-081705	8/17/2005										**407**	
Shallow	MWA-19	MWA-19-091305	9/13/2005								**1,240,000**		**824**	< 1 U
Shallow	MWA-19	MWA-19-120805	12/8/2005										**101**	
Shallow	MWA-19	MWA-19-010906	1/9/2006										**33.2**	
Shallow	MWA-19	MWA-19-021006	2/10/2006										**12.1**	
Shallow	MWA-19	MWA-19-072606	7/26/2006										**56.8**	
Shallow	MWA-19	MWA-19-040907	4/9/2007		**0.0743 J**		< 0.0966 U		**0.242**	**0.316 JA**	**737,000**	**1.79**	**11.3**	< 80.0 U
Shallow	MWA-19	MWA-19-081009	8/10/2009		**0.183 J**		**0.175 J**		**1.14**	**1.5 JA**	**406,000**	**0.390 J**	**500 J**	< 40 U
Shallow	MWA-20	GW010103	3/27/2001						**0.088 J**	**0.088 JT**	**2,810,000 T**	**2,700**		
Shallow	MWA-20	GW020114	6/13/2001						**0.052 J**	**0.052 JT**	**1,780,000 J**	**1,100**	**59.5**	
Shallow	MWA-20	GW04090204	4/9/2002								**1,135,000 T**	**1,900**		
Shallow	MWA-20	GW-060503-03	6/5/2003		**0.0688 J**				**0.213 J**	**0.282 JT**	**1,500,000**	**215**		
Shallow	MWA-20	MWA-20-050905	5/9/2005										**436**	
Shallow	MWA-20	MWA-20-071305	7/13/2005										**74.1**	
Shallow	MWA-20	MWA-20	8/4/2005		< 0.0500 U		< 0.0500 U		< 0.0500 U	< 0.05 UT		**1,540**		
Shallow	MWA-20	MWA-20-081505	8/15/2005										**676**	
Shallow	MWA-20	MWA-20-090705	9/7/2005										**573**	
Shallow	MWA-20	MWA-20-121205	12/12/2005										**9.67 J**	
Shallow	MWA-20	MWA-20-011006	1/10/2006										**52.5**	
Shallow	MWA-20	MWA-20-020906	2/9/2006										**43.8**	
Shallow	MWA-20	MWA-20-072506	7/25/2006										**14.36 J**	
Shallow	MWA-20	MWA-20-041107	4/11/2007		< 0.0485 U		< 0.0485 U		**0.0692 J**	**0.0692 J**	**583,000**	**1,500 J**	**8.6**	< 33.9 U
Shallow	MWA-20	MWA-20-081709	8/17/2009		< 0.00952 U		< 0.00952 U		**0.00836 J**	**0.00836 JA**	**164,000**	**1,780**	**67 J**	< 40 U
Shallow	MWA-22	GW020122	6/15/2001		**0.83**		< 0.096 U		**0.15**	**0.98 T**	**4,870,000**	**38**		
Shallow	MWA-22	GW04110203	4/11/2002		< 0.099 U		< 0.099 U		< 0.099 U	< 0.099 UT	**5,430,000**	**310**		
Shallow	MWA-22	GW-061003-02	6/10/2003		< 0.13 U		< 0.0170 UJ		< 0.348 U	< 0.348 UT	**6,210,000**	**128**		
Shallow	MWA-22	MWA-22	8/1/2005		**0.115**		< 0.0500 U		**1.29**	**1.405 T**		**6,460**		
Shallow	MWA-22	MWA-22-041607	4/16/2007		**0.133**		< 0.0976 U		< 0.0976 U	**0.133 A**	**4,200,000**	**538**	**103**	
Shallow	MWA-22	MWA-22-081909	8/19/2009		< 0.144 U		< 0.0962 U		< 0.0962 U	< 0.144 UA	**2,870,000**	**123**	**48 J**	< 40 U
Shallow	MWA-22	MWA-22-022119	2/21/2019	< 0.10 UJ	**0.026 J-**	< 0.10 UJ	**0.0060 J-**	< 0.10 UJ	< 0.010 UJ	**0.032**		**3,400**	< 13 UJ	< 48
Shallow	MWA-24	GW11150102	11/15/2001									< 2.5 U		
Shallow	MWA-24	GW04080201	4/8/2002								**408,000**			
Shallow	MWA-24	GW-060503-04	6/5/2003		< 0.232 U		< 0.0340 U		< 0.0560 U	< 0.232 UT	**583,000**			
Shallow	MWA-24	MWA-24-050505	5/5/2005								**529,000**		**52.8 J**	
Shallow	MWA-24	MWA-24-071205	7/12/2005										**54.1 J**	
Shallow	MWA-24	MWA-24-081105	8/11/2005										**35.5**	
Shallow	MWA-24	MWA-24-090705	9/7/2005										**20.3**	
Shallow	MWA-24	MWA-24-091405	9/14/2005											**30**
Shallow	MWA-24	MWA-24-120705	12/7/2005										**63.5**	
Shallow	MWA-24	MWA-24-011106	1/11/2006										**31.9**	
Shallow	MWA-24	MWA-24-020806	2/8/2006										**30.6**	
Shallow	MWA-24	MWA-24-072506	7/25/2006										**24**	
