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LLC

Arkema Quarter 1, 2023, Groundwater Monitoring Report

Arkema Inc. Facility, Portland, Oregon

June 2023

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Arkema Quarter 1, 2023, Groundwater Monitoring Report

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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 1, 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

RESPONSES TO AGENCY COMMENTS

Legacy Site Services LLC (LSS) received the following comments on 3 April 2023 in response to the *Arkema Quarter 4, 2022, Groundwater Monitoring Report* submitted to the Oregon Department of Environmental Quality (ODEQ). Environmental Resources Management, Inc. (ERM) has prepared these responses on behalf of LSS. Responses to these comments are provided below.

ODEQ General Comments

1. *“Several data quality issues were noted in the 4Q2022 Groundwater Monitoring Report. Most of these appear to be laboratory errors. However, detected concentrations of certain VOCs in rinsate blanks could indicate field quality control issues.”*

LSS/ERM Response:

Comment noted. See ODEQ Specific Comment 4 below for response.

2. *“There appear to be some significant increases in chloride concentrations on both sides of the groundwater barrier wall (GWBW) in the shallow, intermediate, and deep zones at groundwater control cluster 6 (GCC6) and proximal wells. These increasing chloride concentrations coupled with significant mounding of groundwater behind the GWBW in these hydrogeologic zones could suggest that chloride is being pushed around the GWBW. DEQ notes that magnitude of chloride concentration increases outside of the GWBW are generally lower compared to inside the GWBW, and chloride concentrations in PA-16i are comparable to November 2019. Hopefully, operation of the groundwater extraction enhancement (GEE) system will result on inward hydraulic gradients across the GWBW, and trends in chloride concentrations at the GCC6 and proximal wells reverse. These observations should be discussed in the forthcoming system effectiveness evaluation (SEE).”*

LSS/ERM Response:

Comment noted. Observations will be discussed in the forthcoming 2023 SEE report.

3. *“Chlorobenzene concentrations in PA-30d (behind the GWBW) increased significantly (by an order of magnitude) compared to previous monitoring events, but there does not appear to be a corresponding chlorobenzene increase in PA-19d (outside of GWBW). This observation should be discussed in the forthcoming SEE.”*

LSS/ERM Response:

Comment noted. Observations will be discussed in the forthcoming 2023 SEE report.

ODEQ Specific Comments

1. **“Section 1.2, Background.** *In this section the following is stated “The GW SCM and GWET system, including the newly constructed GEE system.” DEQ notes that the GEE is an enhancement to the GWET system not a system of its own.*

LSS/ERM Response:

Comment noted.

2. **“Section 1.2.2., Groundwater Source Control Measures.** *Recovery wells (RWs) that were part of the GWET system are not identified as a primary component of the GW CSM. DEQ requests that the section be revised to clarify that select RWs are still functioning as components of the GWET system.”*

LSS/ERM Response:

Comment noted. The GW SCM is now clarified in the monthly progress reports.

3. **“Section 1.2.2., Groundwater Source Control Measures.** *In this section it is mentioned that “Hydraulic gradients across the GWBW are evaluated through data collected from a network of 36 piezometers used to monitor the groundwater elevation in the Shallow, Intermediate, and Deep Zones. These hydraulic gradients are used to evaluate hydraulic capture performance in the vicinity of the GWBW.” This statement seems to conflict with the Monthly Performance Monitoring Report statement that “One new monitoring well was installed in each of the seven extraction trenches for manual water level measurement. These data were used to prepare horizontal and vertical potentiometric surface maps representing potentiometric differences between the alluvial sequences, and to generate spatial and temporal hydrographs to evaluate hydraulic capture.” DEQ requests that the text be revised in one of these documents to clarify the monitoring points and data used to evaluate the GW SCM.”*

LSS/ERM Response:

The *Quarter 4, 2022 Groundwater Monitoring Report* discusses groundwater elevation data collected on 4 November 2022, prior to startup of the extraction enhancement trenches and the accompanying change to the monitoring points and data used to evaluate the GW SCM. The *December 2022 Monthly Progress Report* discusses groundwater elevation data collected following startup of the extraction enhancement trenches and includes the new set of monitoring points and data used to evaluate the GW SCM.

4. **Section 2.4, Groundwater Level Measurements.** *Lab and rinsate blanks seem to have been compromised by select VOCs. DEQ requests some explanation of why these issues occurred and actions that may be implemented to limit the likelihood of their recurrence in the future.*

LSS/ERM Response:

ERM has communicated with Eurofins laboratory to identify potential causes of VOC concentrations in lab method blanks and trip blanks. Eurofins laboratory communicated no identified trip blank analysis issues. ERM has also reviewed rinsate blank field collection procedures with field staff, and developed action items to address rinsate blank detections. These action items include:

- Rinsate blanks will be collected outside of the GWET plant to avoid potential cross-contamination from the indoor treatment processes;
- A sample of the deionized water used for decontamination and collecting rinsate blanks will be collected and analyzed; and,
- ERM will also replace existing decontamination spray bottles with new ones.

5. **“Figure 1, Site Layout.** *The extraction trenches are a feature in the legend but are not visible on the figure. DEQ requests that they be added.”*

LSS/ERM Response:

Comment noted. See revised Figure 1.

6. **“Figure 1, Site Layout.** *Monitoring well MWA-81i is mis-labeled on the figure.”*

LSS/ERM Response:

Comment noted. See revised Figure 1.

7. ***“Appendix D, Prior Groundwater Monitoring Program Data Tables and Graphs. Several plots appear to be composed completely of non-detect results. DEQ requests that the utility of these plots be considered before inclusion in a report.”***

LSS/ERM Response:

Comment noted. See revised graphs in Appendix D.

1. INTRODUCTION

Environmental Resources Management, Inc. (ERM) has prepared this *Arkema Quarter 1, 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 1, 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 5 March 2023 and groundwater samples from 30 well locations between 6 and 9 March 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 5 March 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-detect 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 issues during the Quarter 1, 2023, groundwater monitoring event included:

- Samples analyzed by Eurofins lab outside of hold time,
- Samples that were collected with insufficient head space (a preservation requirement for perchlorate samples), and
- Detected concentrations of select VOCs in one lab method blank and two rinsate blanks.

QC/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 1, 2023, groundwater sampling event.

3. GROUNDWATER MONITORING RESULTS

3.1 Groundwater Elevations

On 5 March 2023, ERM manually measured depth to groundwater to the nearest 0.01 foot in 87 wells at the Site using an electronic water level indicator. For the additional 41 wells with functioning transducers, ERM collected transducer groundwater elevation data on 5 March 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 March 2023.

3.2 Groundwater Sampling Results

ERM personnel completed groundwater sampling between 6 and 9 March 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.

Sixteen monitoring locations did not stabilize for turbidity during the Quarter 1, 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 1, 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 9 out of 30 samples. The highest detected

concentration of chlorobenzene was 30,000 micrograms per liter ($\mu\text{g/L}$) 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 4 out of 30 samples. The highest detected concentration of 1,2-dichlorobenzene was 0.26 $\mu\text{g/L}$ at Intermediate Zone piezometer PA-32i.

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 6 out of 30 samples. The highest detected concentration of PCE was 13 $\mu\text{g/L}$ at Shallow Zone monitoring well MWA-63.
- TCE was detected in 6 out of 30 samples. The highest detected concentration of TCE was 14 $\mu\text{g/L}$ at Deep Zone monitoring well PA-19d.
- cis-1,2-DCE was detected in 9 out of 30 samples. The highest detected concentration of cis-1,2-DCE was 21 $\mu\text{g/L}$ at Deep Zone monitoring well PA-19d.
- Vinyl chloride was detected in 2 out of 30 samples. The highest detected concentration of vinyl chloride was 0.48 $\mu\text{g/L}$ at Intermediate Zone monitoring well PA-10i.

3.2.2.2 Perchlorate

Perchlorate results for the Shallow, Intermediate, and Deep Zones are presented on Figures 14 through 16, respectively. Perchlorate was detected in 6 out of 30 samples. The highest detected concentration of perchlorate was 97,000 $\mu\text{g/L}$ 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 33,000 milligrams per liter at Deep Zone piezometer PA-24d.

4. RECOMMENDATIONS

Following the Quarter 1, 2023, groundwater monitoring event, no changes are recommended to the GMWP at this time.

ERM will conduct the Quarter 2, 2023, groundwater monitoring event according to the following schedule:

- Water levels will be measured on 9 June 2023.
- Sampling will begin 12 June 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 (July 2023).

The Quarter 2, 2023, Groundwater Monitoring Report will be submitted to the ODEQ within 60 days after data validation (September 2023).

5. REFERENCES

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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 1, 2023, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Analyte			Volatle Organic Compounds	Volatle Organic Compounds	Chloride	Perchlorate	Comments
Analytical Method			8260C	8260C_LL ¹	300	314	
Location ID	Aquifer Classification	Groundwater Level Measurement					
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*	--	--	--	--	
EW-4	Shallow/Intermediate	X*	--	--	--	--	

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

Analyte			Volatle Organic Compounds	Volatle Organic Compounds	Chloride	Perchlorate	Comments
Analytical Method			8260C	8260C_LL ¹	300	314	
Location ID	Aquifer Classification	Groundwater Level Measurement					
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	--	--	--	--	

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

Analyte			Volatle Organic Compounds	Volatle Organic Compounds	Chloride	Perchlorate	Comments
Analytical Method			8260C	8260C_LL ¹	300	314	
Location ID	Aquifer Classification	Groundwater Level Measurement					
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	--	--	--	--	
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
 NTU = nephelometric turbidity unit

Table 2
Groundwater Elevation Results
Arkema Quarter 1, 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*	3/5/2023	*	Shallow	36.20	--	9.38
MWA-15r	3/5/2023	8:14:00 AM	Shallow	36.06	22.16	13.90
MWA-18	3/5/2023	8:52:00 AM	Shallow	39.43	29.65	9.78
MWA-19*	3/5/2023	*	Shallow	38.26	--	9.85
MWA-20	3/5/2023	8:58:00 AM	Shallow	40.95	25.51	15.44
MWA-22	3/5/2023	8:11:00 AM	Shallow	36.59	20	16.59
MWA-24	3/5/2023	7:40:00 AM	Shallow	37.58	21.13	16.45
MWA-29	3/5/2023	8:01:00 AM	Shallow	44.42	34.41	10.01
MWA-33	3/5/2023	7:47:00 AM	Shallow	37.26	17.04	20.22
MWA-40	3/5/2023	7:42:00 AM	Shallow	36.96	15.98	20.98
MWA-41	3/5/2023	8:13:00 AM	Shallow	45.14	32.15	12.99
MWA-42	3/5/2023	9:08:00 AM	Shallow	37.24	22.76	14.48
MWA-43	3/5/2023	8:04:00 AM	Shallow	44.53	33.86	10.67
MWA-46	3/5/2023	8:53:00 AM	Shallow	36.67	26.93	9.74
MWA-47*	3/5/2023	*	Shallow	39.02	--	10.82
MWA-61	3/5/2023	9:21:00 AM	Shallow	36.21	26.91	9.3
MWA-63	3/5/2023	7:02:00 AM	Shallow	36.29	22.66	13.63
MWA-69*	3/5/2023	*	Shallow	33.73	--	10.02
MWA-71	3/5/2023	6:55:00 AM	Shallow	34.82	1.77	33.05
MWA-72	3/5/2023	7:28:00 AM	Shallow	34.16	0.8	33.36
MWA-73	3/5/2023	7:35:00 AM	Shallow	36.01	3.34	32.67
MWA-82	3/5/2023	7:50:00 AM	Shallow	37.74	22.3	15.44
PA-03*	3/5/2023	*	Shallow	37.10	--	28.74
PA-04*	3/5/2023	*	Shallow	36.67	--	29.22
PA-05*	3/5/2023	*	Shallow	37.22	--	13.19
PA-06*	3/5/2023	*	Shallow	38.03	--	14.53
PA-07**	3/5/2023	8:40:00 AM	Shallow	39.30	24	15.3
PA-08*	3/5/2023	*	Shallow	40.47	--	13.53
PA-09*	3/5/2023	*	Shallow	40.24	--	12.06
PA-28*	3/5/2023	*	Shallow	38.58	--	16.08
PA-31	3/5/2023	7:25:00 AM	Shallow	36.25	5.9	30.35
PA-33	3/5/2023	7:27:00 AM	Shallow	36.29	7.02	29.27
PA-35	3/5/2023	7:37:00 AM	Shallow	35.91	23.65	12.26
PA-36	3/5/2023	7:53:00 AM	Shallow	36.90	24.98	11.92
PA-38	3/5/2023	8:29:00 AM	Shallow	42.93	27.57	15.36
PA-41	3/5/2023	8:37:00 AM	Shallow	39.69	25.62	14.07
PA-42	3/5/2023	8:35:00 AM	Shallow	40.60	27.05	13.55
PA-43	3/5/2023	8:24:00 AM	Shallow	40.41	26.36	14.05
RP-02-31	3/5/2023	6:45:00 AM	Shallow	42.49	31.04	11.45
RP-10-30	3/5/2023	6:51:00 AM	Shallow	37.47	5.19	32.28
RW-05	3/5/2023	7:32:00 AM	Shallow	34.80	7.15	27.65
RW-07	3/5/2023	7:48:00 AM	Shallow	33.98	21.75	12.23
RW-08	3/5/2023	8:08:00 AM	Shallow	34.21	21.23	12.98
RW-10	3/5/2023	8:31:00 AM	Shallow	34.33	20.08	14.25
RW-12	3/5/2023	9:08:00 AM	Shallow	35.58	20.95	14.63
RW-14*	3/5/2023	*	Shallow	36.08	--	9.63
RW-15	3/5/2023	9:19:00 AM	Shallow	35.81	20.12	15.69
RW-17	3/5/2023	9:35:00 AM	Shallow	36.55	20.8	15.75
RW-18	3/5/2023	9:37:00 AM	Shallow	36.51	21	15.51
RW-20	3/5/2023	9:38:00 AM	Shallow	37.07	21.9	15.17
RW-22*	3/5/2023	*	Shallow	38.02	--	14.63
RW-23*	3/5/2023	*	Shallow	33.63	--	5.35
RW-25*	3/5/2023	*	Shallow	38.06	--	9
EW-1*	3/5/2023	*	Shallow/Intermediate	33.84	--	7
EW-2*	3/5/2023	*	Shallow/Intermediate	34.20	--	7.01
EW-3*	3/5/2023	*	Shallow/Intermediate	34.43	--	11.2
EW-4*	3/5/2023	*	Shallow/Intermediate	34.61	--	11.12
EW-5*	3/5/2023	*	Shallow/Intermediate	35.03	--	9.98
EW-6**	3/5/2023	8:38:00 AM	Shallow/Intermediate	35.43	25.47	9.96
EW-7*	3/5/2023	*	Shallow/Intermediate	35.24	--	12.61
EW-8*	3/5/2023	*	Shallow/Intermediate	35.07	--	12.11
EW-9*	3/5/2023	*	Shallow/Intermediate	36.77	--	15.58
EW-10**	3/5/2023	9:30:00 AM	Shallow/Intermediate	36.35	20.85	15.5
EW-11**	3/5/2023	9:45:00 AM	Shallow/Intermediate	37.38	21.89	15.49

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Portland, Oregon

Well ID	Date	Time	Aquifer Unit	Top of Casing Elevation (ft NAVD88)	Depth to Water (ft)	Groundwater Elevation (ft NAVD88)
EW-12**	3/5/2023	9:46:00 AM	Shallow/Intermediate	38.24	22.72	15.52
EW-13**	3/5/2023	9:49:00 AM	Shallow/Intermediate	39.79	28.02	11.77
EW-14**	3/5/2023	9:48:00 AM	Shallow/Intermediate	40.03	29.21	10.82
MWA-83	3/5/2023	7:43:00 AM	Shallow/Intermediate	35.82	25.28	10.54
MWA-84	3/5/2023	8:03:00 AM	Shallow/Intermediate	36.31	24.51	11.8
MWA-85	3/5/2023	8:33:00 AM	Shallow/Intermediate	36.86	25.7	11.16
MWA-86	3/5/2023	9:00:00 AM	Shallow/Intermediate	37.15	23.28	13.87
MWA-87	3/5/2023	9:27:00 AM	Shallow/Intermediate	37.68	22.12	15.55
MWA-88	3/5/2023	9:41:00 AM	Shallow/Intermediate	39.36	24.15	15.21
MWA-89	3/5/2023	9:32:00 AM	Shallow/Intermediate	41.65	29.27	12.38
MWA-07(i)	3/5/2023	7:36:00 AM	Intermediate	36.24	4.15	32.09
MWA-08i*	3/5/2023	*	Intermediate	36.25	--	9.71
MWA-16i	3/5/2023	9:18:00 AM	Intermediate	36.58	27.5	9.08
MWA-34i*	3/5/2023	*	Intermediate	38.02	--	9.94
MWA-49i	3/5/2023	8:54:00 AM	Intermediate	36.68	27.25	9.43
MWA-53i	3/5/2023	8:00:00 AM	Intermediate	44.63	35.36	9.27
MWA-54i	3/5/2023	9:10:00 AM	Intermediate	37.35	24.56	12.79
MWA-66i*	3/5/2023	*	Intermediate	33.35	--	9.05
MWA-70i	3/5/2023	7:48:00 AM	Intermediate	37.62	20.25	17.37
MWA-74i	3/5/2023	6:56:00 AM	Intermediate	34.72	8.68	26.04
MWA-75i	3/5/2023	7:29:00 AM	Intermediate	34.09	2.41	31.68
MWA-81i	3/5/2023	8:15:00 AM	Intermediate	44.62	33.22	11.4
PA-10i*	3/5/2023	*	Intermediate	36.67	--	13.91
PA-11i*	3/5/2023	*	Intermediate	37.63	--	12.26
PA-12i**	3/5/2023	8:42:00 AM	Intermediate	38.03	24.1	13.93
PA-13i*	3/5/2023	*	Intermediate	38.48	--	12.91
PA-14i**	3/5/2023	8:42:00 AM	Intermediate	39.30	26.55	12.75
PA-15i*	3/5/2023	*	Intermediate	40.62	--	12.51
PA-16i**	3/5/2023	8:12:00 AM	Intermediate	40.30	23.1	17.2
PA-17iR*	3/5/2023	*	Intermediate	37.59	--	12.64
PA-29i**	3/5/2023	7:58:00 AM	Intermediate	39.18	29.59	9.59
PA-32i	3/5/2023	7:23:00 AM	Intermediate	36.28	22.3	13.98
PA-34i	3/5/2023	7:29:00 AM	Intermediate	36.02	22.2	13.82
PA-37i	3/5/2023	7:55:00 AM	Intermediate	36.54	24.67	11.87
PA-39i	3/5/2023	8:33:00 AM	Intermediate	40.11	27.8	12.31
PA-40i	3/5/2023	8:31:00 AM	Intermediate	41.47	29.16	12.31
PA-44i	3/5/2023	8:26:00 AM	Intermediate	40.36	28.46	11.9
RW-06i	3/5/2023	7:34:00 AM	Intermediate	35.59	21.63	13.96
RW-09i	3/5/2023	8:25:00 AM	Intermediate	33.73	22	11.73
RW-11i	3/5/2023	8:51:00 AM	Intermediate	34.77	17.87	16.9
RW-13i	3/5/2023	9:14:00 AM	Intermediate	36.09	21.3	14.79
RW-16i	3/5/2023	9:20:00 AM	Intermediate	35.77	21.4	14.37
RW-19i	3/5/2023	9:40:00 AM	Intermediate	36.56	24.01	12.55
RW-21i	3/5/2023	9:34:00 AM	Intermediate	37.38	24.88	12.5
RW-24i	3/5/2023	8:00:00 AM	Intermediate	34.03	19.68	14.35
RW-26i	3/5/2023	9:27:00 AM	Intermediate	38.10	26.25	11.85
MWA-11i(d)	3/5/2023	8:16:00 AM	Deep	36.49	24.55	11.94
MWA-12i(d)	3/5/2023	7:37:00 AM	Deep	35.86	9.51	26.35
MWA-31i(d)	3/5/2023	7:54:00 AM	Deep	38.36	29.32	9.04
MWA-56d	3/5/2023	8:55:00 AM	Deep	36.68	27.27	9.41
MWA-58d*	3/5/2023	*	Deep	37.97	--	9.51
PA-18d*	3/5/2023	*	Deep	36.55	--	11.98
PA-19d*	3/5/2023	*	Deep	36.65	--	8.31
PA-20d**	3/5/2023	8:48:00 AM	Deep	37.91	26.7	11.21
PA-21d*	3/5/2023	*	Deep	34.36	--	8.62
PA-22d*	3/5/2023	*	Deep	38.75	--	11
PA-23d*	3/5/2023	*	Deep	39.31	--	10.98
PA-24d*	3/5/2023	*	Deep	39.06	--	8.28
PA-25d*	3/5/2023	*	Deep	40.44	--	10.99
PA-26d**	3/5/2023	8:10:00 AM	Deep	40.33	28.43	11.9
PA-27d*	3/5/2023	*	Deep	37.10	--	11.52
PA-30d*	3/5/2023	*	Deep	37.34	--	11.24
MWA-76g	3/5/2023	7:30:00 AM	Gravel	34.96	9	25.96
MWA-77g	3/5/2023	6:57:00 AM	Gravel	34.03	19.2	14.83

Table 2
Groundwater Elevation Results
Arkema Quarter 1, 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)
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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 6:56 AM and 9:49 AM for the groundwater elevation value.

Table 3
Field Parameters Measured in Groundwater
Arkema Quarter 1, 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	3/6/2023	Shallow	MWA-41-030623		6.32	11.9	318.7	150.2	0.71	27.6
MWA-63	3/9/2023	Shallow	MWA-63-030923		6.96	11.5	565	59.9	6.41	5.2
MWA-82	3/6/2023	Shallow	MWA-82-030623		9.48	13.4	506	28	0.63	36.8
PA-03	3/7/2023	Shallow	PA-03-030723		10.17	12.1	966	-223.7	0.27	417
PA-04	3/8/2023	Shallow	PA-04-030823		10.15	10.52	637	-65.3	0.31	12.6
PA-08	3/7/2023	Shallow	PA-08-030723		8.63	10.49	2240	-96	0	12.55
PA-09	3/7/2023	Shallow	PA-09-030723		8.08	12.85	978	49	0	46.9
PA-31	3/7/2023	Shallow	PA-31-030723		9.31	13.8	812	-1.8	0.41	5.8
MWA-81i	3/6/2023	Intermediate	MWA-81i-030623		6.29	12.1	606	-11	0.67	8.1
PA-10i	3/8/2023	Intermediate	PA-10i-030823		7.71	13.14	1041	-83.5	0.08	0.02
PA-15i	3/8/2023	Intermediate	PA-15i-030823		7.08	10.4	1926	-145.2	0.32	20.9
PA-16i	3/8/2023	Intermediate	PA-16i-030823		6.77	9.1	2442	-76.5	0.41	8.2
PA-17iR	3/8/2023	Intermediate	PA-17iR-030823		9.79	10.27	856	-145	0.2	1.79
PA-32i	3/7/2023	Intermediate	PA-32i-030723		7.44	12.8	1225	-186.2	0.32	16.8
PA-44i	3/6/2023	Intermediate	PA-44i-030623		8.98	12.6	291.9	69.1	9.89	12.48
MWA-11i(d)	3/9/2023	Deep	MWA-11i(D)-030923		6.58	11.6	4376	-110.4	0.46	4.8
MWA-31i(d)	3/9/2023	Deep	MWA-31i(D)-030923		6.42	14.3	65740	78.9	0.36	8.45
MWA-56d	3/9/2023	Deep	MWA-56D-030923		6.52	13.85	41720	149.7	0.34	3.03
MWA-58d	3/9/2023	Deep	MWA-58D-030923		6.51	14.32	54380	147.2	0.33	1.24
PA-18d	3/9/2023	Deep	PA-18D-030923		8.66	12.13	1059	-50.6	0.26	8.15
PA-19d	3/9/2023	Deep	PA-19D-030923		7.11	10.9	2992	-72.4	0.93	9.3
PA-20d	3/9/2023	Deep	PA-20D-030923		6.59	11.3	4465	-79.1	0.85	5.2
PA-21d	3/9/2023	Deep	PA-21D-030923		6.22	11.4	3341	-45.2	0.6	15.3
PA-22d	3/8/2023	Deep	PA-22D-030823		7.03	12.4	19348	-20.9	0.85	47.6
PA-23d	3/8/2023	Deep	PA-23D-030823		6.61	11.3	42203	-89.6	0.68	7.9
PA-24d	3/8/2023	Deep	PA-24D-030823		6.56	10.5	81685	-105.7	0.41	20.6
PA-25d	3/8/2023	Deep	PA-25D-030823		6.71	10.3	264.5	-28.7	2.59	20.8
PA-26d	3/8/2023	Deep	PA-26D-030823		6.52	10.1	579	-20.3	0.75	8.9
PA-27d	3/8/2023	Deep	PA-27D-030823		7.55	8.46	3413	-115.6	0.25	0.05
PA-30d	3/9/2023	Deep	PA-30D-030923		7.92	11	3660	-150.9	0.4	8.4

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 1, 2023, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Analyte					1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethane	1,1-Dichloropropane	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	3/6/2023	N	Shallow	MWA-41-030623	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	0.032 j	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
MWA-63	3/9/2023	N	Shallow	MWA-63-030923	< 1.8 U	< 3.9 U	< 5.2 U	< 2.4 U	< 2.2 U	< 2.8 U	< 2.9 U	< 4.3 U	< 4.1 U	< 3.3 U
MWA-82	3/6/2023	N	Shallow	MWA-82-030623	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	0.036 j	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-03	3/7/2023	N	Shallow	PA-03-030723	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	0.13 j	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-04	3/8/2023	N	Shallow	PA-04-030823	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	0.16 j	0.22	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-08	3/7/2023	N	Shallow	PA-08-030723	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	0.20	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-09	3/7/2023	N	Shallow	PA-09-030723	< 0.038 U	0.098 j	< 0.056 U	< 0.070 U	0.061 j	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-31	3/7/2023	N	Shallow	PA-31-030723	< 0.038 U	0.23 J+	< 0.056 U	< 0.070 U	0.41	0.94 J+	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
MWA-81i	3/6/2023	N	Intermediate	MWA-81i-030623	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	0.12 j	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-10i	3/8/2023	N	Intermediate	PA-10i-030823	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	0.12 j	0.27	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-15i	3/8/2023	N	Intermediate	PA-15i-030823	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	0.33	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-16i	3/8/2023	N	Intermediate	PA-16i-030823	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	0.31	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-16i	3/8/2023	FD	Intermediate	DUP-01-030823	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	0.31	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-17iR	3/8/2023	N	Intermediate	PA-17iR-030823	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.025 U	0.58	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-32i	3/7/2023	N	Intermediate	PA-32i-030723	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.025 U	0.16 j	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
PA-44i	3/6/2023	N	Intermediate	PA-44i-030623	< 0.038 U	< 0.025 U	< 0.056 U	< 0.070 U	0.047 j	< 0.035 U	< 0.084 U	< 0.15 U	< 0.050 U	< 0.17 U
MWA-11i(d)	3/9/2023	N	Deep	MWA-11i(D)-030923	< 0.038 U	0.044 j	< 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)	3/9/2023	N	Deep	MWA-31i(D)-030923	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.42 j	< 0.28 U	< 0.29 U	< 0.43 U	< 0.41 U	< 0.33 U
MWA-56d	3/9/2023	N	Deep	MWA-56D-030923	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.29 U	< 0.43 U	< 0.41 U	< 0.33 U
MWA-58d	3/9/2023	N	Deep	MWA-58D-030923	< 0.90 U	< 2.0 U	< 2.6 U	< 1.1 U	< 1.1 U	< 1.4 U	< 1.5 U	< 2.2 U	< 2.1 U	< 1.7 U
PA-18d	3/9/2023	N	Deep	PA-18D-030923	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.29 U	< 0.43 U	< 0.41 U	< 0.33 U
PA-18d	3/9/2023	FD	Deep	DUP-02-030923	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.29 U	< 0.43 U	< 0.41 U	< 0.33 U
PA-19d	3/9/2023	N	Deep	PA-19D-030923	< 3.6 U	< 7.8 U	< 10 U	< 4.8 U	< 4.4 U	< 5.6 U	< 5.8 U	< 8.6 U	< 8.2 U	< 6.6 U
PA-20d	3/9/2023	N	Deep	PA-20D-030923	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	1.3	< 0.28 U	< 0.29 U	< 0.43 U	< 0.41 U	< 0.33 U
PA-21d	3/9/2023	N	Deep	PA-21D-030923	< 18 U	< 39 U	< 52 U	< 24 U	< 22 U	< 28 U	< 29 U	< 43 U	< 41 U	< 33 U
PA-22d	3/8/2023	N	Deep	PA-22D-030823	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.29 U	< 0.43 U	< 0.41 U	< 0.33 U
PA-23d	3/8/2023	N	Deep	PA-23D-030823	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.29 U	< 0.43 U	< 0.41 U	< 0.33 U
PA-24d	3/8/2023	N	Deep	PA-24D-030823	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.29 U	< 0.43 U	< 0.41 U	< 0.33 U
PA-25d	3/8/2023	N	Deep	PA-25D-030823	< 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	3/8/2023	N	Deep	PA-26D-030823	< 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	3/8/2023	N	Deep	PA-27D-030823	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.39 j	< 0.28 U	< 0.29 U	< 0.43 U	< 0.41 U	< 0.33 U
PA-30d	3/9/2023	N	Deep	PA-30D-030923	< 36 U	< 78 U	< 100 U	< 48 U	< 44 U	< 56 U	< 58 U	< 86 U	< 82 U	< 66 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
 SWB260C 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.
 J+ = The concentration of the sample is considered to be biased high, as the associated QC exceed the upper control limits.
 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 1, 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	3/6/2023	N	Shallow	MWA-41-030623	< 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-63	3/9/2023	N	Shallow	MWA-63-030923	< 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-82	3/6/2023	N	Shallow	MWA-82-030623	< 0.20 U	< 0.17 UJ	0.082 j	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-03	3/7/2023	N	Shallow	PA-03-030723	< 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	3/8/2023	N	Shallow	PA-04-030823	< 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	3/7/2023	N	Shallow	PA-08-030723	< 0.20 U	< 0.17 U	0.062 j	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-09	3/7/2023	N	Shallow	PA-09-030723	< 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	3/7/2023	N	Shallow	PA-31-030723	< 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-81i	3/6/2023	N	Intermediate	MWA-81i-030623	< 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
PA-10i	3/8/2023	N	Intermediate	PA-10i-030823	< 0.20 U	< 0.17 U	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-15i	3/8/2023	N	Intermediate	PA-15i-030823	< 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	3/8/2023	N	Intermediate	PA-16i-030823	< 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	3/8/2023	FD	Intermediate	DUP-01-030823	< 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	3/8/2023	N	Intermediate	PA-17iR-030823	< 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-32i	3/7/2023	N	Intermediate	PA-32i-030723	< 0.20 U	< 0.17 U	0.26 j	< 0.043 U	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-44i	3/6/2023	N	Intermediate	PA-44i-030623	< 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-11i(d)	3/9/2023	N	Deep	MWA-11i(D)-030923	< 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)	3/9/2023	N	Deep	MWA-31i(D)-030923	< 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	3/9/2023	N	Deep	MWA-56D-030923	< 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-58d	3/9/2023	N	Deep	MWA-58D-030923	< 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	3/9/2023	N	Deep	PA-18D-030923	< 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-18d	3/9/2023	FD	Deep	DUP-02-030923	< 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-19d	3/9/2023	N	Deep	PA-19D-030923	< 12 U	< 11 U	< 9.2 U	< 8.4 U	< 3.6 U	< 11 U	< 9.6 U	< 7.0 U	< 9.2 U	< 6.4 U
PA-20d	3/9/2023	N	Deep	PA-20D-030923	< 0.61 U	< 0.57 U	< 0.46 U	1.3	< 0.18 U	< 0.55 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U
PA-21d	3/9/2023	N	Deep	PA-21D-030923	< 61 U	< 57 U	< 46 U	< 42 U	< 18 U	< 55 U	< 48 U	< 35 U	< 46 U	< 32 U
PA-22d	3/8/2023	N	Deep	PA-22D-030823	< 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	3/8/2023	N	Deep	PA-23D-030823	< 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	3/8/2023	N	Deep	PA-24D-030823	< 0.61 U	< 0.57 U	< 0.46 U	0.58 j	< 0.18 U	< 0.55 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U
PA-25d	3/8/2023	N	Deep	PA-25D-030823	< 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	3/8/2023	N	Deep	PA-26D-030823	< 0.20 U	< 0.17 U	< 0.038 U	0.25	< 0.060 U	< 0.15 U	< 0.050 U	< 0.025 U	< 0.050 U	< 0.060 U
PA-27d	3/8/2023	N	Deep	PA-27D-030823	< 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	3/9/2023	N	Deep	PA-30D-030923	< 120 U	< 110 U	< 92 U	< 84 U	< 36 U	< 110 U	< 96 U	< 70 U	< 92 U	< 64 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.
 J+ = The concentration of the sample is considered to be biased high, as the associated QC exceed the upper control limits.
 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 1, 2023, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Analyte					2-Butanone	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	3/6/2023	N	Shallow	MWA-41-030623	< 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	3/9/2023	N	Shallow	MWA-63-030923	< 47 U	< 3.8 U	< 2.8 U	< 25 U	< 32 U	< 2.4 U	< 4.3 U	< 2.9 U	< 5.1 U	< 2.1 U
MWA-82	3/6/2023	N	Shallow	MWA-82-030623	< 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	3/7/2023	N	Shallow	PA-03-030723	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	0.056 j	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
PA-04	3/8/2023	N	Shallow	PA-04-030823	< 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	3/7/2023	N	Shallow	PA-08-030723	< 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	3/7/2023	N	Shallow	PA-09-030723	< 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	3/7/2023	N	Shallow	PA-31-030723	< 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	3/6/2023	N	Intermediate	MWA-81i-030623	< 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	3/8/2023	N	Intermediate	PA-10i-030823	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	3.2 j	0.22	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
PA-15i	3/8/2023	N	Intermediate	PA-15i-030823	< 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	3/8/2023	N	Intermediate	PA-16i-030823	< 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	3/8/2023	FD	Intermediate	DUP-01-030823	< 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	3/8/2023	N	Intermediate	PA-17iR-030823	< 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-32i	3/7/2023	N	Intermediate	PA-32i-030723	< 2.5 U	< 0.12 U	< 0.15 U	< 1.7 U	< 3.1 U	0.060 j	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U
PA-44i	3/6/2023	N	Intermediate	PA-44i-030623	< 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)	3/9/2023	N	Deep	MWA-11i(D)-030923	< 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)	3/9/2023	N	Deep	MWA-31i(D)-030923	< 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-56d	3/9/2023	N	Deep	MWA-56D-030923	< 4.7 U	< 0.38 U	< 0.28 U	< 2.5 U	< 3.2 U	< 0.24 U	< 0.43 U	0.82 j	< 0.51 U	< 0.21 U
MWA-58d	3/9/2023	N	Deep	MWA-58D-030923	< 24 U	< 1.9 U	< 1.4 U	< 13 U	< 16 U	< 1.2 U	< 2.2 U	1.6 j	< 2.6 U	< 1.1 U
PA-18d	3/9/2023	N	Deep	PA-18D-030923	< 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-18d	3/9/2023	FD	Deep	DUP-02-030923	< 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-19d	3/9/2023	N	Deep	PA-19D-030923	< 94 U	< 7.6 U	< 5.6 U	< 50 U	< 64 U	48	< 8.6 U	< 5.8 U	< 10 U	< 4.2 U
PA-20d	3/9/2023	N	Deep	PA-20D-030923	< 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-21d	3/9/2023	N	Deep	PA-21D-030923	< 470 U	< 38 U	< 28 U	< 250 U	< 320 U	< 24 U	< 43 U	< 29 U	< 51 U	< 21 U
PA-22d	3/8/2023	N	Deep	PA-22D-030823	< 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	3/8/2023	N	Deep	PA-23D-030823	< 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-24d	3/8/2023	N	Deep	PA-24D-030823	< 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	3/8/2023	N	Deep	PA-25D-030823	< 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	3/8/2023	N	Deep	PA-26D-030823	< 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	3/8/2023	N	Deep	PA-27D-030823	< 4.7 U	< 0.38 U	< 0.28 U	< 2.5 U	3.3 j	< 0.24 U	< 0.43 U	< 0.29 U	< 0.51 U	< 0.21 U
PA-30d	3/9/2023	N	Deep	PA-30D-030923	< 940 U	< 76 U	< 56 U	< 500 U	< 640 U	< 48 U	< 86 U	< 58 U	< 100 U	< 42 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
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 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.
 J+ = The concentration of the sample is considered to be biased high, as the associated QC exceed the upper control limits.
 U = Analyte was analyzed for, but not detected above, the limit displayed.
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Table 4
Volatile Organic Compounds Results
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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	3/6/2023	N	Shallow	MWA-41-030623	< 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	3/9/2023	N	Shallow	MWA-63-030923	< 5.3 U	< 3.0 U	5.6 j	< 2.9 U	< 3.5 U	80	< 2.8 U	< 3.5 U	< 4.2 U	< 4.3 U
MWA-82	3/6/2023	N	Shallow	MWA-82-030623	< 0.083 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.096 U	0.50	< 0.14 U	< 0.055 U	< 0.090 U	< 0.055 U
PA-03	3/7/2023	N	Shallow	PA-03-030723	< 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-04	3/8/2023	N	Shallow	PA-04-030823	< 0.083 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.096 U	0.055 j	0.60	< 0.055 U	< 0.090 U	< 0.055 U
PA-08	3/7/2023	N	Shallow	PA-08-030723	< 0.083 U	< 0.025 U	0.24	< 0.050 U	< 0.096 U	< 0.030 U	< 0.14 U	0.15 j	< 0.090 U	< 0.055 U
PA-09	3/7/2023	N	Shallow	PA-09-030723	< 0.083 U	< 0.025 U	0.39	< 0.050 U	< 0.096 U	0.33	< 0.14 U	< 0.055 U	< 0.090 U	< 0.055 U
PA-31	3/7/2023	N	Shallow	PA-31-030723	< 0.083 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.096 U	< 0.20 U	< 0.14 U	< 0.055 U	< 0.090 U	< 0.055 U
MWA-81i	3/6/2023	N	Intermediate	MWA-81i-030623	< 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	3/8/2023	N	Intermediate	PA-10i-030823	< 0.083 U	< 0.025 U	5.7	< 0.050 U	< 0.096 U	< 0.030 U	< 0.14 U	1.1	< 0.090 U	< 0.055 U
PA-15i	3/8/2023	N	Intermediate	PA-15i-030823	< 0.083 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.096 U	< 0.030 U	0.14 j	< 0.055 U	< 0.090 U	< 0.055 U
PA-16i	3/8/2023	N	Intermediate	PA-16i-030823	< 0.083 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.096 U	< 0.030 U	< 0.14 U	0.24	< 0.090 U	< 0.055 U
PA-16i	3/8/2023	FD	Intermediate	DUP-01-030823	< 0.083 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.096 U	< 0.030 U	0.15 j	0.26	< 0.090 U	< 0.055 U
PA-17iR	3/8/2023	N	Intermediate	PA-17iR-030823	0.11 j	< 0.025 U	< 0.060 U	< 0.050 U	< 0.096 U	< 0.030 U	< 0.14 U	0.17 j	< 0.090 U	< 0.055 U
PA-32i	3/7/2023	N	Intermediate	PA-32i-030723	< 0.083 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.096 U	< 0.030 U	< 0.14 U	0.096 j	< 0.090 U	< 0.055 U
PA-44i	3/6/2023	N	Intermediate	PA-44i-030623	< 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)	3/9/2023	N	Deep	MWA-11i(D)-030923	< 0.083 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.096 U	< 0.030 U	0.28 j	0.12 j	< 0.090 U	< 0.055 U
MWA-31i(d)	3/9/2023	N	Deep	MWA-31i(D)-030923	< 0.53 U	< 0.30 U	0.58 j	< 0.29 U	< 0.35 U	83	< 0.28 U	< 0.35 U	< 0.42 U	< 0.43 U
MWA-56d	3/9/2023	N	Deep	MWA-56D-030923	< 0.53 U	< 0.30 U	< 0.44 U	< 0.29 U	< 0.35 U	160 J	0.30 j	< 0.35 U	< 0.42 U	< 0.43 U
MWA-58d	3/9/2023	N	Deep	MWA-58D-030923	< 2.7 U	< 1.5 U	< 2.2 U	< 1.5 U	< 1.8 U	210	< 1.4 U	< 1.8 U	< 2.1 U	< 2.2 U
PA-18d	3/9/2023	N	Deep	PA-18D-030923	< 0.53 U	< 0.30 U	< 0.44 U	< 0.29 U	< 0.35 U	< 0.26 U	0.69 j	< 0.35 U	< 0.42 U	< 0.43 U
PA-18d	3/9/2023	FD	Deep	DUP-02-030923	< 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	3/9/2023	N	Deep	PA-19D-030923	< 11 U	< 6.0 U	12,000 J	< 5.8 U	< 7.0 U	< 5.2 U	< 5.6 U	21	< 8.4 U	< 8.6 U
PA-20d	3/9/2023	N	Deep	PA-20D-030923	< 0.53 U	< 0.30 U	13	< 0.29 U	< 0.35 U	< 0.26 U	< 0.28 U	< 0.35 U	< 0.42 U	< 0.43 U
PA-21d	3/9/2023	N	Deep	PA-21D-030923	< 53 U	< 30 U	30,000 J	< 29 U	< 35 U	< 26 U	< 28 U	< 35 U	< 42 U	< 43 U
PA-22d	3/8/2023	N	Deep	PA-22D-030823	< 0.53 U	< 0.30 U	< 0.44 U	< 0.29 U	< 0.35 U	16	< 0.28 U	< 0.35 U	< 0.42 U	< 0.43 U
PA-23d	3/8/2023	N	Deep	PA-23D-030823	< 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	3/8/2023	N	Deep	PA-24D-030823	< 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	3/8/2023	N	Deep	PA-25D-030823	< 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	3/8/2023	N	Deep	PA-26D-030823	< 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	3/8/2023	N	Deep	PA-27D-030823	< 0.53 U	< 0.30 U	< 0.44 U	< 0.29 U	< 0.35 U	< 0.26 U	< 0.28 U	0.51 j	< 0.42 U	< 0.43 U
PA-30d	3/9/2023	N	Deep	PA-30D-030923	< 110 U	< 60 U	24,000	< 58 U	< 70 U	< 52 U	< 56 U	< 70 U	< 84 U	< 86 U

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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	3/6/2023	N	Shallow	MWA-41-030623	< 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	3/9/2023	N	Shallow	MWA-63-030923	< 3.4 U	< 5.3 U	< 5.0 U	< 4.0 U	< 7.9 U	< 4.4 U	< 5.3 U	< 4.4 U	< 14 U	< 9.3 U
MWA-82	3/6/2023	N	Shallow	MWA-82-030623	< 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	3/7/2023	N	Shallow	PA-03-030723	< 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	3/8/2023	N	Shallow	PA-04-030823	< 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	3/7/2023	N	Shallow	PA-08-030723	< 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	3/7/2023	N	Shallow	PA-09-030723	< 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	3/7/2023	N	Shallow	PA-31-030723	< 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-81i	3/6/2023	N	Intermediate	MWA-81i-030623	< 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	3/8/2023	N	Intermediate	PA-10i-030823	< 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	3/8/2023	N	Intermediate	PA-15i-030823	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	0.14 j	< 0.070 U	< 1.2 U	< 0.22 U
PA-16i	3/8/2023	N	Intermediate	PA-16i-030823	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	0.14 j	< 0.070 U	< 1.2 U	< 0.22 U
PA-16i	3/8/2023	FD	Intermediate	DUP-01-030823	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	0.15 j	< 0.070 U	< 1.2 U	< 0.22 U
PA-17iR	3/8/2023	N	Intermediate	PA-17iR-030823	< 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	3/7/2023	N	Intermediate	PA-32i-030723	< 0.062 U	< 0.13 U	0.034 j	< 0.025 U	< 0.067 U	< 0.19 U	0.13 j	< 0.070 U	< 1.2 U	< 0.22 U
PA-44i	3/6/2023	N	Intermediate	PA-44i-030623	< 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)	3/9/2023	N	Deep	MWA-11i(D)-030923	< 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)	3/9/2023	N	Deep	MWA-31i(D)-030923	< 0.34 U	< 0.53 U	< 0.50 U	< 0.40 U	< 0.79 U	< 0.44 U	< 0.53 U	< 0.44 U	1.5 j	< 0.93 U
MWA-56d	3/9/2023	N	Deep	MWA-56D-030923	< 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 U
MWA-58d	3/9/2023	N	Deep	MWA-58D-030923	< 1.7 U	< 2.7 U	< 2.5 U	< 2.0 U	< 4.0 U	< 2.2 U	< 2.7 U	< 2.2 U	< 7.2 U	< 4.7 U
PA-18d	3/9/2023	N	Deep	PA-18D-030923	< 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 U
PA-18d	3/9/2023	FD	Deep	DUP-02-030923	< 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 U
PA-19d	3/9/2023	N	Deep	PA-19D-030923	< 6.8 U	< 11 U	< 10 U	< 8.0 U	< 16 U	< 8.8 U	< 11 U	< 8.8 U	< 29 U	< 19 U
PA-20d	3/9/2023	N	Deep	PA-20D-030923	< 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 U
PA-21d	3/9/2023	N	Deep	PA-21D-030923	< 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 U
PA-22d	3/8/2023	N	Deep	PA-22D-030823	< 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 U
PA-23d	3/8/2023	N	Deep	PA-23D-030823	< 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 U
PA-24d	3/8/2023	N	Deep	PA-24D-030823	< 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 U
PA-25d	3/8/2023	N	Deep	PA-25D-030823	< 0.062 U	< 0.13 U	< 0.030 U	< 0.025 U	< 0.067 U	< 0.19 U	0.15 j	< 0.070 U	< 1.2 U	< 0.22 U
PA-26d	3/8/2023	N	Deep	PA-26D-030823	< 0.062 U	< 0.13 U	0.032 j	< 0.025 U	< 0.067 U	< 0.19 U	0.19 j	< 0.070 U	< 1.2 U	< 0.22 U
PA-27d	3/8/2023	N	Deep	PA-27D-030823	< 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 U
PA-30d	3/9/2023	N	Deep	PA-30D-030923	< 68 U	< 110 U	< 100 U	< 80 U	< 160 U	< 88 U	< 110 U	< 88 U	< 290 U	< 190 U