Shallow	MWA-24	MWA-24-040307	4/3/2007								**274,000**	**1.90 J**	**76.2**	**258 J**
Shallow	MWA-24	MWA-24-080509	8/5/2009								**237,000**	< 0.500 U	**86 J**	**17.9**
Shallow	MWA-29	GW04080204	4/8/2002		< 0.0096 U		< 0.0096 U		< 0.0096 U	< 0.0096 UT	**21,900,000**	< 0.5 U		
Shallow	MWA-29	GW-060403-06	6/4/2003		< 0.0170 UJ		< 0.0170 UJ		< 0.0280 UJ	< 0.028 UJT	**11,700,000**			< 110 U
Shallow	MWA-29	MWA-29-050905	5/9/2005								**9,100,000**		**14.1**	

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Aquifer	Well ID	Sample ID	Date	2,4'-DDD	4,4'-DDD	2,4'-DDE	4,4'-DDE	2,4'-DDT	4,4'-DDT	Total of 2,4' and 4,4'-DDD, -DDE, -DDT	Chloride	Chlorobenzene	Chromium (VI)	Perchlorate
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Shallow	MWA-29	MWA-29-071805	7/18/2005										< 4.55 U	
Shallow	MWA-29	MWA-29-081205	8/12/2005										< 4.55 U	
Shallow	MWA-29	MWA-29-091205	9/12/2005								**12,600,000**		**107**	**4,800**
Shallow	MWA-29	MWA-29-120805	12/8/2005										**186**	
Shallow	MWA-29	MWA-29-010606	1/6/2006										**14.1**	
Shallow	MWA-29	MWA-29-020806	2/8/2006										**19.5**	
Shallow	MWA-29	MWA-29-072406	7/24/2006										< 20 U	
Shallow	MWA-29	MWA-29-041607	4/16/2007		< 0.0966 U		< 0.0966 U		< 0.0966 U	< 0.0966 UA	**9,710,000**		< 20 UJ	**243**
Shallow	MWA-29	MWA-29-080609	8/6/2009		< 0.00952 U		< 0.00952 U		< 0.00952 U	< 0.00952 UA	**3,750,000**		< 25 UJ	< 20 U
Shallow	MWA-30	GW04120203	4/12/2002		**0.18**		**0.021 J**		**0.012**	**0.213 JT**	**179,000,000**	< 0.5 U		
Shallow	MWA-30	GW-060403-08	6/4/2003		< 0.0170 UJ		< 0.0170 UJ		< 0.0280 UJ	< 0.028 UJT	**164,000,000**			**7,900**
Shallow	MWA-30	MWA-30-050605	5/6/2005								**104,000,000**		**3,040**	
Shallow	MWA-30	MWA-30-051005	5/10/2005											**621**
Shallow	MWA-30	MWA-30-071805	7/18/2005										**13.0**	
Shallow	MWA-30	MWA-30	8/3/2005		< 0.0500 U		< 0.0500 U		< 0.0500 U	< 0.05 UT		< 0.136 U		
Shallow	MWA-30	MWA-30-081705	8/17/2005										**6,270**	
Shallow	MWA-30	MWA-30-010606	1/6/2006										**32.8**	
Shallow	MWA-30	MWA-30-021006	2/10/2006										< 4.55 U	
Shallow	MWA-30	MWA-30-072606	7/26/2006										< 2 U	
Shallow	MWA-30	MWA-30-040507	4/5/2007		< 0.0962 U		< 0.0962 U		< 0.0962 U	< 0.0962 UA	**39,400,000**	**0.900**	**8.5 J**	< 80.0 U
Shallow	MWA-30	MWA-30-081009	8/10/2009		**0.148**		< 0.00943 U		< 0.00943 U	**0.148 A**	**12,900,000**	< 2.00 UJ	**1,100 J**	< 80 U
Shallow	MWA-33	GW-060503-05	6/5/2003								**198,000**	< 2.51 U		**540**
Shallow	MWA-33	GW-061103-02	6/11/2003		< 0.0170 UJ		< 0.0170 UJ		< 0.518 U	< 0.518 UT	**286,000**			**320**
Shallow	MWA-33	MWA-33-050505	5/5/2005										**44.6**	
Shallow	MWA-33	MWA-33-071405	7/14/2005										**51.8**	
Shallow	MWA-33	MWA-33-081105	8/11/2005										**36.2**	
Shallow	MWA-33	MWA-33-090705	9/7/2005										**30.2**	
Shallow	MWA-33	MWA-33-091405	9/14/2005											**1,500**
Shallow	MWA-33	MWA-33-120805	12/8/2005										**17.7**	
Shallow	MWA-33	MWA-33-011106	1/11/2006										**8.74 J**	
Shallow	MWA-33	MWA-33-020806	2/8/2006										**14.8**	
Shallow	MWA-33	MWA-33-072406	7/24/2006										**11 J**	
Shallow	MWA-33	MWA-33-040307	4/3/2007		**0.0688 J**		**0.106**		**0.0892 J**	**0.264 JA**	**336,000**		**11.9**	< 20.0 U
Shallow	MWA-33	MWA-33-080509	8/5/2009		< 0.0952 U		< 0.0952 U		< 0.0952 U	< 0.0952 UA	**929,000**		**14 J**	< 8 U
Shallow	MWA-40	MWA-40-050505	5/5/2005										< 4.55 U	