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Analyte					Unit	in-Butylbenzene	in-Propylbenzene	o-Chlorotoluene (2-Chlorotoluene)	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene
FSWP SHSC (shaded values indicate results above the value shown)					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Location ID	Sample Date	Sample Type	Aquifer Classification	Sample ID	NE	NE	NE	13	NE	NE	NE	NE	0.33	9.8	1,000
MWA-41	3/6/2023	N	Shallow	MWA-41-030623	< 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	3/9/2023	N	Shallow	MWA-63-030923	< 4.4 U	< 5.0 U	< 5.1 U	< 3.9 U	< 4.9 U	< 5.3 U	< 5.8 U	13	< 3.9 U	< 3.9 U	
MWA-82	3/6/2023	N	Shallow	MWA-82-030623	< 0.23 U	< 0.091 U	< 0.12 U	< 0.15 U	< 0.17 U	< 0.19 U	< 0.26 U	0.48	< 0.050 U	< 0.033 U	
PA-03	3/7/2023	N	Shallow	PA-03-030723	< 0.23 U	< 0.091 U	< 0.12 U	< 0.15 U	< 0.17 U	< 0.19 U	< 0.26 U	< 0.084 U	0.13 j	< 0.033 U	
PA-04	3/8/2023	N	Shallow	PA-04-030823	< 0.23 U	< 0.091 U	< 0.12 U	< 0.15 U	< 0.17 U	< 0.19 U	< 0.26 U	0.18 j	< 0.050 U	< 0.033 U	
PA-08	3/7/2023	N	Shallow	PA-08-030723	< 0.23 U	< 0.091 U	< 0.12 U	< 0.15 U	< 0.17 U	< 0.19 U	< 0.26 U	0.24	< 0.050 U	< 0.033 U	
PA-09	3/7/2023	N	Shallow	PA-09-030723	< 0.23 U	< 0.091 U	< 0.12 U	< 0.15 U	< 0.17 U	< 0.19 U	< 0.26 U	0.33	< 0.050 U	< 0.033 U	
PA-31	3/7/2023	N	Shallow	PA-31-030723	< 0.23 U	< 0.091 U	< 0.12 U	< 0.15 U	< 0.17 U	< 0.19 U	< 0.26 U	0.18 j	< 0.050 U	< 0.033 U	
MWA-81i	3/6/2023	N	Intermediate	MWA-81i-030623	< 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	3/8/2023	N	Intermediate	PA-10i-030823	< 0.23 U	< 0.091 U	< 0.12 U	< 0.15 U	< 0.17 U	< 0.19 U	< 0.26 U	< 0.084 U	0.10 j	0.065 j	
PA-15i	3/8/2023	N	Intermediate	PA-15i-030823	< 0.23 U	< 0.091 U	< 0.12 U	0.23 j	< 0.17 U	< 0.19 U	< 0.26 U	< 0.084 U	< 0.050 U	< 0.033 U	
PA-16i	3/8/2023	N	Intermediate	PA-16i-030823	< 0.23 U	< 0.091 U	< 0.12 U	0.23 j	< 0.17 U	< 0.19 U	< 0.26 U	< 0.084 U	< 0.050 U	< 0.033 U	
PA-16i	3/8/2023	FD	Intermediate	DUP-01-030823	< 0.23 U	< 0.091 U	< 0.12 U	0.26 j	< 0.17 U	< 0.19 U	< 0.26 U	< 0.084 U	< 0.050 U	< 0.033 U	
PA-17iR	3/8/2023	N	Intermediate	PA-17iR-030823	< 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	3/7/2023	N	Intermediate	PA-32i-030723	< 0.23 U	< 0.091 U	< 0.12 U	0.23 j	< 0.17 U	< 0.19 U	< 0.26 U	< 0.084 U	< 0.050 U	< 0.033 U	
PA-44i	3/6/2023	N	Intermediate	PA-44i-030623	< 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)	3/9/2023	N	Deep	MWA-11i(D)-030923	< 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)	3/9/2023	N	Deep	MWA-31i(D)-030923	< 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	3/9/2023	N	Deep	MWA-56D-030923	< 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-58d	3/9/2023	N	Deep	MWA-58D-030923	< 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	3/9/2023	N	Deep	PA-18D-030923	< 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-18d	3/9/2023	FD	Deep	DUP-02-030923	< 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	3/9/2023	N	Deep	PA-19D-030923	< 8.8 U	< 10 U	< 10 U	< 7.8 U	< 9.8 U	< 11 U	< 12 U	< 8.2 U	< 7.8 U	< 7.8 U	
PA-20d	3/9/2023	N	Deep	PA-20D-030923	< 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	3/9/2023	N	Deep	PA-21D-030923	< 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	
PA-22d	3/8/2023	N	Deep	PA-22D-030823	< 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	3/8/2023	N	Deep	PA-23D-030823	< 0.44 U	< 0.50 U	< 0.51 U	< 0.39 U	< 0.49 U	< 0.53 U	< 0.58 U	< 0.41 U	97	< 0.39 U	
PA-24d	3/8/2023	N	Deep	PA-24D-030823	< 0.44 U	< 0.50 U	< 0.51 U	< 0.39 U	< 0.49 U	< 0.53 U	< 0.58 U	< 0.41 U	8.0	< 0.39 U	
PA-25d	3/8/2023	N	Deep	PA-25D-030823	< 0.23 U	< 0.091 U	< 0.12 U	0.25 j	< 0.17 U	< 0.19 U	< 0.26 U	< 0.084 U	< 0.050 U	< 0.033 U	
PA-26d	3/8/2023	N	Deep	PA-26D-030823	< 0.23 U	< 0.091 U	< 0.12 U	0.32 j	< 0.17 U	< 0.19 U	< 0.26 U	< 0.084 U	< 0.050 U	< 0.033 U	
PA-27d	3/8/2023	N	Deep	PA-27D-030823	< 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	3/9/2023	N	Deep	PA-30D-030923	< 88 U	< 100 U	< 100 U	< 78 U	< 98 U	< 110 U	< 120 U	< 82 U	< 78 U	< 78 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.
 J+ = The concentration of the sample is considered to be biased high, as the associated QC exceed the upper control limits.
 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 1, 2023, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

					Analyte	Unit			
					trans-1,3-Dichloropropene		Trichloroethene	Trichlorofluoromethane (Freon 11)	Vinyl chloride
					µg/L	NE	µg/L	µg/L	µg/L
					NE	3	NE	NE	0.24
FSWP SHSC (shaded values indicate results above the value shown)									
Location ID	Sample Date	Sample Type	Aquifer Classification	Sample ID					
MWA-41	3/6/2023	N	Shallow	MWA-41-030623	< 0.092 U	< 0.066 U	< 0.12 U	< 0.040 U	
MWA-63	3/9/2023	N	Shallow	MWA-63-030923	< 4.1 U	< 2.6 U	< 3.6 U	< 2.2 U	
MWA-82	3/6/2023	N	Shallow	MWA-82-030623	< 0.092 U	0.19 j	< 0.12 U	< 0.040 U	
PA-03	3/7/2023	N	Shallow	PA-03-030723	< 0.092 U	< 0.066 U	< 0.12 U	< 0.040 U	
PA-04	3/8/2023	N	Shallow	PA-04-030823	< 0.092 U	< 0.066 U	< 0.12 U	< 0.040 U	
PA-08	3/7/2023	N	Shallow	PA-08-030723	< 0.092 U	0.24	< 0.12 U	< 0.040 U	
PA-09	3/7/2023	N	Shallow	PA-09-030723	< 0.092 U	< 0.066 U	< 0.12 U	< 0.040 U	
PA-31	3/7/2023	N	Shallow	PA-31-030723	< 0.092 U	0.086 j	0.12 j	< 0.040 U	
MWA-81i	3/6/2023	N	Intermediate	MWA-81i-030623	< 0.092 U	< 0.066 U	< 0.12 U	< 0.040 U	
PA-10i	3/8/2023	N	Intermediate	PA-10i-030823	< 0.092 U	< 0.066 U	< 0.12 U	0.48	
PA-15i	3/8/2023	N	Intermediate	PA-15i-030823	< 0.092 U	0.13 j	< 0.12 U	< 0.040 U	
PA-16i	3/8/2023	N	Intermediate	PA-16i-030823	< 0.092 U	0.071 j	< 0.12 U	< 0.040 U	
PA-16i	3/8/2023	FD	Intermediate	DUP-01-030823	< 0.092 U	0.084 j	< 0.12 U	< 0.040 U	
PA-17iR	3/8/2023	N	Intermediate	PA-17iR-030823	< 0.092 U	< 0.066 U	< 0.12 U	< 0.040 U	
PA-32i	3/7/2023	N	Intermediate	PA-32i-030723	< 0.092 U	< 0.066 U	< 0.12 U	< 0.040 U	
PA-44i	3/6/2023	N	Intermediate	PA-44i-030623	< 0.092 U	< 0.066 U	< 0.12 U	< 0.040 U	
MWA-11i(d)	3/9/2023	N	Deep	MWA-11i(D)-030923	< 0.092 U	< 0.066 U	< 0.12 U	< 0.040 U	
MWA-31i(d)	3/9/2023	N	Deep	MWA-31i(D)-030923	< 0.41 U	< 0.26 U	< 0.36 U	< 0.22 U	
MWA-56d	3/9/2023	N	Deep	MWA-56D-030923	< 0.41 U	< 0.26 U	< 0.36 U	< 0.22 U	
MWA-58d	3/9/2023	N	Deep	MWA-58D-030923	< 2.1 U	< 1.3 U	< 1.8 U	< 1.1 U	
PA-18d	3/9/2023	N	Deep	PA-18D-030923	< 0.41 U	< 0.26 U	< 0.36 U	0.26 j	
PA-18d	3/9/2023	FD	Deep	DUP-02-030923	< 0.41 U	< 0.26 U	< 0.36 U	0.26 j	
PA-19d	3/9/2023	N	Deep	PA-19D-030923	< 8.2 U	14 j	< 7.2 U	< 4.4 U	
PA-20d	3/9/2023	N	Deep	PA-20D-030923	< 0.41 U	< 0.26 U	< 0.36 U	< 0.22 U	
PA-21d	3/9/2023	N	Deep	PA-21D-030923	< 4.1 U	< 2.6 U	< 3.6 U	< 2.2 U	
PA-22d	3/8/2023	N	Deep	PA-22D-030823	< 0.41 U	< 0.26 U	< 0.36 U	< 0.22 U	
PA-23d	3/8/2023	N	Deep	PA-23D-030823	< 0.41 U	< 0.26 U	< 0.36 U	< 0.22 U	
PA-24d	3/8/2023	N	Deep	PA-24D-030823	< 0.41 U	< 0.26 U	< 0.36 U	< 0.22 U	
PA-25d	3/8/2023	N	Deep	PA-25D-030823	< 0.092 U	< 0.066 U	< 0.12 U	< 0.040 U	
PA-26d	3/8/2023	N	Deep	PA-26D-030823	< 0.092 U	< 0.066 U	< 0.12 U	< 0.040 U	
PA-27d	3/8/2023	N	Deep	PA-27D-030823	< 0.41 U	< 0.26 U	< 0.36 U	< 0.22 U	
PA-30d	3/9/2023	N	Deep	PA-30D-030923	< 82 U	< 52 U	< 72 U	< 44 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.
 J+ = The concentration of the sample is considered to be biased high, as the associated QC exceed the upper control limits.
 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 1, 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	3/6/2023	N	Shallow	MWA-41-030623		7.8	< 2.0 UJ
MWA-63	3/9/2023	N	Shallow	MWA-63-030923		5.5	< 10 UJ
MWA-82	3/6/2023	N	Shallow	MWA-82-030623		11	210 J-
PA-03	3/7/2023	N	Shallow	PA-03-030723		6.5	< 4.0 UJ
PA-04	3/8/2023	N	Shallow	PA-04-030823		5.4	< 10 UJ
PA-08	3/7/2023	N	Shallow	PA-08-030723		380	< 10 UJ
PA-09	3/7/2023	N	Shallow	PA-09-030723		120 j	< 4.0 UJ
PA-31	3/7/2023	N	Shallow	PA-31-030723		5.8 J+	< 2.0 UJ
MWA-81i	3/6/2023	N	Intermediate	MWA-81i-030623		95	< 2.0 UJ
PA-10i	3/8/2023	N	Intermediate	PA-10i-030823		41	< 10 UJ
PA-15i	3/8/2023	N	Intermediate	PA-15i-030823		290	< 10 UJ
PA-16i	3/8/2023	N	Intermediate	PA-16i-030823		530	< 20 UJ
PA-16i	3/8/2023	FD	Intermediate	DUP-01-030823		520	< 20 UJ
PA-17iR	3/8/2023	N	Intermediate	PA-17iR-030823		25	< 10 UJ
PA-32i	3/7/2023	N	Intermediate	PA-32i-030723		83 j	< 20 UJ
PA-44i	3/6/2023	N	Intermediate	PA-44i-030623		15	< 2.0 UJ
MWA-11i(d)	3/9/2023	N	Deep	MWA-11i(D)-030923		1,200	< 20 UJ
MWA-31i(d)	3/9/2023	N	Deep	MWA-31i(D)-030923		25,000	97,000 J-
MWA-56d	3/9/2023	N	Deep	MWA-56D-030923		16,000	15,000 J-
MWA-58d	3/9/2023	N	Deep	MWA-58D-030923		22,000	49,000 J-
PA-18d	3/9/2023	N	Deep	PA-18D-030923		50	< 20 UJ
PA-18d	3/9/2023	FD	Deep	DUP-02-030923		53	< 20 UJ
PA-19d	3/9/2023	N	Deep	PA-19D-030923		350	< 10 UJ
PA-20d	3/9/2023	N	Deep	PA-20D-030923		1,100	< 10 UJ
PA-21d	3/9/2023	N	Deep	PA-21D-030923		340	110 J-
PA-22d	3/8/2023	N	Deep	PA-22D-030823		6,000	17,000 J-
PA-23d	3/8/2023	N	Deep	PA-23D-030823		17,000	< 200 UJ
PA-24d	3/8/2023	N	Deep	PA-24D-030823		33,000	< 400 UJ
PA-25d	3/8/2023	N	Deep	PA-25D-030823		11 J+	< 2.0 UJ
PA-26d	3/8/2023	N	Deep	PA-26D-030823		69	< 2.0 UJ
PA-27d	3/8/2023	N	Deep	PA-27D-030823		670	< 20 UJ
PA-30d	3/9/2023	N	Deep	PA-30D-030923		300	< 20 UJ

Notes:

< = compound not detected; reportable detection limit shown

µg/L = micrograms per liter

mg/L = milligrams per liter

Bolded values indicate concentrations above the Reportable Detection Limit.

Shaded values indicate concentrations above the standard.

FD = Field Duplicate Sample

N = Normal Environmental Sample

FSWP SHSC = Feasibility Study Work Plan Indirect Exposure Pathway Selected Hot Spot Criteria

E300 analyses performed by TestAmerica - Seattle, WA of Seattle.

E314.0 analyses performed by TestAmerica - Sacramento, CA of West Sacramento.

Table 5
Additional Compounds Results
Arkema Quarter 1, 2023, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Qualifiers - Organic:

j = The analyte was positively identified below the RDL; associated numerical value is the approximate concentration of the analyte in the sample.

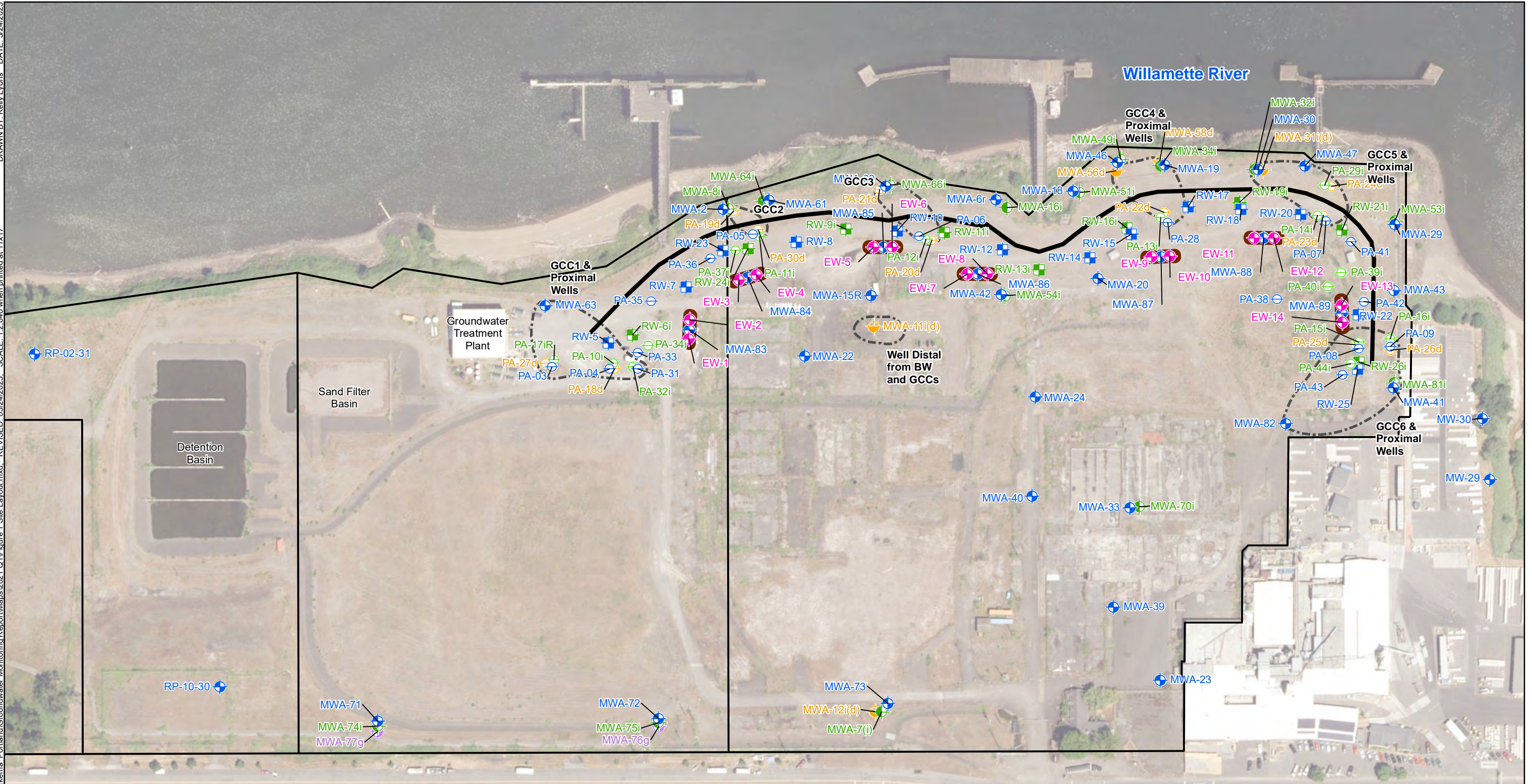
J- = The concentration of the sample is considered to be biased low, as the associated QC results are outside the lower control limits.

J+ = The concentration of the sample is considered to be biased high, as the associated QC results are outside the lower control limits.

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

FIGURES

DRAWN BY: Kelly Lyons DATE: 5/24/2023
 SCALE: 1:2,040 when printed at 11x17
 REVISED: 05/24/2023
 FILE: \\SCUSPRD\GIS\F\Projects\01\Total\Arkema - Portland\Groundwater Monitoring Report\Maps\2021_Q1\Figure 1 Site Layout.mxd



Legend

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

Notes:
 GCC= Gradient Control Cluster.
 GWBW = Ground Water Barrier Wall.

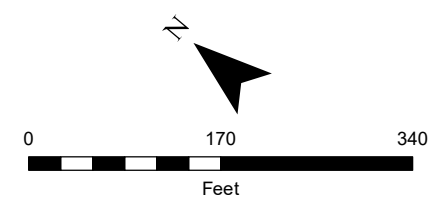
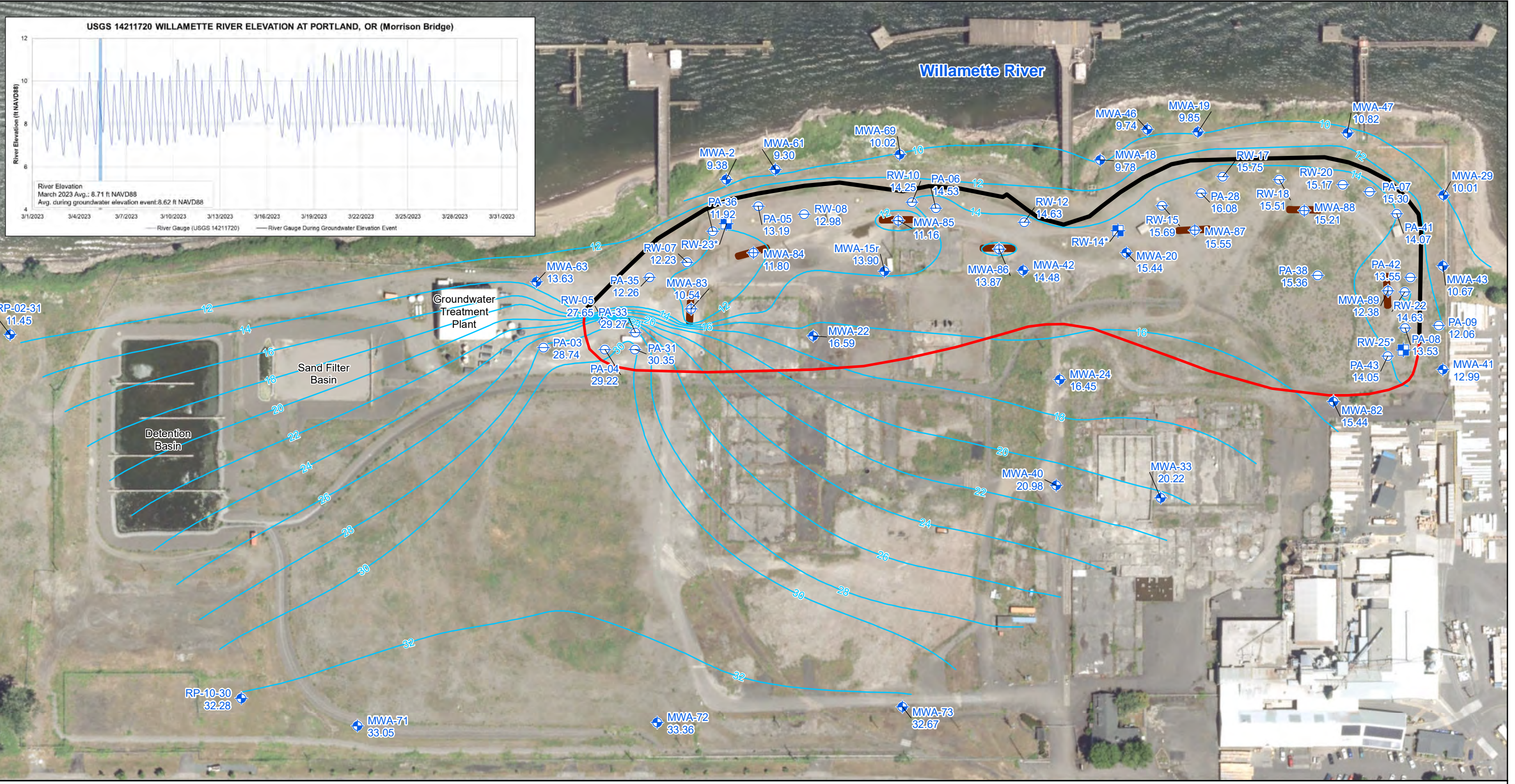


Figure 1
Site Layout
 Groundwater Monitoring Report
 Arkema Inc.
 Portland, Oregon

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

DRAWN BY: Jake Sullivan
 REVISED: 05/16/2023
 SCALE: 1:1,900 when printed at 11x17
 M:\US\Projects\S-U\Total\Arkema - Portland\Groundwater Monitoring Report\Arkema Working\Maps\2023 Q1\Figure 2 March 2023 Shallow Zone.mxd



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 March 5, 2023.
 ft NAVD88: feet North American Vertical Datum of 1988.
 Aerial Photo: City of Portland, Summer 2017.

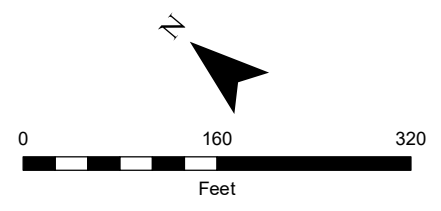
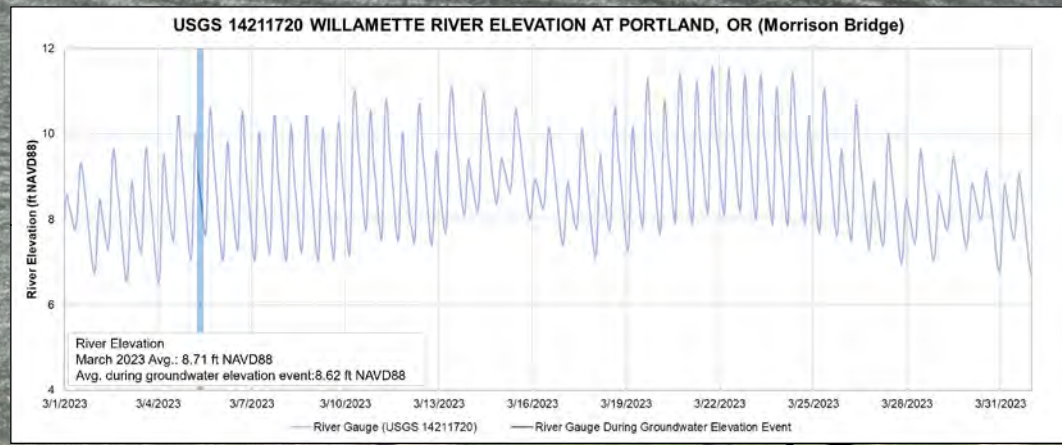
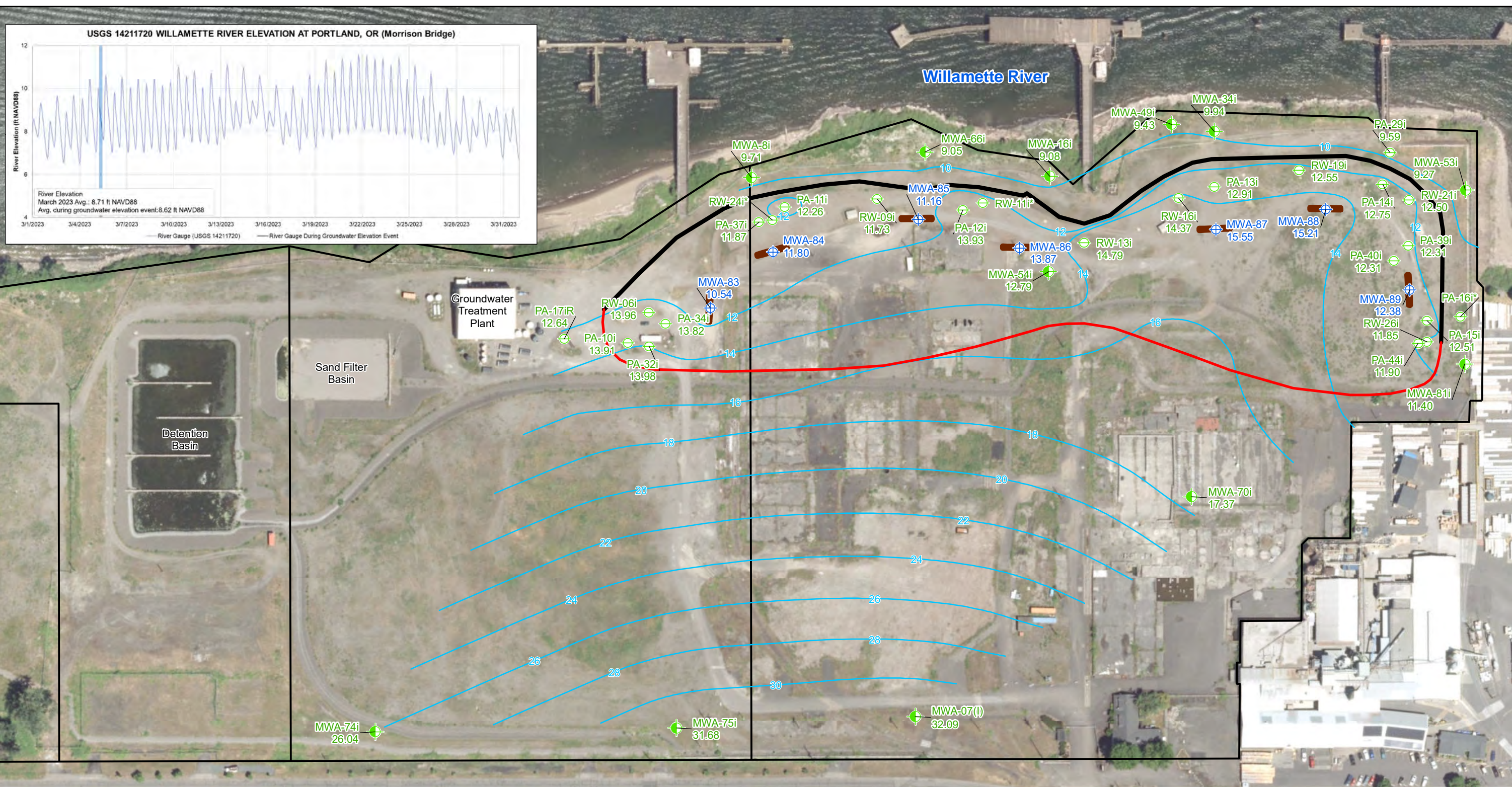


Figure 2
March 2023 Shallow Zone Groundwater Contours
 Quarter 1, 2023
 Groundwater Monitoring Report
 Arkema Inc.
 Portland, Oregon

NAD 1983 StatePlane Oregon North FIPS 3601 Feet Intl

DRAWN BY: Kelly Lyons
SCALE: 1:1,900 when printed at 11x17
REVISED: 05/16/2023
M:\US\Projects\S-U\Total\Arkema Monitoring Report\Data\Scripts\Arkema Working\Maps\2023 Q1\Figure 3 March 2023 Intermediate Zone.mxd



Legend

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

Notes:
 * Value not used for contouring.
 Water levels collected March 5, 2023.
 ft NAVD88: feet North American Vertical Datum of 1988.
 Aerial Photo: City of Portland, Summer 2017.

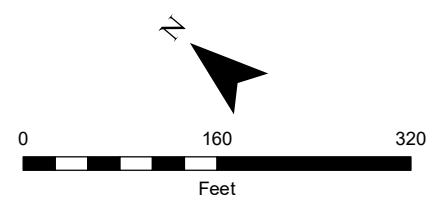
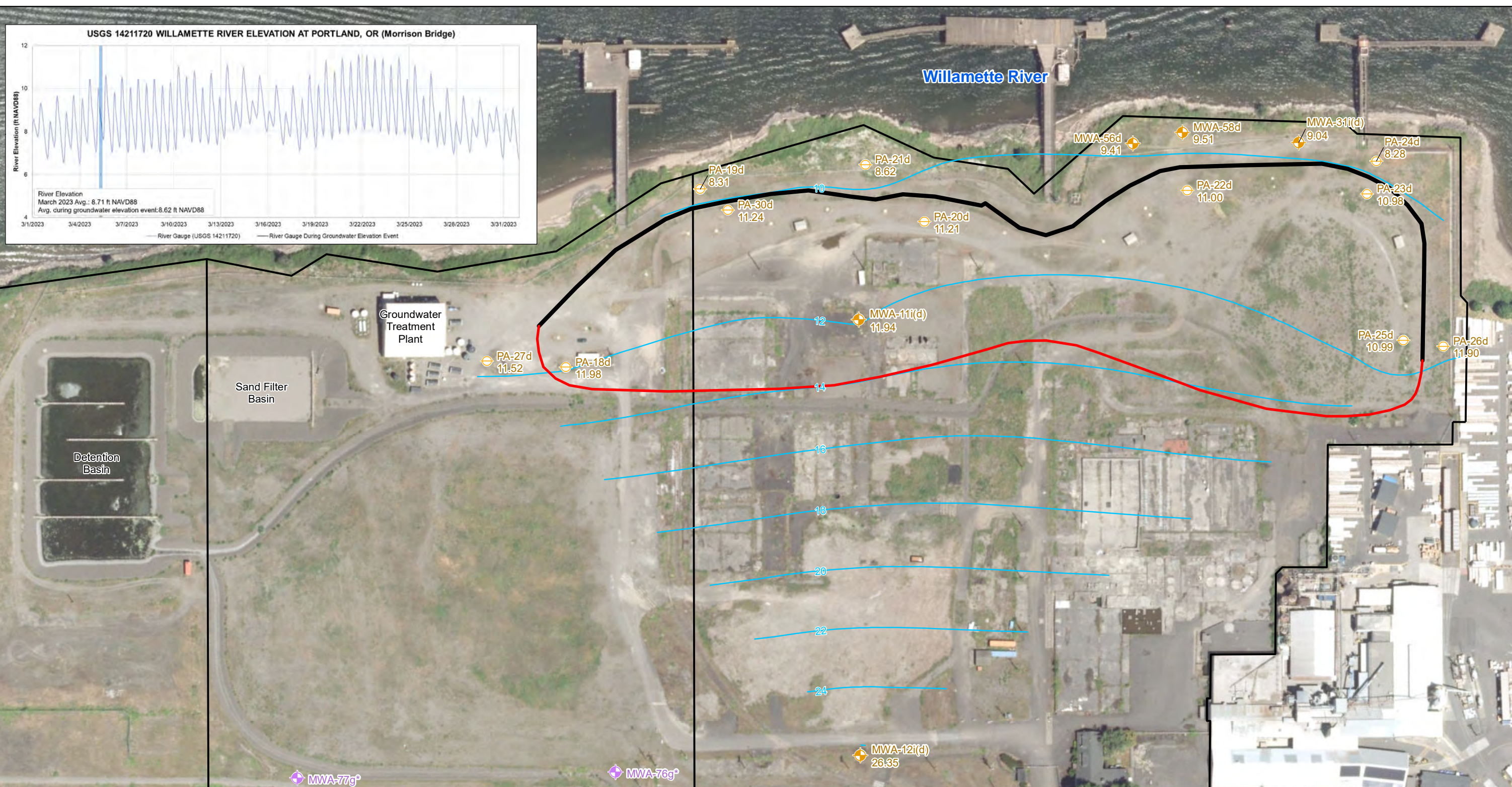


Figure 3
March 2023 Intermediate Zone Groundwater Contours
 Quarter 1, 2023
 Groundwater Monitoring Report
 Arkema Inc.
 Portland, Oregon

DRAWN BY: Kelly Lyons
M:\US\Projects\S-U\Total\Arkema\Monitoring Report\Data\Scripts\Arkema\Working\Maps\2023 Q1\Figure 4 March 2023 Deep Zone.mxd...REVISED: 05/16/2023...SCALE: 1:1,800 when printed at 11x17



- 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 March 5, 2023.
 ft NAVD88: feet North American Vertical Datum of 1988.
 Aerial Photo: City of Portland, Summer 2017.

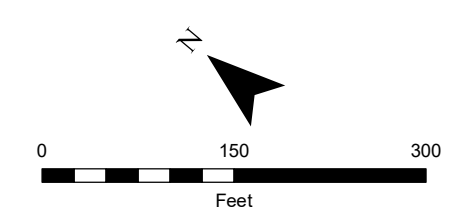


Figure 4
March 2023 Deep Zone Groundwater Contours
 Quarter 1, 2023
 Groundwater Monitoring Report
 Arkema Inc.
 Portland, Oregon

\\SCUSPRD\GIS\F01\Data\US\Projects\S-U\Total\Arkema - Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working Maps\2023 Q1\Figure 5 Chlorobenzene Shallow.mxd. SCALE: 1:1. DATE: 5/16/2023. REVISED: 05/16/2023.



- 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
 - Shallow Zone Groundwater Contours (ft NAVD88) March 2023

Notes:
 Samples Collected 06 March - 09 March, 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

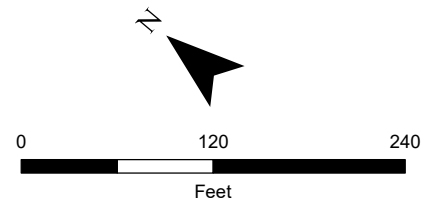


Figure 5
Chlorobenzene Groundwater Concentrations
Shallow Zone
 Quarter 1, 2023
 Groundwater Monitoring Report
 Arkema Inc.
 Portland, Oregon

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

\\SCUSPRD\GIS\Projects\01\Data\US\Projects\S-U\Total\Arkema - Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working Maps\2023 Q1\Figure 6 Chlorobenzene Intermediate.mxd. REVISED: 05/16/2023. SCALE: DRA: 1/4" = 100'. DATE: 5/16/2023



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) March 2023

Notes:
 Samples Collected 06 March - 09 March, 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

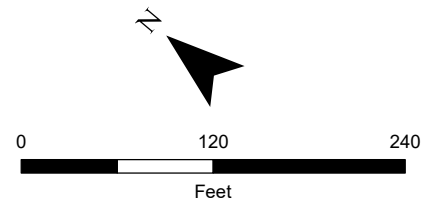


Figure 6
Chlorobenzene Groundwater Concentrations
Intermediate Zone
 Quarter 1, 2023
 Groundwater Monitoring Report
 Arkema Inc.
 Portland, Oregon

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

\\USCUPRD\GIS\Projects\S-U\Total\Arkema - Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working Maps\2023 Q1\Figure 7. Chlorobenzene Deep.mxd. REVISED: 05/16/2023. SCALE: 1:1,440. DATE: 5/16/2023



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) March 2023

Notes:
 Samples Collected 06 March - 09 March, 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

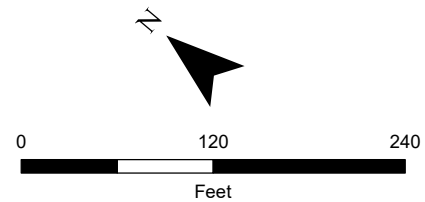


Figure 7
Chlorobenzene Groundwater Concentrations
Deep Zone
 Quarter 1, 2023
 Groundwater Monitoring Report
 Arkema Inc.
 Portland, Oregon

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

\\SCUSPRD\GIS\F01\Data\US\Projects\S-U\Total\Arkema - Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working Maps\2023 Q1\Figure 8 - 12-Dichlorobenzene Shallow.mxd REVISED: 05/16/2023. SCALE: PRA.MXD BY: WaterResources\jshariff 1 XDATE: 5/16/2023



- 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) March 2023

Notes:
 Samples Collected 06 March - 09 March, 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

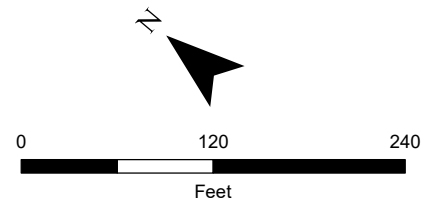


Figure 8
1,2-Dichlorobenzene Groundwater Concentrations
Shallow Zone
 Quarter 1, 2023
 Groundwater Monitoring Report
 Arkema Inc.
 Portland, Oregon

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

\\SCUSPRD\GIS\Projects\01\Data\US\Projects\01\Total\Arkema - Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working Maps\2023 Q1\Figure 9 1,2-Dichlorobenzene Intermediate.mxd, REVISED: 05/16/2023, SCORP\MN\EM\O\Jakes\Spillward at DM\15/16/2023



- 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) March 2023

Notes:
 Samples Collected 06 March - 09 March, 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

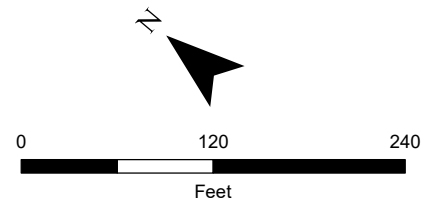


Figure 9
1,2-Dichlorobenzene Groundwater Concentrations
Intermediate Zone
 Quarter 1, 2023
 Groundwater Monitoring Report
 Arkema Inc.
 Portland, Oregon

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

\\USCUPRD\GIS\Projects\01\Total\Arkema - Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working Maps\2023 Q1\Figure 10 - 1,2-Dichlorobenzene Deep.mxd, REVISED: 05/16/2023, SCALE: 0.0000000000000001, DATE: 5/16/2023



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) March 2023

Notes:
 Samples Collected 06 March - 09 March, 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

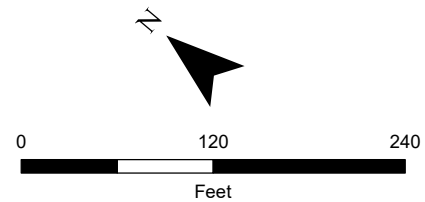


Figure 10
1,2-Dichlorobenzene Groundwater Concentrations
Deep Zone
 Quarter 1, 2023
 Groundwater Monitoring Report
 Arkema Inc.
 Portland, Oregon

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

\\SCUSPRD\GIS\Projects\01\Total\Arkema - Portland\Groundwater - Monitoring Report\Data\Scripts\Arkema Working Maps\2023 Q1\Figure 11 VOCs PieChart Shallow.mxd. REVISED: 05/16/2023. SCALE: 1:1 DRAWING BY: mmm@erms.com DATE: 5/16/2023



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) March 2023

Notes:
 Samples Collected 06 March - 09 March, 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

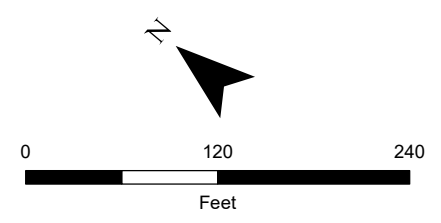


Figure 11
PCE, TCE, cis-1,2-DCE and Vinyl Chloride Groundwater Concentrations Shallow Zone
 Quarter 1, 2023
 Groundwater Monitoring Report
 Arkema Inc.
 Portland, Oregon

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

\\SCUSPRD\GIS\Projects\01\Total\Arkema - Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working Maps\2023 Q1\Figure 12 VOCs PieChart Intermediate.mxd, REVISED: 05/16/2023, SCALED\RAW\01\01\Figure 12 VOCs PieChart Intermediate.mxd, DATE: 5/16/2023



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) March 2023

Notes:
 Samples Collected 06 March - 09 March, 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

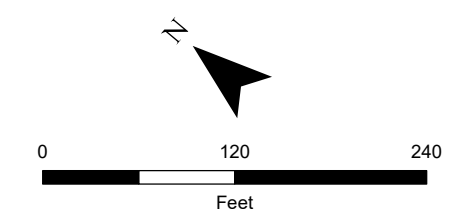
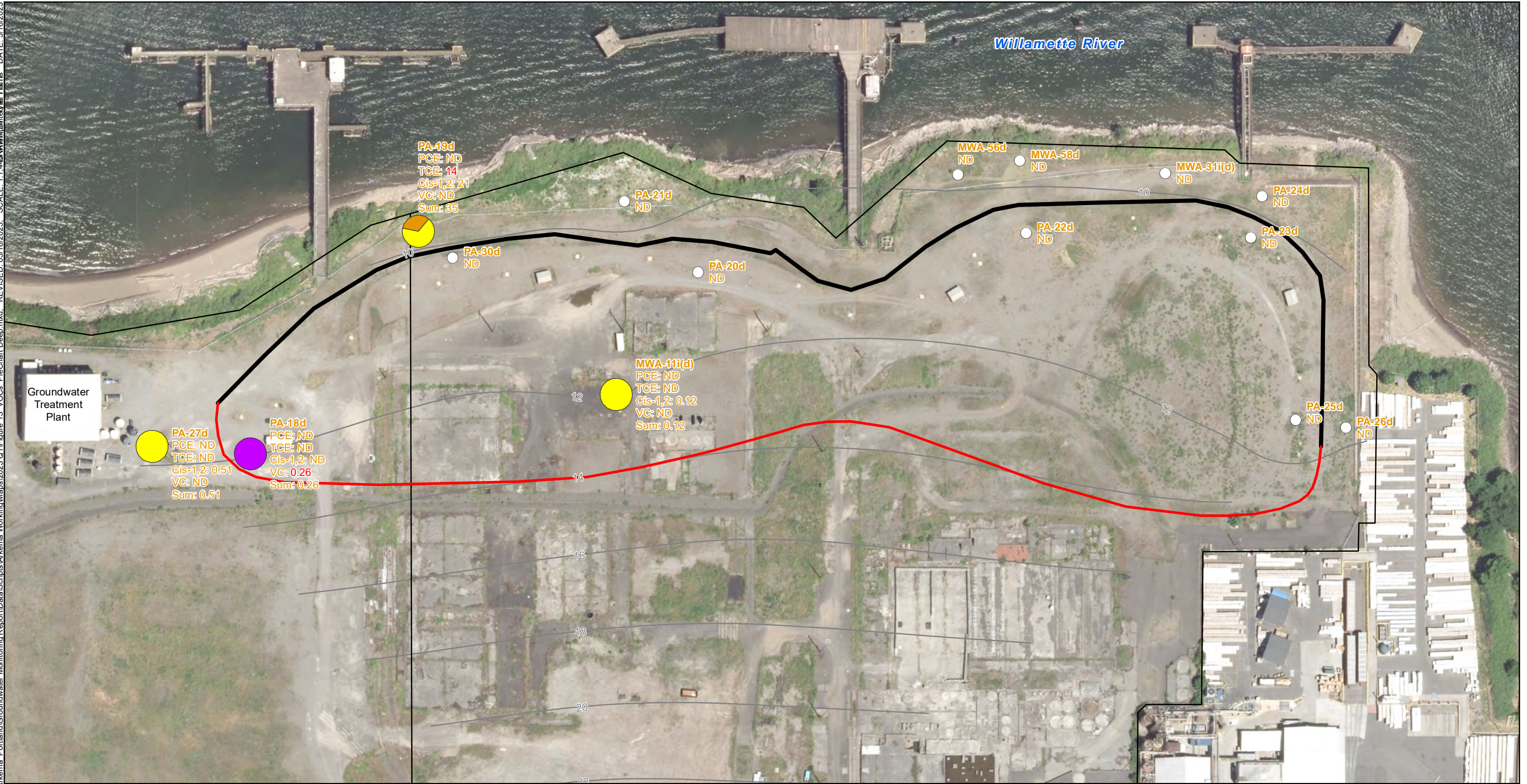


Figure 12
PCE, TCE, cis-1,2-DCE and Vinyl Chloride Groundwater Concentrations Intermediate Zone
 Quarter 1, 2023
 Groundwater Monitoring Report
 Arkema Inc.
 Portland, Oregon

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

\\SCUSPRD\GIS\Projects\01\Total\Arkema - Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working Maps\2023 Q1\Figure 13 VOCs PieChart Deep.mxd. SCALE: 1:1.4. DATE: 5/16/2023. REVISED: 05/16/2023.



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) March 2023

Notes:
 Samples Collected 06 March - 09 March, 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

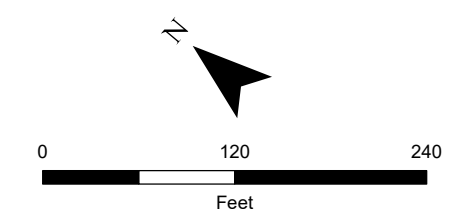


Figure 13
PCE, TCE, cis-1,2-DCE and Vinyl Chloride Groundwater Concentrations Deep Zone
 Quarter 1, 2023
 Groundwater Monitoring Report
 Arkema Inc.
 Portland, Oregon

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

\\SCUSPRD\GIS\Projects\01\Total\Arkema - Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working Maps\2023 Q1\Figure 14 Perchlorate Shallow.mxd. REVISED: 05/16/2023. SCALE: 1:1.4400000000000000 DATE: 5/16/2023



- 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) March 2023

Notes:
 Samples Collected 06 March - 09 March, 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

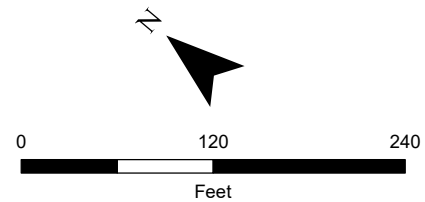


Figure 14
Perchlorate Groundwater Concentrations
Shallow Zone
 Quarter 1, 2023
 Groundwater Monitoring Report
 Arkema Inc.
 Portland, Oregon

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

\\SCUSPRD\GIS\Projects\01\Total\Arkema - Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working Maps\2023 Q1\Figure 15 Perchlorate Intermediate.mxd. REVISED: 05/16/2023. SCALE: 1:10000. Date: 5/16/2023



- 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) March 2023

Notes:
 Samples Collected 06 March - 09 March, 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

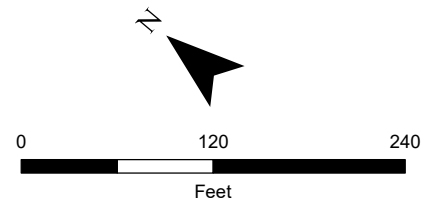


Figure 15
Perchlorate Groundwater Concentrations
Intermediate Zone
 Quarter 1, 2023
 Groundwater Monitoring Report
 Arkema Inc.
 Portland, Oregon

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

\\USPRD\GIS\Projects\01\Total\Arkema - Portland\Groundwater - Monitoring Report\Data\Scripts\Arkema Working Maps\2023 Q1\Figure 16 - Perchlorate Deep.mxd. SCALE: 1:1,440. DATE: 5/16/2023



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) March 2023

Notes:
 Samples Collected 06 March - 09 March, 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

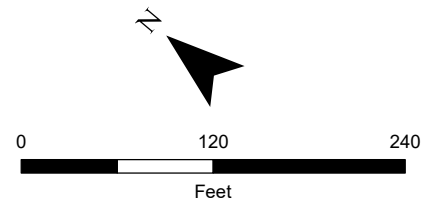


Figure 16
Perchlorate Groundwater Concentrations
Deep Zone
 Quarter 1, 2023
 Groundwater Monitoring Report
 Arkema Inc.
 Portland, Oregon

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

\\SCUSPRD\GIS\F01\Data\US\Projects\S-U\Total\Arkema - Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working Maps\2023 Q1\Figure 17 Chloride Shallow.mxd, SCALE: 1:1,440, WBA MMBBY atakx SJullivan, DATE: 5/16/2023, REVISED: 05/16/2023



- 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) March 2023

Notes:
 Samples Collected 06 March - 09 March, 2023
 All results in milligrams per liter (mg/L)
 Screening Criteria for Chloride = 230 mg/L
 See Table 5 for definition of qualifiers

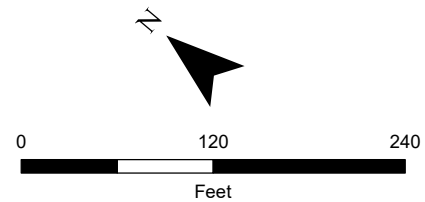


Figure 17
Chloride Groundwater Concentrations
Shallow Zone
 Quarter 1, 2023
 Groundwater Monitoring Report
 Arkema Inc.
 Portland, Oregon

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

\\SCUSPRD\GIS\F01\Data\US\Projects\S-U\Total\Arkema - Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working Maps\2023 Q1\Figure 18 Chloride Intermediate.mxd, REVISED: 05/16/2023, SCALE: 1:1, 4/16/2023, DATE: 5/16/2023



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
- Intermediate Zone Groundwater Contours (ft NAVD88) March 2023

Notes:
 Samples Collected 06 March - 09 March, 2023
 All results in milligrams per liter (mg/L)
 Screening Criteria for Chloride = 230 mg/L
 See Table 5 for definition of qualifiers

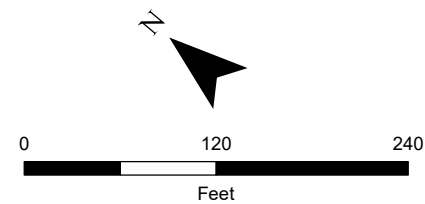


Figure 18
Chloride Groundwater Concentrations
Intermediate Zone
 Quarter 1, 2023
 Groundwater Monitoring Report
 Arkema Inc.
 Portland, Oregon

\\SCUSPRD\GIS\Projects\01\Total\Arkema - Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working Maps\2023 Q1\Figure 19 Chloride Deep.mxd, REVISED: 05/16/2023, SCALE: 1:1,440 whdPRM\MM\B\1.klkz Sullivan DATE: 5/16/2023



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) March 2023

Notes:
 Samples Collected 06 March - 09 March, 2023
 All results in milligrams per liter (mg/L)
 Screening Criteria for Chloride = 230 mg/L
 See Table 5 for definition of qualifiers

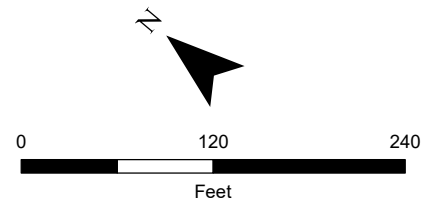


Figure 19
Chloride Groundwater Concentrations
Deep Zone
 Quarter 1, 2023
 Groundwater Monitoring Report
 Arkema Inc.
 Portland, Oregon

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

APPENDIX A FIELD FORMS



Low Flow Groundwater Sampling Field Data Form

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

Date: 2023/03/09
Cool raining

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 24.74 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-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
12:44	24.85	160		11.2	6.89	3579	NM	1.89	-156.8	8.9	NM	
12:47	24.85	160		11.4	6.55	4297	NM	0.9	-121.6	7.5	NM	
12:50	24.85	160		11.2	6.55	4412	NM	0.59	-118.4	5.4	NM	
12:53	24.85	160		11.4	6.57	4388	NM	0.49	-112.7	5.1	NM	
12:56	24.85	160	2.4	11.6	6.58	4376	NM	0.46	-110.4	4.8	NM	

Sample ID(s): MWA-11i(d)-030923	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:	Peri pump	ST	03/09/2023 20:58



Low Flow Groundwater Sampling Field Data Form

Well ID: MWA-41
Well Permit No:


Date: 2023/03/06
Cool cloudy

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 32.18 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-GWMonitor	Average Purge Rate 160 (mL/min)	Well Diameter / Well Screen Interval (in) / - ()
Sampler scott terranova	Volume of Water in Well / Total Volume Purged () / 2.8 (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
10:06	32.18	160		11.2	6.57	337.7	NM	1.96	135.2	42.4	NM	
10:09	23.18	160		11.4	6.36	330.6	NM	1.17	150.1	35.8	NM	
10:12	32.18	160		11.7	6.32	326.4	NM	0.91	153.6	33.92	NM	
10:15	32.18	160		11.8	6.31	323.9	NM	0.77	153.7	30.88	NM	
10:18	32.18	160		11.7	6.31	321.4	NM	0.72	152.5	27.57	NM	
10:21	32.18	160	2.8	11.9	6.32	318.7	NM	0.71	150.2	27.6	NM	

Sample ID(s): MWA-41-030623	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
	2 pump	ST 	03/06/2023 18:24
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: MWA-811
Well Permit No:

Date: 2023/03/06
Cool cloudy

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low_Flow / 47 (ft)	Reference Elevation 44.62 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 33.37 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-GWMonitor	Average Purge Rate 160 (mL/min)	Well Diameter / Well Screen Interval (in) / - ()
Sampler scott terranova	Volume of Water in Well / Total Volume Purged () / 2.8 (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
10:47	33.4	160		11.8	6.52	467.4	NM	2.87	29.7	17.8	NM	
10:50	33.4	160		11.7	6.41	507	NM	1.46	4.7	13.3	NM	
10:53	33.4	160		12.1	6.35	550	NM	1	-8.7	11.2	NM	
10:56	33.4	160		12.3	6.33	590	NM	0.87	-11.2	9.5	NM	
10:59	33.4	160		12.2	6.31	596	NM	0.77	-10.2	9.9	NM	
11:02	33.4	160	2.8	12.1	6.29	606	NM	0.67	-11	8.1	NM	

Sample ID(s): MWA-81i-030623	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:	2 pump	ST	03/06/2023 19:09



Low Flow Groundwater Sampling Field Data Form

Well ID: MWA-82
Well Permit No:

Date: 2023/03/06
Cool cloudy

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 22.35 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-GWMonitor	Average Purge Rate 160 (mL/min)	Well Diameter / Well Screen Interval (in) / - ()
Sampler scott terranova	Volume of Water in Well / Total Volume Purged () / 2.8 (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
09:15	22.35	160		12.4	9.64	507	NM	2.92	9	205.67	NM	
09:18	22.35	160		12.5	9.54	507	NM	1.09	19.4	43.6	NM	
09:21	22.35	160		12.8	9.52	505	NM	0.95	21.2	42.8	NM	
09:24	22.35	160		13	9.5	505	NM	0.74	24.6	40.3	NM	
09:27	22.35	160		13.2	9.48	505	NM	0.68	26.5	33.5	NM	
09:30	22.35	160	2.8	13.4	9.48	506	NM	0.63	28	36.8	NM	

Sample ID(s): MWA-82-030623	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
	2 pump	ST 	03/06/2023 17:36
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-19D
Well Permit No:

Date: 2023/03/09
Cool cloudy

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 27.9 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-GWMonitor	Average Purge Rate 100 (mL/min)	Well Diameter / Well Screen Interval (in) / - ()
Sampler scott terranova	Volume of Water in Well / Total Volume Purged () / 2.27 (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
09:29	29.72	100		10.6	7.14	2980	NM	2.15	-66.7	12.8	NM	
09:32	31.2	100		10.9	7.13	2961	NM	1.22	-77.9	11.6	NM	
09:35	32.63	100		11	7.12	2954	NM	0.85	-78.8	9.8	NM	
09:38	33.05	100		10.7	7.12	2954	NM	0.77	-75.8	10.6	NM	
09:41	33.45	100		10.9	7.11	2953	NM	0.8	-73.5	8.4	NM	
09:44	33.77	100		11	7.11	2974	NM	0.89	-72.6	8.9	NM	
09:47	33.94	100	2.27	10.9	7.11	2992	NM	0.93	-72.4	9.3	NM	

Sample ID(s): PA-19d-030923	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:	1 pump	ST	03/09/2023 17:50



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-20D
Well Permit No:


Date: 2023/03/09
Cool cloudy

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 27.2 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-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
07:09	29.65	100		11.3	6.62	5158	NM	1.73	-76.6	28.7	NM	
07:12	30.6	100		11.3	6.59	4816	NM	1.21	-75.6	14.5	NM	
07:15	31.3	100		11.5	6.58	4667	NM	1.02	-75.7	8.3	NM	
07:18	31.78	100		11.5	6.58	4558	NM	0.97	-76.5	6.2	NM	
07:21	32.15	100		11.4	6.58	4503	NM	0.87	-77.9	5.4	NM	
07:24	32.37	100	2	11.3	6.59	4465	NM	0.85	-79.1	5.2	NM	

Sample ID(s): PA-20d-030923	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
	1 pump. RB-02-030923 taken before purge	ST 	03/09/2023 15:27
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-21D
Well Permit No:

Date: 2023/03/09
Cool cloudy

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low_Flow / 53 (ft)	Reference Elevation 34.36 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 25.36 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-GWMonitor	Average Purge Rate 100 (mL/min)	Well Diameter / Well Screen Interval (in) / - ()
Sampler scott terranova	Volume of Water in Well / Total Volume Purged () / 2.75 (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
08:00	27.3	100		11	6.38	3371	NM	1.61	-63.4	193	NM	
08:03	28.3	100		11.3	6.31	3352	NM	1.08	-50.8	20.8	NM	
08:06	29.7	100		11.4	6.26	3347	NM	0.9	-44.5	17.5	NM	
08:09	30.35	100		11.4	6.24	3347	NM	0.79	-45.6	14.9	NM	
08:12	30.78	100		11.4	6.23	3341	NM	0.7	-45	17.5	NM	
08:15	30.97	100		11.3	6.22	3345	NM	0.68	-44.8	14.3	NM	
08:18	31.18	100	2.75	11.4	6.22	3341	NM	0.6	-45.2	15.3	NM	

Sample ID(s): PA-21d-030923	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:	1 pump	ST	03/09/2023 16:20



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-22D
Well Permit No:

Date: 2023/03/08
Cool cloudy

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low_Flow / 60 (ft)	Reference Elevation 38.75 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 28.15 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-GWMonitor	Average Purge Rate 100 (mL/min)	Well Diameter / Well Screen Interval (in) / - ()
Sampler scott terranova	Volume of Water in Well / Total Volume Purged () / 2.3 (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
13:14	28.4	100		10.4	7.05	19905	NM	1.97	-57.9	77	NM	
13:17	28.45	100		11.2	7.05	19256	NM	1.4	-52.6	68	NM	
13:20	28.48	100		11.7	7.04	18449	NM	1.22	-43	63.2	NM	
13:23	28.5	100		12.1	7.03	18627	NM	1.07	-36	45.3	NM	
13:26	28.5	100		12.4	7.03	18997	NM	0.92	-26.8	48.3	NM	
13:29	28.5	100		12.5	7.03	19270	NM	0.88	-22.4	46.4	NM	
13:32	28.5	100	2.3	12.4	7.03	19348	NM	0.85	-20.9	47.6	NM	

Sample ID(s): PA-22d-030823	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:	1 pump	ST	03/08/2023 21:34



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-23D
Well Permit No:


Date: 2023/03/08
Cool raining

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 28.7 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-GWMonitor	Average Purge Rate 100 (mL/min)	Well Diameter / Well Screen Interval (in) / - ()
Sampler scott terranova	Volume of Water in Well / Total Volume Purged () / 3.35 (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
11:09	31.3	100		10.9	6.44	30118	NM	3.25	-65.2	24.1	NM	
11:12	32.5	100		11.3	6.43	31467	NM	1.91	-70.1	15.7	NM	
11:15	33.2	100		11.4	6.45	32917	NM	1.28	-75.5	18.9	NM	
11:18	33.94	100		11.1	6.48	34216	NM	1.03	-82.6	9.8	NM	
11:21	34.58	100		11.5	6.49	35562	NM	0.93	-83.7	10.7	NM	
11:24	34.87	100		11.5	6.51	36474	NM	0.89	-84	8.8	NM	
11:27	35.34	100		11.6	6.53	37667	NM	0.84	-86.1	9.4	NM	
11:30	35.6	100		11.4	6.55	39294	NM	0.78	-87.8	11.6	NM	
11:33	35.98	100		11.2	6.59	40714	NM	0.72	-88.8	9.2	NM	
11:36	36.31	100	3.35	11.3	6.61	42203	NM	0.68	-89.6	7.9	NM	

Sample ID(s): PA-23d-030823	Additional Comments		SAMPLER NAME AND SIGNATURE		Date Time
	1 pump		ST 		03/08/2023 19:38
Analysis:					



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-24D
Well Permit No:

Date: 2023/03/08
Cool cloudy

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 30.75 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-GWMonitor	Average Purge Rate 100 (mL/min)	Well Diameter / Well Screen Interval (in) / - ()
Sampler scott terranova	Volume of Water in Well / Total Volume Purged () / 2.45 (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
12:09	32.43	100		9.5	6.51	82179	NM	1.59	-87.4	29.8	NM	
12:12	32.96	100		9.7	6.52	81875	NM	0.86	-93.6	36.7	NM	
12:15	33.29	100		10.2	6.52	82397	NM	0.66	-96.8	30.3	NM	
12:18	33.87	100		10.3	6.54	82563	NM	0.56	-99.6	25.4	NM	
12:21	34.07	100		10.6	6.54	82335	NM	0.49	-101.4	22.9	NM	
12:24	34.1	100		10.7	6.54	82347	NM	0.44	-102.8	26.7	NM	
12:27	34.16	100	2.45	10.5	6.56	81685	NM	0.41	-105.7	20.6	NM	

Sample ID(s): PA-24d-030823	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:	1 pump	ST	03/08/2023 20:31



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-25D
Well Permit No:

Date: 2023/03/08
Cool cloudy

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 29.35 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-GWMonitor	Average Purge Rate 100 (mL/min)	Well Diameter / Well Screen Interval (in) / - ()
Sampler scott terranova	Volume of Water in Well / Total Volume Purged () / 2.7 (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
06:58	32	100		9.4	7.37	386.3	NM	3.49	-70.7	23	NM	
07:01	32.6	100		9.6	7.03	235.4	NM	2.95	-51.4	20.7	NM	
07:04	33.12	100		10	6.85	188.2	NM	2.68	-33.4	32.1	NM	
07:07	33.5	100		10.1	6.77	201.9	NM	2.52	-24.9	28.3	NM	
07:10	33.95	100		10.2	6.73	215.9	NM	2.38	-21.7	26.4	NM	
07:13	34.26	100		10.1	6.71	253.7	NM	2.63	-20.9	23.7	NM	
07:16	34.53	100		10.4	6.69	261.9	NM	2.59	-24.3	22.3	NM	
07:19	34.86	100	2.7	10.3	6.71	264.5	NM	2.59	-28.7	20.8	NM	

Sample ID(s): PA-25d-030823	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:	1 pump	ST	03/08/2023 15:23



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-26D
Well Permit No:

Date: 2023/03/08
Cool cloudy

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 28.35 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-GWMonitor	Average Purge Rate 100 (mL/min)	Well Diameter / Well Screen Interval (in) / - ()
Sampler scott terranova	Volume of Water in Well / Total Volume Purged () / 2.7 (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
08:45	29.6	100		9.7	6.82	157.4	NM	2.55	17.2	9.9	NM	
08:48	29.65	100		10.2	6.39	128.7	NM	1.59	39.7	14.6	NM	
08:51	29.65	100		10.1	6.3	140.3	NM	1.4	48.5	19.8	NM	
08:54	29.65	100		10.3	6.22	278.7	NM	1.17	34.3	14	NM	
08:57	29.65	100		10.2	6.32	495.5	NM	0.97	2.7	12.5	NM	
09:00	29.67	100		10.4	6.43	553	NM	0.88	-13.7	16.9	NM	
09:03	29.67	100		10.2	6.47	563	NM	0.81	-18.9	10.8	NM	
09:06	29.67	100	2.7	10.1	6.52	579	NM	0.75	-20.3	8.9	NM	

Sample ID(s): PA-26d-030823	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:	1 pump	ST	03/08/2023 17:10



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-30D
Well Permit No:

Date: 2023/03/09
Cool raining

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low_Flow / 49 (ft)	Reference Elevation 37.34 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 26.85 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-GWMonitor	Average Purge Rate 100 (mL/min)	Well Diameter / Well Screen Interval (in) / - ()
Sampler scott terranova	Volume of Water in Well / Total Volume Purged () / 1.97 (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
10:34	26.85	100		11	7.67	3223	NM	2.15	-91.8	36.9	NM	
10:37	26.85	100		10.9	7.71	3310	NM	0.98	-125.8	12.9	NM	
10:40	26.85	100		10.9	7.8	3433	NM	0.68	-140.8	8.7	NM	
10:43	26.85	100		11	7.88	3531	NM	0.53	-145.8	8.1	NM	
10:46	26.85	100		11	7.9	3605	NM	0.42	-148.7	6.5	NM	
10:49	26.85	100	1.97	11	7.92	3660	NM	0.4	-150.9	8.4	NM	

Sample ID(s): PA-30d-030923	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:	1 pump	ST	03/09/2023 18:54



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-32I
Well Permit No:


Date: 2023/03/07
Cool cloudy

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low_Flow / 37 (ft)	Reference Elevation 36.28 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 22.3 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-GWMonitor	Average Purge Rate 160 (mL/min)	Well Diameter / Well Screen Interval (in) / - ()
Sampler scott terranova	Volume of Water in Well / Total Volume Purged () / 2.8 (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
08:26	22.3	160		12.3	7.67	1087	NM	3.54	-65.9	14.6	NM	
08:29	22.3	160		12.8	7.53	1163	NM	1	-116.8	12.9	NM	
08:32	22.3	160		13.2	7.48	1195	NM	0.56	-153.8	16.5	NM	
08:35	22.3	160		13	7.46	1214	NM	0.39	-183.9	18.8	NM	
08:38	22.3	160		12.7	7.45	1221	NM	0.34	-184.7	18.3	NM	
08:41	22.3	160	2.8	12.8	7.44	1225	NM	0.32	-186.2	16.8	NM	

Sample ID(s): PA-32i-030723	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
	2 pump. RB-01-030723 taken before purge	ST 	03/07/2023 16:44
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-15I
Well Permit No:

Date: 2023/03/08
Cool cloudy

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 28.4 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-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
07:46	28.6	100		9.9	7.02	1866	NM	2.45	-97.8	74.5	NM	
07:49	28.6	100		9.9	7.03	1965	NM	0.81	-120.5	30.8	NM	
07:52	28.6	100		10.2	7.04	2001	NM	0.56	-129.9	23.7	NM	
07:55	28.62	100		10.3	7.05	2001	NM	0.43	-135.8	20.3	NM	
07:58	28.62	100		10.4	7.07	1956	NM	0.37	-141.6	18.5	NM	
08:01	28.62	100	1.8	10.4	7.08	1926	NM	0.32	-145.2	20.9	NM	

Sample ID(s): PA-15i-030823	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
	1 pump	ST 	03/08/2023 16:05
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-16I
Well Permit No:

Date: 2023/03/08
Cool cloudy

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 29.05 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-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
09:38	29.1	100		9	6.77	2017	NM	1.84	-74.3	13.5	NM	
09:41	29.25	100		9.1	6.76	2166	NM	0.91	-75.5	12.1	NM	
09:44	29.3	100		9.2	6.76	2256	NM	0.67	-76	10.8	NM	
09:47	29.33	100		9.1	6.76	2346	NM	0.51	-76.8	10.9	NM	
09:50	29.35	100		9.1	6.77	2400	NM	0.45	-76.6	8.6	NM	
09:53	29.37	100	1.8	9.1	6.77	2442	NM	0.41	-76.5	8.2	NM	

Sample ID(s): DUP-01-030823,PA-16i-030823	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:	1 pump	ST	03/08/2023 17:56



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-31
Well Permit No:

Date: 2023/03/07
Cool cloudy

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low_Flow / 21 (ft)	Reference Elevation 36.25 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 6.11 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-GWMonitor	Average Purge Rate 160 (mL/min)	Well Diameter / Well Screen Interval (in) / - ()
Sampler scott terranova	Volume of Water in Well / Total Volume Purged () / 2.8 (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
10:15	6.35	160		13.7	9.25	707	NM	2.74	26.4	8.7	NM	
10:18	6.4	160		13.7	9.28	778	NM	1.06	14.2	9.7	NM	
10:21	6.42	160		13.7	9.29	802	NM	0.64	3.4	7.5	NM	
10:24	6.42	160		13.7	9.3	808	NM	0.59	4.1	7.9	NM	
10:27	6.42	160		13.7	9.3	809	NM	0.48	2.2	4.6	NM	
10:30	6.42	160	2.8	13.8	9.31	812	NM	0.41	-1.8	5.8	NM	

Sample ID(s): PA-31-030723	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:	2 pump	ST	03/07/2023 18:34



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-44I
Well Permit No:

Date: 2023/03/06
Cool cloudy

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low_Flow / 43 (ft)	Reference Elevation 40.36 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 22.59 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-GWMonitor	Average Purge Rate 160 (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
11:44	22.59	160		12.7	8.57	302.7	NM	9.9	60.6	10.3	NM	
11:47	22.59	160		12.7	8.91	292.9	NM	9.92	62.3	9.44	NM	
11:50	22.59	160		12.6	8.96	291.7	NM	9.92	65.6	10.31	NM	
11:53	22.59	160	1.92	12.6	8.98	291.9	NM	9.89	69.1	12.48	NM	

Sample ID(s): PA-44i-030623	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:		ST 	03/06/2023 20:04



Low Flow Groundwater Sampling Field Data Form

Well ID: MWA-63
Well Permit No:

Date: 2023/03/09
Cool raining

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low_Flow / 25 (ft)	Reference Elevation 36.29 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 20.5 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-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
11:48	21	160		11.5	7.12	695	NM	6.96	35.8	20.8	NM	
11:51	21.1	160		11.6	7.09	600	NM	6.72	48.8	11.2	NM	
11:54	21.15	160		11.6	7	582	NM	6.58	55	8.7	NM	
11:57	21.17	160		11.6	6.97	570	NM	6.53	58.6	6.5	NM	
12:00	21.2	160	2.4	11.5	6.96	565	NM	6.41	59.9	5.2	NM	

Sample ID(s): MWA-63-030923	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:	Peri pump	ST	03/09/2023 20:03



Low Flow Groundwater Sampling Field Data Form

Well ID: MWA-56D
Well Permit No:

Date: 2023/03/09
Rain

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low_Flow / 57 (ft)	Reference Elevation 36.68 (ft)
Site Address Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 27.14 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-GWMonitor	Average Purge Rate 160 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / - ()
Sampler madison rosen	Volume of Water in Well / Total Volume Purged () / 1.28 (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 (mS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
11:20	27.61	160		12.97	6.57	41.11	NM	3.78	138.1	19.2	NM	
11:23	27.61	160		13.6	6.54	41.13	NM	1.03	144.1	14.1	NM	
11:26	27.61	160		13.8	6.53	41.23	NM	0.7	146.1	11.3	NM	
11:29	27.61	160		13.94	6.53	41.36	NM	0.57	147.1	8.96	NM	
11:32	27.61	160		13.97	6.53	41.44	NM	0.49	147.9	5.95	NM	
11:35	27.62	160		14.02	6.52	41.48	NM	0.44	148.6	3.9	NM	
11:38	27.7	160		14.08	6.52	41.54	NM	0.39	149	3.2	NM	
11:41	27.71	160		14.01	6.52	41.65	NM	0.36	149.1	3.18	NM	
11:44	27.68	160	1.28	13.85	6.52	41.72	NM	0.34	149.7	3.03	NM	

Sample ID(s): MWA-56d-030923	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:		Mir 	03/13/2023 17:28



Low Flow Groundwater Sampling Field Data Form

Well ID: MWA-58D
Well Permit No:

Date: 2023/03/09
Rain

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 29.3 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-GWMonitor	Average Purge Rate 160 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / - (")
Sampler madison rosen	Volume of Water in Well / Total Volume Purged () / 1.12 (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 (mS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
12:48	29.12	160		13.35	6.43	45.41	NM	4.11	146	11.7	NM	
12:51	29.12	160		13.75	6.44	50.36	NM	1.05	149.1	3.96	NM	
12:54	29.53	160		14	6.49	52.09	NM	0.55	145.2	1.77	NM	
12:57	29.46	160		14.09	6.52	52.44	NM	0.54	141.7	1.32	NM	
13:00	29.35	160		14.13	6.52	53.27	NM	0.43	140.9	1.48	NM	
13:03	29.36	160		14.13	6.52	53.93	NM	0.38	144.1	1.44	NM	
13:06	29.42	160		14.29	6.51	54.13	NM	0.35	146.3	1.89	NM	
13:09	29.61	160	1.12	14.32	6.51	54.38	NM	0.33	147.2	1.24	NM	

Sample ID(s): MWA-58d-030923	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-03
Well Permit No:

Date: 2023/03/07
Rain

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low_Flow / 23 (ft)	Reference Elevation 37.1 (ft)
Site Address Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 7.11 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-GWMonitor	Average Purge Rate 160 (mL/min)	Well Diameter / Well Screen Interval 1 (in) / - ()
Sampler madison rosen	Volume of Water in Well / Total Volume Purged () / 2.08 (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 (mS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
12:01	8.21	160		12.9	9.65	0.796	NM	8.56	30.9	32.28	NM	
12:04	8.21	160		12.3	9.83	0.845	NM	7.5	-14.5	49.27	NM	
12:07	8.17	160		12.1	10.17	0.946	NM	2.8	-123	95.25	NM	
12:10	8.3	160		12.2	10.18	0.956	NM	0.96	-170.2	260.73	NM	
12:13	8.4	160		12.7	10.14	0.944	NM	0.74	-184.3	372.4	NM	
12:16	8.45	160		12.6	9.98	0.919	NM	1.96	-160.8	449.71	NM	
12:19	8.5	160		12.9	10.13	0.954	NM	1.4	-177.7	529	NM	
12:22	8.53	160		12.6	10.15	0.958	NM	1.02	-188.9	675.47	NM	
12:25	8.54	160		12.8	10.16	0.96	NM	0.66	-200.8	696.85	NM	
12:28	8.55	160		13.2	10.15	0.96	NM	0.49	-207.7	747.9	NM	
12:31	8.58	160		13.1	10.14	0.963	NM	0.42	-211.7	626.57	NM	
12:34	8.6	160		12.6	10.15	0.965	NM	0.38	-215.3	620.71	NM	
12:37	8.57	160		12.4	10.16	0.967	NM	0.33	-219.1	472.84	NM	
12:40	8.43	160	2.08	12.1	10.17	0.966	NM	0.27	-223.7	417	NM	

Sample ID(s): PA-03-030723	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:		Mir	03/13/2023 17:48



Low Flow Groundwater Sampling Field Data Form


Well ID: PA-04
Well Permit No:

Date: 2023/03/08
Rain

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low_Flow / 25 (ft)	Reference Elevation 36.67 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 6.4 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-GWMonitor	Average Purge Rate 160 (mL/min)	Well Diameter / Well Screen Interval 1 (in) / - ()
Sampler madison rosen	Volume of Water in Well / Total Volume Purged () / 1.44 (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 (mS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
11:14	6.8	160		10.61	10.02	0.683	NM	3.85	-100.2	54.8	NM	
11:17	6.59	160		10.49	10.06	0.667	NM	1.21	-96.7	60.9	NM	
11:20	6.55	160		9.58	10.12	0.667	NM	0.78	-94.5	48.4	NM	
11:23	6.6	160		9.17	10.14	0.65	NM	0.71	-90.2	45	NM	
11:26	6.62	160		9.58	10.11	0.647	NM	0.48	-83	41	NM	
11:29	6.65	160		10.12	10.11	0.635	NM	0.41	-74.5	32.4	NM	
11:32	6.66	160		10.12	10.13	0.638	NM	0.38	-71.4	18.2	NM	
11:35	6.68	160		10.56	10.14	0.632	NM	0.31	-66.7	18.5	NM	
11:38	6.65	160		10.53	10.15	0.636	NM	0.32	-64.3	15.1	NM	
11:41	6.68	160	1.44	10.52	10.15	0.637	NM	0.31	-65.3	12.6	NM	

Sample ID(s): PA-04-030823	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:			
		Mlr 	03/13/2023 17:33



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-08
Well Permit No:

Date: 2023/03/07
Cloudy

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low_Flow / 29 (ft)	Reference Elevation 40.47 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 26.45 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-GWMonitor	Average Purge Rate 160 (mL/min)	Well Diameter / Well Screen Interval 1 (in) / - ()
Sampler madison rosen	Volume of Water in Well / Total Volume Purged () / 0.8 (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 (mS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
08:06	26.5	160		9.46	10.54	1.67	NM	0	-48	12.15	NM	
08:09	26.51	160		9.33	9.21	2.36	NM	0	-83	12.06	NM	
08:12	26.51	160		9.66	8.92	2.44	NM	0	-92	12.1	NM	
08:15	26.51	160		10.16	8.79	2.37	NM	0	-94	12.41	NM	
08:18	26.51	160		10.28	8.69	2.32	NM	0	-95	12.25	NM	
08:21	26.51	160	0.8	10.49	8.63	2.24	NM	0	-96	12.55	NM	

Sample ID(s): PA-08-030723	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:			
		Mlr 	03/13/2023 17:34



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-09
Well Permit No:

Date: 2023/03/07
Cloudy

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low_Flow / 29 (ft)	Reference Elevation 40.24 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 27.86 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-GWMonitor	Average Purge Rate 160 (mL/min)	Well Diameter / Well Screen Interval 1 (in) / - ()
Sampler madison rosen	Volume of Water in Well / Total Volume Purged () / 0.8 (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 (mS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
09:48	27.9	160		12.2	9.06	0.948	NM	0	19	52	NM	
09:51	27.9	160		12.3	8.67	0.973	NM	0	38	51.6	NM	
09:54	27.9	160		12.65	8.4	0.966	NM	0	46	50.8	NM	
09:57	27.9	160		12.73	8.23	0.971	NM	0	48	49.7	NM	
10:00	27.9	160		12.77	8.13	0.974	NM	0	49	51.3	NM	
10:03	27.9	160	0.8	12.85	8.08	0.978	NM	0	49	46.9	NM	

Sample ID(s): PA-09-030723	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-10I
Well Permit No:


Date: 2023/03/08
Rain

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low_Flow / 35 (ft)	Reference Elevation 36.67 (ft)
Site Address Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 22.7 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-GWMonitor	Average Purge Rate 160 (mL/min)	Well Diameter / Well Screen Interval 1 (in) / - ()
Sampler madison rosen	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 (mS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
12:40	22.81	160		11.96	8.67	0.126	NM	7.07	-37.9	9.1	NM	
12:43	22.81	160		12.25	8.38	0.146	NM	5.33	-55.5	9.28	NM	
12:46	22.81	160		11.69	7.62	0.746	NM	5.12	-35	3.7	NM	
12:49	22.81	160		12.01	7.65	0.932	NM	1.66	-21.7	0.42	NM	
12:52	22.85	160		12.08	7.67	0.98	NM	0.52	-28	0.21	NM	
12:55	22.81	160		12.08	7.67	0.993	NM	0.38	-24.7	0.06	NM	
12:58	22.81	160		12.09	7.67	1.004	NM	0.2	-33.9	0.09	NM	
13:01	22.81	160		12.2	7.72	1.008	NM	0.21	-65	0.12	NM	
13:04	22.82	160		12.21	7.72	1.016	NM	0.21	-59.2	0.1	NM	
13:07	22.82	160		12.45	7.72	1.014	NM	0.21	-73.7	0.04	NM	
13:10	22.81	160		12.12	7.74	1.034	NM	0.16	-77	0.23	NM	
13:13	22.84	160		12.08	7.73	1.038	NM	0.14	-65.2	0.06	NM	
13:16	22.86	160		12.29	7.72	1.034	NM	0.14	-83	0.04	NM	
13:19	22.84	160		12.53	7.74	1.036	NM	0.13	-96.9	0.07	NM	
13:22	22.84	160		12.69	7.73	1.038	NM	0.13	-83.1	0.1	NM	
13:25	22.83	160		12.83	7.73	1.083	NM	0.13	-91.1	0.12	NM	
13:28	22.82	160		12.92	7.72	1.04	NM	0.12	-80.7	0.03	NM	
13:31	22.82	160		13.05	7.73	1.042	NM	0.1	-89.3	0.04	NM	
13:34	22.84	160	2.88	13.14	7.71	1.041	NM	0.08	-83.5	0.02	NM	

Sample ID(s): PA-10i-030823	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:			
		Mlr 	03/13/2023 17:38



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-17IR
Well Permit No:

Date: 2023/03/08
Cloudy

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low_Flow / 40 (ft)	Reference Elevation 37.59 (ft)
Site Address Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 26.34 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-GWMonitor	Average Purge Rate 160 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / - (ft)
Sampler madison rosen	Volume of Water in Well / Total Volume Purged () / 2.24 (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 (mS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
07:01	26.3	160		10.73	7.22	0.212	NM	3.13	-75.1	5.9	NM	
07:04	26.5	160		11.03	7.22	0.191	NM	0.99	-71.6	6.75	NM	
07:07	26.86	160		11.42	7.4	0.203	NM	0.74	-82.3	3.11	NM	
07:10	26.95	160		11.48	7.82	0.271	NM	0.66	-105	2.74	NM	
07:13	27	160		11.58	8.08	0.343	NM	0.6	-117.5	2.46	NM	
07:16	26.97	160		10.85	8.5	0.428	NM	0.61	-131.2	2.52	NM	
07:19	27	160		9.52	9.22	0.542	NM	0.5	-159.1	2.4	NM	
07:22	27.01	160		9.35	9.62	0.689	NM	0.32	-170.6	2.23	NM	
07:25	27.04	160		9.7	9.74	0.774	NM	0.26	-161.2	1.95	NM	
07:28	27.05	160		10.09	9.77	0.787	NM	0.23	-154.6	1.7	NM	
07:31	27.06	160		10.14	9.76	0.806	NM	0.23	-150.4	1.57	NM	
07:34	27.08	160		10.27	9.77	0.817	NM	0.18	-147.1	1.95	NM	
07:37	27.09	160		10.34	9.77	0.832	NM	0.19	-143.8	1.76	NM	
07:40	27.09	160	2.24	10.27	9.79	0.856	NM	0.2	-145	1.79	NM	

Sample ID(s): PA-17iR-030823	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:		Mlr	03/13/2023 17:39



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-27D
Well Permit No:

Date: 2023/03/08
Cloudy

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low_Flow / 46 (ft)	Reference Elevation 37.1 (ft)
Site Address Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 25.4 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-GWMonitor	Average Purge Rate 160 (mL/min)	Well Diameter / Well Screen Interval 1 (in) / - (in)
Sampler madison rosen	Volume of Water in Well / Total Volume Purged (L) / 3.36 (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 (mS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
08:53	27.35	160		9.95	7.57	3.374	NM	3.09	-134.4	0.58	NM	
08:56	27.27	160		10.16	7.57	3.497	NM	1	-135.2	0.56	NM	
08:59	27.2	160		10.16	7.55	3.723	NM	0.58	-140.9	1.38	NM	
09:02	27.21	160		10.06	7.42	4.043	NM	0.38	-121.2	2.13	NM	
09:05	27.23	160		9.87	7.4	4.058	NM	0.32	-112	2.14	NM	
09:08	27.4	160		9.66	7.4	4.022	NM	0.33	-111.4	1.6	NM	
09:11	27.45	160		9.59	7.43	3.951	NM	0.32	-116.3	2.13	NM	
09:14	27.46	160		9.53	7.47	3.852	NM	0.26	-123.3	1.82	NM	
09:17	27.42	160		9.51	7.48	3.8	NM	0.25	-122.9	2	NM	
09:20	27.4	160		9.37	7.5	3.751	NM	0.25	-124.4	1.75	NM	
09:23	27.3	160		9.27	7.5	3.714	NM	0.27	-120.1	1.86	NM	
09:26	27	160		8.94	7.51	3.68	NM	0.19	-120.72	1.48	NM	
09:30	26.98	160		8.23	7.52	3.647	NM	0.21	-118.5	0.79	NM	
09:33	26.86	160		8.21	7.54	3.627	NM	0.22	-116.2	0.8	NM	
09:36	26.9	160		8.21	7.54	3.602	NM	0.22	-116	0.48	NM	
09:39	26.92	160		8.15	7.54	3.573	NM	0.27	-109.9	0.4	NM	
09:42	26.26	160		8.05	7.56	3.515	NM	0.23	-123.8	0.3	NM	
09:48	26.8	160		7.69	7.68	3.512	NM	0.2	-124	0.34	NM	
09:51	27	160		7.92	7.56	3.491	NM	0.25	-108.8	0.28	NM	
09:54	27.05	160		8.2	7.55	3.461	NM	0.23	-114	0.25	NM	
09:57	27.15	160		8.34	7.55	3.443	NM	0.2	-113.3	0.16	NM	
10:01	27.2	160	3.36	8.46	7.55	3.413	NM	0.25	-115.6	0.05	NM	

Sample ID(s): PA-27D-030823	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:		Mir 	03/13/2023 17:44



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-18D
Well Permit No:


Date: 2023/03/09
Cloudy

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 24.9 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-GWMonitor	Average Purge Rate 160 (mL/min)	Well Diameter / Well Screen Interval 1 (in) / - ()
Sampler madison rosen	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 (mS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
07:04	27.5	160		12.42	7.61	0.217	NM	5.71	69	5.55	NM	
07:07	27.61	160		12.13	7.27	0.214	NM	3.88	104.9	3.38	NM	
07:10	27.7	160		12.14	7.21	0.213	NM	3.27	115.8	2.56	NM	
07:13	27.81	160		12.15	7.19	0.214	NM	2.68	119.9	2.5	NM	
07:16	27.87	160		12.38	8.27	0.81	NM	1.98	28.3	1.18	NM	
07:19	27.89	160		12.37	8.41	0.911	NM	0.99	-1.7	1.18	NM	
07:22	27.89	160		12.24	8.48	0.964	NM	0.5	-22.9	1.05	NM	
07:25	27.87	160		12.1	8.55	0.996	NM	1.01	-41.6	1.13	NM	
07:28	27.87	160		12.08	8.59	1.014	NM	1.46	-49.9	2.29	NM	
07:31	27.86	160		12.11	8.61	1.016	NM	0.3	-46.3	4.11	NM	
07:34	27.86	160		12.08	8.61	1.027	NM	0.27	-44.4	5.23	NM	
07:37	27.86	160		12.11	8.65	1.049	NM	0.26	-54.1	7.1	NM	
07:40	27.86	160	1.92	12.13	8.66	1.059	NM	0.26	-50.6	8.15	NM	

Sample ID(s): DUP-02-030923,PA-18D-030923	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:		Mlr 	03/13/2023 17:42



Low Flow Groundwater Sampling Field Data Form

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

Date: 2023/03/09
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 29.19 (ft) / None
Project Number 0682894	Sample Equipment NA	Total Well Depth (ft)
Project Name 20230306-GWMonitor	Average Purge Rate 160 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / - ()
Sampler madison rosen	Volume of Water in Well / Total Volume Purged () / 1.28 (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 (mS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
09:07	29.41	160		13.91	6.34	60.68	NM	2.2	76.3	71.1	NM	
09:10	29.43	160		14.02	6.3	62.83	NM	0.78	72.6	44	NM	
09:13	29.43	160		14.03	6.26	63.98	NM	0.47	69.9	28.4	NM	
09:16	29.45	160		14.09	6.31	64.5	NM	0.5	69.1	18.4	NM	
09:19	29.45	160		14.22	6.37	64.85	NM	0.43	70.6	11.3	NM	
09:22	29.46	160		14.32	6.4	65.02	NM	0.38	72.9	11.51	NM	
09:25	29.48	160		14.38	6.41	65.29	NM	0.33	75.9	10.03	NM	
09:28	29.5	160		14.31	6.41	65.57	NM	0.35	77.3	9.19	NM	
09:31	29.51	160	1.28	14.3	6.42	65.74	NM	0.36	78.9	8.45	NM	

Sample ID(s): MWA-31i(d)-030923	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:		Mir	03/13/2023 17:26

APPENDIX B LABORATORY ANALYTICAL REPORTS

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Sarah Seekins
ERM-West
1050 SW 6th Avenue
Suite 1650
Portland, Oregon 97204
Generated 3/22/2023 5:48:55 PM

JOB DESCRIPTION

Arkema - Q1 2023 Groundwater Event-I

JOB NUMBER

580-124438-1

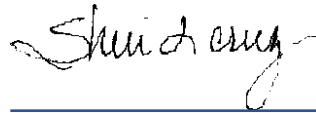
Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

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
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Case Narrative

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Job ID: 580-124438-1

Laboratory: Eurofins Seattle

Narrative

Job Narrative 580-124438-1

Comments

No additional comments.