Shallow	MWA-40	MWA-40-071205	7/12/2005										< 4.55 U	
Shallow	MWA-40	MWA-40-081105	8/11/2005										< 4.55 U	
Shallow	MWA-40	MWA-40-090705	9/7/2005										**4.76 J**	
Shallow	MWA-40	MWA-40-120705	12/7/2005										< 4.55 U	
Shallow	MWA-40	MWA-40-011106	1/11/2006										< 4.55 U	
Shallow	MWA-40	MWA-40-020806	2/8/2006										< 4.55 U	
Shallow	MWA-40	MWA-40-072406	7/24/2006										**9.5 J**	
Shallow	MWA-40	MWA-40-040307	4/3/2007								**294,000**		**21.7**	< 400 U
Shallow	MWA-40	MWA-40-080509	8/5/2009								**220,000**		**42 J**	< 20 U
Shallow	MWA-41	MWA-41-050905	5/9/2005										< 4.55 U	
Shallow	MWA-41	MWA-41-071505	7/15/2005										< 4.55 U	
Shallow	MWA-41	MWA-41-081205	8/12/2005										< 4.55 U	
Shallow	MWA-41	MWA-41-090705	9/7/2005										< 4.55 U	
Shallow	MWA-41	MWA-41-120805	12/8/2005										**0.600 J**	
Shallow	MWA-41	MWA-41-010506	1/5/2006										< 4.55 U	
Shallow	MWA-41	MWA-41-020806	2/8/2006										< 4.55 U	
Shallow	MWA-41	MWA-41-072406	7/24/2006										**15.1 J**	
Shallow	MWA-41	MWA-41-041607	4/16/2007								**26,600**		< 0.6 U	**1.7 J**
Shallow	MWA-41	MWA-41-080609	8/6/2009								**26,300**		< 25 UJ	< 4 U
Shallow	MWA-42	MWA-42-050505	5/5/2005										**56.2**	

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Aquifer	Well ID	Sample ID	Date	2,4'-DDD	4,4'-DDD	2,4'-DDE	4,4'-DDE	2,4'-DDT	4,4'-DDT	Total of 2,4' and 4,4'-DDD, -DDE, -DDT	Chloride	Chlorobenzene	Chromium (VI)	Perchlorate
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Shallow	MWA-42	MWA-42-071205	7/12/2005										< 4.55 U	
Shallow	MWA-42	MWA-42	8/2/2005		< 0.250 UJ		< 0.250 UJ		< 0.250 UJ	< 0.25 UJT		**94.0**		
Shallow	MWA-42	MWA-42-081505	8/15/2005										**11.9**	
Shallow	MWA-42	MWA-42-090805	9/8/2005								**913,000**			
Shallow	MWA-42	MWA-42-092305	9/23/2005										**46.7**	
Shallow	MWA-42	MWA-42-120705	12/7/2005										**27.7**	
Shallow	MWA-42	MWA-42-011106	1/11/2006										**5.77 J**	
Shallow	MWA-42	MWA-42-020906	2/9/2006										**6.26 J**	
Shallow	MWA-42	MWA-42-072506	7/25/2006										**8.6 J**	
Shallow	MWA-42	MWA-42-040307	4/3/2007		**0.101**		**0.197**		**0.111**	**0.409 A**	**45,000**	**3.35**	**7.4**	< 80.0 U
Shallow	MWA-42	MWA-42-081709	8/17/2009		**0.104**		**0.152**		< 0.0952 U	**0.256 A**	**816,000**	**129**	< 25 UJ	< 40 U
Shallow	MWA-46	MWA-46-050605	5/6/2005										**49.5 J**	
Shallow	MWA-46	MWA-46-071405	7/14/2005										**41.1**	
Shallow	MWA-46	MWA-46	8/4/2005		< 0.0500 U		< 0.0500 U		**0.611 J**	**0.611 JT**		**40.2**		
Shallow	MWA-46	MWA-46-081605	8/16/2005										**20.3**	
Shallow	MWA-46	MWA-46-091305	9/13/2005								**1,250,000**		**43.3**	< 1 U
Shallow	MWA-46	MWA-46-120905	12/9/2005										**16.7**	
Shallow	MWA-46	MWA-46-010906	1/9/2006										< 4.55 U	
Shallow	MWA-46	MWA-46-021306	2/13/2006										**5.14 J**	
Shallow	MWA-46	MWA-46-072606	7/26/2006										**35.4**	
Shallow	MWA-46	MWA-46-041107	4/11/2007		< 0.0980 U		< 0.0980 U		**0.323**	**0.323 A**	**1,820,000**	**938**	**22**	< 80.0 U
Shallow	MWA-46	MWA-46-081009	8/10/2009		**0.429**		**0.176 J**		**0.728**	**1.33 JA**	**651,000**	**1.54**	< 250 UJ	< 40 U
Shallow	MWA-47	MWA-47-050605	5/6/2005										< 4.55 U	
Shallow	MWA-47	MWA-47-071905	7/19/2005										< 40.0 UJ	
Shallow	MWA-47	MWA-47-081705	8/17/2005										**4.63 J**	