Receipt

The samples were received on 3/8/2023 3:25 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 0.1° C.

Receipt Exceptions

Containers received in west Sacramento for samples 2-11 do not have sufficient headspace for 314 analysis. All containers received were completely full. MWA-82-030623 (580-124438-2), MWA-41-030623 (580-124438-3), MWA-81i-030623 (580-124438-4), PA-44i-030623 (580-124438-5), RB-01-030723 (580-124438-6), PA-32i-030723 (580-124438-7), PA-31-030723 (580-124438-8), PA-31-030723 (580-124438-8[MSJ]), PA-31-030723 (580-124438-8[MSD]), PA-08-030723 (580-124438-9), PA-09-030723 (580-124438-10) and PA-03-030723 (580-124438-11)

GC/MS VOA

Method 8260D: The CCV for analytical batch 580-420030 recovered outside control limits for the following analyte(s): 1,2-Dibromo-3-Chloropropane. 1,2-Dibromo-3-Chloropropane has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method 8260D: The method blank for analytical batch 580-420030 contained Hexachlorobutadiene above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

Method 8260D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 580-420224 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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

General Chemistry

Method 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 580-420845 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 314.0: The following sample in analytical batch 320-660402 was diluted to bring the concentration of target analytes within the calibration range: MWA-82-030623 (580-124438-2). 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 320-660402 were diluted. The samples were a discolored color ranging from brown, dark brown, and orange brown. The samples were still discolored after filtering. In order to protect instrumentation, the samples were diluted. Elevated reporting limits (RLs) are provided. Data is being reported with this narration. PA-32i-030723 (580-124438-7), PA-08-030723 (580-124438-9), PA-09-030723 (580-124438-10) and PA-03-030723 (580-124438-11)

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
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Client Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Client Sample ID: TB-030623-A

Lab Sample ID: 580-124438-1

Date Collected: 03/06/23 00:01

Matrix: Water

Date Received: 03/08/23 15:25

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			03/10/23 00:15	1
Chloromethane	ND		0.50	0.14	ug/L			03/10/23 00:15	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/10/23 00:15	1
Bromomethane	ND		0.50	0.13	ug/L			03/10/23 00:15	1
Chloroethane	ND		0.50	0.096	ug/L			03/10/23 00:15	1
Carbon disulfide	ND		0.30	0.083	ug/L			03/10/23 00:15	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/10/23 00:15	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			03/10/23 00:15	1
Acetone	ND		10	3.1	ug/L			03/10/23 00:15	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/10/23 00:15	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/10/23 00:15	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/10/23 00:15	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			03/10/23 00:15	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			03/10/23 00:15	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/10/23 00:15	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			03/10/23 00:15	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/10/23 00:15	1
Chloroform	ND		0.20	0.030	ug/L			03/10/23 00:15	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			03/10/23 00:15	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/10/23 00:15	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/10/23 00:15	1
Benzene	ND		0.20	0.030	ug/L			03/10/23 00:15	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/10/23 00:15	1
Trichloroethene	ND		0.20	0.066	ug/L			03/10/23 00:15	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/10/23 00:15	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/10/23 00:15	1
Dibromomethane	ND		0.20	0.062	ug/L			03/10/23 00:15	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/10/23 00:15	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/10/23 00:15	1
Toluene	ND		0.20	0.050	ug/L			03/10/23 00:15	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/10/23 00:15	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/10/23 00:15	1
Tetrachloroethene	ND		0.24	0.084	ug/L			03/10/23 00:15	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/10/23 00:15	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/10/23 00:15	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/10/23 00:15	1
Chlorobenzene	ND		0.20	0.060	ug/L			03/10/23 00:15	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/10/23 00:15	1
Ethylbenzene	ND		0.20	0.030	ug/L			03/10/23 00:15	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			03/10/23 00:15	1
o-Xylene	ND		0.50	0.15	ug/L			03/10/23 00:15	1
Styrene	ND		1.0	0.19	ug/L			03/10/23 00:15	1
Bromoform	ND		0.50	0.16	ug/L			03/10/23 00:15	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/10/23 00:15	1
Bromobenzene	ND		0.20	0.038	ug/L			03/10/23 00:15	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/10/23 00:15	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/10/23 00:15	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/10/23 00:15	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			03/10/23 00:15	1

Client Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Client Sample ID: TB-030623-A

Lab Sample ID: 580-124438-1

Date Collected: 03/06/23 00:01

Matrix: Water

Date Received: 03/08/23 15:25

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			03/10/23 00:15	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/10/23 00:15	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/10/23 00:15	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/10/23 00:15	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/10/23 00:15	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/10/23 00:15	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/10/23 00:15	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/10/23 00:15	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/10/23 00:15	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			03/10/23 00:15	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/10/23 00:15	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/10/23 00:15	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/10/23 00:15	1
Naphthalene	ND		1.0	0.22	ug/L			03/10/23 00:15	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/10/23 00:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		03/10/23 00:15	1
Dibromofluoromethane (Surr)	102		80 - 120		03/10/23 00:15	1
4-Bromofluorobenzene (Surr)	102		80 - 120		03/10/23 00:15	1
1,2-Dichloroethane-d4 (Surr)	100		80 - 120		03/10/23 00:15	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Client Sample ID: MWA-82-030623

Lab Sample ID: 580-124438-2

Date Collected: 03/06/23 09:31

Matrix: Water

Date Received: 03/08/23 15:25

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			03/10/23 04:52	1
Chloromethane	ND		0.50	0.14	ug/L			03/10/23 04:52	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/10/23 04:52	1
Bromomethane	ND		0.50	0.13	ug/L			03/10/23 04:52	1
Chloroethane	ND		0.50	0.096	ug/L			03/10/23 04:52	1
Carbon disulfide	ND		0.30	0.083	ug/L			03/10/23 04:52	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/10/23 04:52	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			03/10/23 04:52	1
Acetone	ND		10	3.1	ug/L			03/10/23 04:52	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/10/23 04:52	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/10/23 04:52	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/10/23 04:52	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			03/10/23 04:52	1
1,1-Dichloroethane	0.036	J	0.20	0.025	ug/L			03/10/23 04:52	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/10/23 04:52	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			03/10/23 04:52	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/10/23 04:52	1
Chloroform	0.50		0.20	0.030	ug/L			03/10/23 04:52	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			03/10/23 04:52	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/10/23 04:52	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/10/23 04:52	1
Benzene	ND		0.20	0.030	ug/L			03/10/23 04:52	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/10/23 04:52	1
Trichloroethene	0.19	J	0.20	0.066	ug/L			03/10/23 04:52	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/10/23 04:52	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/10/23 04:52	1
Dibromomethane	ND		0.20	0.062	ug/L			03/10/23 04:52	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/10/23 04:52	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/10/23 04:52	1
Toluene	ND		0.20	0.050	ug/L			03/10/23 04:52	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/10/23 04:52	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/10/23 04:52	1
Tetrachloroethene	0.48		0.24	0.084	ug/L			03/10/23 04:52	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/10/23 04:52	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/10/23 04:52	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/10/23 04:52	1
Chlorobenzene	ND		0.20	0.060	ug/L			03/10/23 04:52	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/10/23 04:52	1
Ethylbenzene	ND		0.20	0.030	ug/L			03/10/23 04:52	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			03/10/23 04:52	1
o-Xylene	ND		0.50	0.15	ug/L			03/10/23 04:52	1
Styrene	ND		1.0	0.19	ug/L			03/10/23 04:52	1
Bromoform	ND		0.50	0.16	ug/L			03/10/23 04:52	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/10/23 04:52	1
Bromobenzene	ND		0.20	0.038	ug/L			03/10/23 04:52	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/10/23 04:52	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/10/23 04:52	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/10/23 04:52	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			03/10/23 04:52	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Client Sample ID: MWA-82-030623

Lab Sample ID: 580-124438-2

Date Collected: 03/06/23 09:31

Matrix: Water

Date Received: 03/08/23 15:25

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			03/10/23 04:52	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/10/23 04:52	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/10/23 04:52	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/10/23 04:52	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/10/23 04:52	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/10/23 04:52	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/10/23 04:52	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/10/23 04:52	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/10/23 04:52	1
1,2-Dichlorobenzene	0.082	J	0.30	0.038	ug/L			03/10/23 04:52	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/10/23 04:52	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/10/23 04:52	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/10/23 04:52	1
Naphthalene	ND		1.0	0.22	ug/L			03/10/23 04:52	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/10/23 04:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		03/10/23 04:52	1
Dibromofluoromethane (Surr)	102		80 - 120		03/10/23 04:52	1
4-Bromofluorobenzene (Surr)	100		80 - 120		03/10/23 04:52	1
1,2-Dichloroethane-d4 (Surr)	107		80 - 120		03/10/23 04:52	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	210		20	10	ug/L			03/13/23 18:13	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	11		1.5	0.43	mg/L			03/18/23 19:37	1

Client Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Client Sample ID: MWA-41-030623

Lab Sample ID: 580-124438-3

Date Collected: 03/06/23 10:22

Matrix: Water

Date Received: 03/08/23 15:25

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			03/10/23 05:15	1
Chloromethane	ND		0.50	0.14	ug/L			03/10/23 05:15	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/10/23 05:15	1
Bromomethane	ND		0.50	0.13	ug/L			03/10/23 05:15	1
Chloroethane	ND		0.50	0.096	ug/L			03/10/23 05:15	1
Carbon disulfide	ND		0.30	0.083	ug/L			03/10/23 05:15	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/10/23 05:15	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			03/10/23 05:15	1
Acetone	ND		10	3.1	ug/L			03/10/23 05:15	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/10/23 05:15	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/10/23 05:15	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/10/23 05:15	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			03/10/23 05:15	1
1,1-Dichloroethane	0.032	J	0.20	0.025	ug/L			03/10/23 05:15	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/10/23 05:15	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			03/10/23 05:15	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/10/23 05:15	1
Chloroform	ND		0.20	0.030	ug/L			03/10/23 05:15	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			03/10/23 05:15	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/10/23 05:15	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/10/23 05:15	1
Benzene	ND		0.20	0.030	ug/L			03/10/23 05:15	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/10/23 05:15	1
Trichloroethene	ND		0.20	0.066	ug/L			03/10/23 05:15	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/10/23 05:15	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/10/23 05:15	1
Dibromomethane	ND		0.20	0.062	ug/L			03/10/23 05:15	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/10/23 05:15	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/10/23 05:15	1
Toluene	ND		0.20	0.050	ug/L			03/10/23 05:15	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/10/23 05:15	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/10/23 05:15	1
Tetrachloroethene	ND		0.24	0.084	ug/L			03/10/23 05:15	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/10/23 05:15	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/10/23 05:15	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/10/23 05:15	1
Chlorobenzene	ND		0.20	0.060	ug/L			03/10/23 05:15	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/10/23 05:15	1
Ethylbenzene	ND		0.20	0.030	ug/L			03/10/23 05:15	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			03/10/23 05:15	1
o-Xylene	ND		0.50	0.15	ug/L			03/10/23 05:15	1
Styrene	ND		1.0	0.19	ug/L			03/10/23 05:15	1
Bromoform	ND		0.50	0.16	ug/L			03/10/23 05:15	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/10/23 05:15	1
Bromobenzene	ND		0.20	0.038	ug/L			03/10/23 05:15	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/10/23 05:15	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/10/23 05:15	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/10/23 05:15	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			03/10/23 05:15	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Client Sample ID: MWA-41-030623

Lab Sample ID: 580-124438-3

Date Collected: 03/06/23 10:22

Matrix: Water

Date Received: 03/08/23 15:25

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			03/10/23 05:15	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/10/23 05:15	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/10/23 05:15	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/10/23 05:15	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/10/23 05:15	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/10/23 05:15	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/10/23 05:15	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/10/23 05:15	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/10/23 05:15	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			03/10/23 05:15	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/10/23 05:15	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/10/23 05:15	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/10/23 05:15	1
Naphthalene	ND		1.0	0.22	ug/L			03/10/23 05:15	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/10/23 05:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		03/10/23 05:15	1
Dibromofluoromethane (Surr)	97		80 - 120		03/10/23 05:15	1
4-Bromofluorobenzene (Surr)	98		80 - 120		03/10/23 05:15	1
1,2-Dichloroethane-d4 (Surr)	107		80 - 120		03/10/23 05:15	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			03/13/23 19:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	7.8		1.5	0.43	mg/L			03/18/23 19:49	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Client Sample ID: MWA-81i-030623

Lab Sample ID: 580-124438-4

Date Collected: 03/06/23 11:03

Matrix: Water

Date Received: 03/08/23 15:25

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			03/10/23 05:39	1
Chloromethane	ND		0.50	0.14	ug/L			03/10/23 05:39	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/10/23 05:39	1
Bromomethane	ND		0.50	0.13	ug/L			03/10/23 05:39	1
Chloroethane	ND		0.50	0.096	ug/L			03/10/23 05:39	1
Carbon disulfide	ND		0.30	0.083	ug/L			03/10/23 05:39	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/10/23 05:39	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			03/10/23 05:39	1
Acetone	ND		10	3.1	ug/L			03/10/23 05:39	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/10/23 05:39	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/10/23 05:39	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/10/23 05:39	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			03/10/23 05:39	1
1,1-Dichloroethane	0.12	J	0.20	0.025	ug/L			03/10/23 05:39	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/10/23 05:39	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			03/10/23 05:39	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/10/23 05:39	1
Chloroform	ND		0.20	0.030	ug/L			03/10/23 05:39	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			03/10/23 05:39	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/10/23 05:39	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/10/23 05:39	1
Benzene	ND		0.20	0.030	ug/L			03/10/23 05:39	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/10/23 05:39	1
Trichloroethene	ND		0.20	0.066	ug/L			03/10/23 05:39	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/10/23 05:39	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/10/23 05:39	1
Dibromomethane	ND		0.20	0.062	ug/L			03/10/23 05:39	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/10/23 05:39	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/10/23 05:39	1
Toluene	ND		0.20	0.050	ug/L			03/10/23 05:39	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/10/23 05:39	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/10/23 05:39	1
Tetrachloroethene	ND		0.24	0.084	ug/L			03/10/23 05:39	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/10/23 05:39	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/10/23 05:39	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/10/23 05:39	1
Chlorobenzene	ND		0.20	0.060	ug/L			03/10/23 05:39	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/10/23 05:39	1
Ethylbenzene	ND		0.20	0.030	ug/L			03/10/23 05:39	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			03/10/23 05:39	1
o-Xylene	ND		0.50	0.15	ug/L			03/10/23 05:39	1
Styrene	ND		1.0	0.19	ug/L			03/10/23 05:39	1
Bromoform	ND		0.50	0.16	ug/L			03/10/23 05:39	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/10/23 05:39	1
Bromobenzene	ND		0.20	0.038	ug/L			03/10/23 05:39	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/10/23 05:39	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/10/23 05:39	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/10/23 05:39	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			03/10/23 05:39	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Client Sample ID: MWA-81i-030623

Lab Sample ID: 580-124438-4

Date Collected: 03/06/23 11:03

Matrix: Water

Date Received: 03/08/23 15:25

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			03/10/23 05:39	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/10/23 05:39	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/10/23 05:39	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/10/23 05:39	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/10/23 05:39	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/10/23 05:39	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/10/23 05:39	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/10/23 05:39	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/10/23 05:39	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			03/10/23 05:39	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/10/23 05:39	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/10/23 05:39	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/10/23 05:39	1
Naphthalene	ND		1.0	0.22	ug/L			03/10/23 05:39	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/10/23 05:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		03/10/23 05:39	1
Dibromofluoromethane (Surr)	102		80 - 120		03/10/23 05:39	1
4-Bromofluorobenzene (Surr)	100		80 - 120		03/10/23 05:39	1
1,2-Dichloroethane-d4 (Surr)	108		80 - 120		03/10/23 05:39	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			03/13/23 19:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	95		1.5	0.43	mg/L			03/18/23 20:01	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Client Sample ID: PA-44i-030623

Lab Sample ID: 580-124438-5

Date Collected: 03/06/23 12:00

Matrix: Water

Date Received: 03/08/23 15:25

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			03/10/23 06:03	1
Chloromethane	ND		0.50	0.14	ug/L			03/10/23 06:03	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/10/23 06:03	1
Bromomethane	ND		0.50	0.13	ug/L			03/10/23 06:03	1
Chloroethane	ND		0.50	0.096	ug/L			03/10/23 06:03	1
Carbon disulfide	ND		0.30	0.083	ug/L			03/10/23 06:03	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/10/23 06:03	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			03/10/23 06:03	1
Acetone	ND		10	3.1	ug/L			03/10/23 06:03	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/10/23 06:03	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/10/23 06:03	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/10/23 06:03	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			03/10/23 06:03	1
1,1-Dichloroethane	0.047	J	0.20	0.025	ug/L			03/10/23 06:03	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/10/23 06:03	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			03/10/23 06:03	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/10/23 06:03	1
Chloroform	ND		0.20	0.030	ug/L			03/10/23 06:03	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			03/10/23 06:03	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/10/23 06:03	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/10/23 06:03	1
Benzene	ND		0.20	0.030	ug/L			03/10/23 06:03	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/10/23 06:03	1
Trichloroethene	ND		0.20	0.066	ug/L			03/10/23 06:03	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/10/23 06:03	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/10/23 06:03	1
Dibromomethane	ND		0.20	0.062	ug/L			03/10/23 06:03	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/10/23 06:03	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/10/23 06:03	1
Toluene	ND		0.20	0.050	ug/L			03/10/23 06:03	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/10/23 06:03	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/10/23 06:03	1
Tetrachloroethene	ND		0.24	0.084	ug/L			03/10/23 06:03	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/10/23 06:03	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/10/23 06:03	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/10/23 06:03	1
Chlorobenzene	ND		0.20	0.060	ug/L			03/10/23 06:03	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/10/23 06:03	1
Ethylbenzene	ND		0.20	0.030	ug/L			03/10/23 06:03	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			03/10/23 06:03	1
o-Xylene	ND		0.50	0.15	ug/L			03/10/23 06:03	1
Styrene	ND		1.0	0.19	ug/L			03/10/23 06:03	1
Bromoform	ND		0.50	0.16	ug/L			03/10/23 06:03	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/10/23 06:03	1
Bromobenzene	ND		0.20	0.038	ug/L			03/10/23 06:03	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/10/23 06:03	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/10/23 06:03	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/10/23 06:03	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			03/10/23 06:03	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Client Sample ID: PA-44i-030623

Lab Sample ID: 580-124438-5

Date Collected: 03/06/23 12:00

Matrix: Water

Date Received: 03/08/23 15:25

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			03/10/23 06:03	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/10/23 06:03	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/10/23 06:03	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/10/23 06:03	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/10/23 06:03	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/10/23 06:03	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/10/23 06:03	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/10/23 06:03	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/10/23 06:03	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			03/10/23 06:03	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/10/23 06:03	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/10/23 06:03	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/10/23 06:03	1
Naphthalene	ND		1.0	0.22	ug/L			03/10/23 06:03	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/10/23 06:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		03/10/23 06:03	1
Dibromofluoromethane (Surr)	96		80 - 120		03/10/23 06:03	1
4-Bromofluorobenzene (Surr)	98		80 - 120		03/10/23 06:03	1
1,2-Dichloroethane-d4 (Surr)	106		80 - 120		03/10/23 06:03	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			03/13/23 19:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	15		1.5	0.43	mg/L			03/18/23 20:24	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Client Sample ID: RB-01-030723

Lab Sample ID: 580-124438-6

Date Collected: 03/07/23 07:30

Matrix: Water

Date Received: 03/08/23 15:25

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			03/10/23 02:54	1
Chloromethane	ND		0.50	0.14	ug/L			03/10/23 02:54	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/10/23 02:54	1
Bromomethane	ND		0.50	0.13	ug/L			03/10/23 02:54	1
Chloroethane	ND		0.50	0.096	ug/L			03/10/23 02:54	1
Carbon disulfide	ND		0.30	0.083	ug/L			03/10/23 02:54	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/10/23 02:54	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			03/10/23 02:54	1
Acetone	47		10	3.1	ug/L			03/10/23 02:54	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/10/23 02:54	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/10/23 02:54	1
2-Butanone (MEK)	2.7 J		10	2.5	ug/L			03/10/23 02:54	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			03/10/23 02:54	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			03/10/23 02:54	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/10/23 02:54	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			03/10/23 02:54	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/10/23 02:54	1
Chloroform	0.045 J		0.20	0.030	ug/L			03/10/23 02:54	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			03/10/23 02:54	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/10/23 02:54	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/10/23 02:54	1
Benzene	ND		0.20	0.030	ug/L			03/10/23 02:54	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/10/23 02:54	1
Trichloroethene	ND		0.20	0.066	ug/L			03/10/23 02:54	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/10/23 02:54	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/10/23 02:54	1
Dibromomethane	ND		0.20	0.062	ug/L			03/10/23 02:54	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/10/23 02:54	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/10/23 02:54	1
Toluene	ND		0.20	0.050	ug/L			03/10/23 02:54	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/10/23 02:54	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/10/23 02:54	1
Tetrachloroethene	ND		0.24	0.084	ug/L			03/10/23 02:54	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/10/23 02:54	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/10/23 02:54	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/10/23 02:54	1
Chlorobenzene	0.41		0.20	0.060	ug/L			03/10/23 02:54	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/10/23 02:54	1
Ethylbenzene	ND		0.20	0.030	ug/L			03/10/23 02:54	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			03/10/23 02:54	1
o-Xylene	ND		0.50	0.15	ug/L			03/10/23 02:54	1
Styrene	ND		1.0	0.19	ug/L			03/10/23 02:54	1
Bromoform	ND		0.50	0.16	ug/L			03/10/23 02:54	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/10/23 02:54	1
Bromobenzene	ND		0.20	0.038	ug/L			03/10/23 02:54	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/10/23 02:54	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/10/23 02:54	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/10/23 02:54	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			03/10/23 02:54	1

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Client Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Client Sample ID: RB-01-030723

Lab Sample ID: 580-124438-6

Date Collected: 03/07/23 07:30

Matrix: Water

Date Received: 03/08/23 15:25

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			03/10/23 02:54	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/10/23 02:54	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/10/23 02:54	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/10/23 02:54	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/10/23 02:54	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/10/23 02:54	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/10/23 02:54	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/10/23 02:54	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/10/23 02:54	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			03/10/23 02:54	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/10/23 02:54	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/10/23 02:54	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/10/23 02:54	1
Naphthalene	ND		1.0	0.22	ug/L			03/10/23 02:54	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/10/23 02:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		03/10/23 02:54	1
Dibromofluoromethane (Surr)	104		80 - 120		03/10/23 02:54	1
4-Bromofluorobenzene (Surr)	99		80 - 120		03/10/23 02:54	1
1,2-Dichloroethane-d4 (Surr)	109		80 - 120		03/10/23 02:54	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			03/13/23 20:00	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			03/18/23 20:36	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Client Sample ID: PA-32i-030723

Lab Sample ID: 580-124438-7

Date Collected: 03/07/23 08:42

Matrix: Water

Date Received: 03/08/23 15:25

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			03/14/23 04:50	1
Chloromethane	ND		0.50	0.14	ug/L			03/14/23 04:50	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/14/23 04:50	1
Bromomethane	ND		0.50	0.13	ug/L			03/14/23 04:50	1
Chloroethane	ND		0.50	0.096	ug/L			03/14/23 04:50	1
Carbon disulfide	ND		0.30	0.083	ug/L			03/14/23 04:50	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/14/23 04:50	1
1,1-Dichloroethene	0.16	J	0.20	0.035	ug/L			03/14/23 04:50	1
Acetone	ND		10	3.1	ug/L			03/14/23 04:50	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/14/23 04:50	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/14/23 04:50	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/14/23 04:50	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			03/14/23 04:50	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			03/14/23 04:50	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/14/23 04:50	1
cis-1,2-Dichloroethene	0.096	J	0.20	0.055	ug/L			03/14/23 04:50	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/14/23 04:50	1
Chloroform	ND		0.20	0.030	ug/L			03/14/23 04:50	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			03/14/23 04:50	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/14/23 04:50	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/14/23 04:50	1
Benzene	0.060	J	0.20	0.030	ug/L			03/14/23 04:50	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/14/23 04:50	1
Trichloroethene	ND		0.20	0.066	ug/L			03/14/23 04:50	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/14/23 04:50	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/14/23 04:50	1
Dibromomethane	ND		0.20	0.062	ug/L			03/14/23 04:50	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/14/23 04:50	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/14/23 04:50	1
Toluene	ND		0.20	0.050	ug/L			03/14/23 04:50	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/14/23 04:50	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/14/23 04:50	1
Tetrachloroethene	ND		0.24	0.084	ug/L			03/14/23 04:50	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/14/23 04:50	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/14/23 04:50	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/14/23 04:50	1
Chlorobenzene	ND		0.20	0.060	ug/L			03/14/23 04:50	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/14/23 04:50	1
Ethylbenzene	0.034	J	0.20	0.030	ug/L			03/14/23 04:50	1
m-Xylene & p-Xylene	0.13	J	0.50	0.12	ug/L			03/14/23 04:50	1
o-Xylene	0.23	J	0.50	0.15	ug/L			03/14/23 04:50	1
Styrene	ND		1.0	0.19	ug/L			03/14/23 04:50	1
Bromoform	ND		0.50	0.16	ug/L			03/14/23 04:50	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/14/23 04:50	1
Bromobenzene	ND		0.20	0.038	ug/L			03/14/23 04:50	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/14/23 04:50	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/14/23 04:50	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/14/23 04:50	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			03/14/23 04:50	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Client Sample ID: PA-32i-030723

Lab Sample ID: 580-124438-7

Date Collected: 03/07/23 08:42

Matrix: Water

Date Received: 03/08/23 15:25

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			03/14/23 04:50	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/14/23 04:50	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/14/23 04:50	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/14/23 04:50	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/14/23 04:50	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/14/23 04:50	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 04:50	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 04:50	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/14/23 04:50	1
1,2-Dichlorobenzene	0.26	J	0.30	0.038	ug/L			03/14/23 04:50	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/14/23 04:50	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/14/23 04:50	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/14/23 04:50	1
Naphthalene	ND		1.0	0.22	ug/L			03/14/23 04:50	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/14/23 04:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		03/14/23 04:50	1
Dibromofluoromethane (Surr)	100		80 - 120		03/14/23 04:50	1
4-Bromofluorobenzene (Surr)	100		80 - 120		03/14/23 04:50	1
1,2-Dichloroethane-d4 (Surr)	97		80 - 120		03/14/23 04:50	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		40	20	ug/L			03/13/23 20:18	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	83	J	150	43	mg/L			03/18/23 20:48	100

Client Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Client Sample ID: PA-31-030723

Lab Sample ID: 580-124438-8

Date Collected: 03/07/23 10:31

Matrix: Water

Date Received: 03/08/23 15:25

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			03/14/23 05:12	1
Chloromethane	ND		0.50	0.14	ug/L			03/14/23 05:12	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/14/23 05:12	1
Bromomethane	ND		0.50	0.13	ug/L			03/14/23 05:12	1
Chloroethane	ND		0.50	0.096	ug/L			03/14/23 05:12	1
Carbon disulfide	ND	F1	0.30	0.083	ug/L			03/14/23 05:12	1
Trichlorofluoromethane	0.12	J	0.50	0.12	ug/L			03/14/23 05:12	1
1,1-Dichloroethene	0.94	F1	0.20	0.035	ug/L			03/14/23 05:12	1
Acetone	ND		10	3.1	ug/L			03/14/23 05:12	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/14/23 05:12	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/14/23 05:12	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/14/23 05:12	1
trans-1,2-Dichloroethene	ND	F1	0.20	0.033	ug/L			03/14/23 05:12	1
1,1-Dichloroethane	0.41	F1	0.20	0.025	ug/L			03/14/23 05:12	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/14/23 05:12	1
cis-1,2-Dichloroethene	ND	F1	0.20	0.055	ug/L			03/14/23 05:12	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/14/23 05:12	1
Chloroform	0.14	J F1	0.20	0.030	ug/L			03/14/23 05:12	1
1,1,1-Trichloroethane	0.23	F1	0.20	0.025	ug/L			03/14/23 05:12	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/14/23 05:12	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/14/23 05:12	1
Benzene	ND		0.20	0.030	ug/L			03/14/23 05:12	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/14/23 05:12	1
Trichloroethene	0.086	J F1	0.20	0.066	ug/L			03/14/23 05:12	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/14/23 05:12	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/14/23 05:12	1
Dibromomethane	ND		0.20	0.062	ug/L			03/14/23 05:12	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/14/23 05:12	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/14/23 05:12	1
Toluene	ND		0.20	0.050	ug/L			03/14/23 05:12	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/14/23 05:12	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/14/23 05:12	1
Tetrachloroethene	0.18	J	0.24	0.084	ug/L			03/14/23 05:12	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/14/23 05:12	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/14/23 05:12	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/14/23 05:12	1
Chlorobenzene	ND		0.20	0.060	ug/L			03/14/23 05:12	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/14/23 05:12	1
Ethylbenzene	ND		0.20	0.030	ug/L			03/14/23 05:12	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			03/14/23 05:12	1
o-Xylene	ND		0.50	0.15	ug/L			03/14/23 05:12	1
Styrene	ND		1.0	0.19	ug/L			03/14/23 05:12	1
Bromoform	ND		0.50	0.16	ug/L			03/14/23 05:12	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/14/23 05:12	1
Bromobenzene	ND		0.20	0.038	ug/L			03/14/23 05:12	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/14/23 05:12	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/14/23 05:12	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/14/23 05:12	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			03/14/23 05:12	1

Client Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Client Sample ID: PA-31-030723

Lab Sample ID: 580-124438-8

Date Collected: 03/07/23 10:31

Matrix: Water

Date Received: 03/08/23 15:25

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			03/14/23 05:12	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/14/23 05:12	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/14/23 05:12	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/14/23 05:12	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/14/23 05:12	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/14/23 05:12	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 05:12	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 05:12	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/14/23 05:12	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			03/14/23 05:12	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/14/23 05:12	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/14/23 05:12	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/14/23 05:12	1
Naphthalene	ND		1.0	0.22	ug/L			03/14/23 05:12	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/14/23 05:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		03/14/23 05:12	1
Dibromofluoromethane (Surr)	100		80 - 120		03/14/23 05:12	1
4-Bromofluorobenzene (Surr)	101		80 - 120		03/14/23 05:12	1
1,2-Dichloroethane-d4 (Surr)	94		80 - 120		03/14/23 05:12	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			03/13/23 20:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	5.8	F1	1.5	0.43	mg/L			03/18/23 21:23	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Client Sample ID: PA-08-030723

Lab Sample ID: 580-124438-9

Date Collected: 03/07/23 08:30

Matrix: Water

Date Received: 03/08/23 15:25

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			03/14/23 05:34	1
Chloromethane	ND		0.50	0.14	ug/L			03/14/23 05:34	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/14/23 05:34	1
Bromomethane	ND		0.50	0.13	ug/L			03/14/23 05:34	1
Chloroethane	ND		0.50	0.096	ug/L			03/14/23 05:34	1
Carbon disulfide	ND		0.30	0.083	ug/L			03/14/23 05:34	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/14/23 05:34	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			03/14/23 05:34	1
Acetone	ND		10	3.1	ug/L			03/14/23 05:34	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/14/23 05:34	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/14/23 05:34	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/14/23 05:34	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			03/14/23 05:34	1
1,1-Dichloroethane	0.20		0.20	0.025	ug/L			03/14/23 05:34	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/14/23 05:34	1
cis-1,2-Dichloroethene	0.15	J	0.20	0.055	ug/L			03/14/23 05:34	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/14/23 05:34	1
Chloroform	ND		0.20	0.030	ug/L			03/14/23 05:34	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			03/14/23 05:34	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/14/23 05:34	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/14/23 05:34	1
Benzene	ND		0.20	0.030	ug/L			03/14/23 05:34	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/14/23 05:34	1
Trichloroethene	0.24		0.20	0.066	ug/L			03/14/23 05:34	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/14/23 05:34	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/14/23 05:34	1
Dibromomethane	ND		0.20	0.062	ug/L			03/14/23 05:34	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/14/23 05:34	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/14/23 05:34	1
Toluene	ND		0.20	0.050	ug/L			03/14/23 05:34	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/14/23 05:34	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/14/23 05:34	1
Tetrachloroethene	0.24		0.24	0.084	ug/L			03/14/23 05:34	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/14/23 05:34	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/14/23 05:34	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/14/23 05:34	1
Chlorobenzene	0.24		0.20	0.060	ug/L			03/14/23 05:34	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/14/23 05:34	1
Ethylbenzene	ND		0.20	0.030	ug/L			03/14/23 05:34	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			03/14/23 05:34	1
o-Xylene	ND		0.50	0.15	ug/L			03/14/23 05:34	1
Styrene	ND		1.0	0.19	ug/L			03/14/23 05:34	1
Bromoform	ND		0.50	0.16	ug/L			03/14/23 05:34	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/14/23 05:34	1
Bromobenzene	ND		0.20	0.038	ug/L			03/14/23 05:34	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/14/23 05:34	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/14/23 05:34	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/14/23 05:34	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			03/14/23 05:34	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Client Sample ID: PA-08-030723

Lab Sample ID: 580-124438-9

Date Collected: 03/07/23 08:30

Matrix: Water

Date Received: 03/08/23 15:25

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			03/14/23 05:34	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/14/23 05:34	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/14/23 05:34	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/14/23 05:34	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/14/23 05:34	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/14/23 05:34	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 05:34	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 05:34	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/14/23 05:34	1
1,2-Dichlorobenzene	0.062	J	0.30	0.038	ug/L			03/14/23 05:34	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/14/23 05:34	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/14/23 05:34	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/14/23 05:34	1
Naphthalene	ND		1.0	0.22	ug/L			03/14/23 05:34	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/14/23 05:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		03/14/23 05:34	1
Dibromofluoromethane (Surr)	100		80 - 120		03/14/23 05:34	1
4-Bromofluorobenzene (Surr)	100		80 - 120		03/14/23 05:34	1
1,2-Dichloroethane-d4 (Surr)	97		80 - 120		03/14/23 05:34	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	10	ug/L			03/13/23 21:29	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	380		150	43	mg/L			03/18/23 21:58	100

Client Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Client Sample ID: PA-09-030723

Lab Sample ID: 580-124438-10

Date Collected: 03/07/23 10:15

Matrix: Water

Date Received: 03/08/23 15:25

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			03/14/23 05:55	1
Chloromethane	ND		0.50	0.14	ug/L			03/14/23 05:55	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/14/23 05:55	1
Bromomethane	ND		0.50	0.13	ug/L			03/14/23 05:55	1
Chloroethane	ND		0.50	0.096	ug/L			03/14/23 05:55	1
Carbon disulfide	ND		0.30	0.083	ug/L			03/14/23 05:55	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/14/23 05:55	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			03/14/23 05:55	1
Acetone	ND		10	3.1	ug/L			03/14/23 05:55	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/14/23 05:55	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/14/23 05:55	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/14/23 05:55	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			03/14/23 05:55	1
1,1-Dichloroethane	0.061	J	0.20	0.025	ug/L			03/14/23 05:55	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/14/23 05:55	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			03/14/23 05:55	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/14/23 05:55	1
Chloroform	0.33		0.20	0.030	ug/L			03/14/23 05:55	1
1,1,1-Trichloroethane	0.098	J	0.20	0.025	ug/L			03/14/23 05:55	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/14/23 05:55	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/14/23 05:55	1
Benzene	ND		0.20	0.030	ug/L			03/14/23 05:55	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/14/23 05:55	1
Trichloroethene	ND		0.20	0.066	ug/L			03/14/23 05:55	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/14/23 05:55	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/14/23 05:55	1
Dibromomethane	ND		0.20	0.062	ug/L			03/14/23 05:55	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/14/23 05:55	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/14/23 05:55	1
Toluene	ND		0.20	0.050	ug/L			03/14/23 05:55	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/14/23 05:55	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/14/23 05:55	1
Tetrachloroethene	0.33		0.24	0.084	ug/L			03/14/23 05:55	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/14/23 05:55	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/14/23 05:55	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/14/23 05:55	1
Chlorobenzene	0.39		0.20	0.060	ug/L			03/14/23 05:55	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/14/23 05:55	1
Ethylbenzene	ND		0.20	0.030	ug/L			03/14/23 05:55	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			03/14/23 05:55	1
o-Xylene	ND		0.50	0.15	ug/L			03/14/23 05:55	1
Styrene	ND		1.0	0.19	ug/L			03/14/23 05:55	1
Bromoform	ND		0.50	0.16	ug/L			03/14/23 05:55	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/14/23 05:55	1
Bromobenzene	ND		0.20	0.038	ug/L			03/14/23 05:55	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/14/23 05:55	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/14/23 05:55	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/14/23 05:55	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			03/14/23 05:55	1

Eurolins Seattle

Client Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Client Sample ID: PA-09-030723

Lab Sample ID: 580-124438-10

Date Collected: 03/07/23 10:15

Matrix: Water

Date Received: 03/08/23 15:25

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			03/14/23 05:55	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/14/23 05:55	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/14/23 05:55	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/14/23 05:55	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/14/23 05:55	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/14/23 05:55	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 05:55	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 05:55	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/14/23 05:55	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			03/14/23 05:55	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/14/23 05:55	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/14/23 05:55	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/14/23 05:55	1
Naphthalene	ND		1.0	0.22	ug/L			03/14/23 05:55	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/14/23 05:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		03/14/23 05:55	1
Dibromofluoromethane (Surr)	100		80 - 120		03/14/23 05:55	1
4-Bromofluorobenzene (Surr)	99		80 - 120		03/14/23 05:55	1
1,2-Dichloroethane-d4 (Surr)	95		80 - 120		03/14/23 05:55	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			03/13/23 22:23	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	120	J	150	43	mg/L			03/18/23 22:33	100

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Client Sample ID: PA-03-030723

Lab Sample ID: 580-124438-11

Date Collected: 03/07/23 12:55

Matrix: Water

Date Received: 03/08/23 15:25

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			03/14/23 06:17	1
Chloromethane	ND		0.50	0.14	ug/L			03/14/23 06:17	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/14/23 06:17	1
Bromomethane	ND		0.50	0.13	ug/L			03/14/23 06:17	1
Chloroethane	ND		0.50	0.096	ug/L			03/14/23 06:17	1
Carbon disulfide	ND		0.30	0.083	ug/L			03/14/23 06:17	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/14/23 06:17	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			03/14/23 06:17	1
Acetone	ND		10	3.1	ug/L			03/14/23 06:17	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/14/23 06:17	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/14/23 06:17	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/14/23 06:17	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			03/14/23 06:17	1
1,1-Dichloroethane	0.13	J	0.20	0.025	ug/L			03/14/23 06:17	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/14/23 06:17	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			03/14/23 06:17	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/14/23 06:17	1
Chloroform	ND		0.20	0.030	ug/L			03/14/23 06:17	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			03/14/23 06:17	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/14/23 06:17	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/14/23 06:17	1
Benzene	0.056	J	0.20	0.030	ug/L			03/14/23 06:17	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/14/23 06:17	1
Trichloroethene	ND		0.20	0.066	ug/L			03/14/23 06:17	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/14/23 06:17	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/14/23 06:17	1
Dibromomethane	ND		0.20	0.062	ug/L			03/14/23 06:17	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/14/23 06:17	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/14/23 06:17	1
Toluene	0.13	J	0.20	0.050	ug/L			03/14/23 06:17	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/14/23 06:17	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/14/23 06:17	1
Tetrachloroethene	ND		0.24	0.084	ug/L			03/14/23 06:17	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/14/23 06:17	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/14/23 06:17	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/14/23 06:17	1
Chlorobenzene	ND		0.20	0.060	ug/L			03/14/23 06:17	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/14/23 06:17	1
Ethylbenzene	ND		0.20	0.030	ug/L			03/14/23 06:17	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			03/14/23 06:17	1
o-Xylene	ND		0.50	0.15	ug/L			03/14/23 06:17	1
Styrene	ND		1.0	0.19	ug/L			03/14/23 06:17	1
Bromoform	ND		0.50	0.16	ug/L			03/14/23 06:17	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/14/23 06:17	1
Bromobenzene	ND		0.20	0.038	ug/L			03/14/23 06:17	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/14/23 06:17	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/14/23 06:17	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/14/23 06:17	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			03/14/23 06:17	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Client Sample ID: PA-03-030723

Lab Sample ID: 580-124438-11

Date Collected: 03/07/23 12:55

Matrix: Water

Date Received: 03/08/23 15:25

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			03/14/23 06:17	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/14/23 06:17	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/14/23 06:17	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/14/23 06:17	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/14/23 06:17	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/14/23 06:17	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 06:17	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 06:17	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/14/23 06:17	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			03/14/23 06:17	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/14/23 06:17	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/14/23 06:17	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/14/23 06:17	1
Naphthalene	ND		1.0	0.22	ug/L			03/14/23 06:17	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/14/23 06:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		03/14/23 06:17	1
Dibromofluoromethane (Surr)	100		80 - 120		03/14/23 06:17	1
4-Bromofluorobenzene (Surr)	101		80 - 120		03/14/23 06:17	1
1,2-Dichloroethane-d4 (Surr)	94		80 - 120		03/14/23 06:17	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			03/13/23 22:41	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	6.5		1.5	0.43	mg/L			03/18/23 22:45	1

QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

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

Lab Sample ID: MB 580-420023/7
Matrix: Water
Analysis Batch: 420023

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			03/09/23 22:48	1
Chloromethane	ND		0.50	0.14	ug/L			03/09/23 22:48	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/09/23 22:48	1
Bromomethane	ND		0.50	0.13	ug/L			03/09/23 22:48	1
Chloroethane	ND		0.50	0.096	ug/L			03/09/23 22:48	1
Carbon disulfide	ND		0.30	0.083	ug/L			03/09/23 22:48	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/09/23 22:48	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			03/09/23 22:48	1
Acetone	ND		10	3.1	ug/L			03/09/23 22:48	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/09/23 22:48	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/09/23 22:48	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/09/23 22:48	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			03/09/23 22:48	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			03/09/23 22:48	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/09/23 22:48	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			03/09/23 22:48	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/09/23 22:48	1
Chloroform	ND		0.20	0.030	ug/L			03/09/23 22:48	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			03/09/23 22:48	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/09/23 22:48	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/09/23 22:48	1
Benzene	ND		0.20	0.030	ug/L			03/09/23 22:48	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/09/23 22:48	1
Trichloroethene	ND		0.20	0.066	ug/L			03/09/23 22:48	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/09/23 22:48	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/09/23 22:48	1
Dibromomethane	ND		0.20	0.062	ug/L			03/09/23 22:48	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/09/23 22:48	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/09/23 22:48	1
Toluene	ND		0.20	0.050	ug/L			03/09/23 22:48	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/09/23 22:48	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/09/23 22:48	1
Tetrachloroethene	ND		0.24	0.084	ug/L			03/09/23 22:48	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/09/23 22:48	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/09/23 22:48	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/09/23 22:48	1
Chlorobenzene	ND		0.20	0.060	ug/L			03/09/23 22:48	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/09/23 22:48	1
Ethylbenzene	ND		0.20	0.030	ug/L			03/09/23 22:48	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			03/09/23 22:48	1
o-Xylene	ND		0.50	0.15	ug/L			03/09/23 22:48	1
Styrene	ND		1.0	0.19	ug/L			03/09/23 22:48	1
Bromoform	ND		0.50	0.16	ug/L			03/09/23 22:48	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/09/23 22:48	1
Bromobenzene	ND		0.20	0.038	ug/L			03/09/23 22:48	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/09/23 22:48	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/09/23 22:48	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/09/23 22:48	1

QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

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

Lab Sample ID: MB 580-420023/7
Matrix: Water
Analysis Batch: 420023

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			03/09/23 22:48	1
4-Chlorotoluene	ND		0.30	0.12	ug/L			03/09/23 22:48	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/09/23 22:48	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/09/23 22:48	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/09/23 22:48	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/09/23 22:48	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/09/23 22:48	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/09/23 22:48	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/09/23 22:48	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/09/23 22:48	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			03/09/23 22:48	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/09/23 22:48	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/09/23 22:48	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/09/23 22:48	1
Naphthalene	ND		1.0	0.22	ug/L			03/09/23 22:48	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/09/23 22:48	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	101		80 - 120		03/09/23 22:48	1
<i>Dibromofluoromethane (Surr)</i>	104		80 - 120		03/09/23 22:48	1
<i>4-Bromofluorobenzene (Surr)</i>	100		80 - 120		03/09/23 22:48	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	100		80 - 120		03/09/23 22:48	1