Shallow	MWA-47	MWA-47-090905	9/9/2005								**9,690,000**		< 4.55 U	**66,000**
Shallow	MWA-47	MWA-47-121205	12/12/2005										< 4.55 U	
Shallow	MWA-47	MWA-47-010606	1/6/2006										**14.3**	
Shallow	MWA-47	MWA-47-021006	2/10/2006										< 4.55 U	
Shallow	MWA-47	MWA-47-072606	7/26/2006										< 2 U	
Shallow	MWA-47	MWA-47-040507	4/5/2007		**0.265**		**0.0489 J**		**0.152**	**0.466 JA**	**3,690,000**	**0.540**	< 20 UJ	**82.3**
Shallow	MWA-47	MWA-47-080609	8/6/2009		**0.200**		**0.0353 J**		**0.0931 J**	**0.328 JA**	**2,110,000**	**0.880 J**	**110 J**	< 20 U
Shallow	MWA-47	MWA-47-022119	2/21/2019	**0.040 j**	**0.067**	< 0.10	< 0.0050	< 0.10	**0.041**	**0.148**		**33**	**1.1**	**3.9 j**
Shallow	MWA-61	MWA-61	8/1/2005		< 2.50 UJ		< 2.50 UJ		< 2.50 UJ	< 2.5 UJT		**5,800**		
Shallow	MWA-61	MWA-61-102605	10/26/2005		**0.109**		< 0.236 UJ		**0.129**	**0.238 T**		**2,100**		
Shallow	MWA-61	MWA-61-112105	11/21/2005		**0.11**		**0.0557 J**		**0.204**	**0.369 JT**		**133**		
Shallow	MWA-61	MWA-61-011306	1/13/2006		**0.545**		< 0.0472 U		**0.124**	**0.669 T**		**465**		
Shallow	MWA-61	MWA-61-040407	4/4/2007		**0.567**		< 0.0980 U		< 0.0980 U	**0.567 A**	**683,000**	**325**		**343**
Shallow	MWA-61	MWA-61-081009	8/10/2009		**0.356 J**		< 0.476 U		< 0.476 U	**0.356 JA**	**473,000**	**715 J**		**489**
Shallow	MWA-61	MWA-61-022119	2/21/2019	**0.27 J+**	**0.50 J+**	< 0.10	**0.016 J+**	< 0.10	**0.029 J+**	**0.815**		**690**	< 1.0	**37**
Shallow	MWA-63	MWA-63-102705	10/27/2005		< 0.0472 U		< 0.0472 U		< 0.0472 U	< 0.0472 UT		**7.60**		
Shallow	MWA-63	MWA-63-112105	11/21/2005		< 0.0495 U		< 0.0495 U		**0.0533 J**	**0.0533 JT**		< 0.272 U		
Shallow	MWA-63	MWA-63-040407	4/4/2007		< 0.00995 UJ		< 0.00995 UJ		**0.00603 J**	**0.00603 JA**	**358,000**	**0.180 J**		< 4.0 U
Shallow	MWA-63	MWA-63-080509	8/5/2009		< 0.00952 U		< 0.00952 U		**0.00574 J**	**0.00574 JA**	**690,000**	< 100 U		< 8 U
Shallow	MWA-63	MWA-63-022119	2/21/2019	< 0.10	< 0.0050	< 0.10	< 0.0050	< 0.10	< 0.010	< 0.10		**5,800**	< 1.0 UJ	< 4.0
Shallow	MWA-69	MWA-69	8/2/2005		**17.3**		< 5.00 UJ		**51.1**	**68.4 T**		**9,010**		
Shallow	MWA-69	MWA-69-102505	10/25/2005		**3.93**		**0.289**		**6.84**	**11.059 T**		**2,690**		
Shallow	MWA-69	MWA-69-112205	11/22/2005		**4.36**		**0.425**		**9.33**	**14.115 T**		**3,640**		
Shallow	MWA-69	MWA-69-011606	1/16/2006		**8.64**		**0.838**		**29.5**	**38.978 T**		**166**		
Shallow	MWA-69	MWA-69-041707	4/17/2007		**15.6**		**1.05 J**		**46.4 J**	**62.9 JA**	**511,000**	**5,360**		**29.5 J**
Shallow	MWA-69	MWA-69-081109	8/11/2009		**50.0**		**4.16**		**57.9**	**112.06**	**297,000**	**6,930**		< 20 U
Shallow	MWA-69	MWA-69-090309	9/3/2009		**7.45**		**0.369**		**5.95**	**13.8 A**				
Intermediate	MWA-8I	GWG001	11/24/1998									**1,700**		
Intermediate	MWA-8I	GW019906	1/27/1999		**5.3 J**		**0.07 J**		**1 J**	**6.37 JT**	**2,660,000**	**4,800**		
Intermediate	MWA-8I	GW029908	4/27/1999		**0.16 J**		< 0.04 UJ		< 0.04 UJ	**0.16 JT**	**2,290,000**	**4,300 J**		

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Aquifer	Well ID	Sample ID	Date	2,4'-DDD	4,4'-DDD	2,4'-DDE	4,4'-DDE	2,4'-DDT	4,4'-DDT	Total of 2,4' and 4,4'-DDD, -DDE, -DDT	Chloride	Chlorobenzene	Chromium (VI)	Perchlorate
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Intermediate	MWA-8I	GW039905	8/24/1999		**0.05 J**		< 0.04 UJ		< 0.04 UJ	**0.05 JT**	**2,660,000**	**3,400**		
Intermediate	MWA-8I	GW049906	11/16/1999		**0.08 J**					**0.08 JT**	**2,530,000**	**2,800**		
Intermediate	MWA-8I	GW010112	3/29/2001		< 0.1 U		< 0.1 U		< 0.1 U	< 0.1 UT	**1,660,000 J**	**4,100**		
Intermediate	MWA-8I	GW020107	6/12/2001		**0.11 J**					**0.11 JT**	**1,420,000**	**1,400**		
Intermediate	MWA-8I	GW04100206	4/10/2002		**0.08**		< 0.0097 U		**0.012**	**0.092 T**	**2,110,000**	**940**		
Intermediate	MWA-8I	GW-060903-02	6/9/2003		< 0.0170 U		< 0.0170 U		< 0.0280 U	< 0.028 UT	**2,380,000**	**23**		< 20 U
Intermediate	MWA-8I	MWA-8I-111004	11/10/2004		< 0.0500 U		< 0.0500 U		**0.590**	**0.59 T**		**24**		
Intermediate	MWA-8I	MWA-8I-031005	3/10/2005		< 0.0500 U		< 0.0500 U		**0.138 J**	**0.138 JT**		**185**		
Intermediate	MWA-8I	MWA-8I-062105	6/21/2005		< 0.0500 U		< 0.0500 U		< 0.0500 U	< 0.05 UT		**27**		
Intermediate	MWA-8I	MWA-8I-091505	9/15/2005		< 0.00103 U		< 0.00367 U		**0.0243 J**	**0.0243 JT**		**122**		
Intermediate	MWA-8I	MWA-8I-102705	10/27/2005		< 0.0472 U		< 0.0472 U		< 0.0472 U	< 0.0472 UT		**215**		
Intermediate	MWA-8I	MWA-8I-112105	11/21/2005		< 0.0472 U		< 0.0472 U		**0.0678 J**	**0.0678 JT**		**46**		
Intermediate	MWA-8I	MWA-8I-122005	12/20/2005		< 0.0957 UJ		< 0.0957 UJ		< 0.0957 UJ	< 0.0957 UJT		**25**		
Intermediate	MWA-8I	MWA-8I-032906	3/29/2006		< 0.0490 U		< 0.0490 U		< 0.0490 U	< 0.049 UT		**18**		
Intermediate	MWA-8I	MWA-8I-040407	4/4/2007		< 0.0976 U		< 0.0976 U		< 0.0976 U	< 0.0976 UA	**1,420,000**	**4,910**		< 200 U
Intermediate	MWA-8I	MWA-8I-080609	8/6/2009		< 0.0190 U		< 0.0190 U		**0.0194**	**0.0194 A**	**1,020,000**	**746**		< 20 U
Intermediate	MWA-32I	GW-060403-10	6/4/2003		< 0.0170 UJ		< 0.0170 UJ		< 0.0280 UJ	< 0.028 UJT	**31,000,000**			**200,000**
Intermediate	MWA-32I	MWA-32I-050605	5/6/2005								**17,600,000**		**176**	
Intermediate	MWA-32I	MWA-32I-051005	5/10/2005											**158,000**
Intermediate	MWA-32I	MWA-32I-071805	7/18/2005										**119**	
Intermediate	MWA-32I	MWA-32I	8/3/2005		< 0.0500 U		< 0.0500 U		< 0.0500 U	< 0.05 UT		**1**		
Intermediate	MWA-32I	MWA-32I-081705	8/17/2005										**555**	
Intermediate	MWA-32I	MWA-32I-091405	9/14/2005								**13,700,000**		**386**	**160,000**
Intermediate	MWA-32I	MWA-32I-120905	12/9/2005										**14.4**	
Intermediate	MWA-32I	MWA-32I-010606	1/6/2006										**6.55 J**	
Intermediate	MWA-32I	MWA-32I-021006	2/10/2006										**6.72 J**	
Intermediate	MWA-32I	MWA-32I-072606	7/26/2006										< 2 U	
Intermediate	MWA-32I	MWA-32I-040507	4/5/2007		**0.0818 J**		< 0.0952 U		< 0.0952 U	**0.0818 JA**	**33,800,000**	**0.470 J**	**8 J**	**131 J**
Intermediate	MWA-32I	MWA-32I-081009	8/10/2009		**0.0568 J**		< 0.0962 U		< 0.0962 U	**0.0568 JA**	**2,520,000**	**0.180 J**	**210 J**	**29,900**
Intermediate	MWA-34I	GW-060603-05	6/6/2003		**0.0892**		< 0.0170 U		**0.327**	**0.416 T**	**3,040,000**	**666**		**4,600**
Intermediate	MWA-34I	MWA-34I-050605	5/6/2005								**5,260,000**		**35.8**	
Intermediate	MWA-34I	MWA-34I-071805	7/18/2005										**17.6**	
Intermediate	MWA-34I	MWA-34I	8/3/2005		< 0.0500 U		< 0.0500 U		< 0.0500 U	< 0.05 UT		**1,540**		
Intermediate	MWA-34I	MWA-34I-081705	8/17/2005										**192**	
Intermediate	MWA-34I	MWA-34I-091305	9/13/2005								**4,580,000**		**26.9**	**5,900**
Intermediate	MWA-34I	MWA-34I-120905	12/9/2005										**30.2**	