Lab Sample ID: LCS 580-420023/4
Matrix: Water
Analysis Batch: 420023

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	3.71		ug/L		74	20 - 150
Chloromethane	5.00	4.03		ug/L		81	32 - 150
Vinyl chloride	5.00	4.62		ug/L		92	41 - 150
Bromomethane	5.00	5.07		ug/L		101	51 - 148
Chloroethane	5.00	4.89		ug/L		98	54 - 140
Carbon disulfide	5.00	5.54		ug/L		111	54 - 142
Trichlorofluoromethane	5.00	5.07		ug/L		101	60 - 132
1,1-Dichloroethene	5.00	5.21		ug/L		104	60 - 129
Acetone	25.0	26.1		ug/L		105	49 - 150
Methylene Chloride	5.00	5.19		ug/L		104	40 - 142
Methyl tert-butyl ether	5.00	5.26		ug/L		105	61 - 131
2-Butanone (MEK)	25.0	26.1		ug/L		104	37 - 150
trans-1,2-Dichloroethene	5.00	5.22		ug/L		104	69 - 121
1,1-Dichloroethane	5.00	5.16		ug/L		103	74 - 120
2,2-Dichloropropane	5.00	4.94		ug/L		99	55 - 140
cis-1,2-Dichloroethene	5.00	5.21		ug/L		104	72 - 120
Chlorobromomethane	5.00	5.13		ug/L		103	79 - 121
Chloroform	5.00	5.13		ug/L		103	75 - 120
1,1,1-Trichloroethane	5.00	5.31		ug/L		106	70 - 121
Carbon tetrachloride	5.00	5.29		ug/L		106	66 - 130

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QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

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

Lab Sample ID: LCS 580-420023/4
Matrix: Water
Analysis Batch: 420023

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	5.14		ug/L		103	72 - 125
Benzene	5.00	5.12		ug/L		102	80 - 120
1,2-Dichloroethane	5.00	5.08		ug/L		102	74 - 127
Trichloroethene	5.00	5.12		ug/L		102	72 - 120
1,2-Dichloropropane	5.00	4.97		ug/L		99	69 - 130
4-Methyl-2-pentanone (MIBK)	25.00	25.5		ug/L		102	63 - 137
Dibromomethane	5.00	5.24		ug/L		105	65 - 141
Dichlorobromomethane	5.00	4.96		ug/L		99	74 - 131
cis-1,3-Dichloropropene	5.00	4.96		ug/L		99	77 - 131
Toluene	5.00	5.17		ug/L		103	80 - 126
trans-1,3-Dichloropropene	5.00	5.11		ug/L		102	71 - 138
1,1,2-Trichloroethane	5.00	5.21		ug/L		104	73 - 127
Tetrachloroethene	5.00	4.86		ug/L		97	75 - 124
1,3-Dichloropropane	5.00	4.94		ug/L		99	69 - 138
Chlorodibromomethane	5.00	5.25		ug/L		105	62 - 141
Ethylene Dibromide	5.00	5.42		ug/L		108	61 - 143
Chlorobenzene	5.00	5.11		ug/L		102	74 - 123
1,1,1,2-Tetrachloroethane	5.00	5.15		ug/L		103	69 - 127
Ethylbenzene	5.00	5.09		ug/L		102	80 - 124
m-Xylene & p-Xylene	5.00	5.01		ug/L		100	75 - 124
o-Xylene	5.00	5.14		ug/L		103	71 - 124
Styrene	5.00	5.09		ug/L		102	74 - 127
Bromoform	5.00	5.08		ug/L		102	48 - 127
Isopropylbenzene	5.00	5.02		ug/L		100	71 - 123
Bromobenzene	5.00	4.89		ug/L		98	74 - 130
1,1,2,2-Tetrachloroethane	5.00	4.85		ug/L		97	67 - 136
1,2,3-Trichloropropane	5.00	5.05		ug/L		101	67 - 135
N-Propylbenzene	5.00	4.97		ug/L		99	72 - 126
2-Chlorotoluene	5.00	4.98		ug/L		100	73 - 120
4-Chlorotoluene	5.00	4.89		ug/L		98	75 - 124
1,3,5-Trimethylbenzene	5.00	4.93		ug/L		99	75 - 123
tert-Butylbenzene	5.00	4.95		ug/L		99	70 - 129
1,2,4-Trimethylbenzene	5.00	4.87		ug/L		97	71 - 127
sec-Butylbenzene	5.00	4.91		ug/L		98	75 - 126
4-Isopropyltoluene	5.00	5.08		ug/L		102	78 - 125
1,3-Dichlorobenzene	5.00	5.12		ug/L		102	72 - 125
1,4-Dichlorobenzene	5.00	4.93		ug/L		99	71 - 129
n-Butylbenzene	5.00	4.84		ug/L		97	69 - 127
1,2-Dichlorobenzene	5.00	5.01		ug/L		100	72 - 129
1,2-Dibromo-3-Chloropropane	5.00	4.85		ug/L		97	55 - 135
1,2,4-Trichlorobenzene	5.00	4.99		ug/L		100	60 - 130
Hexachlorobutadiene	5.00	4.92		ug/L		98	63 - 130
Naphthalene	5.00	5.23		ug/L		105	54 - 137
1,2,3-Trichlorobenzene	5.00	5.11		ug/L		102	60 - 136

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	101		80 - 120

QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

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

Lab Sample ID: LCS 580-420023/4
Matrix: Water
Analysis Batch: 420023

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		80 - 120
1,2-Dichloroethane-d4 (Surr)	99		80 - 120

Lab Sample ID: LCSD 580-420023/5
Matrix: Water
Analysis Batch: 420023

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	3.84		ug/L		77	20 - 150	4	30
Chloromethane	5.00	4.24		ug/L		85	32 - 150	5	33
Vinyl chloride	5.00	4.74		ug/L		95	41 - 150	2	32
Bromomethane	5.00	5.05		ug/L		101	51 - 148	0	35
Chloroethane	5.00	4.65		ug/L		93	54 - 140	5	33
Carbon disulfide	5.00	5.60		ug/L		112	54 - 142	1	34
Trichlorofluoromethane	5.00	4.89		ug/L		98	60 - 132	3	32
1,1-Dichloroethene	5.00	5.18		ug/L		104	60 - 129	1	29
Acetone	25.0	26.6		ug/L		107	49 - 150	2	24
Methylene Chloride	5.00	5.21		ug/L		104	40 - 142	0	25
Methyl tert-butyl ether	5.00	5.33		ug/L		107	61 - 131	1	27
2-Butanone (MEK)	25.0	27.2		ug/L		109	37 - 150	4	35
trans-1,2-Dichloroethene	5.00	5.34		ug/L		107	69 - 121	2	27
1,1-Dichloroethane	5.00	5.13		ug/L		103	74 - 120	1	26
2,2-Dichloropropane	5.00	4.84		ug/L		97	55 - 140	2	31
cis-1,2-Dichloroethene	5.00	5.29		ug/L		106	72 - 120	1	22
Chlorobromomethane	5.00	5.18		ug/L		104	79 - 121	1	20
Chloroform	5.00	5.18		ug/L		104	75 - 120	1	21
1,1,1-Trichloroethane	5.00	5.34		ug/L		107	70 - 121	0	24
Carbon tetrachloride	5.00	5.28		ug/L		106	66 - 130	0	24
1,1-Dichloropropene	5.00	5.16		ug/L		103	72 - 125	0	23
Benzene	5.00	5.14		ug/L		103	80 - 120	1	22
1,2-Dichloroethane	5.00	5.05		ug/L		101	74 - 127	1	21
Trichloroethene	5.00	5.29		ug/L		106	72 - 120	3	22
1,2-Dichloropropane	5.00	4.99		ug/L		100	69 - 130	0	22
4-Methyl-2-pentanone (MIBK)	25.0	25.7		ug/L		103	63 - 137	1	26
Dibromomethane	5.00	5.33		ug/L		107	65 - 141	2	22
Dichlorobromomethane	5.00	5.08		ug/L		102	74 - 131	2	21
cis-1,3-Dichloropropene	5.00	4.85		ug/L		97	77 - 131	2	24
Toluene	5.00	5.17		ug/L		103	80 - 126	0	20
trans-1,3-Dichloropropene	5.00	5.08		ug/L		102	71 - 138	1	26
1,1,2-Trichloroethane	5.00	5.27		ug/L		105	73 - 127	1	22
Tetrachloroethene	5.00	4.95		ug/L		99	75 - 124	2	20
1,3-Dichloropropane	5.00	4.99		ug/L		100	69 - 138	1	19
Chlorodibromomethane	5.00	5.29		ug/L		106	62 - 141	1	22
Ethylene Dibromide	5.00	5.44		ug/L		109	61 - 143	0	22
Chlorobenzene	5.00	5.11		ug/L		102	74 - 123	0	21
1,1,1,2-Tetrachloroethane	5.00	5.25		ug/L		105	69 - 127	2	22
Ethylbenzene	5.00	5.12		ug/L		102	80 - 124	1	22
m-Xylene & p-Xylene	5.00	5.11		ug/L		102	75 - 124	2	22

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

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

Lab Sample ID: LCSD 580-420023/5
Matrix: Water
Analysis Batch: 420023

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	5.19		ug/L		104	71 - 124	1	23
Styrene	5.00	5.04		ug/L		101	74 - 127	1	22
Bromoform	5.00	5.22		ug/L		104	48 - 127	3	23
Isopropylbenzene	5.00	5.07		ug/L		101	71 - 123	1	23
Bromobenzene	5.00	5.05		ug/L		101	74 - 130	3	23
1,1,2,2-Tetrachloroethane	5.00	5.01		ug/L		100	67 - 136	3	24
1,2,3-Trichloropropane	5.00	5.30		ug/L		106	67 - 135	5	25
N-Propylbenzene	5.00	5.07		ug/L		101	72 - 126	2	20
2-Chlorotoluene	5.00	5.22		ug/L		104	73 - 120	5	22
4-Chlorotoluene	5.00	5.02		ug/L		100	75 - 124	3	23
1,3,5-Trimethylbenzene	5.00	5.06		ug/L		101	75 - 123	3	23
tert-Butylbenzene	5.00	5.01		ug/L		100	70 - 129	1	24
1,2,4-Trimethylbenzene	5.00	5.07		ug/L		101	71 - 127	4	23
sec-Butylbenzene	5.00	4.99		ug/L		100	75 - 126	2	23
4-Isopropyltoluene	5.00	5.13		ug/L		103	78 - 125	1	24
1,3-Dichlorobenzene	5.00	5.15		ug/L		103	72 - 125	1	22
1,4-Dichlorobenzene	5.00	5.09		ug/L		102	71 - 129	3	22
n-Butylbenzene	5.00	4.87		ug/L		97	69 - 127	1	24
1,2-Dichlorobenzene	5.00	5.17		ug/L		103	72 - 129	3	22
1,2-Dibromo-3-Chloropropane	5.00	5.11		ug/L		102	55 - 135	5	29
1,2,4-Trichlorobenzene	5.00	5.16		ug/L		103	60 - 130	3	26
Hexachlorobutadiene	5.00	5.07		ug/L		101	63 - 130	3	26
Naphthalene	5.00	5.33		ug/L		107	54 - 137	2	28
1,2,3-Trichlorobenzene	5.00	5.22		ug/L		104	60 - 136	2	28

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
Toluene-d8 (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	104		80 - 120
4-Bromofluorobenzene (Surr)	99		80 - 120
1,2-Dichloroethane-d4 (Surr)	101		80 - 120

Lab Sample ID: MB 580-420030/7
Matrix: Water
Analysis Batch: 420030

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			03/10/23 02:30	1
Chloromethane	ND		0.50	0.14	ug/L			03/10/23 02:30	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/10/23 02:30	1
Bromomethane	ND		0.50	0.13	ug/L			03/10/23 02:30	1
Chloroethane	ND		0.50	0.096	ug/L			03/10/23 02:30	1
Carbon disulfide	ND		0.30	0.083	ug/L			03/10/23 02:30	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/10/23 02:30	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			03/10/23 02:30	1
Acetone	ND		10	3.1	ug/L			03/10/23 02:30	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/10/23 02:30	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/10/23 02:30	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/10/23 02:30	1

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QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

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

Lab Sample ID: MB 580-420030/7
Matrix: Water
Analysis Batch: 420030

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			03/10/23 02:30	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			03/10/23 02:30	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/10/23 02:30	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			03/10/23 02:30	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/10/23 02:30	1
Chloroform	ND		0.20	0.030	ug/L			03/10/23 02:30	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			03/10/23 02:30	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/10/23 02:30	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/10/23 02:30	1
Benzene	ND		0.20	0.030	ug/L			03/10/23 02:30	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/10/23 02:30	1
Trichloroethene	ND		0.20	0.066	ug/L			03/10/23 02:30	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/10/23 02:30	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/10/23 02:30	1
Dibromomethane	ND		0.20	0.062	ug/L			03/10/23 02:30	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/10/23 02:30	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/10/23 02:30	1
Toluene	ND		0.20	0.050	ug/L			03/10/23 02:30	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/10/23 02:30	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/10/23 02:30	1
Tetrachloroethene	ND		0.24	0.084	ug/L			03/10/23 02:30	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/10/23 02:30	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/10/23 02:30	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/10/23 02:30	1
Chlorobenzene	ND		0.20	0.060	ug/L			03/10/23 02:30	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/10/23 02:30	1
Ethylbenzene	ND		0.20	0.030	ug/L			03/10/23 02:30	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			03/10/23 02:30	1
o-Xylene	ND		0.50	0.15	ug/L			03/10/23 02:30	1
Styrene	ND		1.0	0.19	ug/L			03/10/23 02:30	1
Bromoform	ND		0.50	0.16	ug/L			03/10/23 02:30	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/10/23 02:30	1
Bromobenzene	ND		0.20	0.038	ug/L			03/10/23 02:30	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/10/23 02:30	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/10/23 02:30	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/10/23 02:30	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			03/10/23 02:30	1
4-Chlorotoluene	ND		0.30	0.12	ug/L			03/10/23 02:30	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/10/23 02:30	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/10/23 02:30	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/10/23 02:30	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/10/23 02:30	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/10/23 02:30	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/10/23 02:30	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/10/23 02:30	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/10/23 02:30	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			03/10/23 02:30	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/10/23 02:30	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/10/23 02:30	1

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QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

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

Lab Sample ID: MB 580-420030/7
Matrix: Water
Analysis Batch: 420030

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorobutadiene	0.0672	J	0.50	0.067	ug/L			03/10/23 02:30	1
Naphthalene	ND		1.0	0.22	ug/L			03/10/23 02:30	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/10/23 02:30	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	99		80 - 120					03/10/23 02:30	1
<i>Dibromofluoromethane (Surr)</i>	104		80 - 120					03/10/23 02:30	1
<i>4-Bromofluorobenzene (Surr)</i>	99		80 - 120					03/10/23 02:30	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	108		80 - 120					03/10/23 02:30	1

Lab Sample ID: LCS 580-420030/4
Matrix: Water
Analysis Batch: 420030

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	4.48		ug/L		90	20 - 150
Chloromethane	5.00	4.60		ug/L		92	32 - 150
Vinyl chloride	5.00	5.00		ug/L		100	41 - 150
Bromomethane	5.00	5.73		ug/L		115	51 - 148
Chloroethane	5.00	5.63		ug/L		113	54 - 140
Carbon disulfide	5.00	4.13		ug/L		83	54 - 142
Trichlorofluoromethane	5.00	5.16		ug/L		103	60 - 132
1,1-Dichloroethene	5.00	4.55		ug/L		91	60 - 129
Acetone	25.0	26.8		ug/L		107	49 - 150
Methylene Chloride	5.00	5.67		ug/L		113	40 - 142
Methyl tert-butyl ether	5.00	5.14		ug/L		103	61 - 131
2-Butanone (MEK)	25.0	25.1		ug/L		100	37 - 150
trans-1,2-Dichloroethene	5.00	4.98		ug/L		100	69 - 121
1,1-Dichloroethane	5.00	4.91		ug/L		98	74 - 120
2,2-Dichloropropane	5.00	4.62		ug/L		92	55 - 140
cis-1,2-Dichloroethene	5.00	4.96		ug/L		99	72 - 120
Chlorobromomethane	5.00	4.76		ug/L		95	79 - 121
Chloroform	5.00	4.82		ug/L		96	75 - 120
1,1,1-Trichloroethane	5.00	4.70		ug/L		94	70 - 121
Carbon tetrachloride	5.00	4.75		ug/L		95	66 - 130
1,1-Dichloropropene	5.00	4.69		ug/L		94	72 - 125
Benzene	5.00	4.85		ug/L		97	80 - 120
1,2-Dichloroethane	5.00	4.89		ug/L		98	74 - 127
Trichloroethene	5.00	4.33		ug/L		87	72 - 120
1,2-Dichloropropane	5.00	4.68		ug/L		94	69 - 130
4-Methyl-2-pentanone (MIBK)	25.0	25.5		ug/L		102	63 - 137
Dibromomethane	5.00	5.26		ug/L		105	65 - 141
Dichlorobromomethane	5.00	4.13		ug/L		83	74 - 131
cis-1,3-Dichloropropene	5.00	4.48		ug/L		90	77 - 131
Toluene	5.00	4.96		ug/L		99	80 - 126
trans-1,3-Dichloropropene	5.00	4.46		ug/L		89	71 - 138
1,1,2-Trichloroethane	5.00	4.94		ug/L		99	73 - 127
Tetrachloroethene	5.00	5.16		ug/L		103	75 - 124

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

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

Lab Sample ID: LCS 580-420030/4
Matrix: Water
Analysis Batch: 420030

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	5.00	5.07		ug/L		101	69 - 138
Chlorodibromomethane	5.00	4.45		ug/L		89	62 - 141
Ethylene Dibromide	5.00	4.77		ug/L		95	61 - 143
Chlorobenzene	5.00	5.24		ug/L		105	74 - 123
1,1,1,2-Tetrachloroethane	5.00	4.71		ug/L		94	69 - 127
Ethylbenzene	5.00	5.11		ug/L		102	80 - 124
m-Xylene & p-Xylene	5.00	5.02		ug/L		100	75 - 124
o-Xylene	5.00	5.21		ug/L		104	71 - 124
Styrene	5.00	5.13		ug/L		103	74 - 127
Bromoform	5.00	3.76		ug/L		75	48 - 127
Isopropylbenzene	5.00	5.17		ug/L		103	71 - 123
Bromobenzene	5.00	4.58		ug/L		92	74 - 130
1,1,2,2-Tetrachloroethane	5.00	4.68		ug/L		94	67 - 136
1,2,3-Trichloropropane	5.00	4.96		ug/L		99	67 - 135
N-Propylbenzene	5.00	4.47		ug/L		89	72 - 126
2-Chlorotoluene	5.00	4.49		ug/L		90	73 - 120
4-Chlorotoluene	5.00	4.44		ug/L		89	75 - 124
1,3,5-Trimethylbenzene	5.00	4.74		ug/L		95	75 - 123
tert-Butylbenzene	5.00	4.60		ug/L		92	70 - 129
1,2,4-Trimethylbenzene	5.00	4.77		ug/L		95	71 - 127
sec-Butylbenzene	5.00	4.65		ug/L		93	75 - 126
4-Isopropyltoluene	5.00	4.66		ug/L		93	78 - 125
1,3-Dichlorobenzene	5.00	4.75		ug/L		95	72 - 125
1,4-Dichlorobenzene	5.00	4.97		ug/L		99	71 - 129
n-Butylbenzene	5.00	4.12		ug/L		82	69 - 127
1,2-Dichlorobenzene	5.00	4.37		ug/L		87	72 - 129
1,2-Dibromo-3-Chloropropane	5.00	3.72		ug/L		74	55 - 135
1,2,4-Trichlorobenzene	5.00	5.18		ug/L		104	60 - 130
Hexachlorobutadiene	5.00	4.73		ug/L		95	63 - 130
Naphthalene	5.00	5.41		ug/L		108	54 - 137
1,2,3-Trichlorobenzene	5.00	5.70		ug/L		114	60 - 136

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	103		80 - 120
4-Bromofluorobenzene (Surr)	108		80 - 120
1,2-Dichloroethane-d4 (Surr)	101		80 - 120

Lab Sample ID: LCSD 580-420030/5
Matrix: Water
Analysis Batch: 420030

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	4.27		ug/L		85	20 - 150	5	30
Chloromethane	5.00	4.20		ug/L		84	32 - 150	9	33
Vinyl chloride	5.00	4.59		ug/L		92	41 - 150	9	32
Bromomethane	5.00	5.29		ug/L		106	51 - 148	8	35
Chloroethane	5.00	5.48		ug/L		110	54 - 140	3	33

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QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

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

Lab Sample ID: LCSD 580-420030/5
Matrix: Water
Analysis Batch: 420030

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
Carbon disulfide	5.00	3.85		ug/L		77	54 - 142	7	34
Trichlorofluoromethane	5.00	4.82		ug/L		96	60 - 132	7	32
1,1-Dichloroethene	5.00	4.22		ug/L		84	60 - 129	7	29
Acetone	25.0	23.7		ug/L		95	49 - 150	12	24
Methylene Chloride	5.00	5.37		ug/L		107	40 - 142	5	25
Methyl tert-butyl ether	5.00	4.76		ug/L		95	61 - 131	8	27
2-Butanone (MEK)	25.0	26.0		ug/L		104	37 - 150	3	35
trans-1,2-Dichloroethene	5.00	4.70		ug/L		94	69 - 121	6	27
1,1-Dichloroethane	5.00	4.66		ug/L		93	74 - 120	5	26
2,2-Dichloropropane	5.00	4.15		ug/L		83	55 - 140	11	31
cis-1,2-Dichloroethene	5.00	4.65		ug/L		93	72 - 120	6	22
Chlorobromomethane	5.00	4.57		ug/L		91	79 - 121	4	20
Chloroform	5.00	4.59		ug/L		92	75 - 120	5	21
1,1,1-Trichloroethane	5.00	4.45		ug/L		89	70 - 121	5	24
Carbon tetrachloride	5.00	4.49		ug/L		90	66 - 130	6	24
1,1-Dichloropropene	5.00	4.53		ug/L		91	72 - 125	4	23
Benzene	5.00	4.78		ug/L		96	80 - 120	1	22
1,2-Dichloroethane	5.00	5.01		ug/L		100	74 - 127	2	21
Trichloroethene	5.00	4.33		ug/L		87	72 - 120	0	22
1,2-Dichloropropane	5.00	4.79		ug/L		96	69 - 130	2	22
4-Methyl-2-pentanone (MIBK)	25.0	25.8		ug/L		103	63 - 137	1	26
Dibromomethane	5.00	5.32		ug/L		106	65 - 141	1	22
Dichlorobromomethane	5.00	4.28		ug/L		86	74 - 131	4	21
cis-1,3-Dichloropropene	5.00	4.85		ug/L		97	77 - 131	8	24
Toluene	5.00	5.08		ug/L		102	80 - 126	2	20
trans-1,3-Dichloropropene	5.00	4.84		ug/L		97	71 - 138	8	26
1,1,2-Trichloroethane	5.00	5.26		ug/L		105	73 - 127	6	22
Tetrachloroethene	5.00	5.17		ug/L		103	75 - 124	0	20
1,3-Dichloropropane	5.00	5.41		ug/L		108	69 - 138	7	19
Chlorodibromomethane	5.00	4.57		ug/L		91	62 - 141	3	22
Ethylene Dibromide	5.00	4.99		ug/L		100	61 - 143	4	22
Chlorobenzene	5.00	5.27		ug/L		105	74 - 123	1	21
1,1,1,2-Tetrachloroethane	5.00	4.60		ug/L		92	69 - 127	2	22
Ethylbenzene	5.00	5.08		ug/L		102	80 - 124	1	22
m-Xylene & p-Xylene	5.00	4.97		ug/L		99	75 - 124	1	22
o-Xylene	5.00	5.07		ug/L		101	71 - 124	3	23
Styrene	5.00	5.17		ug/L		103	74 - 127	1	22
Bromoform	5.00	3.81		ug/L		76	48 - 127	1	23
Isopropylbenzene	5.00	5.04		ug/L		101	71 - 123	3	23
Bromobenzene	5.00	5.19		ug/L		104	74 - 130	12	23
1,1,2,2-Tetrachloroethane	5.00	5.08		ug/L		102	67 - 136	8	24
1,2,3-Trichloropropane	5.00	5.53		ug/L		111	67 - 135	11	25
N-Propylbenzene	5.00	4.90		ug/L		98	72 - 126	9	20
2-Chlorotoluene	5.00	4.86		ug/L		97	73 - 120	8	22
4-Chlorotoluene	5.00	4.90		ug/L		98	75 - 124	10	23
1,3,5-Trimethylbenzene	5.00	5.14		ug/L		103	75 - 123	8	23
tert-Butylbenzene	5.00	5.11		ug/L		102	70 - 129	11	24
1,2,4-Trimethylbenzene	5.00	5.10		ug/L		102	71 - 127	7	23
sec-Butylbenzene	5.00	4.99		ug/L		100	75 - 126	7	23

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

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

Lab Sample ID: LCSD 580-420030/5
Matrix: Water
Analysis Batch: 420030

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
4-Isopropyltoluene	5.00	4.93		ug/L		99	78 - 125	6	24
1,3-Dichlorobenzene	5.00	5.01		ug/L		100	72 - 125	5	22
1,4-Dichlorobenzene	5.00	5.29		ug/L		106	71 - 129	6	22
n-Butylbenzene	5.00	4.19		ug/L		84	69 - 127	2	24
1,2-Dichlorobenzene	5.00	4.51		ug/L		90	72 - 129	3	22
1,2-Dibromo-3-Chloropropane	5.00	3.69		ug/L		74	55 - 135	1	29
1,2,4-Trichlorobenzene	5.00	4.94		ug/L		99	60 - 130	5	26
Hexachlorobutadiene	5.00	4.68		ug/L		94	63 - 130	1	26
Naphthalene	5.00	5.04		ug/L		101	54 - 137	7	28
1,2,3-Trichlorobenzene	5.00	5.31		ug/L		106	60 - 136	7	28

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>Toluene-d8 (Surr)</i>	105		80 - 120
<i>Dibromofluoromethane (Surr)</i>	99		80 - 120
<i>4-Bromofluorobenzene (Surr)</i>	103		80 - 120
<i>1,2-Dichloroethane-d4 (Surr)</i>	99		80 - 120

Lab Sample ID: MB 580-420224/7
Matrix: Water
Analysis Batch: 420224

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			03/14/23 00:30	1
Chloromethane	ND		0.50	0.14	ug/L			03/14/23 00:30	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/14/23 00:30	1
Bromomethane	ND		0.50	0.13	ug/L			03/14/23 00:30	1
Chloroethane	ND		0.50	0.096	ug/L			03/14/23 00:30	1
Carbon disulfide	ND		0.30	0.083	ug/L			03/14/23 00:30	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/14/23 00:30	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			03/14/23 00:30	1
Acetone	ND		10	3.1	ug/L			03/14/23 00:30	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/14/23 00:30	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/14/23 00:30	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/14/23 00:30	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			03/14/23 00:30	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			03/14/23 00:30	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/14/23 00:30	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			03/14/23 00:30	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/14/23 00:30	1
Chloroform	ND		0.20	0.030	ug/L			03/14/23 00:30	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			03/14/23 00:30	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/14/23 00:30	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/14/23 00:30	1
Benzene	ND		0.20	0.030	ug/L			03/14/23 00:30	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/14/23 00:30	1
Trichloroethene	ND		0.20	0.066	ug/L			03/14/23 00:30	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/14/23 00:30	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/14/23 00:30	1

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QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

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

Lab Sample ID: MB 580-420224/7
Matrix: Water
Analysis Batch: 420224

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromomethane	ND		0.20	0.062	ug/L			03/14/23 00:30	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/14/23 00:30	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/14/23 00:30	1
Toluene	ND		0.20	0.050	ug/L			03/14/23 00:30	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/14/23 00:30	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/14/23 00:30	1
Tetrachloroethene	ND		0.24	0.084	ug/L			03/14/23 00:30	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/14/23 00:30	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/14/23 00:30	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/14/23 00:30	1
Chlorobenzene	ND		0.20	0.060	ug/L			03/14/23 00:30	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/14/23 00:30	1
Ethylbenzene	ND		0.20	0.030	ug/L			03/14/23 00:30	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			03/14/23 00:30	1
o-Xylene	ND		0.50	0.15	ug/L			03/14/23 00:30	1
Styrene	ND		1.0	0.19	ug/L			03/14/23 00:30	1
Bromoform	ND		0.50	0.16	ug/L			03/14/23 00:30	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/14/23 00:30	1
Bromobenzene	ND		0.20	0.038	ug/L			03/14/23 00:30	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/14/23 00:30	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/14/23 00:30	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/14/23 00:30	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			03/14/23 00:30	1
4-Chlorotoluene	ND		0.30	0.12	ug/L			03/14/23 00:30	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/14/23 00:30	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/14/23 00:30	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/14/23 00:30	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/14/23 00:30	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/14/23 00:30	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 00:30	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 00:30	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/14/23 00:30	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			03/14/23 00:30	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/14/23 00:30	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/14/23 00:30	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/14/23 00:30	1
Naphthalene	ND		1.0	0.22	ug/L			03/14/23 00:30	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/14/23 00:30	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		03/14/23 00:30	1
Dibromofluoromethane (Surr)	99		80 - 120		03/14/23 00:30	1
4-Bromofluorobenzene (Surr)	100		80 - 120		03/14/23 00:30	1
1,2-Dichloroethane-d4 (Surr)	96		80 - 120		03/14/23 00:30	1

QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

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

Lab Sample ID: LCS 580-420224/4

Matrix: Water

Analysis Batch: 420224

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	5.05		ug/L		101	20 - 150
Chloromethane	5.00	4.35		ug/L		87	32 - 150
Vinyl chloride	5.00	4.74		ug/L		95	41 - 150
Bromomethane	5.00	4.54		ug/L		91	51 - 148
Chloroethane	5.00	4.96		ug/L		99	54 - 140
Carbon disulfide	5.00	6.14		ug/L		123	54 - 142
Trichlorofluoromethane	5.00	5.17		ug/L		103	60 - 132
1,1-Dichloroethene	5.00	5.95		ug/L		119	60 - 129
Acetone	25.0	24.3		ug/L		97	49 - 150
Methylene Chloride	5.00	5.36		ug/L		107	40 - 142
Methyl tert-butyl ether	5.00	5.10		ug/L		102	61 - 131
2-Butanone (MEK)	25.0	23.5		ug/L		94	37 - 150
trans-1,2-Dichloroethene	5.00	5.47		ug/L		109	69 - 121
1,1-Dichloroethane	5.00	5.16		ug/L		103	74 - 120
2,2-Dichloropropane	5.00	4.48		ug/L		90	55 - 140
cis-1,2-Dichloroethene	5.00	5.45		ug/L		109	72 - 120
Chlorobromomethane	5.00	5.23		ug/L		105	79 - 121
Chloroform	5.00	5.19		ug/L		104	75 - 120
1,1,1-Trichloroethane	5.00	5.19		ug/L		104	70 - 121
Carbon tetrachloride	5.00	5.28		ug/L		106	66 - 130
1,1-Dichloropropene	5.00	5.15		ug/L		103	72 - 125
Benzene	5.00	5.16		ug/L		103	80 - 120
1,2-Dichloroethane	5.00	5.06		ug/L		101	74 - 127
Trichloroethene	5.00	5.57		ug/L		111	72 - 120
1,2-Dichloropropane	5.00	4.79		ug/L		96	69 - 130
4-Methyl-2-pentanone (MIBK)	25.0	22.1		ug/L		88	63 - 137
Dibromomethane	5.00	5.23		ug/L		105	65 - 141
Dichlorobromomethane	5.00	4.78		ug/L		96	74 - 131
cis-1,3-Dichloropropene	5.00	4.55		ug/L		91	77 - 131
Toluene	5.00	5.15		ug/L		103	80 - 126
trans-1,3-Dichloropropene	5.00	4.60		ug/L		92	71 - 138
1,1,2-Trichloroethane	5.00	4.90		ug/L		98	73 - 127
Tetrachloroethene	5.00	4.94		ug/L		99	75 - 124
1,3-Dichloropropane	5.00	4.70		ug/L		94	69 - 138
Chlorodibromomethane	5.00	4.87		ug/L		97	62 - 141
Ethylene Dibromide	5.00	5.16		ug/L		103	61 - 143
Chlorobenzene	5.00	5.10		ug/L		102	74 - 123
1,1,1,2-Tetrachloroethane	5.00	4.91		ug/L		98	69 - 127
Ethylbenzene	5.00	5.03		ug/L		101	80 - 124
m-Xylene & p-Xylene	5.00	5.01		ug/L		100	75 - 124
o-Xylene	5.00	5.03		ug/L		101	71 - 124
Styrene	5.00	4.88		ug/L		98	74 - 127
Bromoform	5.00	4.59		ug/L		92	48 - 127
Isopropylbenzene	5.00	4.94		ug/L		99	71 - 123
Bromobenzene	5.00	4.79		ug/L		96	74 - 130
1,1,2,2-Tetrachloroethane	5.00	4.29		ug/L		86	67 - 136
1,2,3-Trichloropropane	5.00	4.74		ug/L		95	67 - 135
N-Propylbenzene	5.00	4.77		ug/L		95	72 - 126

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

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

Lab Sample ID: LCS 580-420224/4
Matrix: Water
Analysis Batch: 420224

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Chlorotoluene	5.00	4.96		ug/L		99	73 - 120
4-Chlorotoluene	5.00	4.85		ug/L		97	75 - 124
1,3,5-Trimethylbenzene	5.00	4.79		ug/L		96	75 - 123
tert-Butylbenzene	5.00	4.85		ug/L		97	70 - 129
1,2,4-Trimethylbenzene	5.00	4.70		ug/L		94	71 - 127
sec-Butylbenzene	5.00	4.71		ug/L		94	75 - 126
4-Isopropyltoluene	5.00	4.87		ug/L		97	78 - 125
1,3-Dichlorobenzene	5.00	4.99		ug/L		100	72 - 125
1,4-Dichlorobenzene	5.00	4.85		ug/L		97	71 - 129
n-Butylbenzene	5.00	4.61		ug/L		92	69 - 127
1,2-Dichlorobenzene	5.00	4.94		ug/L		99	72 - 129
1,2-Dibromo-3-Chloropropane	5.00	4.21		ug/L		84	55 - 135
1,2,4-Trichlorobenzene	5.00	4.86		ug/L		97	60 - 130
Hexachlorobutadiene	5.00	4.96		ug/L		99	63 - 130
Naphthalene	5.00	4.85		ug/L		97	54 - 137
1,2,3-Trichlorobenzene	5.00	4.87		ug/L		97	60 - 136

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	101		80 - 120
4-Bromofluorobenzene (Surr)	101		80 - 120
1,2-Dichloroethane-d4 (Surr)	95		80 - 120

Lab Sample ID: LCSD 580-420224/5
Matrix: Water
Analysis Batch: 420224

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	4.90		ug/L		98	20 - 150	3	30
Chloromethane	5.00	4.15		ug/L		83	32 - 150	5	33
Vinyl chloride	5.00	4.64		ug/L		93	41 - 150	2	32
Bromomethane	5.00	4.46		ug/L		89	51 - 148	2	35
Chloroethane	5.00	4.75		ug/L		95	54 - 140	4	33
Carbon disulfide	5.00	5.87		ug/L		117	54 - 142	4	34
Trichlorofluoromethane	5.00	5.00		ug/L		100	60 - 132	3	32
1,1-Dichloroethene	5.00	5.87		ug/L		117	60 - 129	1	29
Acetone	25.0	25.3		ug/L		101	49 - 150	4	24
Methylene Chloride	5.00	5.23		ug/L		105	40 - 142	2	25
Methyl tert-butyl ether	5.00	5.03		ug/L		101	61 - 131	1	27
2-Butanone (MEK)	25.0	24.3		ug/L		97	37 - 150	3	35
trans-1,2-Dichloroethene	5.00	5.22		ug/L		104	69 - 121	5	27
1,1-Dichloroethane	5.00	4.92		ug/L		98	74 - 120	5	26
2,2-Dichloropropane	5.00	4.29		ug/L		86	55 - 140	4	31
cis-1,2-Dichloroethene	5.00	5.35		ug/L		107	72 - 120	2	22
Chlorobromomethane	5.00	5.25		ug/L		105	79 - 121	0	20
Chloroform	5.00	4.94		ug/L		99	75 - 120	5	21
1,1,1-Trichloroethane	5.00	5.09		ug/L		102	70 - 121	2	24
Carbon tetrachloride	5.00	5.02		ug/L		100	66 - 130	5	24

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

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

Lab Sample ID: LCSD 580-420224/5
Matrix: Water
Analysis Batch: 420224

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-Dichloropropene	5.00	5.01		ug/L		100	72 - 125	3	23
Benzene	5.00	5.01		ug/L		100	80 - 120	3	22
1,2-Dichloroethane	5.00	4.68		ug/L		94	74 - 127	8	21
Trichloroethene	5.00	5.08		ug/L		102	72 - 120	9	22
1,2-Dichloropropane	5.00	4.71		ug/L		94	69 - 130	2	22
4-Methyl-2-pentanone (MIBK)	25.00	21.5		ug/L		86	63 - 137	2	26
Dibromomethane	5.00	5.01		ug/L		100	65 - 141	4	22
Dichlorobromomethane	5.00	4.66		ug/L		93	74 - 131	3	21
cis-1,3-Dichloropropene	5.00	4.37		ug/L		87	77 - 131	4	24
Toluene	5.00	4.89		ug/L		98	80 - 126	5	20
trans-1,3-Dichloropropene	5.00	4.34		ug/L		87	71 - 138	6	26
1,1,2-Trichloroethane	5.00	4.81		ug/L		96	73 - 127	2	22
Tetrachloroethene	5.00	4.84		ug/L		97	75 - 124	2	20
1,3-Dichloropropane	5.00	4.56		ug/L		91	69 - 138	3	19
Chlorodibromomethane	5.00	4.76		ug/L		95	62 - 141	2	22
Ethylene Dibromide	5.00	4.97		ug/L		99	61 - 143	4	22
Chlorobenzene	5.00	4.90		ug/L		98	74 - 123	4	21
1,1,1,2-Tetrachloroethane	5.00	4.81		ug/L		96	69 - 127	2	22
Ethylbenzene	5.00	4.84		ug/L		97	80 - 124	4	22
m-Xylene & p-Xylene	5.00	4.72		ug/L		94	75 - 124	6	22
o-Xylene	5.00	4.77		ug/L		95	71 - 124	5	23
Styrene	5.00	4.71		ug/L		94	74 - 127	4	22
Bromoform	5.00	4.44		ug/L		89	48 - 127	3	23
Isopropylbenzene	5.00	4.76		ug/L		95	71 - 123	4	23
Bromobenzene	5.00	4.72		ug/L		94	74 - 130	1	23
1,1,2,2-Tetrachloroethane	5.00	4.41		ug/L		88	67 - 136	3	24
1,2,3-Trichloropropane	5.00	4.85		ug/L		97	67 - 135	2	25
N-Propylbenzene	5.00	4.65		ug/L		93	72 - 126	3	20
2-Chlorotoluene	5.00	4.97		ug/L		99	73 - 120	0	22
4-Chlorotoluene	5.00	4.75		ug/L		95	75 - 124	2	23
1,3,5-Trimethylbenzene	5.00	4.68		ug/L		94	75 - 123	2	23
tert-Butylbenzene	5.00	4.75		ug/L		95	70 - 129	2	24
1,2,4-Trimethylbenzene	5.00	4.65		ug/L		93	71 - 127	1	23
sec-Butylbenzene	5.00	4.66		ug/L		93	75 - 126	1	23
4-Isopropyltoluene	5.00	4.79		ug/L		96	78 - 125	2	24
1,3-Dichlorobenzene	5.00	4.86		ug/L		97	72 - 125	3	22
1,4-Dichlorobenzene	5.00	4.82		ug/L		96	71 - 129	1	22
n-Butylbenzene	5.00	4.58		ug/L		92	69 - 127	1	24
1,2-Dichlorobenzene	5.00	4.88		ug/L		98	72 - 129	1	22
1,2-Dibromo-3-Chloropropane	5.00	4.37		ug/L		87	55 - 135	4	29
1,2,4-Trichlorobenzene	5.00	4.83		ug/L		97	60 - 130	1	26
Hexachlorobutadiene	5.00	4.85		ug/L		97	63 - 130	2	26
Naphthalene	5.00	4.75		ug/L		95	54 - 137	2	28
1,2,3-Trichlorobenzene	5.00	4.82		ug/L		96	60 - 136	1	28

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
Toluene-d8 (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	101		80 - 120

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QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

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

Lab Sample ID: LCSD 580-420224/5
Matrix: Water
Analysis Batch: 420224

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

<i>Surrogate</i>	<i>%Recovery</i>	<i>LCSD Qualifier</i>	<i>LCSD Limits</i>
4-Bromofluorobenzene (Surr)	101		80 - 120
1,2-Dichloroethane-d4 (Surr)	96		80 - 120

Lab Sample ID: 580-124438-8 MS
Matrix: Water
Analysis Batch: 420224

Client Sample ID: PA-31-030723
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Dichlorodifluoromethane	ND		5.00	6.44		ug/L		129	20 - 150
Chloromethane	ND		5.00	5.02		ug/L		100	32 - 150
Vinyl chloride	ND		5.00	5.80		ug/L		116	41 - 150
Bromomethane	ND		5.00	4.45		ug/L		89	51 - 148
Chloroethane	ND		5.00	5.97		ug/L		119	54 - 140
Carbon disulfide	ND	F1	5.00	7.38	F1	ug/L		148	54 - 142
Trichlorofluoromethane	0.12	J	5.00	6.32		ug/L		124	60 - 132
1,1-Dichloroethene	0.94	F1	5.00	8.15	F1	ug/L		144	60 - 129
Acetone	ND		25.0	25.5		ug/L		102	49 - 150
Methylene Chloride	ND		5.00	6.61		ug/L		132	40 - 142
Methyl tert-butyl ether	ND		5.00	5.43		ug/L		109	61 - 131
2-Butanone (MEK)	ND		25.0	25.3		ug/L		101	37 - 150
trans-1,2-Dichloroethene	ND	F1	5.00	6.52	F1	ug/L		130	69 - 121
1,1-Dichloroethane	0.41	F1	5.00	6.47	F1	ug/L		121	74 - 120
2,2-Dichloropropane	ND		5.00	4.47		ug/L		89	55 - 140
cis-1,2-Dichloroethene	ND	F1	5.00	6.18	F1	ug/L		124	72 - 120
Chlorobromomethane	ND		5.00	5.97		ug/L		119	79 - 121
Chloroform	0.14	J F1	5.00	6.18	F1	ug/L		121	75 - 120
1,1,1-Trichloroethane	0.23	F1	5.00	6.48	F1	ug/L		125	70 - 121
Carbon tetrachloride	ND		5.00	6.26		ug/L		125	66 - 130
1,1-Dichloropropene	ND		5.00	6.13		ug/L		123	72 - 125
Benzene	ND		5.00	5.97		ug/L		119	80 - 120
1,2-Dichloroethane	ND		5.00	5.43		ug/L		109	74 - 127
Trichloroethene	0.086	J F1	5.00	6.19	F1	ug/L		122	72 - 120
1,2-Dichloropropane	ND		5.00	5.55		ug/L		111	69 - 130
4-Methyl-2-pentanone (MIBK)	ND		25.0	22.8		ug/L		91	63 - 137
Dibromomethane	ND		5.00	5.72		ug/L		114	65 - 141
Dichlorobromomethane	ND		5.00	5.42		ug/L		108	74 - 131
cis-1,3-Dichloropropene	ND		5.00	4.92		ug/L		98	77 - 131
Toluene	ND		5.00	6.02		ug/L		120	80 - 126
trans-1,3-Dichloropropene	ND		5.00	4.81		ug/L		96	71 - 138
1,1,2-Trichloroethane	ND		5.00	5.41		ug/L		108	73 - 127
Tetrachloroethene	0.18	J	5.00	6.05		ug/L		117	75 - 124
1,3-Dichloropropane	ND		5.00	5.17		ug/L		103	69 - 138
Chlorodibromomethane	ND		5.00	5.34		ug/L		107	62 - 141
Ethylene Dibromide	ND		5.00	5.49		ug/L		110	61 - 143
Chlorobenzene	ND		5.00	5.89		ug/L		118	74 - 123
1,1,1,2-Tetrachloroethane	ND		5.00	5.59		ug/L		112	69 - 127
Ethylbenzene	ND		5.00	5.82		ug/L		116	80 - 124
m-Xylene & p-Xylene	ND		5.00	5.70		ug/L		114	75 - 124

QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

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

Lab Sample ID: 580-124438-8 MSD

Client Sample ID: PA-31-030723

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 420224

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier		Added	Result				Qualifier		Limits
trans-1,2-Dichloroethene	ND	F1	5.00	6.48	F1	ug/L		130	69 - 121	1	27
1,1-Dichloroethane	0.41	F1	5.00	6.33		ug/L		118	74 - 120	2	26
2,2-Dichloropropane	ND		5.00	4.43		ug/L		89	55 - 140	1	31
cis-1,2-Dichloroethene	ND	F1	5.00	6.11	F1	ug/L		122	72 - 120	1	22
Chlorobromomethane	ND		5.00	5.74		ug/L		115	79 - 121	4	20
Chloroform	0.14	J F1	5.00	6.02		ug/L		117	75 - 120	3	21
1,1,1-Trichloroethane	0.23	F1	5.00	6.32	F1	ug/L		122	70 - 121	2	24
Carbon tetrachloride	ND		5.00	6.11		ug/L		122	66 - 130	2	24
1,1-Dichloropropene	ND		5.00	5.89		ug/L		118	72 - 125	4	23
Benzene	ND		5.00	5.81		ug/L		116	80 - 120	3	22
1,2-Dichloroethane	ND		5.00	5.33		ug/L		107	74 - 127	2	21
Trichloroethene	0.086	J F1	5.00	5.96		ug/L		118	72 - 120	4	22
1,2-Dichloropropane	ND		5.00	5.35		ug/L		107	69 - 130	4	22
4-Methyl-2-pentanone (MIBK)	ND		25.0	21.7		ug/L		87	63 - 137	5	26
Dibromomethane	ND		5.00	5.54		ug/L		111	65 - 141	3	22
Dichlorobromomethane	ND		5.00	5.29		ug/L		106	74 - 131	2	21
cis-1,3-Dichloropropene	ND		5.00	4.82		ug/L		96	77 - 131	2	24
Toluene	ND		5.00	5.83		ug/L		117	80 - 126	3	20
trans-1,3-Dichloropropene	ND		5.00	4.69		ug/L		94	71 - 138	3	26
1,1,2-Trichloroethane	ND		5.00	5.23		ug/L		105	73 - 127	3	22
Tetrachloroethene	0.18	J	5.00	5.99		ug/L		116	75 - 124	1	20
1,3-Dichloropropane	ND		5.00	5.04		ug/L		101	69 - 138	2	19
Chlorodibromomethane	ND		5.00	5.09		ug/L		102	62 - 141	5	22
Ethylene Dibromide	ND		5.00	5.32		ug/L		106	61 - 143	3	22
Chlorobenzene	ND		5.00	5.76		ug/L		115	74 - 123	2	21
1,1,1,2-Tetrachloroethane	ND		5.00	5.47		ug/L		109	69 - 127	2	22
Ethylbenzene	ND		5.00	5.68		ug/L		114	80 - 124	2	22
m-Xylene & p-Xylene	ND		5.00	5.58		ug/L		112	75 - 124	2	22
o-Xylene	ND		5.00	5.63		ug/L		113	71 - 124	2	23
Styrene	ND		5.00	5.34		ug/L		107	74 - 127	3	22
Bromoform	ND		5.00	4.69		ug/L		94	48 - 127	0	23
Isopropylbenzene	ND		5.00	5.64		ug/L		113	71 - 123	3	23
Bromobenzene	ND		5.00	5.36		ug/L		107	74 - 130	2	23
1,1,1,2,2-Tetrachloroethane	ND		5.00	4.75		ug/L		95	67 - 136	3	24
1,2,3-Trichloropropane	ND		5.00	4.94		ug/L		99	67 - 135	4	25
N-Propylbenzene	ND		5.00	5.62		ug/L		112	72 - 126	1	20
2-Chlorotoluene	ND		5.00	5.76		ug/L		115	73 - 120	0	22
4-Chlorotoluene	ND		5.00	5.44		ug/L		109	75 - 124	2	23
1,3,5-Trimethylbenzene	ND		5.00	5.50		ug/L		110	75 - 123	2	23
tert-Butylbenzene	ND		5.00	5.70		ug/L		114	70 - 129	2	24
1,2,4-Trimethylbenzene	ND		5.00	5.44		ug/L		109	71 - 127	2	23
sec-Butylbenzene	ND		5.00	5.57		ug/L		111	75 - 126	0	23
4-Isopropyltoluene	ND		5.00	5.66		ug/L		113	78 - 125	2	24
1,3-Dichlorobenzene	ND		5.00	5.55		ug/L		111	72 - 125	1	22
1,4-Dichlorobenzene	ND		5.00	5.56		ug/L		111	71 - 129	1	22
n-Butylbenzene	ND		5.00	5.38		ug/L		108	69 - 127	1	24
1,2-Dichlorobenzene	ND		5.00	5.50		ug/L		110	72 - 129	2	22
1,2-Dibromo-3-Chloropropane	ND		5.00	4.18		ug/L		84	55 - 135	2	29
1,2,4-Trichlorobenzene	ND		5.00	5.33		ug/L		107	60 - 130	0	26

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QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

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

Lab Sample ID: 580-124438-8 MSD
Matrix: Water
Analysis Batch: 420224

Client Sample ID: PA-31-030723
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexachlorobutadiene	ND		5.00	5.75		ug/L		115	63 - 130	1	26
Naphthalene	ND		5.00	4.93		ug/L		99	54 - 137	3	28
1,2,3-Trichlorobenzene	ND		5.00	5.24		ug/L		105	60 - 136	2	28
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
Toluene-d8 (Surr)	99		80 - 120								
Dibromofluoromethane (Surr)	100		80 - 120								
4-Bromofluorobenzene (Surr)	100		80 - 120								
1,2-Dichloroethane-d4 (Surr)	95		80 - 120								

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 320-660402/12
Matrix: Water
Analysis Batch: 660402

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			03/13/23 15:32	1

Lab Sample ID: LCS 320-660402/13
Matrix: Water
Analysis Batch: 660402

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	48.2		ug/L		97	85 - 115

Lab Sample ID: MRL 320-660402/11
Matrix: Water
Analysis Batch: 660402

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	3.61	J	ug/L		90	75 - 125

Lab Sample ID: 580-124438-8 MS
Matrix: Water
Analysis Batch: 660402

Client Sample ID: PA-31-030723
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	ND		49.9	53.7		ug/L		108	80 - 120

Lab Sample ID: 580-124438-8 MSD
Matrix: Water
Analysis Batch: 660402

Client Sample ID: PA-31-030723
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		49.9	47.3		ug/L		95	80 - 120	13	20

QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 580-420845/3
Matrix: Water
Analysis Batch: 420845

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			03/18/23 19:02	1

Lab Sample ID: LCS 580-420845/4
Matrix: Water
Analysis Batch: 420845

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	51.9		mg/L		104	90 - 110

Lab Sample ID: LCSD 580-420845/5
Matrix: Water
Analysis Batch: 420845

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	51.9		mg/L		104	90 - 110	0	15

Lab Sample ID: 580-124438-8 MS
Matrix: Water
Analysis Batch: 420845

Client Sample ID: PA-31-030723
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5.8	F1	50.0	62.8	F1	mg/L		114	90 - 110

Lab Sample ID: 580-124438-8 MSD
Matrix: Water
Analysis Batch: 420845

Client Sample ID: PA-31-030723
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	5.8	F1	50.0	62.8	F1	mg/L		114	90 - 110	0	15

Lab Chronicle

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Client Sample ID: TB-030623-A

Lab Sample ID: 580-124438-1

Date Collected: 03/06/23 00:01

Matrix: Water

Date Received: 03/08/23 15:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420023	JBT	EET SEA	03/10/23 00:15

Client Sample ID: MWA-82-030623

Lab Sample ID: 580-124438-2

Date Collected: 03/06/23 09:31

Matrix: Water

Date Received: 03/08/23 15:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420030	JBT	EET SEA	03/10/23 04:52
Total/NA	Analysis	314.0		5	660402	AP1	EET SAC	03/13/23 18:13
Total/NA	Analysis	300.0		1	420845	CA	EET SEA	03/18/23 19:37

Client Sample ID: MWA-41-030623

Lab Sample ID: 580-124438-3

Date Collected: 03/06/23 10:22

Matrix: Water

Date Received: 03/08/23 15:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420030	JBT	EET SEA	03/10/23 05:15
Total/NA	Analysis	314.0		1	660402	AP1	EET SAC	03/13/23 19:06
Total/NA	Analysis	300.0		1	420845	CA	EET SEA	03/18/23 19:49

Client Sample ID: MWA-81i-030623

Lab Sample ID: 580-124438-4

Date Collected: 03/06/23 11:03

Matrix: Water

Date Received: 03/08/23 15:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420030	JBT	EET SEA	03/10/23 05:39
Total/NA	Analysis	314.0		1	660402	AP1	EET SAC	03/13/23 19:24
Total/NA	Analysis	300.0		1	420845	CA	EET SEA	03/18/23 20:01

Client Sample ID: PA-44i-030623

Lab Sample ID: 580-124438-5

Date Collected: 03/06/23 12:00

Matrix: Water

Date Received: 03/08/23 15:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420030	JBT	EET SEA	03/10/23 06:03
Total/NA	Analysis	314.0		1	660402	AP1	EET SAC	03/13/23 19:42
Total/NA	Analysis	300.0		1	420845	CA	EET SEA	03/18/23 20:24

Client Sample ID: RB-01-030723

Lab Sample ID: 580-124438-6

Date Collected: 03/07/23 07:30

Matrix: Water

Date Received: 03/08/23 15:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420030	JBT	EET SEA	03/10/23 02:54
Total/NA	Analysis	314.0		1	660402	AP1	EET SAC	03/13/23 20:00

Eurofins Seattle

Lab Chronicle

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Client Sample ID: RB-01-030723

Lab Sample ID: 580-124438-6

Date Collected: 03/07/23 07:30

Matrix: Water

Date Received: 03/08/23 15:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	420845	CA	EET SEA	03/18/23 20:36

Client Sample ID: PA-32i-030723

Lab Sample ID: 580-124438-7

Date Collected: 03/07/23 08:42

Matrix: Water

Date Received: 03/08/23 15:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420224	ITR	EET SEA	03/14/23 04:50
Total/NA	Analysis	314.0		10	660402	AP1	EET SAC	03/13/23 20:18
Total/NA	Analysis	300.0		100	420845	CA	EET SEA	03/18/23 20:48

Client Sample ID: PA-31-030723

Lab Sample ID: 580-124438-8

Date Collected: 03/07/23 10:31

Matrix: Water

Date Received: 03/08/23 15:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420224	ITR	EET SEA	03/14/23 05:12
Total/NA	Analysis	314.0		1	660402	AP1	EET SAC	03/13/23 20:36
Total/NA	Analysis	300.0		1	420845	CA	EET SEA	03/18/23 21:23

Client Sample ID: PA-08-030723

Lab Sample ID: 580-124438-9

Date Collected: 03/07/23 08:30

Matrix: Water

Date Received: 03/08/23 15:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420224	ITR	EET SEA	03/14/23 05:34
Total/NA	Analysis	314.0		5	660402	AP1	EET SAC	03/13/23 21:29
Total/NA	Analysis	300.0		100	420845	CA	EET SEA	03/18/23 21:58

Client Sample ID: PA-09-030723

Lab Sample ID: 580-124438-10

Date Collected: 03/07/23 10:15

Matrix: Water

Date Received: 03/08/23 15:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420224	ITR	EET SEA	03/14/23 05:55
Total/NA	Analysis	314.0		2	660402	AP1	EET SAC	03/13/23 22:23
Total/NA	Analysis	300.0		100	420845	CA	EET SEA	03/18/23 22:33

Client Sample ID: PA-03-030723

Lab Sample ID: 580-124438-11

Date Collected: 03/07/23 12:55

Matrix: Water

Date Received: 03/08/23 15:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420224	ITR	EET SEA	03/14/23 06:17
Total/NA	Analysis	314.0		2	660402	AP1	EET SAC	03/13/23 22:41

Eurofins Seattle

Lab Chronicle

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Client Sample ID: PA-03-030723

Lab Sample ID: 580-124438-11

Date Collected: 03/07/23 12:55

Matrix: Water

Date Received: 03/08/23 15:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	420845	CA	EET SEA	03/18/23 22:45

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
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Laboratory: Eurofins Seattle

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

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4167	07-07-23

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
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124438-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-124438-1	TB-030623-A	Water	03/06/23 00:01	03/08/23 15:25
580-124438-2	MWA-82-030623	Water	03/06/23 09:31	03/08/23 15:25
580-124438-3	MWA-41-030623	Water	03/06/23 10:22	03/08/23 15:25
580-124438-4	MWA-81i-030623	Water	03/06/23 11:03	03/08/23 15:25
580-124438-5	PA-44i-030623	Water	03/06/23 12:00	03/08/23 15:25
580-124438-6	RB-01-030723	Water	03/07/23 07:30	03/08/23 15:25
580-124438-7	PA-32i-030723	Water	03/07/23 08:42	03/08/23 15:25
580-124438-8	PA-31-030723	Water	03/07/23 10:31	03/08/23 15:25
580-124438-9	PA-08-030723	Water	03/07/23 08:30	03/08/23 15:25
580-124438-10	PA-09-030723	Water	03/07/23 10:15	03/08/23 15:25
580-124438-11	PA-03-030723	Water	03/07/23 12:55	03/08/23 15:25

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

Chain of Custody Record



Client Information
 Client Contact: Avey Soplata, Andrew Gardner, and Sarah Seekins
 Company: ERM-West
 Address: 1050 SW 6th Avenue Suite 1650
 City: Portland
 State: OR, Zip: 97204
 Phone: [Redacted]
 Email: avey.soplata@erm.com, andrew.gardner@erm.com and sarah.seekins@erm.com
 Project Name: Arkema - Q1 2023 Groundwater event
 Site: [Redacted]

Sampler: Scott Terry / Madison Rosen
 Lab PI: [Redacted]
 Phone: [Redacted]
 CRUZ, Sheri L
 E-Mail: sheri.cruz@testamericainc.com

Due Date Requested: [Redacted]
TAT Requested (days): 15BD
PO #: PN 0682894.207
WO #: [Redacted]
Project #: 0682894
SSOW#: [Redacted]

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Seawater, Other)	Field Filtered Sample (Yes or No)		8260C regular level standard VOA list-Seattle		8260C LL - Standard VOA list-Seattle		314 Perchlorate	Total Number of Containers	Special Instructions/Note:
					Perform MS/MSD (Yes or No)	Field Filtered Sample (Yes or No)	A	N	A	N			
TB-030623-A	3/6/23		G	Water	X	X	X	X	X	X	2		
MWA-82-030623		0931		Water	X	X	X	X	X	X	5		
MWA-41-030623		1022		Water	X	X	X	X	X	X	5		
MWA-81-030623		1103		Water	X	X	X	X	X	X	5		
PA-44-030623		1200		Water	X	X	X	X	X	X	5		
RB-01-030723	3/17/23	0730	G	Water	X	X	X	X	X	X	5		
PA-32i-030723		0842		Water	X	X	X	X	X	X	5		
PA-31-030723		1031		Water	X	X	X	X	X	X	5		
PA-08-030723		0830		Water	X	X	X	X	X	X	15		
PA-09-030723		1015		Water	X	X	X	X	X	X	5		
PA-03-030723		1255		Water	X	X	X	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 Dispose By Lab Archive For _____ Months

Special Instructions/QC Requirements: please run at lowest dilution possible for ND.

Empty Kit Relinquished by: [Signature] Date: 3/8/23
 Relinquished by: [Signature] Date/Time: [Redacted]
 Relinquished by: [Signature] Date/Time: [Redacted]

Company: ERM
 Received by: [Signature] Date/Time: [Redacted]
 Received by: [Signature] Date/Time: [Redacted]
 Received by: [Signature] Date/Time: [Redacted]

Custody Seal No.: [Redacted] Cooler Temperature(s) °C and Other Remarks: 0.1

Login Sample Receipt Checklist

Client: ERM-West

Job Number: 580-124438-1

Login Number: 124438

List Number: 1

Creator: O'Connell, Jason I

List Source: Eurofins Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Login Sample Receipt Checklist

Client: ERM-West

Job Number: 580-124438-1

Login Number: 124438

List Number: 2

Creator: Cahill, Nicholas P

List Source: Eurofins Sacramento

List Creation: 03/11/23 12:05 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
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	2.5c
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?	False	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	No headspace left for 314
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



ANALYTICAL REPORT

PREPARED FOR

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

Generated 4/5/2023 3:38:12 PM Revision 1

JOB DESCRIPTION

Arkema - Q1 2023 Groundwater Event-I

JOB NUMBER

580-124498-1

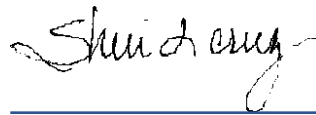
Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

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



Generated
4/5/2023 3:38:12 PM
Revision 1

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



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Case Narrative

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Job ID: 580-124498-1

Laboratory: Eurofins Seattle

Narrative

Job Narrative 580-124498-1

Revised report 4/5/23 to fix sample 11 name. Sample on COC was scribbled on part of name and hard to read.

Receipt

The samples were received on 3/9/2023 12:35 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 1.1° C.

Receipt Exceptions

Containers received in west Sacramento for samples 2-13 do not have sufficient headspace for 314 analysis. All containers received were completely full. PA-25d-030823 (580-124498-2), PA-15i-030823 (580-124498-3), PA-26d-030823 (580-124498-4), PA-16i-030823 (580-124498-5), Dup-01-030823 (580-124498-6), PA-23d-030823 (580-124498-7), PA-24d-030823 (580-124498-8), PA-22d-030823 (580-124498-9), PA-04-030823 (580-124498-10), PA-17iR-030823 (580-124498-11), PA-27d-030823 (580-124498-12) and PA-10i-030823 (580-124498-13)

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-420560 recovered above the upper control limit for Dibromomethane and Bromoform. 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 580-420560 recovered outside control limits for the following analyte(s): Chloromethane. Chloromethane has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method 8260D: The laboratory control sample duplicate (LCSD) for analytical batch 580-420560 recovered outside control limits for the following analytes: Dibromomethane. These analytes were biased high in the LCSD and were not detected in the associated samples; therefore, the data have been reported.

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

General Chemistry

Method 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 580-420835 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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 320-660930 were diluted. In order to protect instrumentation, the samples were diluted. Elevated reporting limits (RLs) are provided. PA-15i-030823 (580-124498-3), PA-16i-030823 (580-124498-5), Dup-01-030823 (580-124498-6), PA-23d-030823 (580-124498-7), PA-24d-030823 (580-124498-8), PA-04-030823 (580-124498-10), PA-17iR-030823 (580-124498-11), PA-27d-030823 (580-124498-12) and PA-10i-030823 (580-124498-13)

Method 314.0: The following sample in analytical batch 320-660930 was diluted to bring the concentration of target analytes within the calibration range: PA-22d-030823 (580-124498-9). 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.

VOA Prep

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

Definitions/Glossary

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

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 Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: TB-030823-A

Lab Sample ID: 580-124498-1

Date Collected: 03/08/23 00:01

Matrix: Water

Date Received: 03/09/23 12:35

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			03/14/23 00:52	1
Chloromethane	ND		0.50	0.14	ug/L			03/14/23 00:52	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/14/23 00:52	1
Bromomethane	ND		0.50	0.13	ug/L			03/14/23 00:52	1
Chloroethane	ND		0.50	0.096	ug/L			03/14/23 00:52	1
Carbon disulfide	ND		0.30	0.083	ug/L			03/14/23 00:52	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/14/23 00:52	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			03/14/23 00:52	1
Acetone	ND		10	3.1	ug/L			03/14/23 00:52	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/14/23 00:52	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/14/23 00:52	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/14/23 00:52	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			03/14/23 00:52	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			03/14/23 00:52	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/14/23 00:52	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			03/14/23 00:52	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/14/23 00:52	1
Chloroform	ND		0.20	0.030	ug/L			03/14/23 00:52	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			03/14/23 00:52	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/14/23 00:52	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/14/23 00:52	1
Benzene	ND		0.20	0.030	ug/L			03/14/23 00:52	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/14/23 00:52	1
Trichloroethene	ND		0.20	0.066	ug/L			03/14/23 00:52	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/14/23 00:52	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/14/23 00:52	1
Dibromomethane	ND		0.20	0.062	ug/L			03/14/23 00:52	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/14/23 00:52	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/14/23 00:52	1
Toluene	ND		0.20	0.050	ug/L			03/14/23 00:52	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/14/23 00:52	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/14/23 00:52	1
Tetrachloroethene	ND		0.24	0.084	ug/L			03/14/23 00:52	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/14/23 00:52	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/14/23 00:52	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/14/23 00:52	1
Chlorobenzene	ND		0.20	0.060	ug/L			03/14/23 00:52	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/14/23 00:52	1
Ethylbenzene	ND		0.20	0.030	ug/L			03/14/23 00:52	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			03/14/23 00:52	1
o-Xylene	ND		0.50	0.15	ug/L			03/14/23 00:52	1
Styrene	ND		1.0	0.19	ug/L			03/14/23 00:52	1
Bromoform	ND		0.50	0.16	ug/L			03/14/23 00:52	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/14/23 00:52	1
Bromobenzene	ND		0.20	0.038	ug/L			03/14/23 00:52	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/14/23 00:52	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/14/23 00:52	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/14/23 00:52	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			03/14/23 00:52	1

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Client Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: TB-030823-A

Lab Sample ID: 580-124498-1

Date Collected: 03/08/23 00:01

Matrix: Water

Date Received: 03/09/23 12:35

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			03/14/23 00:52	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/14/23 00:52	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/14/23 00:52	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/14/23 00:52	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/14/23 00:52	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/14/23 00:52	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 00:52	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 00:52	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/14/23 00:52	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			03/14/23 00:52	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/14/23 00:52	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/14/23 00:52	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/14/23 00:52	1
Naphthalene	ND		1.0	0.22	ug/L			03/14/23 00:52	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/14/23 00:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		03/14/23 00:52	1
Dibromofluoromethane (Surr)	100		80 - 120		03/14/23 00:52	1
4-Bromofluorobenzene (Surr)	103		80 - 120		03/14/23 00:52	1
1,2-Dichloroethane-d4 (Surr)	98		80 - 120		03/14/23 00:52	1

Client Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: PA-25d-030823

Lab Sample ID: 580-124498-2

Date Collected: 03/08/23 07:20

Matrix: Water

Date Received: 03/09/23 12:35

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			03/14/23 01:57	1
Chloromethane	ND		0.50	0.14	ug/L			03/14/23 01:57	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/14/23 01:57	1
Bromomethane	ND		0.50	0.13	ug/L			03/14/23 01:57	1
Chloroethane	ND		0.50	0.096	ug/L			03/14/23 01:57	1
Carbon disulfide	ND		0.30	0.083	ug/L			03/14/23 01:57	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/14/23 01:57	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			03/14/23 01:57	1
Acetone	ND		10	3.1	ug/L			03/14/23 01:57	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/14/23 01:57	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/14/23 01:57	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/14/23 01:57	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			03/14/23 01:57	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			03/14/23 01:57	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/14/23 01:57	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			03/14/23 01:57	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/14/23 01:57	1
Chloroform	ND		0.20	0.030	ug/L			03/14/23 01:57	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			03/14/23 01:57	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/14/23 01:57	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/14/23 01:57	1
Benzene	ND		0.20	0.030	ug/L			03/14/23 01:57	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/14/23 01:57	1
Trichloroethene	ND		0.20	0.066	ug/L			03/14/23 01:57	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/14/23 01:57	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/14/23 01:57	1
Dibromomethane	ND		0.20	0.062	ug/L			03/14/23 01:57	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/14/23 01:57	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/14/23 01:57	1
Toluene	ND		0.20	0.050	ug/L			03/14/23 01:57	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/14/23 01:57	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/14/23 01:57	1
Tetrachloroethene	ND		0.24	0.084	ug/L			03/14/23 01:57	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/14/23 01:57	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/14/23 01:57	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/14/23 01:57	1
Chlorobenzene	ND		0.20	0.060	ug/L			03/14/23 01:57	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/14/23 01:57	1
Ethylbenzene	ND		0.20	0.030	ug/L			03/14/23 01:57	1
m-Xylene & p-Xylene	0.15	J	0.50	0.12	ug/L			03/14/23 01:57	1
o-Xylene	0.25	J	0.50	0.15	ug/L			03/14/23 01:57	1
Styrene	ND		1.0	0.19	ug/L			03/14/23 01:57	1
Bromoform	ND		0.50	0.16	ug/L			03/14/23 01:57	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/14/23 01:57	1
Bromobenzene	ND		0.20	0.038	ug/L			03/14/23 01:57	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/14/23 01:57	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/14/23 01:57	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/14/23 01:57	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			03/14/23 01:57	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: PA-25d-030823

Lab Sample ID: 580-124498-2

Date Collected: 03/08/23 07:20

Matrix: Water

Date Received: 03/09/23 12:35

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			03/14/23 01:57	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/14/23 01:57	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/14/23 01:57	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/14/23 01:57	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/14/23 01:57	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/14/23 01:57	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 01:57	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 01:57	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/14/23 01:57	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			03/14/23 01:57	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/14/23 01:57	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/14/23 01:57	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/14/23 01:57	1
Naphthalene	ND		1.0	0.22	ug/L			03/14/23 01:57	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/14/23 01:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		03/14/23 01:57	1
Dibromofluoromethane (Surr)	100		80 - 120		03/14/23 01:57	1
4-Bromofluorobenzene (Surr)	101		80 - 120		03/14/23 01:57	1
1,2-Dichloroethane-d4 (Surr)	96		80 - 120		03/14/23 01:57	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			03/15/23 13:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	11	F1	1.5	0.43	mg/L			03/17/23 16:31	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: PA-15i-030823

Lab Sample ID: 580-124498-3

Date Collected: 03/08/23 08:02

Matrix: Water

Date Received: 03/09/23 12:35

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			03/14/23 02:19	1
Chloromethane	0.14	J	0.50	0.14	ug/L			03/14/23 02:19	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/14/23 02:19	1
Bromomethane	ND		0.50	0.13	ug/L			03/14/23 02:19	1
Chloroethane	ND		0.50	0.096	ug/L			03/14/23 02:19	1
Carbon disulfide	ND		0.30	0.083	ug/L			03/14/23 02:19	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/14/23 02:19	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			03/14/23 02:19	1
Acetone	ND		10	3.1	ug/L			03/14/23 02:19	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/14/23 02:19	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/14/23 02:19	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/14/23 02:19	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			03/14/23 02:19	1
1,1-Dichloroethane	0.33		0.20	0.025	ug/L			03/14/23 02:19	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/14/23 02:19	1
cis-1,2-Dichloroethene	0.15	J	0.20	0.055	ug/L			03/14/23 02:19	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/14/23 02:19	1
Chloroform	ND		0.20	0.030	ug/L			03/14/23 02:19	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			03/14/23 02:19	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/14/23 02:19	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/14/23 02:19	1
Benzene	ND		0.20	0.030	ug/L			03/14/23 02:19	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/14/23 02:19	1
Trichloroethene	0.13	J	0.20	0.066	ug/L			03/14/23 02:19	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/14/23 02:19	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/14/23 02:19	1
Dibromomethane	ND		0.20	0.062	ug/L			03/14/23 02:19	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/14/23 02:19	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/14/23 02:19	1
Toluene	ND		0.20	0.050	ug/L			03/14/23 02:19	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/14/23 02:19	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/14/23 02:19	1
Tetrachloroethene	ND		0.24	0.084	ug/L			03/14/23 02:19	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/14/23 02:19	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/14/23 02:19	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/14/23 02:19	1
Chlorobenzene	ND		0.20	0.060	ug/L			03/14/23 02:19	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/14/23 02:19	1
Ethylbenzene	ND		0.20	0.030	ug/L			03/14/23 02:19	1
m-Xylene & p-Xylene	0.14	J	0.50	0.12	ug/L			03/14/23 02:19	1
o-Xylene	0.23	J	0.50	0.15	ug/L			03/14/23 02:19	1
Styrene	ND		1.0	0.19	ug/L			03/14/23 02:19	1
Bromoform	ND		0.50	0.16	ug/L			03/14/23 02:19	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/14/23 02:19	1
Bromobenzene	ND		0.20	0.038	ug/L			03/14/23 02:19	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/14/23 02:19	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/14/23 02:19	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/14/23 02:19	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			03/14/23 02:19	1

Eurolins Seattle

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: PA-15i-030823

Lab Sample ID: 580-124498-3

Date Collected: 03/08/23 08:02

Matrix: Water

Date Received: 03/09/23 12:35

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			03/14/23 02:19	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/14/23 02:19	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/14/23 02:19	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/14/23 02:19	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/14/23 02:19	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/14/23 02:19	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 02:19	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 02:19	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/14/23 02:19	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			03/14/23 02:19	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/14/23 02:19	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/14/23 02:19	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/14/23 02:19	1
Naphthalene	ND		1.0	0.22	ug/L			03/14/23 02:19	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/14/23 02:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		03/14/23 02:19	1
Dibromofluoromethane (Surr)	99		80 - 120		03/14/23 02:19	1
4-Bromofluorobenzene (Surr)	100		80 - 120		03/14/23 02:19	1
1,2-Dichloroethane-d4 (Surr)	95		80 - 120		03/14/23 02:19	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	10	ug/L			03/15/23 13:44	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	290		15	4.3	mg/L			03/17/23 17:41	10

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: PA-26d-030823

Lab Sample ID: 580-124498-4

Date Collected: 03/08/23 09:07

Matrix: Water

Date Received: 03/09/23 12:35

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			03/14/23 02:40	1
Chloromethane	ND		0.50	0.14	ug/L			03/14/23 02:40	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/14/23 02:40	1
Bromomethane	ND		0.50	0.13	ug/L			03/14/23 02:40	1
Chloroethane	ND		0.50	0.096	ug/L			03/14/23 02:40	1
Carbon disulfide	ND		0.30	0.083	ug/L			03/14/23 02:40	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/14/23 02:40	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			03/14/23 02:40	1
Acetone	ND		10	3.1	ug/L			03/14/23 02:40	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/14/23 02:40	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/14/23 02:40	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/14/23 02:40	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			03/14/23 02:40	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			03/14/23 02:40	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/14/23 02:40	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			03/14/23 02:40	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/14/23 02:40	1
Chloroform	ND		0.20	0.030	ug/L			03/14/23 02:40	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			03/14/23 02:40	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/14/23 02:40	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/14/23 02:40	1
Benzene	ND		0.20	0.030	ug/L			03/14/23 02:40	1
1,2-Dichloroethane	0.25		0.20	0.043	ug/L			03/14/23 02:40	1
Trichloroethene	ND		0.20	0.066	ug/L			03/14/23 02:40	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/14/23 02:40	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/14/23 02:40	1
Dibromomethane	ND		0.20	0.062	ug/L			03/14/23 02:40	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/14/23 02:40	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/14/23 02:40	1
Toluene	ND		0.20	0.050	ug/L			03/14/23 02:40	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/14/23 02:40	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/14/23 02:40	1
Tetrachloroethene	ND		0.24	0.084	ug/L			03/14/23 02:40	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/14/23 02:40	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/14/23 02:40	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/14/23 02:40	1
Chlorobenzene	ND		0.20	0.060	ug/L			03/14/23 02:40	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/14/23 02:40	1
Ethylbenzene	0.032	J	0.20	0.030	ug/L			03/14/23 02:40	1
m-Xylene & p-Xylene	0.19	J	0.50	0.12	ug/L			03/14/23 02:40	1
o-Xylene	0.32	J	0.50	0.15	ug/L			03/14/23 02:40	1
Styrene	ND		1.0	0.19	ug/L			03/14/23 02:40	1
Bromoform	ND		0.50	0.16	ug/L			03/14/23 02:40	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/14/23 02:40	1
Bromobenzene	ND		0.20	0.038	ug/L			03/14/23 02:40	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/14/23 02:40	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/14/23 02:40	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/14/23 02:40	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			03/14/23 02:40	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: PA-26d-030823

Lab Sample ID: 580-124498-4

Date Collected: 03/08/23 09:07

Matrix: Water

Date Received: 03/09/23 12:35

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			03/14/23 02:40	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/14/23 02:40	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/14/23 02:40	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/14/23 02:40	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/14/23 02:40	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/14/23 02:40	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 02:40	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 02:40	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/14/23 02:40	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			03/14/23 02:40	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/14/23 02:40	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/14/23 02:40	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/14/23 02:40	1
Naphthalene	ND		1.0	0.22	ug/L			03/14/23 02:40	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/14/23 02:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		03/14/23 02:40	1
Dibromofluoromethane (Surr)	99		80 - 120		03/14/23 02:40	1
4-Bromofluorobenzene (Surr)	101		80 - 120		03/14/23 02:40	1
1,2-Dichloroethane-d4 (Surr)	94		80 - 120		03/14/23 02:40	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			03/15/23 14:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	69		1.5	0.43	mg/L			03/17/23 17:53	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: PA-16i-030823

Lab Sample ID: 580-124498-5

Date Collected: 03/08/23 09:54

Matrix: Water

Date Received: 03/09/23 12:35

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			03/14/23 03:02	1
Chloromethane	ND		0.50	0.14	ug/L			03/14/23 03:02	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/14/23 03:02	1
Bromomethane	ND		0.50	0.13	ug/L			03/14/23 03:02	1
Chloroethane	ND		0.50	0.096	ug/L			03/14/23 03:02	1
Carbon disulfide	ND		0.30	0.083	ug/L			03/14/23 03:02	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/14/23 03:02	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			03/14/23 03:02	1
Acetone	ND		10	3.1	ug/L			03/14/23 03:02	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/14/23 03:02	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/14/23 03:02	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/14/23 03:02	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			03/14/23 03:02	1
1,1-Dichloroethane	0.31		0.20	0.025	ug/L			03/14/23 03:02	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/14/23 03:02	1
cis-1,2-Dichloroethene	0.24		0.20	0.055	ug/L			03/14/23 03:02	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/14/23 03:02	1
Chloroform	ND		0.20	0.030	ug/L			03/14/23 03:02	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			03/14/23 03:02	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/14/23 03:02	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/14/23 03:02	1
Benzene	ND		0.20	0.030	ug/L			03/14/23 03:02	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/14/23 03:02	1
Trichloroethene	0.071 J		0.20	0.066	ug/L			03/14/23 03:02	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/14/23 03:02	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/14/23 03:02	1
Dibromomethane	ND		0.20	0.062	ug/L			03/14/23 03:02	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/14/23 03:02	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/14/23 03:02	1
Toluene	ND		0.20	0.050	ug/L			03/14/23 03:02	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/14/23 03:02	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/14/23 03:02	1
Tetrachloroethene	ND		0.24	0.084	ug/L			03/14/23 03:02	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/14/23 03:02	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/14/23 03:02	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/14/23 03:02	1
Chlorobenzene	ND		0.20	0.060	ug/L			03/14/23 03:02	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/14/23 03:02	1
Ethylbenzene	ND		0.20	0.030	ug/L			03/14/23 03:02	1
m-Xylene & p-Xylene	0.14 J		0.50	0.12	ug/L			03/14/23 03:02	1
o-Xylene	0.23 J		0.50	0.15	ug/L			03/14/23 03:02	1
Styrene	ND		1.0	0.19	ug/L			03/14/23 03:02	1
Bromoform	ND		0.50	0.16	ug/L			03/14/23 03:02	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/14/23 03:02	1
Bromobenzene	ND		0.20	0.038	ug/L			03/14/23 03:02	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/14/23 03:02	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/14/23 03:02	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/14/23 03:02	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			03/14/23 03:02	1

Euromins Seattle

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: PA-16i-030823

Lab Sample ID: 580-124498-5

Date Collected: 03/08/23 09:54

Matrix: Water

Date Received: 03/09/23 12:35

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			03/14/23 03:02	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/14/23 03:02	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/14/23 03:02	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/14/23 03:02	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/14/23 03:02	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/14/23 03:02	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 03:02	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 03:02	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/14/23 03:02	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			03/14/23 03:02	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/14/23 03:02	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/14/23 03:02	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/14/23 03:02	1
Naphthalene	ND		1.0	0.22	ug/L			03/14/23 03:02	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/14/23 03:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		03/14/23 03:02	1
Dibromofluoromethane (Surr)	101		80 - 120		03/14/23 03:02	1
4-Bromofluorobenzene (Surr)	103		80 - 120		03/14/23 03:02	1
1,2-Dichloroethane-d4 (Surr)	95		80 - 120		03/14/23 03:02	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		40	20	ug/L			03/15/23 14:20	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	530		30	8.6	mg/L			03/17/23 18:16	20

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: Dup-01-030823

Lab Sample ID: 580-124498-6

Date Collected: 03/08/23 09:55

Matrix: Water

Date Received: 03/09/23 12:35

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			03/14/23 03:24	1
Chloromethane	0.15	J	0.50	0.14	ug/L			03/14/23 03:24	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/14/23 03:24	1
Bromomethane	ND		0.50	0.13	ug/L			03/14/23 03:24	1
Chloroethane	ND		0.50	0.096	ug/L			03/14/23 03:24	1
Carbon disulfide	ND		0.30	0.083	ug/L			03/14/23 03:24	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/14/23 03:24	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			03/14/23 03:24	1
Acetone	ND		10	3.1	ug/L			03/14/23 03:24	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/14/23 03:24	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/14/23 03:24	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/14/23 03:24	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			03/14/23 03:24	1
1,1-Dichloroethane	0.31		0.20	0.025	ug/L			03/14/23 03:24	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/14/23 03:24	1
cis-1,2-Dichloroethene	0.26		0.20	0.055	ug/L			03/14/23 03:24	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/14/23 03:24	1
Chloroform	ND		0.20	0.030	ug/L			03/14/23 03:24	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			03/14/23 03:24	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/14/23 03:24	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/14/23 03:24	1
Benzene	ND		0.20	0.030	ug/L			03/14/23 03:24	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/14/23 03:24	1
Trichloroethene	0.084	J	0.20	0.066	ug/L			03/14/23 03:24	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/14/23 03:24	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/14/23 03:24	1
Dibromomethane	ND		0.20	0.062	ug/L			03/14/23 03:24	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/14/23 03:24	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/14/23 03:24	1
Toluene	ND		0.20	0.050	ug/L			03/14/23 03:24	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/14/23 03:24	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/14/23 03:24	1
Tetrachloroethene	ND		0.24	0.084	ug/L			03/14/23 03:24	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/14/23 03:24	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/14/23 03:24	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/14/23 03:24	1
Chlorobenzene	ND		0.20	0.060	ug/L			03/14/23 03:24	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/14/23 03:24	1
Ethylbenzene	ND		0.20	0.030	ug/L			03/14/23 03:24	1
m-Xylene & p-Xylene	0.15	J	0.50	0.12	ug/L			03/14/23 03:24	1
o-Xylene	0.26	J	0.50	0.15	ug/L			03/14/23 03:24	1
Styrene	ND		1.0	0.19	ug/L			03/14/23 03:24	1
Bromoform	ND		0.50	0.16	ug/L			03/14/23 03:24	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/14/23 03:24	1
Bromobenzene	ND		0.20	0.038	ug/L			03/14/23 03:24	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/14/23 03:24	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/14/23 03:24	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/14/23 03:24	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			03/14/23 03:24	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: Dup-01-030823

Lab Sample ID: 580-124498-6

Date Collected: 03/08/23 09:55

Matrix: Water

Date Received: 03/09/23 12:35

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			03/14/23 03:24	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/14/23 03:24	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/14/23 03:24	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/14/23 03:24	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/14/23 03:24	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/14/23 03:24	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 03:24	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 03:24	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/14/23 03:24	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			03/14/23 03:24	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/14/23 03:24	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/14/23 03:24	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/14/23 03:24	1
Naphthalene	ND		1.0	0.22	ug/L			03/14/23 03:24	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/14/23 03:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		03/14/23 03:24	1
Dibromofluoromethane (Surr)	101		80 - 120		03/14/23 03:24	1
4-Bromofluorobenzene (Surr)	101		80 - 120		03/14/23 03:24	1
1,2-Dichloroethane-d4 (Surr)	96		80 - 120		03/14/23 03:24	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		40	20	ug/L			03/15/23 15:14	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	520		15	4.3	mg/L			03/17/23 18:40	10

Client Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: PA-23d-030823

Lab Sample ID: 580-124498-7

Date Collected: 03/08/23 11:37

Matrix: Water

Date Received: 03/09/23 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	ND		1.0	0.28	ug/L			03/16/23 19:14	1
Vinyl chloride	ND		1.0	0.22	ug/L			03/16/23 19:14	1
Bromomethane	ND		1.0	0.21	ug/L			03/16/23 19:14	1
Chloroethane	ND		1.0	0.35	ug/L			03/16/23 19:14	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			03/16/23 19:14	1
Carbon disulfide	ND		1.0	0.53	ug/L			03/16/23 19:14	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			03/16/23 19:14	1
Acetone	ND		15	3.2	ug/L			03/16/23 19:14	1
Methylene Chloride	ND		3.0	1.4	ug/L			03/16/23 19:14	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			03/16/23 19:14	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			03/16/23 19:14	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			03/16/23 19:14	1
2-Butanone (MEK)	ND		15	4.7	ug/L			03/16/23 19:14	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			03/16/23 19:14	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			03/16/23 19:14	1
Bromochloromethane	ND		1.0	0.29	ug/L			03/16/23 19:14	1
Chloroform	ND		1.0	0.26	ug/L			03/16/23 19:14	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			03/16/23 19:14	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			03/16/23 19:14	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			03/16/23 19:14	1
Benzene	ND		1.0	0.24	ug/L			03/16/23 19:14	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			03/16/23 19:14	1
Trichloroethene	ND		1.0	0.26	ug/L			03/16/23 19:14	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			03/16/23 19:14	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			03/16/23 19:14	1
Dibromomethane	ND	+	1.0	0.34	ug/L			03/16/23 19:14	1
Bromodichloromethane	ND		1.0	0.29	ug/L			03/16/23 19:14	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			03/16/23 19:14	1
Toluene	97		1.0	0.39	ug/L			03/16/23 19:14	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			03/16/23 19:14	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			03/16/23 19:14	1
Tetrachloroethene	ND		1.0	0.41	ug/L			03/16/23 19:14	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			03/16/23 19:14	1
Dibromochloromethane	ND		1.0	0.43	ug/L			03/16/23 19:14	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			03/16/23 19:14	1
Chlorobenzene	ND		1.0	0.44	ug/L			03/16/23 19:14	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			03/16/23 19:14	1
Ethylbenzene	ND		1.0	0.50	ug/L			03/16/23 19:14	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			03/16/23 19:14	1
o-Xylene	ND		1.0	0.39	ug/L			03/16/23 19:14	1
Styrene	ND		1.0	0.53	ug/L			03/16/23 19:14	1
Bromoform	ND		1.0	0.51	ug/L			03/16/23 19:14	1
Isopropylbenzene	ND		1.0	0.44	ug/L			03/16/23 19:14	1
Bromobenzene	ND		1.0	0.43	ug/L			03/16/23 19:14	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			03/16/23 19:14	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			03/16/23 19:14	1
N-Propylbenzene	ND		1.0	0.50	ug/L			03/16/23 19:14	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			03/16/23 19:14	1
4-Chlorotoluene	ND		1.0	0.38	ug/L			03/16/23 19:14	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: PA-23d-030823

Lab Sample ID: 580-124498-7

Date Collected: 03/08/23 11:37

Matrix: Water

Date Received: 03/09/23 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
t-Butylbenzene	ND		2.0	0.58	ug/L			03/16/23 19:14	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			03/16/23 19:14	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			03/16/23 19:14	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			03/16/23 19:14	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			03/16/23 19:14	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			03/16/23 19:14	1
n-Butylbenzene	ND		1.0	0.44	ug/L			03/16/23 19:14	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			03/16/23 19:14	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			03/16/23 19:14	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			03/16/23 19:14	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			03/16/23 19:14	1
Naphthalene	ND		3.0	0.93	ug/L			03/16/23 19:14	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			03/16/23 19:14	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			03/16/23 19:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	92		80 - 120		03/16/23 19:14	1
1,2-Dichloroethane-d4 (Surr)	108		80 - 120		03/16/23 19:14	1
4-Bromofluorobenzene (Surr)	96		80 - 120		03/16/23 19:14	1
Dibromofluoromethane (Surr)	108		80 - 120		03/16/23 19:14	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.53	ug/L			03/22/23 13:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120		03/22/23 13:31	1
1,2-Dichloroethane-d4 (Surr)	103		80 - 120		03/22/23 13:31	1
4-Bromofluorobenzene (Surr)	100		80 - 120		03/22/23 13:31	1
Dibromofluoromethane (Surr)	96		80 - 120		03/22/23 13:31	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		400	200	ug/L			03/15/23 15:32	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	17000		1500	430	mg/L			03/17/23 19:15	1000