Intermediate	MWA-34I	MWA-34I-010906	1/9/2006										**13.5**	
Intermediate	MWA-34I	MWA-34I-021006	2/10/2006										**12.3**	
Intermediate	MWA-34I	MWA-34I-072606	7/26/2006										**34.5**	
Intermediate	MWA-34I	MWA-34I-040907	4/9/2007		< 0.0971 U		< 0.0971 U		< 0.0971 U	< 0.0971 UA	**1,400,000**	**3,920**	**32.6**	< 80.0 U
Intermediate	MWA-34I	MWA-34I-081109	8/11/2009		< 0.0200 U		< 0.0200 U		< 0.0200 U	< 0.02 UA	**740,000**	**3,240**	< 250 UJ	< 40 U
Intermediate	MWA-49I	MWA-49I-050605	5/6/2005										< 4.55 U	
Intermediate	MWA-49I	MWA-49I-071405	7/14/2005										< 4.55 U	
Intermediate	MWA-49I	MWA-49I	8/3/2005		< 0.0500 U		< 0.0500 U		**0.204**	**0.204 T**		**6**		
Intermediate	MWA-49I	MWA-49I-081605	8/16/2005										< 4.55 U	
Intermediate	MWA-49I	MWA-49I-091305	9/13/2005								**10,600,000**		< 4.55 U	**160,000**
Intermediate	MWA-49I	MWA-49I-120905	12/9/2005										< 4.55 U	
Intermediate	MWA-49I	MWA-49I-010906	1/9/2006										< 4.55 U	
Intermediate	MWA-49I	MWA-49I-021306	2/13/2006										< 4.55 U	
Intermediate	MWA-49I	MWA-49I-072606	7/26/2006										< 2 U	
Intermediate	MWA-49I	MWA-49I-041107	4/11/2007		< 0.0971 U		< 0.0971 U		**0.135**	**0.135 A**	**11,000,000**	**0.780 J**	**0.9 J**	**42,800**
Intermediate	MWA-49I	MWA-49I-081009	8/10/2009		**0.0402 J**		**0.0394 J**		**0.269**	**0.349 JA**	**7,560,000**	< 10.0 U	< 25 UJ	**58,900**
Intermediate	MWA-51I	MWA-51I-050505	5/5/2005										**48.5**	
Intermediate	MWA-51I	MWA-51I-071405	7/14/2005										**63.1**	
Intermediate	MWA-51I	MWA-51I	8/3/2005		< 0.0500 U		< 0.0500 U		**1.21**	**1.21 T**		**845**		

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Aquifer	Well ID	Sample ID	Date	2,4'-DDD	4,4'-DDD	2,4'-DDE	4,4'-DDE	2,4'-DDT	4,4'-DDT	Total of 2,4' and 4,4'-DDD, -DDE, -DDT	Chloride	Chlorobenzene	Chromium (VI)	Perchlorate
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Intermediate	MWA-51I	MWA-51I-081605	8/16/2005										**24.3**	
Intermediate	MWA-51I	MWA-51I-091305	9/13/2005								**8,910,000**		**46.8**	**590**
Intermediate	MWA-51I	MWA-51I-120805	12/8/2005										**22.0**	
Intermediate	MWA-51I	MWA-51I-011006	1/10/2006										< 4.55 U	
Intermediate	MWA-51I	MWA-51I-021306	2/13/2006										**10.7**	
Intermediate	MWA-51I	MWA-51I-041107	4/11/2007		**0.103**		< 0.0962 U		**0.0572 J**	**0.16 JA**	**4,640,000**	**358**	**31.3**	**54.6 J**
Intermediate	MWA-51I	MWA-51I-081009	8/10/2009		**0.113**		< 0.0962 U		**0.0363 J**	**0.149 JA**	**2,780,000**	**336 J**	< 250 UJ	< 40 U
Intermediate	MWA-53I	MWA-53I-050905	5/9/2005										< 4.55 U	
Intermediate	MWA-53I	MWA-53I-071805	7/18/2005										< 4.55 U	
Intermediate	MWA-53I	MWA-53I-081205	8/12/2005										< 4.55 U	
Intermediate	MWA-53I	MWA-53I-091205	9/12/2005								**14,300,000**		< 4.55 U	**1,400**
Intermediate	MWA-53I	MWA-53I-120805	12/8/2005										**1.10 J**	
Intermediate	MWA-53I	MWA-53I-010606	1/6/2006										< 4.55 U	
Intermediate	MWA-53I	MWA-53I-020806	2/8/2006										< 4.55 U	
Intermediate	MWA-53I	MWA-53I-072406	7/24/2006										**6.8 J**	
Intermediate	MWA-53I	MWA-53I-041607	4/16/2007								**16,200,000**		< 6 UJ	**209**
Intermediate	MWA-53I	MWA-53I-080609	8/6/2009								**5,980,000**		< 25 UJ	< 20 U
Intermediate	MWA-54I	MWA-54I-050505	5/5/2005										**54.8**	
Intermediate	MWA-54I	MWA-54I-071205	7/12/2005										< 136 U	
Intermediate	MWA-54I	MWA-54I-081505	8/15/2005										< 4.55 U	
Intermediate	MWA-54I	MWA-54I-090805	9/8/2005								**5,540,000**			
Intermediate	MWA-54I	MWA-54I-092305	9/23/2005										**6.34 J**	
Intermediate	MWA-54I	MWA-54I-120705	12/7/2005										**7.20 J**	
Intermediate	MWA-54I	MWA-54I-011106	1/11/2006										**11.3**	
Intermediate	MWA-54I	MWA-54I-020906	2/9/2006										**11.3**	
Intermediate	MWA-54I	MWA-54I-07506	7/25/2006										**17.5 J**	
Intermediate	MWA-54I	MWA-54I-040307	4/3/2007		< 0.0962 U		< 0.0962 U		< 0.0962 U	< 0.0962 UA	**3,090,000**	**9**	**14.4**	< 40.0 U
Intermediate	MWA-54I	MWA-54I-081909	8/19/2009		**0.0380 J**		**0.00781 J**		**0.0103 J**	**0.0561**	**2,750,000**	**7**	**210 J**	< 40 U
Intermediate	MWA-64I	MWA-64I	8/1/2005		**0.207**		< 0.0500 U		**0.309**	**0.516 T**		**2,320**		
Intermediate	MWA-64I	MWA-64I-040407	4/4/2007		**0.0563 J**		< 0.0966 U		< 0.0966 U	**0.0563 JA**	**1,910,000**	**17,500**		< 400 U
Intermediate	MWA-64I	MWA-64I-080609	8/6/2009		**0.0290 J**		< 0.0952 U		**0.0319 J**	**0.0609 JA**	**1,590,000**	**2,070**		< 40 U
Intermediate	MWA-66I	MWA-66I	8/2/2005		< 0.500 UJ		< 0.500 UJ		< 0.500 UJ	< 0.5 UJT		**12,900**		
Intermediate	MWA-66I	MWA-66I-041707	4/17/2007		< 0.0957 U		< 0.0957 U		< 0.0957 U	< 0.0957 UA	**1,890,000**	**8,160**		**39.0 J**
Intermediate	MWA-66I	MWA-66I-081109	8/11/2009		< 0.0340 U		< 0.00971 U		**0.00620 J**	**0.0062 JA**	**1,720,000**	**7,780**	< 25 UJ	**1,240**
Intermediate	MWA-70I	MWA-70I-B	4/19/2006								**68,000**	< 0.17 U	< 1.62 U	< 200 U
Intermediate	MWA-70I	MWA-70I-040307	4/3/2007								**4,090,000**		**1.4 J**	< 40.0 U
Intermediate	MWA-70I	MWA-70I-080509	8/5/2009								**5,200,000**		< 25 U	< 20 U
Deep	MWA-11I(D)	GWG004	12/7/1998									**49**		
Deep	MWA-11I(D)	GW019916	1/29/1999		< 0.04 U		< 0.04 U		**0.2**	**0.2 T**	**612,000**	**2.5**		
Deep	MWA-11I(D)	GW029905	4/27/1999		**0.19**		< 0.04 U		**0.08**	**0.27 T**	**637,000**	< 0.5 UJ		
Deep	MWA-11I(D)	GW039916	8/26/1999		**0.12**		< 0.04 U		**0.05**	**0.17 T**	**802,000**	< 0.5 U		
Deep	MWA-11I(D)	GW049914	11/17/1999		**0.1 J**		< 0.04 UJ		< 0.04 UJ	**0.1 JT**	**963,000**	< 1 U		
Deep	MWA-11I(D)	GW010118	3/30/2001		**0.25**		< 0.1 U		**0.7**	**0.95 T**	**768,000 J**	< 0.5 U		
Deep	MWA-11I(D)	GW020119	6/15/2001		**0.25**		**0.01 J**		**0.48**	**0.74 JT**	**773,000**	< 0.5 U		
Deep	MWA-11I(D)	GW04110204	4/11/2002		< 0.16 U		< 0.0097 U		< 0.085 U	< 0.16 UT	**833,000**	< 1.4 U		
Deep	MWA-11I(D)	GW-061003-03	6/10/2003		**1.2**		< 0.0170 U		< 0.573 U	**1.2 T**	**550,000**	< 0.71 U		< 20 U
Deep	MWA-11I(D)	MWA-11	8/1/2005		**0.593**		< 0.0500 U		**0.0829 J**	**0.6759 JT**		**0.810**		
Deep	MWA-11I(D)	MWA-11I-041707	4/17/2007		**0.0722 J**		< 0.0971 U		**0.0591 J**	**0.131 JA**	**1,210,000**	**1.92**		< 8.0 U
Deep	MWA-11I(D)	MWA-11I-081909	8/19/2009		**0.658**		**0.0459 J**		**0.0599 J**	**0.764 JA**	**1,090,000**	< 0.780 U	**40 J**	< 4 U
Deep	MWA-31I(D)	GW04080205	4/8/2002		< 0.0097 U		< 0.0097 U		< 0.0097 U	< 0.0097 UT	**39,100,000**	< 0.5 U		
Deep	MWA-31I(D)	GW-060403-07	6/4/2003		< 0.0170 U		< 0.0170 U		< 0.0280 U	< 0.028 UT	**61,100,000**			**4,700**
Deep	MWA-31I(D)	MWA-31I-050605	5/6/2005								**62,100,000**		**726**	
Deep	MWA-31I(D)	MWA-31I-071805	7/18/2005										**250**	
Deep	MWA-31I(D)	MWA-31I-081705	8/17/2005										**142**	
Deep	MWA-31I(D)	MWA-31I-091405	9/14/2005								**57,900,000**		**1,020**	

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				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Deep	MWA-31I(D)	MWA-31I-120905	12/9/2005										**25.1**	
Deep	MWA-31I(D)	MWA-31I-010906	1/9/2006										**45.3**	
Deep	MWA-31I(D)	MWA-31I-021006	2/10/2006										**104**	
Deep	MWA-31I(D)	MWA-31I-072606	7/26/2006										< 2 U	
Deep	MWA-31I(D)	MWA-31I(D)-040507	4/5/2007		< 0.0962 U		< 0.0962 U		< 0.0962 U	< 0.0962 UA	**53,700,000**	**0.640**	< 6 UJ	**5,730**
Deep	MWA-31I(D)	MWA-31I(D)-081009	8/10/2009		< 0.00952 U		< 0.00952 U		< 0.00952 U	< 0.00952 UA	**54,300,000**	< 2.50 UJ	**9,300 J**	**1,840**
Deep	MWA-56D	MWA-56D-050605	5/6/2005										< 4.55 U	
Deep	MWA-56D	MWA-56D-071405	7/14/2005										**22.3**	
Deep	MWA-56D	MWA-56D-081605	8/16/2005										< 4.55 U	
Deep	MWA-56D	MWA-56D-091305	9/13/2005								**30,800,000**		< 4.55 U	
Deep	MWA-56D	MWA-56D-120905	12/9/2005										< 4.55 UJ	
Deep	MWA-56D	MWA-56D-010906	1/9/2006										< 4.55 U	
Deep	MWA-56D	MWA-56D-021306	2/13/2006										< 4.55 U	
Deep	MWA-56D	MWA-56D-072606	7/26/2006										< 2 U	
Deep	MWA-56D	MWA-56D-041107	4/11/2007		< 0.0971 U		< 0.0971 U		< 0.0971 U	< 0.0971 UA	**27,900,000**	< 2.50 U	< 2 UJ	**2,430**
Deep	MWA-56D	MWA-56D-081009	8/10/2009		< 0.00976 U		< 0.00976 U		**0.00690 J**	**0.0069 JA**	**22,800,000**	< 5.00 U	< 25 UJ	**2,140**
Deep	MWA-58D	MWA-58D-050605	5/6/2005										< 4.55 U	
Deep	MWA-58D	MWA-58D-071405	7/14/2005										< 4.55 U	
Deep	MWA-58D	MWA-58D-081705	8/17/2005										< 4.55 U	
Deep	MWA-58D	MWA-58D-091305	9/13/2005								**60,700,000**		< 4.55 U	
Deep	MWA-58D	MWA-58D-120905	12/9/2005										< 4.55 UJ	
Deep	MWA-58D	MWA-58D-010906	1/9/2006										< 4.55 U	
Deep	MWA-58D	MWA-58D-021006	2/10/2006										< 4.55 U	
Deep	MWA-58D	MWA-58D-072606	7/26/2006										< 2 U	
Deep	MWA-58D	MWA-58D-040907	4/9/2007		< 0.0962 U		< 0.0962 U		< 0.0962 U	< 0.0962 UA	**53,600,000**	< 2.50 U	**57.5**	**59,600**
Deep	MWA-58D	MWA-58D-081009	8/10/2009		< 0.00943 U		< 0.00943 U		**0.0286**	**0.0286 A**	**33,600,000**	**2.00 J**	< 25 UJ	**128,000**

Notes:
Bolded values indicate concentrations above the Reportable Detection Limit.
< = Compound not detected. Reportable detection limit shown.
µg/L = micrograms per liter
DDD = Dichlorodiphenyldichloroethane
DDE = Dichlorodiphenyldichloroethylene
DDT = Dichlorodiphenyltrichloroethane

Qualifers:
A = Total value based on limited number of analytes.
j = The analyte was positively identified; associated numerical value is the approximate concentration of the analyte in the sample.
J = The analyte was positively identified; associated numerical value is the approximate concentration of the analyte in the sample.
J+ = The concentration of the sample is considered to be biased high, as the associated QC results exceed the upper control limits.
J- = The concentration of the sample is considered to be biased low, as the associated QC results are outside the lower control limits.
T = Sample temperature did not meet quality control criteria.
U = Compound not detected based on quality assurance review.
UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.
R = Rejected. Quality control indicates that the data are unusable (compound may or not be present).

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