Client Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: PA-24d-030823

Lab Sample ID: 580-124498-8

Date Collected: 03/08/23 12:28

Matrix: Water

Date Received: 03/09/23 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	ND		1.0	0.28	ug/L			03/16/23 19:38	1
Vinyl chloride	ND		1.0	0.22	ug/L			03/16/23 19:38	1
Bromomethane	ND		1.0	0.21	ug/L			03/16/23 19:38	1
Chloroethane	ND		1.0	0.35	ug/L			03/16/23 19:38	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			03/16/23 19:38	1
Carbon disulfide	ND		1.0	0.53	ug/L			03/16/23 19:38	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			03/16/23 19:38	1
Acetone	ND		15	3.2	ug/L			03/16/23 19:38	1
Methylene Chloride	ND		3.0	1.4	ug/L			03/16/23 19:38	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			03/16/23 19:38	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			03/16/23 19:38	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			03/16/23 19:38	1
2-Butanone (MEK)	ND		15	4.7	ug/L			03/16/23 19:38	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			03/16/23 19:38	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			03/16/23 19:38	1
Bromochloromethane	ND		1.0	0.29	ug/L			03/16/23 19:38	1
Chloroform	ND		1.0	0.26	ug/L			03/16/23 19:38	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			03/16/23 19:38	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			03/16/23 19:38	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			03/16/23 19:38	1
Benzene	ND		1.0	0.24	ug/L			03/16/23 19:38	1
1,2-Dichloroethane	0.58	J	1.0	0.42	ug/L			03/16/23 19:38	1
Trichloroethene	ND		1.0	0.26	ug/L			03/16/23 19:38	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			03/16/23 19:38	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			03/16/23 19:38	1
Dibromomethane	ND	*+	1.0	0.34	ug/L			03/16/23 19:38	1
Bromodichloromethane	ND		1.0	0.29	ug/L			03/16/23 19:38	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			03/16/23 19:38	1
Toluene	8.0		1.0	0.39	ug/L			03/16/23 19:38	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			03/16/23 19:38	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			03/16/23 19:38	1
Tetrachloroethene	ND		1.0	0.41	ug/L			03/16/23 19:38	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			03/16/23 19:38	1
Dibromochloromethane	ND		1.0	0.43	ug/L			03/16/23 19:38	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			03/16/23 19:38	1
Chlorobenzene	ND		1.0	0.44	ug/L			03/16/23 19:38	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			03/16/23 19:38	1
Ethylbenzene	ND		1.0	0.50	ug/L			03/16/23 19:38	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			03/16/23 19:38	1
o-Xylene	ND		1.0	0.39	ug/L			03/16/23 19:38	1
Styrene	ND		1.0	0.53	ug/L			03/16/23 19:38	1
Bromoform	ND		1.0	0.51	ug/L			03/16/23 19:38	1
Isopropylbenzene	ND		1.0	0.44	ug/L			03/16/23 19:38	1
Bromobenzene	ND		1.0	0.43	ug/L			03/16/23 19:38	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			03/16/23 19:38	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			03/16/23 19:38	1
N-Propylbenzene	ND		1.0	0.50	ug/L			03/16/23 19:38	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			03/16/23 19:38	1
4-Chlorotoluene	ND		1.0	0.38	ug/L			03/16/23 19:38	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: PA-24d-030823

Lab Sample ID: 580-124498-8

Date Collected: 03/08/23 12:28

Matrix: Water

Date Received: 03/09/23 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
t-Butylbenzene	ND		2.0	0.58	ug/L			03/16/23 19:38	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			03/16/23 19:38	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			03/16/23 19:38	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			03/16/23 19:38	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			03/16/23 19:38	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			03/16/23 19:38	1
n-Butylbenzene	ND		1.0	0.44	ug/L			03/16/23 19:38	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			03/16/23 19:38	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			03/16/23 19:38	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			03/16/23 19:38	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			03/16/23 19:38	1
Naphthalene	ND		3.0	0.93	ug/L			03/16/23 19:38	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			03/16/23 19:38	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			03/16/23 19:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 120		03/16/23 19:38	1
1,2-Dichloroethane-d4 (Surr)	110		80 - 120		03/16/23 19:38	1
4-Bromofluorobenzene (Surr)	96		80 - 120		03/16/23 19:38	1
Dibromofluoromethane (Surr)	110		80 - 120		03/16/23 19:38	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.53	ug/L			03/22/23 13:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		03/22/23 13:53	1
1,2-Dichloroethane-d4 (Surr)	108		80 - 120		03/22/23 13:53	1
4-Bromofluorobenzene (Surr)	100		80 - 120		03/22/23 13:53	1
Dibromofluoromethane (Surr)	100		80 - 120		03/22/23 13:53	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		800	400	ug/L			03/15/23 15:49	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	33000		1500	430	mg/L			03/17/23 20:02	1000

Client Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: PA-22d-030823

Lab Sample ID: 580-124498-9

Date Collected: 03/08/23 13:33

Matrix: Water

Date Received: 03/09/23 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	ND		1.0	0.28	ug/L			03/16/23 20:02	1
Vinyl chloride	ND		1.0	0.22	ug/L			03/16/23 20:02	1
Bromomethane	ND		1.0	0.21	ug/L			03/16/23 20:02	1
Chloroethane	ND		1.0	0.35	ug/L			03/16/23 20:02	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			03/16/23 20:02	1
Carbon disulfide	ND		1.0	0.53	ug/L			03/16/23 20:02	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			03/16/23 20:02	1
Acetone	ND		15	3.2	ug/L			03/16/23 20:02	1
Methylene Chloride	ND		3.0	1.4	ug/L			03/16/23 20:02	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			03/16/23 20:02	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			03/16/23 20:02	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			03/16/23 20:02	1
2-Butanone (MEK)	ND		15	4.7	ug/L			03/16/23 20:02	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			03/16/23 20:02	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			03/16/23 20:02	1
Bromochloromethane	ND		1.0	0.29	ug/L			03/16/23 20:02	1
Chloroform	16		1.0	0.26	ug/L			03/16/23 20:02	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			03/16/23 20:02	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			03/16/23 20:02	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			03/16/23 20:02	1
Benzene	ND		1.0	0.24	ug/L			03/16/23 20:02	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			03/16/23 20:02	1
Trichloroethene	ND		1.0	0.26	ug/L			03/16/23 20:02	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			03/16/23 20:02	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			03/16/23 20:02	1
Dibromomethane	ND	+	1.0	0.34	ug/L			03/16/23 20:02	1
Bromodichloromethane	ND		1.0	0.29	ug/L			03/16/23 20:02	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			03/16/23 20:02	1
Toluene	ND		1.0	0.39	ug/L			03/16/23 20:02	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			03/16/23 20:02	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			03/16/23 20:02	1
Tetrachloroethene	ND		1.0	0.41	ug/L			03/16/23 20:02	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			03/16/23 20:02	1
Dibromochloromethane	ND		1.0	0.43	ug/L			03/16/23 20:02	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			03/16/23 20:02	1
Chlorobenzene	ND		1.0	0.44	ug/L			03/16/23 20:02	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			03/16/23 20:02	1
Ethylbenzene	ND		1.0	0.50	ug/L			03/16/23 20:02	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			03/16/23 20:02	1
o-Xylene	ND		1.0	0.39	ug/L			03/16/23 20:02	1
Styrene	ND		1.0	0.53	ug/L			03/16/23 20:02	1
Bromoform	ND		1.0	0.51	ug/L			03/16/23 20:02	1
Isopropylbenzene	ND		1.0	0.44	ug/L			03/16/23 20:02	1
Bromobenzene	ND		1.0	0.43	ug/L			03/16/23 20:02	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			03/16/23 20:02	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			03/16/23 20:02	1
N-Propylbenzene	ND		1.0	0.50	ug/L			03/16/23 20:02	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			03/16/23 20:02	1
4-Chlorotoluene	ND		1.0	0.38	ug/L			03/16/23 20:02	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: PA-22d-030823

Lab Sample ID: 580-124498-9

Date Collected: 03/08/23 13:33

Matrix: Water

Date Received: 03/09/23 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
t-Butylbenzene	ND		2.0	0.58	ug/L			03/16/23 20:02	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			03/16/23 20:02	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			03/16/23 20:02	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			03/16/23 20:02	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			03/16/23 20:02	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			03/16/23 20:02	1
n-Butylbenzene	ND		1.0	0.44	ug/L			03/16/23 20:02	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			03/16/23 20:02	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			03/16/23 20:02	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			03/16/23 20:02	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			03/16/23 20:02	1
Naphthalene	ND		3.0	0.93	ug/L			03/16/23 20:02	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			03/16/23 20:02	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			03/16/23 20:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	91		80 - 120		03/16/23 20:02	1
1,2-Dichloroethane-d4 (Surr)	102		80 - 120		03/16/23 20:02	1
4-Bromofluorobenzene (Surr)	98		80 - 120		03/16/23 20:02	1
Dibromofluoromethane (Surr)	107		80 - 120		03/16/23 20:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.53	ug/L			03/22/23 14:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		03/22/23 14:15	1
1,2-Dichloroethane-d4 (Surr)	102		80 - 120		03/22/23 14:15	1
4-Bromofluorobenzene (Surr)	100		80 - 120		03/22/23 14:15	1
Dibromofluoromethane (Surr)	99		80 - 120		03/22/23 14:15	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	17000		800	400	ug/L			03/15/23 16:07	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	6000		150	43	mg/L			03/17/23 20:14	100

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: PA-04-030823

Lab Sample ID: 580-124498-10

Date Collected: 03/08/23 12:00

Matrix: Water

Date Received: 03/09/23 12:35

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			03/14/23 03:45	1
Chloromethane	0.60		0.50	0.14	ug/L			03/14/23 03:45	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/14/23 03:45	1
Bromomethane	ND		0.50	0.13	ug/L			03/14/23 03:45	1
Chloroethane	ND		0.50	0.096	ug/L			03/14/23 03:45	1
Carbon disulfide	ND		0.30	0.083	ug/L			03/14/23 03:45	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/14/23 03:45	1
1,1-Dichloroethene	0.22		0.20	0.035	ug/L			03/14/23 03:45	1
Acetone	ND		10	3.1	ug/L			03/14/23 03:45	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/14/23 03:45	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/14/23 03:45	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/14/23 03:45	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			03/14/23 03:45	1
1,1-Dichloroethane	0.16 J		0.20	0.025	ug/L			03/14/23 03:45	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/14/23 03:45	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			03/14/23 03:45	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/14/23 03:45	1
Chloroform	0.055 J		0.20	0.030	ug/L			03/14/23 03:45	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			03/14/23 03:45	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/14/23 03:45	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/14/23 03:45	1
Benzene	ND		0.20	0.030	ug/L			03/14/23 03:45	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/14/23 03:45	1
Trichloroethene	ND		0.20	0.066	ug/L			03/14/23 03:45	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/14/23 03:45	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/14/23 03:45	1
Dibromomethane	ND		0.20	0.062	ug/L			03/14/23 03:45	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/14/23 03:45	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/14/23 03:45	1
Toluene	ND		0.20	0.050	ug/L			03/14/23 03:45	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/14/23 03:45	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/14/23 03:45	1
Tetrachloroethene	0.18 J		0.24	0.084	ug/L			03/14/23 03:45	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/14/23 03:45	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/14/23 03:45	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/14/23 03:45	1
Chlorobenzene	ND		0.20	0.060	ug/L			03/14/23 03:45	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/14/23 03:45	1
Ethylbenzene	ND		0.20	0.030	ug/L			03/14/23 03:45	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			03/14/23 03:45	1
o-Xylene	ND		0.50	0.15	ug/L			03/14/23 03:45	1
Styrene	ND		1.0	0.19	ug/L			03/14/23 03:45	1
Bromoform	ND		0.50	0.16	ug/L			03/14/23 03:45	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/14/23 03:45	1
Bromobenzene	ND		0.20	0.038	ug/L			03/14/23 03:45	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/14/23 03:45	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/14/23 03:45	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/14/23 03:45	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			03/14/23 03:45	1

Eurolins Seattle

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: PA-04-030823

Lab Sample ID: 580-124498-10

Date Collected: 03/08/23 12:00

Matrix: Water

Date Received: 03/09/23 12:35

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			03/14/23 03:45	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/14/23 03:45	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/14/23 03:45	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/14/23 03:45	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/14/23 03:45	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/14/23 03:45	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 03:45	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 03:45	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/14/23 03:45	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			03/14/23 03:45	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/14/23 03:45	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/14/23 03:45	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/14/23 03:45	1
Naphthalene	ND		1.0	0.22	ug/L			03/14/23 03:45	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/14/23 03:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		03/14/23 03:45	1
Dibromofluoromethane (Surr)	99		80 - 120		03/14/23 03:45	1
4-Bromofluorobenzene (Surr)	100		80 - 120		03/14/23 03:45	1
1,2-Dichloroethane-d4 (Surr)	94		80 - 120		03/14/23 03:45	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	10	ug/L			03/15/23 16:25	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	5.4		1.5	0.43	mg/L			03/17/23 20:37	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: PA-17iR-030823

Lab Sample ID: 580-124498-11

Date Collected: 03/08/23 08:00

Matrix: Water

Date Received: 03/09/23 12:35

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			03/14/23 04:07	1
Chloromethane	ND		0.50	0.14	ug/L			03/14/23 04:07	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/14/23 04:07	1
Bromomethane	ND		0.50	0.13	ug/L			03/14/23 04:07	1
Chloroethane	ND		0.50	0.096	ug/L			03/14/23 04:07	1
Carbon disulfide	0.11	J	0.30	0.083	ug/L			03/14/23 04:07	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/14/23 04:07	1
1,1-Dichloroethene	0.58		0.20	0.035	ug/L			03/14/23 04:07	1
Acetone	ND		10	3.1	ug/L			03/14/23 04:07	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/14/23 04:07	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/14/23 04:07	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/14/23 04:07	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			03/14/23 04:07	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			03/14/23 04:07	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/14/23 04:07	1
cis-1,2-Dichloroethene	0.17	J	0.20	0.055	ug/L			03/14/23 04:07	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/14/23 04:07	1
Chloroform	ND		0.20	0.030	ug/L			03/14/23 04:07	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			03/14/23 04:07	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/14/23 04:07	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/14/23 04:07	1
Benzene	0.083	J	0.20	0.030	ug/L			03/14/23 04:07	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/14/23 04:07	1
Trichloroethene	ND		0.20	0.066	ug/L			03/14/23 04:07	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/14/23 04:07	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/14/23 04:07	1
Dibromomethane	ND		0.20	0.062	ug/L			03/14/23 04:07	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/14/23 04:07	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/14/23 04:07	1
Toluene	ND		0.20	0.050	ug/L			03/14/23 04:07	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/14/23 04:07	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/14/23 04:07	1
Tetrachloroethene	ND		0.24	0.084	ug/L			03/14/23 04:07	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/14/23 04:07	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/14/23 04:07	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/14/23 04:07	1
Chlorobenzene	ND		0.20	0.060	ug/L			03/14/23 04:07	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/14/23 04:07	1
Ethylbenzene	ND		0.20	0.030	ug/L			03/14/23 04:07	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			03/14/23 04:07	1
o-Xylene	ND		0.50	0.15	ug/L			03/14/23 04:07	1
Styrene	ND		1.0	0.19	ug/L			03/14/23 04:07	1
Bromoform	ND		0.50	0.16	ug/L			03/14/23 04:07	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/14/23 04:07	1
Bromobenzene	ND		0.20	0.038	ug/L			03/14/23 04:07	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/14/23 04:07	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/14/23 04:07	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/14/23 04:07	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			03/14/23 04:07	1

Eurolins Seattle

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: PA-17iR-030823

Lab Sample ID: 580-124498-11

Date Collected: 03/08/23 08:00

Matrix: Water

Date Received: 03/09/23 12:35

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			03/14/23 04:07	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/14/23 04:07	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/14/23 04:07	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/14/23 04:07	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/14/23 04:07	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/14/23 04:07	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 04:07	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 04:07	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/14/23 04:07	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			03/14/23 04:07	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/14/23 04:07	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/14/23 04:07	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/14/23 04:07	1
Naphthalene	ND		1.0	0.22	ug/L			03/14/23 04:07	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/14/23 04:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		03/14/23 04:07	1
Dibromofluoromethane (Surr)	100		80 - 120		03/14/23 04:07	1
4-Bromofluorobenzene (Surr)	103		80 - 120		03/14/23 04:07	1
1,2-Dichloroethane-d4 (Surr)	94		80 - 120		03/14/23 04:07	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	10	ug/L			03/15/23 16:43	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	25		15	4.3	mg/L			03/17/23 20:49	10

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: PA-27d-030823

Lab Sample ID: 580-124498-12

Date Collected: 03/08/23 10:20

Matrix: Water

Date Received: 03/09/23 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	ND		1.0	0.28	ug/L			03/16/23 20:26	1
Vinyl chloride	ND		1.0	0.22	ug/L			03/16/23 20:26	1
Bromomethane	ND		1.0	0.21	ug/L			03/16/23 20:26	1
Chloroethane	ND		1.0	0.35	ug/L			03/16/23 20:26	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			03/16/23 20:26	1
Carbon disulfide	ND		1.0	0.53	ug/L			03/16/23 20:26	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			03/16/23 20:26	1
Acetone	3.3	J	15	3.2	ug/L			03/16/23 20:26	1
Methylene Chloride	ND		3.0	1.4	ug/L			03/16/23 20:26	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			03/16/23 20:26	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			03/16/23 20:26	1
1,1-Dichloroethane	0.39	J	1.0	0.22	ug/L			03/16/23 20:26	1
2-Butanone (MEK)	ND		15	4.7	ug/L			03/16/23 20:26	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			03/16/23 20:26	1
cis-1,2-Dichloroethene	0.51	J	1.0	0.35	ug/L			03/16/23 20:26	1
Bromochloromethane	ND		1.0	0.29	ug/L			03/16/23 20:26	1
Chloroform	ND		1.0	0.26	ug/L			03/16/23 20:26	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			03/16/23 20:26	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			03/16/23 20:26	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			03/16/23 20:26	1
Benzene	ND		1.0	0.24	ug/L			03/16/23 20:26	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			03/16/23 20:26	1
Trichloroethene	ND		1.0	0.26	ug/L			03/16/23 20:26	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			03/16/23 20:26	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			03/16/23 20:26	1
Dibromomethane	ND	*+	1.0	0.34	ug/L			03/16/23 20:26	1
Bromodichloromethane	ND		1.0	0.29	ug/L			03/16/23 20:26	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			03/16/23 20:26	1
Toluene	ND		1.0	0.39	ug/L			03/16/23 20:26	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			03/16/23 20:26	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			03/16/23 20:26	1
Tetrachloroethene	ND		1.0	0.41	ug/L			03/16/23 20:26	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			03/16/23 20:26	1
Dibromochloromethane	ND		1.0	0.43	ug/L			03/16/23 20:26	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			03/16/23 20:26	1
Chlorobenzene	ND		1.0	0.44	ug/L			03/16/23 20:26	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			03/16/23 20:26	1
Ethylbenzene	ND		1.0	0.50	ug/L			03/16/23 20:26	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			03/16/23 20:26	1
o-Xylene	ND		1.0	0.39	ug/L			03/16/23 20:26	1
Styrene	ND		1.0	0.53	ug/L			03/16/23 20:26	1
Bromoform	ND		1.0	0.51	ug/L			03/16/23 20:26	1
Isopropylbenzene	ND		1.0	0.44	ug/L			03/16/23 20:26	1
Bromobenzene	ND		1.0	0.43	ug/L			03/16/23 20:26	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			03/16/23 20:26	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			03/16/23 20:26	1
N-Propylbenzene	ND		1.0	0.50	ug/L			03/16/23 20:26	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			03/16/23 20:26	1
4-Chlorotoluene	ND		1.0	0.38	ug/L			03/16/23 20:26	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: PA-27d-030823

Lab Sample ID: 580-124498-12

Date Collected: 03/08/23 10:20

Matrix: Water

Date Received: 03/09/23 12:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
t-Butylbenzene	ND		2.0	0.58	ug/L			03/16/23 20:26	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			03/16/23 20:26	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			03/16/23 20:26	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			03/16/23 20:26	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			03/16/23 20:26	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			03/16/23 20:26	1
n-Butylbenzene	ND		1.0	0.44	ug/L			03/16/23 20:26	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			03/16/23 20:26	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			03/16/23 20:26	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			03/16/23 20:26	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			03/16/23 20:26	1
Naphthalene	ND		3.0	0.93	ug/L			03/16/23 20:26	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			03/16/23 20:26	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			03/16/23 20:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	93		80 - 120		03/16/23 20:26	1
1,2-Dichloroethane-d4 (Surr)	100		80 - 120		03/16/23 20:26	1
4-Bromofluorobenzene (Surr)	96		80 - 120		03/16/23 20:26	1
Dibromofluoromethane (Surr)	108		80 - 120		03/16/23 20:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.53	ug/L			03/22/23 14:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		03/22/23 14:36	1
1,2-Dichloroethane-d4 (Surr)	99		80 - 120		03/22/23 14:36	1
4-Bromofluorobenzene (Surr)	102		80 - 120		03/22/23 14:36	1
Dibromofluoromethane (Surr)	97		80 - 120		03/22/23 14:36	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		40	20	ug/L			03/15/23 17:01	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	670		150	43	mg/L			03/17/23 21:00	100

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: PA-10i-030823

Lab Sample ID: 580-124498-13

Date Collected: 03/08/23 13:45

Matrix: Water

Date Received: 03/09/23 12:35

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			03/14/23 04:29	1
Chloromethane	ND		0.50	0.14	ug/L			03/14/23 04:29	1
Vinyl chloride	0.48		0.10	0.040	ug/L			03/14/23 04:29	1
Bromomethane	ND		0.50	0.13	ug/L			03/14/23 04:29	1
Chloroethane	ND		0.50	0.096	ug/L			03/14/23 04:29	1
Carbon disulfide	ND		0.30	0.083	ug/L			03/14/23 04:29	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/14/23 04:29	1
1,1-Dichloroethene	0.27		0.20	0.035	ug/L			03/14/23 04:29	1
Acetone	3.2 J		10	3.1	ug/L			03/14/23 04:29	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/14/23 04:29	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/14/23 04:29	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/14/23 04:29	1
trans-1,2-Dichloroethene	0.065 J		0.20	0.033	ug/L			03/14/23 04:29	1
1,1-Dichloroethane	0.12 J		0.20	0.025	ug/L			03/14/23 04:29	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/14/23 04:29	1
cis-1,2-Dichloroethene	1.1		0.20	0.055	ug/L			03/14/23 04:29	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/14/23 04:29	1
Chloroform	ND		0.20	0.030	ug/L			03/14/23 04:29	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			03/14/23 04:29	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/14/23 04:29	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/14/23 04:29	1
Benzene	0.22		0.20	0.030	ug/L			03/14/23 04:29	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/14/23 04:29	1
Trichloroethene	ND		0.20	0.066	ug/L			03/14/23 04:29	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/14/23 04:29	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/14/23 04:29	1
Dibromomethane	ND		0.20	0.062	ug/L			03/14/23 04:29	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/14/23 04:29	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/14/23 04:29	1
Toluene	0.10 J		0.20	0.050	ug/L			03/14/23 04:29	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/14/23 04:29	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/14/23 04:29	1
Tetrachloroethene	ND		0.24	0.084	ug/L			03/14/23 04:29	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/14/23 04:29	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/14/23 04:29	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/14/23 04:29	1
Chlorobenzene	5.7		0.20	0.060	ug/L			03/14/23 04:29	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/14/23 04:29	1
Ethylbenzene	ND		0.20	0.030	ug/L			03/14/23 04:29	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			03/14/23 04:29	1
o-Xylene	ND		0.50	0.15	ug/L			03/14/23 04:29	1
Styrene	ND		1.0	0.19	ug/L			03/14/23 04:29	1
Bromoform	ND		0.50	0.16	ug/L			03/14/23 04:29	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/14/23 04:29	1
Bromobenzene	ND		0.20	0.038	ug/L			03/14/23 04:29	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/14/23 04:29	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/14/23 04:29	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/14/23 04:29	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			03/14/23 04:29	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: PA-10i-030823

Lab Sample ID: 580-124498-13

Date Collected: 03/08/23 13:45

Matrix: Water

Date Received: 03/09/23 12:35

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			03/14/23 04:29	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/14/23 04:29	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/14/23 04:29	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/14/23 04:29	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/14/23 04:29	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/14/23 04:29	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 04:29	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 04:29	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/14/23 04:29	1
1,2-Dichlorobenzene	0.15	J	0.30	0.038	ug/L			03/14/23 04:29	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/14/23 04:29	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/14/23 04:29	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/14/23 04:29	1
Naphthalene	ND		1.0	0.22	ug/L			03/14/23 04:29	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/14/23 04:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		03/14/23 04:29	1
Dibromofluoromethane (Surr)	100		80 - 120		03/14/23 04:29	1
4-Bromofluorobenzene (Surr)	99		80 - 120		03/14/23 04:29	1
1,2-Dichloroethane-d4 (Surr)	93		80 - 120		03/14/23 04:29	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	10	ug/L			03/15/23 17:19	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	41		15	4.3	mg/L			03/17/23 21:12	10

QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

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

Lab Sample ID: MB 580-420224/7
Matrix: Water
Analysis Batch: 420224

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			03/14/23 00:30	1
Chloromethane	ND		0.50	0.14	ug/L			03/14/23 00:30	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/14/23 00:30	1
Bromomethane	ND		0.50	0.13	ug/L			03/14/23 00:30	1
Chloroethane	ND		0.50	0.096	ug/L			03/14/23 00:30	1
Carbon disulfide	ND		0.30	0.083	ug/L			03/14/23 00:30	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/14/23 00:30	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			03/14/23 00:30	1
Acetone	ND		10	3.1	ug/L			03/14/23 00:30	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/14/23 00:30	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/14/23 00:30	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/14/23 00:30	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			03/14/23 00:30	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			03/14/23 00:30	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/14/23 00:30	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			03/14/23 00:30	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/14/23 00:30	1
Chloroform	ND		0.20	0.030	ug/L			03/14/23 00:30	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			03/14/23 00:30	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/14/23 00:30	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/14/23 00:30	1
Benzene	ND		0.20	0.030	ug/L			03/14/23 00:30	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/14/23 00:30	1
Trichloroethene	ND		0.20	0.066	ug/L			03/14/23 00:30	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/14/23 00:30	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/14/23 00:30	1
Dibromomethane	ND		0.20	0.062	ug/L			03/14/23 00:30	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/14/23 00:30	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/14/23 00:30	1
Toluene	ND		0.20	0.050	ug/L			03/14/23 00:30	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/14/23 00:30	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/14/23 00:30	1
Tetrachloroethene	ND		0.24	0.084	ug/L			03/14/23 00:30	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/14/23 00:30	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/14/23 00:30	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/14/23 00:30	1
Chlorobenzene	ND		0.20	0.060	ug/L			03/14/23 00:30	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/14/23 00:30	1
Ethylbenzene	ND		0.20	0.030	ug/L			03/14/23 00:30	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			03/14/23 00:30	1
o-Xylene	ND		0.50	0.15	ug/L			03/14/23 00:30	1
Styrene	ND		1.0	0.19	ug/L			03/14/23 00:30	1
Bromoform	ND		0.50	0.16	ug/L			03/14/23 00:30	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/14/23 00:30	1
Bromobenzene	ND		0.20	0.038	ug/L			03/14/23 00:30	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/14/23 00:30	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/14/23 00:30	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/14/23 00:30	1

QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

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

Lab Sample ID: MB 580-420224/7
Matrix: Water
Analysis Batch: 420224

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			03/14/23 00:30	1
4-Chlorotoluene	ND		0.30	0.12	ug/L			03/14/23 00:30	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/14/23 00:30	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/14/23 00:30	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/14/23 00:30	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/14/23 00:30	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/14/23 00:30	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 00:30	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 00:30	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/14/23 00:30	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			03/14/23 00:30	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/14/23 00:30	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/14/23 00:30	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/14/23 00:30	1
Naphthalene	ND		1.0	0.22	ug/L			03/14/23 00:30	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/14/23 00:30	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	99		80 - 120		03/14/23 00:30	1
<i>Dibromofluoromethane (Surr)</i>	99		80 - 120		03/14/23 00:30	1
<i>4-Bromofluorobenzene (Surr)</i>	100		80 - 120		03/14/23 00:30	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	96		80 - 120		03/14/23 00:30	1

Lab Sample ID: LCS 580-420224/4
Matrix: Water
Analysis Batch: 420224

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	5.05		ug/L		101	20 - 150
Chloromethane	5.00	4.35		ug/L		87	32 - 150
Vinyl chloride	5.00	4.74		ug/L		95	41 - 150
Bromomethane	5.00	4.54		ug/L		91	51 - 148
Chloroethane	5.00	4.96		ug/L		99	54 - 140
Carbon disulfide	5.00	6.14		ug/L		123	54 - 142
Trichlorofluoromethane	5.00	5.17		ug/L		103	60 - 132
1,1-Dichloroethene	5.00	5.95		ug/L		119	60 - 129
Acetone	25.0	24.3		ug/L		97	49 - 150
Methylene Chloride	5.00	5.36		ug/L		107	40 - 142
Methyl tert-butyl ether	5.00	5.10		ug/L		102	61 - 131
2-Butanone (MEK)	25.0	23.5		ug/L		94	37 - 150
trans-1,2-Dichloroethene	5.00	5.47		ug/L		109	69 - 121
1,1-Dichloroethane	5.00	5.16		ug/L		103	74 - 120
2,2-Dichloropropane	5.00	4.48		ug/L		90	55 - 140
cis-1,2-Dichloroethene	5.00	5.45		ug/L		109	72 - 120
Chlorobromomethane	5.00	5.23		ug/L		105	79 - 121
Chloroform	5.00	5.19		ug/L		104	75 - 120
1,1,1-Trichloroethane	5.00	5.19		ug/L		104	70 - 121
Carbon tetrachloride	5.00	5.28		ug/L		106	66 - 130

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QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

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

Lab Sample ID: LCS 580-420224/4
Matrix: Water
Analysis Batch: 420224

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	5.15		ug/L		103	72 - 125
Benzene	5.00	5.16		ug/L		103	80 - 120
1,2-Dichloroethane	5.00	5.06		ug/L		101	74 - 127
Trichloroethene	5.00	5.57		ug/L		111	72 - 120
1,2-Dichloropropane	5.00	4.79		ug/L		96	69 - 130
4-Methyl-2-pentanone (MIBK)	25.00	22.1		ug/L		88	63 - 137
Dibromomethane	5.00	5.23		ug/L		105	65 - 141
Dichlorobromomethane	5.00	4.78		ug/L		96	74 - 131
cis-1,3-Dichloropropene	5.00	4.55		ug/L		91	77 - 131
Toluene	5.00	5.15		ug/L		103	80 - 126
trans-1,3-Dichloropropene	5.00	4.60		ug/L		92	71 - 138
1,1,2-Trichloroethane	5.00	4.90		ug/L		98	73 - 127
Tetrachloroethene	5.00	4.94		ug/L		99	75 - 124
1,3-Dichloropropane	5.00	4.70		ug/L		94	69 - 138
Chlorodibromomethane	5.00	4.87		ug/L		97	62 - 141
Ethylene Dibromide	5.00	5.16		ug/L		103	61 - 143
Chlorobenzene	5.00	5.10		ug/L		102	74 - 123
1,1,1,2-Tetrachloroethane	5.00	4.91		ug/L		98	69 - 127
Ethylbenzene	5.00	5.03		ug/L		101	80 - 124
m-Xylene & p-Xylene	5.00	5.01		ug/L		100	75 - 124
o-Xylene	5.00	5.03		ug/L		101	71 - 124
Styrene	5.00	4.88		ug/L		98	74 - 127
Bromoform	5.00	4.59		ug/L		92	48 - 127
Isopropylbenzene	5.00	4.94		ug/L		99	71 - 123
Bromobenzene	5.00	4.79		ug/L		96	74 - 130
1,1,2,2-Tetrachloroethane	5.00	4.29		ug/L		86	67 - 136
1,2,3-Trichloropropane	5.00	4.74		ug/L		95	67 - 135
N-Propylbenzene	5.00	4.77		ug/L		95	72 - 126
2-Chlorotoluene	5.00	4.96		ug/L		99	73 - 120
4-Chlorotoluene	5.00	4.85		ug/L		97	75 - 124
1,3,5-Trimethylbenzene	5.00	4.79		ug/L		96	75 - 123
tert-Butylbenzene	5.00	4.85		ug/L		97	70 - 129
1,2,4-Trimethylbenzene	5.00	4.70		ug/L		94	71 - 127
sec-Butylbenzene	5.00	4.71		ug/L		94	75 - 126
4-Isopropyltoluene	5.00	4.87		ug/L		97	78 - 125
1,3-Dichlorobenzene	5.00	4.99		ug/L		100	72 - 125
1,4-Dichlorobenzene	5.00	4.85		ug/L		97	71 - 129
n-Butylbenzene	5.00	4.61		ug/L		92	69 - 127
1,2-Dichlorobenzene	5.00	4.94		ug/L		99	72 - 129
1,2-Dibromo-3-Chloropropane	5.00	4.21		ug/L		84	55 - 135
1,2,4-Trichlorobenzene	5.00	4.86		ug/L		97	60 - 130
Hexachlorobutadiene	5.00	4.96		ug/L		99	63 - 130
Naphthalene	5.00	4.85		ug/L		97	54 - 137
1,2,3-Trichlorobenzene	5.00	4.87		ug/L		97	60 - 136

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	101		80 - 120

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

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

Lab Sample ID: LCS 580-420224/4
Matrix: Water
Analysis Batch: 420224

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)	95		80 - 120

Lab Sample ID: LCSD 580-420224/5
Matrix: Water
Analysis Batch: 420224

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	4.90		ug/L		98	20 - 150	3	30
Chloromethane	5.00	4.15		ug/L		83	32 - 150	5	33
Vinyl chloride	5.00	4.64		ug/L		93	41 - 150	2	32
Bromomethane	5.00	4.46		ug/L		89	51 - 148	2	35
Chloroethane	5.00	4.75		ug/L		95	54 - 140	4	33
Carbon disulfide	5.00	5.87		ug/L		117	54 - 142	4	34
Trichlorofluoromethane	5.00	5.00		ug/L		100	60 - 132	3	32
1,1-Dichloroethene	5.00	5.87		ug/L		117	60 - 129	1	29
Acetone	25.0	25.3		ug/L		101	49 - 150	4	24
Methylene Chloride	5.00	5.23		ug/L		105	40 - 142	2	25
Methyl tert-butyl ether	5.00	5.03		ug/L		101	61 - 131	1	27
2-Butanone (MEK)	25.0	24.3		ug/L		97	37 - 150	3	35
trans-1,2-Dichloroethene	5.00	5.22		ug/L		104	69 - 121	5	27
1,1-Dichloroethane	5.00	4.92		ug/L		98	74 - 120	5	26
2,2-Dichloropropane	5.00	4.29		ug/L		86	55 - 140	4	31
cis-1,2-Dichloroethene	5.00	5.35		ug/L		107	72 - 120	2	22
Chlorobromomethane	5.00	5.25		ug/L		105	79 - 121	0	20
Chloroform	5.00	4.94		ug/L		99	75 - 120	5	21
1,1,1-Trichloroethane	5.00	5.09		ug/L		102	70 - 121	2	24
Carbon tetrachloride	5.00	5.02		ug/L		100	66 - 130	5	24
1,1-Dichloropropene	5.00	5.01		ug/L		100	72 - 125	3	23
Benzene	5.00	5.01		ug/L		100	80 - 120	3	22
1,2-Dichloroethane	5.00	4.68		ug/L		94	74 - 127	8	21
Trichloroethene	5.00	5.08		ug/L		102	72 - 120	9	22
1,2-Dichloropropane	5.00	4.71		ug/L		94	69 - 130	2	22
4-Methyl-2-pentanone (MIBK)	25.0	21.5		ug/L		86	63 - 137	2	26
Dibromomethane	5.00	5.01		ug/L		100	65 - 141	4	22
Dichlorobromomethane	5.00	4.66		ug/L		93	74 - 131	3	21
cis-1,3-Dichloropropene	5.00	4.37		ug/L		87	77 - 131	4	24
Toluene	5.00	4.89		ug/L		98	80 - 126	5	20
trans-1,3-Dichloropropene	5.00	4.34		ug/L		87	71 - 138	6	26
1,1,2-Trichloroethane	5.00	4.81		ug/L		96	73 - 127	2	22
Tetrachloroethene	5.00	4.84		ug/L		97	75 - 124	2	20
1,3-Dichloropropane	5.00	4.56		ug/L		91	69 - 138	3	19
Chlorodibromomethane	5.00	4.76		ug/L		95	62 - 141	2	22
Ethylene Dibromide	5.00	4.97		ug/L		99	61 - 143	4	22
Chlorobenzene	5.00	4.90		ug/L		98	74 - 123	4	21
1,1,1,2-Tetrachloroethane	5.00	4.81		ug/L		96	69 - 127	2	22
Ethylbenzene	5.00	4.84		ug/L		97	80 - 124	4	22
m-Xylene & p-Xylene	5.00	4.72		ug/L		94	75 - 124	6	22

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

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

Lab Sample ID: LCSD 580-420224/5
Matrix: Water
Analysis Batch: 420224

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	4.77		ug/L		95	71 - 124	5	23
Styrene	5.00	4.71		ug/L		94	74 - 127	4	22
Bromoform	5.00	4.44		ug/L		89	48 - 127	3	23
Isopropylbenzene	5.00	4.76		ug/L		95	71 - 123	4	23
Bromobenzene	5.00	4.72		ug/L		94	74 - 130	1	23
1,1,2,2-Tetrachloroethane	5.00	4.41		ug/L		88	67 - 136	3	24
1,2,3-Trichloropropane	5.00	4.85		ug/L		97	67 - 135	2	25
N-Propylbenzene	5.00	4.65		ug/L		93	72 - 126	3	20
2-Chlorotoluene	5.00	4.97		ug/L		99	73 - 120	0	22
4-Chlorotoluene	5.00	4.75		ug/L		95	75 - 124	2	23
1,3,5-Trimethylbenzene	5.00	4.68		ug/L		94	75 - 123	2	23
tert-Butylbenzene	5.00	4.75		ug/L		95	70 - 129	2	24
1,2,4-Trimethylbenzene	5.00	4.65		ug/L		93	71 - 127	1	23
sec-Butylbenzene	5.00	4.66		ug/L		93	75 - 126	1	23
4-Isopropyltoluene	5.00	4.79		ug/L		96	78 - 125	2	24
1,3-Dichlorobenzene	5.00	4.86		ug/L		97	72 - 125	3	22
1,4-Dichlorobenzene	5.00	4.82		ug/L		96	71 - 129	1	22
n-Butylbenzene	5.00	4.58		ug/L		92	69 - 127	1	24
1,2-Dichlorobenzene	5.00	4.88		ug/L		98	72 - 129	1	22
1,2-Dibromo-3-Chloropropane	5.00	4.37		ug/L		87	55 - 135	4	29
1,2,4-Trichlorobenzene	5.00	4.83		ug/L		97	60 - 130	1	26
Hexachlorobutadiene	5.00	4.85		ug/L		97	63 - 130	2	26
Naphthalene	5.00	4.75		ug/L		95	54 - 137	2	28
1,2,3-Trichlorobenzene	5.00	4.82		ug/L		96	60 - 136	1	28

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
Toluene-d8 (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	101		80 - 120
4-Bromofluorobenzene (Surr)	101		80 - 120
1,2-Dichloroethane-d4 (Surr)	96		80 - 120

Lab Sample ID: MB 580-420560/6
Matrix: Water
Analysis Batch: 420560

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	ND		1.0	0.28	ug/L			03/16/23 13:11	1
Vinyl chloride	ND		1.0	0.22	ug/L			03/16/23 13:11	1
Bromomethane	ND		1.0	0.21	ug/L			03/16/23 13:11	1
Chloroethane	ND		1.0	0.35	ug/L			03/16/23 13:11	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			03/16/23 13:11	1
Carbon disulfide	ND		1.0	0.53	ug/L			03/16/23 13:11	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			03/16/23 13:11	1
Acetone	ND		15	3.2	ug/L			03/16/23 13:11	1
Methylene Chloride	ND		3.0	1.4	ug/L			03/16/23 13:11	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			03/16/23 13:11	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			03/16/23 13:11	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			03/16/23 13:11	1

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QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

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

Lab Sample ID: MB 580-420560/6
Matrix: Water
Analysis Batch: 420560

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		15	4.7	ug/L			03/16/23 13:11	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			03/16/23 13:11	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			03/16/23 13:11	1
Bromochloromethane	ND		1.0	0.29	ug/L			03/16/23 13:11	1
Chloroform	ND		1.0	0.26	ug/L			03/16/23 13:11	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			03/16/23 13:11	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			03/16/23 13:11	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			03/16/23 13:11	1
Benzene	ND		1.0	0.24	ug/L			03/16/23 13:11	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			03/16/23 13:11	1
Trichloroethene	ND		1.0	0.26	ug/L			03/16/23 13:11	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			03/16/23 13:11	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			03/16/23 13:11	1
Dibromomethane	ND		1.0	0.34	ug/L			03/16/23 13:11	1
Bromodichloromethane	ND		1.0	0.29	ug/L			03/16/23 13:11	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			03/16/23 13:11	1
Toluene	ND		1.0	0.39	ug/L			03/16/23 13:11	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			03/16/23 13:11	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			03/16/23 13:11	1
Tetrachloroethene	ND		1.0	0.41	ug/L			03/16/23 13:11	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			03/16/23 13:11	1
Dibromochloromethane	ND		1.0	0.43	ug/L			03/16/23 13:11	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			03/16/23 13:11	1
Chlorobenzene	ND		1.0	0.44	ug/L			03/16/23 13:11	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			03/16/23 13:11	1
Ethylbenzene	ND		1.0	0.50	ug/L			03/16/23 13:11	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			03/16/23 13:11	1
o-Xylene	ND		1.0	0.39	ug/L			03/16/23 13:11	1
Styrene	ND		1.0	0.53	ug/L			03/16/23 13:11	1
Bromoform	ND		1.0	0.51	ug/L			03/16/23 13:11	1
Isopropylbenzene	ND		1.0	0.44	ug/L			03/16/23 13:11	1
Bromobenzene	ND		1.0	0.43	ug/L			03/16/23 13:11	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			03/16/23 13:11	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			03/16/23 13:11	1
N-Propylbenzene	ND		1.0	0.50	ug/L			03/16/23 13:11	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			03/16/23 13:11	1
4-Chlorotoluene	ND		1.0	0.38	ug/L			03/16/23 13:11	1
t-Butylbenzene	ND		2.0	0.58	ug/L			03/16/23 13:11	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			03/16/23 13:11	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			03/16/23 13:11	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			03/16/23 13:11	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			03/16/23 13:11	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			03/16/23 13:11	1
n-Butylbenzene	ND		1.0	0.44	ug/L			03/16/23 13:11	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			03/16/23 13:11	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			03/16/23 13:11	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			03/16/23 13:11	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			03/16/23 13:11	1
Naphthalene	ND		3.0	0.93	ug/L			03/16/23 13:11	1

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QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

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

Lab Sample ID: MB 580-420560/6
Matrix: Water
Analysis Batch: 420560

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			03/16/23 13:11	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			03/16/23 13:11	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		03/16/23 13:11	1
1,2-Dichloroethane-d4 (Surr)	101		80 - 120		03/16/23 13:11	1
4-Bromofluorobenzene (Surr)	97		80 - 120		03/16/23 13:11	1
Dibromofluoromethane (Surr)	102		80 - 120		03/16/23 13:11	1

Lab Sample ID: LCS 580-420560/7
Matrix: Water
Analysis Batch: 420560

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloromethane	10.0	7.63		ug/L		76	25 - 150
Vinyl chloride	10.0	8.37		ug/L		84	31 - 150
Bromomethane	10.0	11.1		ug/L		111	36 - 150
Chloroethane	10.0	10.3		ug/L		103	38 - 150
Trichlorofluoromethane	10.0	9.99		ug/L		100	45 - 148
Carbon disulfide	10.0	10.2		ug/L		102	63 - 134
1,1-Dichloroethene	10.0	10.6		ug/L		106	70 - 129
Acetone	50.0	51.2		ug/L		102	44 - 150
Methylene Chloride	10.0	9.80		ug/L		98	77 - 125
Methyl tert-butyl ether	10.0	10.6		ug/L		106	72 - 120
trans-1,2-Dichloroethene	10.0	10.9		ug/L		109	75 - 120
1,1-Dichloroethane	10.0	9.85		ug/L		99	80 - 120
2-Butanone (MEK)	50.0	58.6		ug/L		117	65 - 137
2,2-Dichloropropane	10.0	9.78		ug/L		98	66 - 126
cis-1,2-Dichloroethene	10.0	10.4		ug/L		104	76 - 120
Bromochloromethane	10.0	11.4		ug/L		114	78 - 120
Chloroform	10.0	10.3		ug/L		103	78 - 127
1,1,1-Trichloroethane	10.0	10.5		ug/L		105	74 - 130
Carbon tetrachloride	10.0	10.7		ug/L		107	72 - 129
1,1-Dichloropropene	10.0	10.2		ug/L		102	74 - 120
Benzene	10.0	10.2		ug/L		102	80 - 122
1,2-Dichloroethane	10.0	10.0		ug/L		100	69 - 126
Trichloroethene	10.0	11.2		ug/L		112	80 - 125
1,2-Dichloropropane	10.0	9.96		ug/L		100	80 - 120
4-Methyl-2-pentanone (MIBK)	50.0	54.2		ug/L		108	59 - 141
Dibromomethane	10.0	11.9		ug/L		119	80 - 120
Bromodichloromethane	10.0	10.6		ug/L		106	75 - 124
cis-1,3-Dichloropropene	10.0	10.3		ug/L		103	77 - 120
Toluene	10.0	9.93		ug/L		99	80 - 120
trans-1,3-Dichloropropene	10.0	10.2		ug/L		102	76 - 122
1,1,2-Trichloroethane	10.0	10.5		ug/L		105	80 - 121
Tetrachloroethene	10.0	10.4		ug/L		104	76 - 125
1,3-Dichloropropane	10.0	10.4		ug/L		104	79 - 120
Dibromochloromethane	10.0	11.4		ug/L		114	73 - 125

QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

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

Lab Sample ID: LCS 580-420560/7
Matrix: Water
Analysis Batch: 420560

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dibromoethane	10.0	10.8		ug/L		108	79 - 126
Chlorobenzene	10.0	10.4		ug/L		104	80 - 120
1,1,1,2-Tetrachloroethane	10.0	10.6		ug/L		106	79 - 120
Ethylbenzene	10.0	9.95		ug/L		100	80 - 120
m-Xylene & p-Xylene	10.0	9.89		ug/L		99	80 - 120
o-Xylene	10.0	9.94		ug/L		99	80 - 120
Styrene	10.0	10.8		ug/L		108	76 - 122
Bromoform	10.0	12.5		ug/L		125	56 - 139
Isopropylbenzene	10.0	10.3		ug/L		103	80 - 123
Bromobenzene	10.0	10.2		ug/L		102	80 - 120
1,1,2,2-Tetrachloroethane	10.0	10.3		ug/L		103	74 - 124
1,2,3-Trichloropropane	10.0	10.3		ug/L		103	76 - 124
N-Propylbenzene	10.0	9.24		ug/L		92	80 - 122
2-Chlorotoluene	10.0	9.47		ug/L		95	80 - 120
4-Chlorotoluene	10.0	9.86		ug/L		99	73 - 129
t-Butylbenzene	10.0	9.71		ug/L		97	75 - 123
1,2,4-Trimethylbenzene	10.0	9.63		ug/L		96	80 - 120
sec-Butylbenzene	10.0	9.63		ug/L		96	78 - 122
4-Isopropyltoluene	10.0	9.79		ug/L		98	77 - 126
1,3-Dichlorobenzene	10.0	9.97		ug/L		100	77 - 127
1,4-Dichlorobenzene	10.0	10.3		ug/L		103	80 - 120
n-Butylbenzene	10.0	10.1		ug/L		101	57 - 133
1,2-Dichlorobenzene	10.0	10.1		ug/L		101	80 - 120
1,2-Dibromo-3-Chloropropane	10.0	11.2		ug/L		112	65 - 133
1,2,4-Trichlorobenzene	10.0	10.0		ug/L		100	61 - 148
Hexachlorobutadiene	10.0	10.7		ug/L		107	74 - 131
Naphthalene	10.0	9.56		ug/L		96	63 - 150
1,2,3-Trichlorobenzene	10.0	9.67		ug/L		97	65 - 150
1,3,5-Trimethylbenzene	10.0	9.57		ug/L		96	80 - 122

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	99		80 - 120
1,2-Dichloroethane-d4 (Surr)	98		80 - 120
4-Bromofluorobenzene (Surr)	109		80 - 120
Dibromofluoromethane (Surr)	104		80 - 120

Lab Sample ID: LCSD 580-420560/8
Matrix: Water
Analysis Batch: 420560

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
Chloromethane	10.0	7.49		ug/L		75	25 - 150	2	26
Vinyl chloride	10.0	8.59		ug/L		86	31 - 150	3	26
Bromomethane	10.0	11.5		ug/L		115	36 - 150	4	33
Chloroethane	10.0	10.9		ug/L		109	38 - 150	5	28
Trichlorofluoromethane	10.0	10.3		ug/L		103	45 - 148	3	35
Carbon disulfide	10.0	10.3		ug/L		103	63 - 134	1	24
1,1-Dichloroethene	10.0	11.1		ug/L		111	70 - 129	5	23

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QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

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

Lab Sample ID: LCSD 580-420560/8
Matrix: Water
Analysis Batch: 420560

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
Acetone	50.0	55.5		ug/L		111	44 - 150	8	33
Methylene Chloride	10.0	10.2		ug/L		102	77 - 125	4	18
Methyl tert-butyl ether	10.0	11.1		ug/L		111	72 - 120	5	18
trans-1,2-Dichloroethene	10.0	10.8		ug/L		108	75 - 120	0	21
1,1-Dichloroethane	10.0	10.2		ug/L		102	80 - 120	3	15
2-Butanone (MEK)	50.0	62.8		ug/L		126	65 - 137	7	34
2,2-Dichloropropane	10.0	9.91		ug/L		99	66 - 126	1	22
cis-1,2-Dichloroethene	10.0	10.7		ug/L		107	76 - 120	2	20
Bromochloromethane	10.0	11.2		ug/L		112	78 - 120	2	13
Chloroform	10.0	10.3		ug/L		103	78 - 127	0	14
1,1,1-Trichloroethane	10.0	10.3		ug/L		103	74 - 130	2	19
Carbon tetrachloride	10.0	10.9		ug/L		109	72 - 129	1	19
1,1-Dichloropropene	10.0	10.3		ug/L		103	74 - 120	1	14
Benzene	10.0	10.5		ug/L		105	80 - 122	3	14
1,2-Dichloroethane	10.0	10.2		ug/L		102	69 - 126	2	11
Trichloroethene	10.0	11.1		ug/L		111	80 - 125	1	13
1,2-Dichloropropane	10.0	10.2		ug/L		102	80 - 120	3	14
4-Methyl-2-pentanone (MIBK)	50.0	58.9		ug/L		118	59 - 141	8	22
Dibromomethane	10.0	12.2	*+	ug/L		122	80 - 120	2	11
Bromodichloromethane	10.0	11.2		ug/L		112	75 - 124	5	13
cis-1,3-Dichloropropene	10.0	10.7		ug/L		107	77 - 120	4	35
Toluene	10.0	10.0		ug/L		100	80 - 120	1	13
trans-1,3-Dichloropropene	10.0	10.5		ug/L		105	76 - 122	3	20
1,1,2-Trichloroethane	10.0	10.8		ug/L		108	80 - 121	3	14
Tetrachloroethene	10.0	10.5		ug/L		105	76 - 125	1	13
1,3-Dichloropropane	10.0	10.7		ug/L		107	79 - 120	2	19
Dibromochloromethane	10.0	11.6		ug/L		116	73 - 125	1	13
1,2-Dibromoethane	10.0	11.5		ug/L		115	79 - 126	6	12
Chlorobenzene	10.0	10.6		ug/L		106	80 - 120	1	10
1,1,1,2-Tetrachloroethane	10.0	10.9		ug/L		109	79 - 120	3	16
Ethylbenzene	10.0	10.1		ug/L		101	80 - 120	2	14
m-Xylene & p-Xylene	10.0	10.0		ug/L		100	80 - 120	1	14
o-Xylene	10.0	10.0		ug/L		100	80 - 120	1	16
Styrene	10.0	10.5		ug/L		105	76 - 122	2	16
Bromoform	10.0	13.2		ug/L		132	56 - 139	5	21
Isopropylbenzene	10.0	10.4		ug/L		104	80 - 123	1	19
Bromobenzene	10.0	10.6		ug/L		106	80 - 120	3	24
1,1,2,2-Tetrachloroethane	10.0	11.2		ug/L		112	74 - 124	8	25
1,2,3-Trichloropropane	10.0	11.3		ug/L		113	76 - 124	9	26
N-Propylbenzene	10.0	9.83		ug/L		98	80 - 122	6	22
2-Chlorotoluene	10.0	10.2		ug/L		102	80 - 120	7	20
4-Chlorotoluene	10.0	10.3		ug/L		103	73 - 129	4	29
t-Butylbenzene	10.0	10.1		ug/L		101	75 - 123	4	21
1,2,4-Trimethylbenzene	10.0	10.2		ug/L		102	80 - 120	5	16
sec-Butylbenzene	10.0	10.2		ug/L		102	78 - 122	6	15
4-Isopropyltoluene	10.0	10.2		ug/L		102	77 - 126	4	20
1,3-Dichlorobenzene	10.0	10.4		ug/L		104	77 - 127	5	35
1,4-Dichlorobenzene	10.0	10.5		ug/L		105	80 - 120	2	17
n-Butylbenzene	10.0	10.4		ug/L		104	57 - 133	3	14

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

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

Lab Sample ID: LCSD 580-420560/8
Matrix: Water
Analysis Batch: 420560

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
1,2-Dichlorobenzene	10.0	10.7		ug/L		107	80 - 120	5	15
1,2-Dibromo-3-Chloropropane	10.0	11.8		ug/L		118	65 - 133	6	25
1,2,4-Trichlorobenzene	10.0	10.5		ug/L		105	61 - 148	5	27
Hexachlorobutadiene	10.0	11.1		ug/L		111	74 - 131	3	22
Naphthalene	10.0	10.4		ug/L		104	63 - 150	9	33
1,2,3-Trichlorobenzene	10.0	10.4		ug/L		104	65 - 150	7	33
1,3,5-Trimethylbenzene	10.0	9.95		ug/L		99	80 - 122	4	21

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	99		80 - 120
1,2-Dichloroethane-d4 (Surr)	97		80 - 120
4-Bromofluorobenzene (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	103		80 - 120

Lab Sample ID: MB 580-421048/7
Matrix: Water
Analysis Batch: 421048

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			03/22/23 10:59	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		03/22/23 10:59	1
1,2-Dichloroethane-d4 (Surr)	96		80 - 120		03/22/23 10:59	1
4-Bromofluorobenzene (Surr)	97		80 - 120		03/22/23 10:59	1
Dibromofluoromethane (Surr)	95		80 - 120		03/22/23 10:59	1

Lab Sample ID: LCS 580-421048/4
Matrix: Water
Analysis Batch: 421048

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	4.78		ug/L		96	20 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	99		80 - 120
1,2-Dichloroethane-d4 (Surr)	93		80 - 120
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	98		80 - 120

Lab Sample ID: LCSD 580-421048/5
Matrix: Water
Analysis Batch: 421048

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	4.77		ug/L		95	20 - 150	0	33

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

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

Lab Sample ID: LCSD 580-421048/5
Matrix: Water
Analysis Batch: 421048

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

Surrogate	LCS D %Recovery	LCS D Qualifier	Limits
Toluene-d8 (Surr)	100		80 - 120
1,2-Dichloroethane-d4 (Surr)	93		80 - 120
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	99		80 - 120

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 320-660930/5
Matrix: Water
Analysis Batch: 660930

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			03/15/23 11:39	1

Lab Sample ID: LCS 320-660930/6
Matrix: Water
Analysis Batch: 660930

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	50.5		ug/L		101	85 - 115

Lab Sample ID: MRL 320-660930/4
Matrix: Water
Analysis Batch: 660930

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	4.09		ug/L		103	75 - 125

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 580-420835/3
Matrix: Water
Analysis Batch: 420835

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			03/17/23 12:12	1

Lab Sample ID: LCS 580-420835/4
Matrix: Water
Analysis Batch: 420835

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	51.7		mg/L		103	90 - 110

Lab Sample ID: LCSD 580-420835/5
Matrix: Water
Analysis Batch: 420835

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	51.7		mg/L		103	90 - 110	0	15

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QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 580-124498-2 MS
Matrix: Water
Analysis Batch: 420835

Client Sample ID: PA-25d-030823
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	11	F1	50.0	66.6	F1	mg/L		111	90 - 110

Lab Sample ID: 580-124498-2 MSD
Matrix: Water
Analysis Batch: 420835

Client Sample ID: PA-25d-030823
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	11	F1	50.0	66.6	F1	mg/L		111	90 - 110	0	15



Lab Chronicle

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: TB-030823-A

Lab Sample ID: 580-124498-1

Date Collected: 03/08/23 00:01

Matrix: Water

Date Received: 03/09/23 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420224	ITR	EET SEA	03/14/23 00:52

Client Sample ID: PA-25d-030823

Lab Sample ID: 580-124498-2

Date Collected: 03/08/23 07:20

Matrix: Water

Date Received: 03/09/23 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420224	ITR	EET SEA	03/14/23 01:57
Total/NA	Analysis	314.0		1	660930	AP1	EET SAC	03/15/23 13:26
Total/NA	Analysis	300.0		1	420835	CA	EET SEA	03/17/23 16:31

Client Sample ID: PA-15i-030823

Lab Sample ID: 580-124498-3

Date Collected: 03/08/23 08:02

Matrix: Water

Date Received: 03/09/23 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420224	ITR	EET SEA	03/14/23 02:19
Total/NA	Analysis	314.0		5	660930	AP1	EET SAC	03/15/23 13:44
Total/NA	Analysis	300.0		10	420835	CA	EET SEA	03/17/23 17:41

Client Sample ID: PA-26d-030823

Lab Sample ID: 580-124498-4

Date Collected: 03/08/23 09:07

Matrix: Water

Date Received: 03/09/23 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420224	ITR	EET SEA	03/14/23 02:40
Total/NA	Analysis	314.0		1	660930	AP1	EET SAC	03/15/23 14:02
Total/NA	Analysis	300.0		1	420835	CA	EET SEA	03/17/23 17:53

Client Sample ID: PA-16i-030823

Lab Sample ID: 580-124498-5

Date Collected: 03/08/23 09:54

Matrix: Water

Date Received: 03/09/23 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420224	ITR	EET SEA	03/14/23 03:02
Total/NA	Analysis	314.0		10	660930	AP1	EET SAC	03/15/23 14:20
Total/NA	Analysis	300.0		20	420835	CA	EET SEA	03/17/23 18:16

Client Sample ID: Dup-01-030823

Lab Sample ID: 580-124498-6

Date Collected: 03/08/23 09:55

Matrix: Water

Date Received: 03/09/23 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420224	ITR	EET SEA	03/14/23 03:24
Total/NA	Analysis	314.0		10	660930	AP1	EET SAC	03/15/23 15:14

Eurofins Seattle

Lab Chronicle

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: Dup-01-030823

Lab Sample ID: 580-124498-6

Date Collected: 03/08/23 09:55

Matrix: Water

Date Received: 03/09/23 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		10	420835	CA	EET SEA	03/17/23 18:40

Client Sample ID: PA-23d-030823

Lab Sample ID: 580-124498-7

Date Collected: 03/08/23 11:37

Matrix: Water

Date Received: 03/09/23 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420560	JJY	EET SEA	03/16/23 19:14
Total/NA	Analysis	8260D	RA	1	421048	JBT	EET SEA	03/22/23 13:31
Total/NA	Analysis	314.0		100	660930	AP1	EET SAC	03/15/23 15:32
Total/NA	Analysis	300.0		1000	420835	CA	EET SEA	03/17/23 19:15

Client Sample ID: PA-24d-030823

Lab Sample ID: 580-124498-8

Date Collected: 03/08/23 12:28

Matrix: Water

Date Received: 03/09/23 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420560	JJY	EET SEA	03/16/23 19:38
Total/NA	Analysis	8260D	RA	1	421048	JBT	EET SEA	03/22/23 13:53
Total/NA	Analysis	314.0		200	660930	AP1	EET SAC	03/15/23 15:49
Total/NA	Analysis	300.0		1000	420835	CA	EET SEA	03/17/23 20:02

Client Sample ID: PA-22d-030823

Lab Sample ID: 580-124498-9

Date Collected: 03/08/23 13:33

Matrix: Water

Date Received: 03/09/23 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420560	JJY	EET SEA	03/16/23 20:02
Total/NA	Analysis	8260D	RA	1	421048	JBT	EET SEA	03/22/23 14:15
Total/NA	Analysis	314.0		200	660930	AP1	EET SAC	03/15/23 16:07
Total/NA	Analysis	300.0		100	420835	CA	EET SEA	03/17/23 20:14

Client Sample ID: PA-04-030823

Lab Sample ID: 580-124498-10

Date Collected: 03/08/23 12:00

Matrix: Water

Date Received: 03/09/23 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420224	ITR	EET SEA	03/14/23 03:45
Total/NA	Analysis	314.0		5	660930	AP1	EET SAC	03/15/23 16:25
Total/NA	Analysis	300.0		1	420835	CA	EET SEA	03/17/23 20:37

Lab Chronicle

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Client Sample ID: PA-17iR-030823

Lab Sample ID: 580-124498-11

Date Collected: 03/08/23 08:00

Matrix: Water

Date Received: 03/09/23 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420224	ITR	EET SEA	03/14/23 04:07
Total/NA	Analysis	314.0		5	660930	AP1	EET SAC	03/15/23 16:43
Total/NA	Analysis	300.0		10	420835	CA	EET SEA	03/17/23 20:49

Client Sample ID: PA-27d-030823

Lab Sample ID: 580-124498-12

Date Collected: 03/08/23 10:20

Matrix: Water

Date Received: 03/09/23 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420560	JJY	EET SEA	03/16/23 20:26
Total/NA	Analysis	8260D	RA	1	421048	JBT	EET SEA	03/22/23 14:36
Total/NA	Analysis	314.0		10	660930	AP1	EET SAC	03/15/23 17:01
Total/NA	Analysis	300.0		100	420835	CA	EET SEA	03/17/23 21:00

Client Sample ID: PA-10i-030823

Lab Sample ID: 580-124498-13

Date Collected: 03/08/23 13:45

Matrix: Water

Date Received: 03/09/23 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420224	ITR	EET SEA	03/14/23 04:29
Total/NA	Analysis	314.0		5	660930	AP1	EET SAC	03/15/23 17:19
Total/NA	Analysis	300.0		10	420835	CA	EET SEA	03/17/23 21:12

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
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Laboratory: Eurofins Seattle

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

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4167	07-07-23

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
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124498-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-124498-1	TB-030823-A	Water	03/08/23 00:01	03/09/23 12:35
580-124498-2	PA-25d-030823	Water	03/08/23 07:20	03/09/23 12:35
580-124498-3	PA-15i-030823	Water	03/08/23 08:02	03/09/23 12:35
580-124498-4	PA-26d-030823	Water	03/08/23 09:07	03/09/23 12:35
580-124498-5	PA-16i-030823	Water	03/08/23 09:54	03/09/23 12:35
580-124498-6	Dup-01-030823	Water	03/08/23 09:55	03/09/23 12:35
580-124498-7	PA-23d-030823	Water	03/08/23 11:37	03/09/23 12:35
580-124498-8	PA-24d-030823	Water	03/08/23 12:28	03/09/23 12:35
580-124498-9	PA-22d-030823	Water	03/08/23 13:33	03/09/23 12:35
580-124498-10	PA-04-030823	Water	03/08/23 12:00	03/09/23 12:35
580-124498-11	PA-17iR-030823	Water	03/08/23 08:00	03/09/23 12:35
580-124498-12	PA-27d-030823	Water	03/08/23 10:20	03/09/23 12:35
580-124498-13	PA-10i-030823	Water	03/08/23 13:45	03/09/23 12:35

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- 11

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

Sampler: ST/MR Lab P#: _____
 Client Contact: Avery Soplata, Andrew Gardner, and Sarah Seekins Cruz, Sheri L
 Company: ERM-West Phone: _____ E-Mail: sheri.cruz@testamericainc.com

Job #: _____
 Job #: 10f2
 Job #: _____

Due Date Requested: _____
 TAT Requested (days): 15BD
 PO #: PN 0682894.207
 W/O #: _____
 Project #: 0682894
 SSOW#: _____

Analysis Requested
 8260C regular level standard VOA list-Seattle
 8260C LL - Standard VOA list-Seattle
 300.0_28D-Chloride-Seattle
 314 Perchlorate

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Solid, Other)	Field Filtered Sample (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:
					S/M	Y/B	A	N	A	N	A	N				
T8-030823-A	3/8/23		G	Water			X		X					2		
PA-25d-030823		0710		Water			X		X					5		
PA-15i-030823		0802		Water			X		X					5		
PA-26d-030823		0907		Water			X		X					5		
PA-16i-030823		0954		Water			X		X					5		
Dup-01-030823		0955		Water			X		X					5		
PA-23d-030823		1137		Water			X		X					5		
PA-24d-030823		1228		Water			X		X					5		
PA-22d-030823		1333		Water			X		X					5		
PA-04-030823		1200		Water			X		X					5		
PA-17-030823		0800		Water			X		X					5		

Possible Hazard Identification: Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological

Deliverable Requested: I, II, III, IV, Other (specify) _____

Empty Kit Relinquished by: _____ Date: _____

Relinquished by: ERM Company: ERM
 Relinquished by: M.E. Company: M.E.
 Relinquished by: _____ Company: _____

Custody Seals Intact: Yes No Custody Seal No.: _____
 Cooler Temperature(s) °C and Other Remarks: 1-1

Chain of Custody Record

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: PN 0682894.207 Email: avery.soplata@erm.com, andrew.gardner@erm.com and sarah.seekins@erm.com Project Name: Arkema - Q1 2023 Groundwater event Site:		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 #:		COC No: Page: 2 of 2 Job #:	
Sample Identification Sample ID: PA-27d-030823 PA-10i-030823 RB-02-030923		Analysis Requested 8260C regular level standard VOA list-Seattle 8260C_LL - Standard VOA list-Seattle 300.0_28D-Chloride-Seattle 314 Perchlorate	
Sample Date: 3/8/23 ↓ 3/9/23	Sample Time: 1020 ↓ 1345 0620	Matrix (Water, Solid, On-waste, etc.) Water Water Water Water Water Water Water Water	Field Filtered Sample (Yes or No) A A N N N N N N N N
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological <input type="checkbox"/> Poison B		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Relinquished by: <i>gn</i> Relinquished by: <i>Avinia Nf</i> Relinquished by:		Received by: <i>Avinia Nf</i> Received by: <i>M.E.</i> Received by:	
Date/Time: 3/9/23 1200 Date/Time: 3/9/23 1335 Date/Time:		Date/Time: 3/9/23 1200 Date/Time: 3/9/23 1335 Date/Time:	
Company: ERM Company: M.E. Company:		Company: M.E. Company: ERM Company:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Δ Yes Δ No		Cooler Temperature(s) °C and Other Remarks:	



Login Sample Receipt Checklist

Client: ERM-West

Job Number: 580-124498-1

Login Number: 124498

List Number: 1

Creator: O'Connell, Jason I

List Source: Eurofins Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ERM-West

Job Number: 580-124498-1

Login Number: 124498

List Number: 2

Creator: Cahill, Nicholas P

List Source: Eurofins Sacramento

List Creation: 03/11/23 12:05 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.	N/A	
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	2.5c
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?	False	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	No headspace left for 314
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	





ANALYTICAL REPORT

PREPARED FOR

Attn: Sarah Seekins
ERM-West
1050 SW 6th Avenue
Suite 1650
Portland, Oregon 97204
Generated 4/4/2023 9:59:56 AM

JOB DESCRIPTION

Arkema - Q1 2023 Groundwater Event-I

JOB NUMBER

580-124516-1

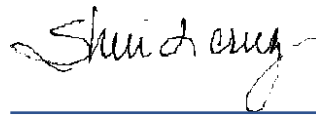
Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

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



Generated
4/4/2023 9:59:56 AM

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



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Case Narrative

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Job ID: 580-124516-1

Laboratory: Eurofins Seattle

Narrative

Job Narrative 580-124516-1

Comments

No additional comments.

Receipt

The samples were received on 3/9/2023 3:30 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 1.8° C.

Receipt Exceptions

Containers received in west sacramento for samples 2-13 do not have sufficient headspace for 314 analysis. All containers received were completely full. RB-02-030923 (580-124516-2), PA-20d-030923 (580-124516-3), PA-21d-030923 (580-124516-4), PA-19d-030923 (580-124516-5), PA-30d-030923 (580-124516-6), MWA-63-030923 (580-124516-7), MWA-63-030923 (580-124516-7[MS]), MWA-63-030923 (580-124516-7[MSD]), MWA-11i(d)-030923 (580-124516-8), PA-18d-030923 (580-124516-9), Dup-02-030923 (580-124516-10), MWA-31i(d)-030923 (580-124516-11), MWA-56d-030923 (580-124516-12) and MWA-58d-030923 (580-124516-13)

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-420328 recovered above the upper control limit for Carbon disulfide. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: TB-030923 (580-124516-1), MWA-11i(d)-030923 (580-124516-8) and (CCVIS 580-420328/3).

Method 8260D: The following samples were diluted to bring the concentration of target analytes within the calibration range: PA-21d-030923 (580-124516-4), PA-19d-030923 (580-124516-5), PA-30d-030923 (580-124516-6), MWA-63-030923 (580-124516-7), MWA-63-030923 (580-124516-7[MS]), MWA-63-030923 (580-124516-7[MSD]) and MWA-58d-030923 (580-124516-13). Elevated reporting limits (RLs) are provided.

Method 8260D: Reanalysis of the following samples was performed outside of the analytical holding time due to analytes being out of calibration limits. Therefore, both sets of data were reported : PA-21d-030923 (580-124516-4), PA-19d-030923 (580-124516-5) and MWA-56d-030923 (580-124516-12).

Method 8260D: The following samples were diluted to bring the concentration of target analytes within the calibration range: PA-21d-030923 (580-124516-4), PA-19d-030923 (580-124516-5) and MWA-56d-030923 (580-124516-12). 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 320-661729 were diluted to bring the concentration of target analytes within the calibration range: MWA-31i(d)-030923 (580-124516-11), MWA-56d-030923 (580-124516-12) and MWA-58d-030923 (580-124516-13). 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 320-661729 were diluted. The samples were a discolored brown or dark brown before and after filtering. In order to protect instrumentation, the samples were diluted. Elevated reporting limits (RLs) are provided. PA-20d-030923 (580-124516-3), PA-21d-030923 (580-124516-4), PA-19d-030923 (580-124516-5), PA-30d-030923 (580-124516-6), MWA-63-030923 (580-124516-7), MWA-63-030923 (580-124516-7[MS]), MWA-63-030923 (580-124516-7[MSD]), MWA-11i(d)-030923 (580-124516-8), PA-18d-030923 (580-124516-9) and Dup-02-030923 (580-124516-10)

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
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
H	Sample was prepped or analyzed beyond the specified holding time
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 Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: TB-030923

Lab Sample ID: 580-124516-1

Date Collected: 03/09/23 00:01

Matrix: Water

Date Received: 03/09/23 15:30

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			03/14/23 13:11	1
Chloromethane	ND		0.50	0.14	ug/L			03/14/23 13:11	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/14/23 13:11	1
Bromomethane	ND		0.50	0.13	ug/L			03/14/23 13:11	1
Chloroethane	ND		0.50	0.096	ug/L			03/14/23 13:11	1
Carbon disulfide	ND		0.30	0.083	ug/L			03/14/23 13:11	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/14/23 13:11	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			03/14/23 13:11	1
Acetone	ND		10	3.1	ug/L			03/14/23 13:11	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/14/23 13:11	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/14/23 13:11	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/14/23 13:11	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			03/14/23 13:11	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			03/14/23 13:11	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/14/23 13:11	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			03/14/23 13:11	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/14/23 13:11	1
Chloroform	ND		0.20	0.030	ug/L			03/14/23 13:11	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			03/14/23 13:11	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/14/23 13:11	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/14/23 13:11	1
Benzene	ND		0.20	0.030	ug/L			03/14/23 13:11	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/14/23 13:11	1
Trichloroethene	ND		0.20	0.066	ug/L			03/14/23 13:11	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/14/23 13:11	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/14/23 13:11	1
Dibromomethane	ND		0.20	0.062	ug/L			03/14/23 13:11	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/14/23 13:11	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/14/23 13:11	1
Toluene	ND		0.20	0.050	ug/L			03/14/23 13:11	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/14/23 13:11	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/14/23 13:11	1
Tetrachloroethene	ND		0.24	0.084	ug/L			03/14/23 13:11	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/14/23 13:11	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/14/23 13:11	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/14/23 13:11	1
Chlorobenzene	ND		0.20	0.060	ug/L			03/14/23 13:11	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/14/23 13:11	1
Ethylbenzene	ND		0.20	0.030	ug/L			03/14/23 13:11	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			03/14/23 13:11	1
o-Xylene	ND		0.50	0.15	ug/L			03/14/23 13:11	1
Styrene	ND		1.0	0.19	ug/L			03/14/23 13:11	1
Bromoform	ND		0.50	0.16	ug/L			03/14/23 13:11	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/14/23 13:11	1
Bromobenzene	ND		0.20	0.038	ug/L			03/14/23 13:11	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/14/23 13:11	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/14/23 13:11	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/14/23 13:11	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			03/14/23 13:11	1

Client Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: TB-030923

Lab Sample ID: 580-124516-1

Date Collected: 03/09/23 00:01

Matrix: Water

Date Received: 03/09/23 15:30

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			03/14/23 13:11	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/14/23 13:11	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/14/23 13:11	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/14/23 13:11	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/14/23 13:11	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/14/23 13:11	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 13:11	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 13:11	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/14/23 13:11	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			03/14/23 13:11	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/14/23 13:11	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/14/23 13:11	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/14/23 13:11	1
Naphthalene	ND		1.0	0.22	ug/L			03/14/23 13:11	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/14/23 13:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		03/14/23 13:11	1
Dibromofluoromethane (Surr)	99		80 - 120		03/14/23 13:11	1
4-Bromofluorobenzene (Surr)	102		80 - 120		03/14/23 13:11	1
1,2-Dichloroethane-d4 (Surr)	99		80 - 120		03/14/23 13:11	1

Client Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: RB-02-030923

Lab Sample ID: 580-124516-2

Date Collected: 03/09/23 06:20

Matrix: Water

Date Received: 03/09/23 15:30

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			03/23/23 17:43	1
Chloromethane	ND		1.0	0.28	ug/L			03/23/23 17:43	1
Vinyl chloride	ND		1.0	0.22	ug/L			03/23/23 17:43	1
Bromomethane	ND		1.0	0.21	ug/L			03/23/23 17:43	1
Chloroethane	ND		1.0	0.35	ug/L			03/23/23 17:43	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			03/23/23 17:43	1
Carbon disulfide	ND		1.0	0.53	ug/L			03/23/23 17:43	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			03/23/23 17:43	1
Acetone	39		15	3.2	ug/L			03/23/23 17:43	1
Methylene Chloride	ND		3.0	1.4	ug/L			03/23/23 17:43	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			03/23/23 17:43	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			03/23/23 17:43	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			03/23/23 17:43	1
2-Butanone (MEK)	ND		15	4.7	ug/L			03/23/23 17:43	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			03/23/23 17:43	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			03/23/23 17:43	1
Bromochloromethane	ND		1.0	0.29	ug/L			03/23/23 17:43	1
Chloroform	ND		1.0	0.26	ug/L			03/23/23 17:43	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			03/23/23 17:43	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			03/23/23 17:43	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			03/23/23 17:43	1
Benzene	ND		1.0	0.24	ug/L			03/23/23 17:43	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			03/23/23 17:43	1
Trichloroethene	ND		1.0	0.26	ug/L			03/23/23 17:43	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			03/23/23 17:43	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			03/23/23 17:43	1
Dibromomethane	ND		1.0	0.34	ug/L			03/23/23 17:43	1
Bromodichloromethane	ND		1.0	0.29	ug/L			03/23/23 17:43	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			03/23/23 17:43	1
Toluene	ND		1.0	0.39	ug/L			03/23/23 17:43	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			03/23/23 17:43	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			03/23/23 17:43	1
Tetrachloroethene	ND		1.0	0.41	ug/L			03/23/23 17:43	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			03/23/23 17:43	1
Dibromochloromethane	ND		1.0	0.43	ug/L			03/23/23 17:43	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			03/23/23 17:43	1
Chlorobenzene	ND		1.0	0.44	ug/L			03/23/23 17:43	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			03/23/23 17:43	1
Ethylbenzene	ND		1.0	0.50	ug/L			03/23/23 17:43	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			03/23/23 17:43	1
o-Xylene	ND		1.0	0.39	ug/L			03/23/23 17:43	1
Styrene	ND		1.0	0.53	ug/L			03/23/23 17:43	1
Bromoform	ND		1.0	0.51	ug/L			03/23/23 17:43	1
Isopropylbenzene	ND		1.0	0.44	ug/L			03/23/23 17:43	1
Bromobenzene	ND		1.0	0.43	ug/L			03/23/23 17:43	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			03/23/23 17:43	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			03/23/23 17:43	1
N-Propylbenzene	ND		1.0	0.50	ug/L			03/23/23 17:43	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			03/23/23 17:43	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: RB-02-030923

Lab Sample ID: 580-124516-2

Date Collected: 03/09/23 06:20

Matrix: Water

Date Received: 03/09/23 15:30

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			03/23/23 17:43	1
t-Butylbenzene	ND		2.0	0.58	ug/L			03/23/23 17:43	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			03/23/23 17:43	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			03/23/23 17:43	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			03/23/23 17:43	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			03/23/23 17:43	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			03/23/23 17:43	1
n-Butylbenzene	ND		1.0	0.44	ug/L			03/23/23 17:43	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			03/23/23 17:43	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			03/23/23 17:43	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			03/23/23 17:43	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			03/23/23 17:43	1
Naphthalene	ND		3.0	0.93	ug/L			03/23/23 17:43	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			03/23/23 17:43	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			03/23/23 17:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		03/23/23 17:43	1
1,2-Dichloroethane-d4 (Surr)	105		80 - 120		03/23/23 17:43	1
4-Bromofluorobenzene (Surr)	90		80 - 120		03/23/23 17:43	1
Dibromofluoromethane (Surr)	106		80 - 120		03/23/23 17:43	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			03/17/23 15:53	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			03/20/23 20:14	1

Client Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: PA-20d-030923

Lab Sample ID: 580-124516-3

Date Collected: 03/09/23 07:25

Matrix: Water

Date Received: 03/09/23 15:30

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			03/23/23 18:08	1
Chloromethane	ND		1.0	0.28	ug/L			03/23/23 18:08	1
Vinyl chloride	ND		1.0	0.22	ug/L			03/23/23 18:08	1
Bromomethane	ND		1.0	0.21	ug/L			03/23/23 18:08	1
Chloroethane	ND		1.0	0.35	ug/L			03/23/23 18:08	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			03/23/23 18:08	1
Carbon disulfide	ND		1.0	0.53	ug/L			03/23/23 18:08	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			03/23/23 18:08	1
Acetone	ND		15	3.2	ug/L			03/23/23 18:08	1
Methylene Chloride	ND		3.0	1.4	ug/L			03/23/23 18:08	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			03/23/23 18:08	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			03/23/23 18:08	1
1,1-Dichloroethane	1.3		1.0	0.22	ug/L			03/23/23 18:08	1
2-Butanone (MEK)	ND		15	4.7	ug/L			03/23/23 18:08	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			03/23/23 18:08	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			03/23/23 18:08	1
Bromochloromethane	ND		1.0	0.29	ug/L			03/23/23 18:08	1
Chloroform	ND		1.0	0.26	ug/L			03/23/23 18:08	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			03/23/23 18:08	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			03/23/23 18:08	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			03/23/23 18:08	1
Benzene	ND		1.0	0.24	ug/L			03/23/23 18:08	1
1,2-Dichloroethane	1.3		1.0	0.42	ug/L			03/23/23 18:08	1
Trichloroethene	ND		1.0	0.26	ug/L			03/23/23 18:08	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			03/23/23 18:08	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			03/23/23 18:08	1
Dibromomethane	ND		1.0	0.34	ug/L			03/23/23 18:08	1
Bromodichloromethane	ND		1.0	0.29	ug/L			03/23/23 18:08	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			03/23/23 18:08	1
Toluene	ND		1.0	0.39	ug/L			03/23/23 18:08	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			03/23/23 18:08	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			03/23/23 18:08	1
Tetrachloroethene	ND		1.0	0.41	ug/L			03/23/23 18:08	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			03/23/23 18:08	1
Dibromochloromethane	ND		1.0	0.43	ug/L			03/23/23 18:08	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			03/23/23 18:08	1
Chlorobenzene	13		1.0	0.44	ug/L			03/23/23 18:08	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			03/23/23 18:08	1
Ethylbenzene	ND		1.0	0.50	ug/L			03/23/23 18:08	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			03/23/23 18:08	1
o-Xylene	ND		1.0	0.39	ug/L			03/23/23 18:08	1
Styrene	ND		1.0	0.53	ug/L			03/23/23 18:08	1
Bromoform	ND		1.0	0.51	ug/L			03/23/23 18:08	1
Isopropylbenzene	ND		1.0	0.44	ug/L			03/23/23 18:08	1
Bromobenzene	ND		1.0	0.43	ug/L			03/23/23 18:08	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			03/23/23 18:08	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			03/23/23 18:08	1
N-Propylbenzene	ND		1.0	0.50	ug/L			03/23/23 18:08	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			03/23/23 18:08	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: PA-20d-030923

Lab Sample ID: 580-124516-3

Date Collected: 03/09/23 07:25

Matrix: Water

Date Received: 03/09/23 15:30

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			03/23/23 18:08	1
t-Butylbenzene	ND		2.0	0.58	ug/L			03/23/23 18:08	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			03/23/23 18:08	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			03/23/23 18:08	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			03/23/23 18:08	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			03/23/23 18:08	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			03/23/23 18:08	1
n-Butylbenzene	ND		1.0	0.44	ug/L			03/23/23 18:08	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			03/23/23 18:08	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			03/23/23 18:08	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			03/23/23 18:08	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			03/23/23 18:08	1
Naphthalene	ND		3.0	0.93	ug/L			03/23/23 18:08	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			03/23/23 18:08	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			03/23/23 18:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		03/23/23 18:08	1
1,2-Dichloroethane-d4 (Surr)	106		80 - 120		03/23/23 18:08	1
4-Bromofluorobenzene (Surr)	93		80 - 120		03/23/23 18:08	1
Dibromofluoromethane (Surr)	107		80 - 120		03/23/23 18:08	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	10	ug/L			03/17/23 17:04	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	1100		150	43	mg/L			03/20/23 20:26	100

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: PA-21d-030923

Lab Sample ID: 580-124516-4

Date Collected: 03/09/23 08:19

Matrix: Water

Date Received: 03/09/23 15:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		100	53	ug/L			03/23/23 18:32	100
Chloromethane	ND		100	28	ug/L			03/23/23 18:32	100
Vinyl chloride	ND		100	22	ug/L			03/23/23 18:32	100
Bromomethane	ND		100	21	ug/L			03/23/23 18:32	100
Chloroethane	ND		100	35	ug/L			03/23/23 18:32	100
Trichlorofluoromethane	ND		100	36	ug/L			03/23/23 18:32	100
Carbon disulfide	ND		100	53	ug/L			03/23/23 18:32	100
1,1-Dichloroethene	ND		100	28	ug/L			03/23/23 18:32	100
Acetone	ND		1500	320	ug/L			03/23/23 18:32	100
Methylene Chloride	ND		300	140	ug/L			03/23/23 18:32	100
Methyl tert-butyl ether	ND		100	44	ug/L			03/23/23 18:32	100
trans-1,2-Dichloroethene	ND		100	39	ug/L			03/23/23 18:32	100
1,1-Dichloroethane	ND		100	22	ug/L			03/23/23 18:32	100
2-Butanone (MEK)	ND		1500	470	ug/L			03/23/23 18:32	100
2,2-Dichloropropane	ND		100	32	ug/L			03/23/23 18:32	100
cis-1,2-Dichloroethene	ND		100	35	ug/L			03/23/23 18:32	100
Bromochloromethane	ND		100	29	ug/L			03/23/23 18:32	100
Chloroform	ND		100	26	ug/L			03/23/23 18:32	100
1,1,1-Trichloroethane	ND		100	39	ug/L			03/23/23 18:32	100
Carbon tetrachloride	ND		100	30	ug/L			03/23/23 18:32	100
1,1-Dichloropropene	ND		100	29	ug/L			03/23/23 18:32	100
Benzene	ND		100	24	ug/L			03/23/23 18:32	100
1,2-Dichloroethane	ND		100	42	ug/L			03/23/23 18:32	100
Trichloroethene	ND		100	26	ug/L			03/23/23 18:32	100
1,2-Dichloropropane	ND		100	18	ug/L			03/23/23 18:32	100
4-Methyl-2-pentanone (MIBK)	ND		500	250	ug/L			03/23/23 18:32	100
Dibromomethane	ND		100	34	ug/L			03/23/23 18:32	100
Bromodichloromethane	ND		100	29	ug/L			03/23/23 18:32	100
cis-1,3-Dichloropropene	ND		100	42	ug/L			03/23/23 18:32	100
Toluene	ND		100	39	ug/L			03/23/23 18:32	100
trans-1,3-Dichloropropene	ND		100	41	ug/L			03/23/23 18:32	100
1,1,2-Trichloroethane	ND		100	24	ug/L			03/23/23 18:32	100
Tetrachloroethene	ND		100	41	ug/L			03/23/23 18:32	100
1,3-Dichloropropane	ND		100	35	ug/L			03/23/23 18:32	100
Dibromochloromethane	ND		100	43	ug/L			03/23/23 18:32	100
1,2-Dibromoethane	ND		100	40	ug/L			03/23/23 18:32	100
Chlorobenzene	33000	E	100	44	ug/L			03/23/23 18:32	100
1,1,1,2-Tetrachloroethane	ND		100	18	ug/L			03/23/23 18:32	100
Ethylbenzene	ND		100	50	ug/L			03/23/23 18:32	100
m-Xylene & p-Xylene	ND		200	53	ug/L			03/23/23 18:32	100
o-Xylene	ND		100	39	ug/L			03/23/23 18:32	100
Styrene	ND		100	53	ug/L			03/23/23 18:32	100
Bromoform	ND		100	51	ug/L			03/23/23 18:32	100
Isopropylbenzene	ND		100	44	ug/L			03/23/23 18:32	100
Bromobenzene	ND		100	43	ug/L			03/23/23 18:32	100
1,1,2,2-Tetrachloroethane	ND		100	52	ug/L			03/23/23 18:32	100
1,2,3-Trichloropropane	ND		100	41	ug/L			03/23/23 18:32	100
N-Propylbenzene	ND		100	50	ug/L			03/23/23 18:32	100
2-Chlorotoluene	ND		100	51	ug/L			03/23/23 18:32	100

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: PA-21d-030923

Lab Sample ID: 580-124516-4

Date Collected: 03/09/23 08:19

Matrix: Water

Date Received: 03/09/23 15:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		100	38	ug/L			03/23/23 18:32	100
t-Butylbenzene	ND		200	58	ug/L			03/23/23 18:32	100
1,2,4-Trimethylbenzene	ND		300	61	ug/L			03/23/23 18:32	100
sec-Butylbenzene	ND		100	49	ug/L			03/23/23 18:32	100
4-Isopropyltoluene	ND		100	28	ug/L			03/23/23 18:32	100
1,3-Dichlorobenzene	ND		100	48	ug/L			03/23/23 18:32	100
1,4-Dichlorobenzene	ND		100	46	ug/L			03/23/23 18:32	100
n-Butylbenzene	ND		100	44	ug/L			03/23/23 18:32	100
1,2-Dichlorobenzene	ND		100	46	ug/L			03/23/23 18:32	100
1,2-Dibromo-3-Chloropropane	ND		300	57	ug/L			03/23/23 18:32	100
1,2,4-Trichlorobenzene	ND		100	33	ug/L			03/23/23 18:32	100
Hexachlorobutadiene	ND		300	79	ug/L			03/23/23 18:32	100
Naphthalene	ND		300	93	ug/L			03/23/23 18:32	100
1,2,3-Trichlorobenzene	ND		200	43	ug/L			03/23/23 18:32	100
1,3,5-Trimethylbenzene	ND		100	55	ug/L			03/23/23 18:32	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	92		80 - 120					03/23/23 18:32	100
1,2-Dichloroethane-d4 (Surr)	103		80 - 120					03/23/23 18:32	100
4-Bromofluorobenzene (Surr)	94		80 - 120					03/23/23 18:32	100
Dibromofluoromethane (Surr)	106		80 - 120					03/23/23 18:32	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	30000	H	500	220	ug/L			03/29/23 15:35	500
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120					03/29/23 15:35	500
1,2-Dichloroethane-d4 (Surr)	106		80 - 120					03/29/23 15:35	500
4-Bromofluorobenzene (Surr)	96		80 - 120					03/29/23 15:35	500
Dibromofluoromethane (Surr)	103		80 - 120					03/29/23 15:35	500

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	110	J	200	100	ug/L			03/17/23 17:58	50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	340		15	4.3	mg/L			03/20/23 21:01	10

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: PA-19d-030923

Lab Sample ID: 580-124516-5

Date Collected: 03/09/23 09:48

Matrix: Water

Date Received: 03/09/23 15:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		20	11	ug/L			03/23/23 18:56	20
Chloromethane	ND		20	5.6	ug/L			03/23/23 18:56	20
Vinyl chloride	ND		20	4.4	ug/L			03/23/23 18:56	20
Bromomethane	ND		20	4.2	ug/L			03/23/23 18:56	20
Chloroethane	ND		20	7.0	ug/L			03/23/23 18:56	20
Trichlorofluoromethane	ND		20	7.2	ug/L			03/23/23 18:56	20
Carbon disulfide	ND		20	11	ug/L			03/23/23 18:56	20
1,1-Dichloroethene	ND		20	5.6	ug/L			03/23/23 18:56	20
Acetone	ND		300	64	ug/L			03/23/23 18:56	20
Methylene Chloride	ND		60	29	ug/L			03/23/23 18:56	20
Methyl tert-butyl ether	ND		20	8.8	ug/L			03/23/23 18:56	20
trans-1,2-Dichloroethene	ND		20	7.8	ug/L			03/23/23 18:56	20
1,1-Dichloroethane	ND		20	4.4	ug/L			03/23/23 18:56	20
2-Butanone (MEK)	ND		300	94	ug/L			03/23/23 18:56	20
2,2-Dichloropropane	ND		20	6.4	ug/L			03/23/23 18:56	20
cis-1,2-Dichloroethene	21		20	7.0	ug/L			03/23/23 18:56	20
Bromochloromethane	ND		20	5.8	ug/L			03/23/23 18:56	20
Chloroform	ND		20	5.2	ug/L			03/23/23 18:56	20
1,1,1-Trichloroethane	ND		20	7.8	ug/L			03/23/23 18:56	20
Carbon tetrachloride	ND		20	6.0	ug/L			03/23/23 18:56	20
1,1-Dichloropropene	ND		20	5.8	ug/L			03/23/23 18:56	20
Benzene	48		20	4.8	ug/L			03/23/23 18:56	20
1,2-Dichloroethane	ND		20	8.4	ug/L			03/23/23 18:56	20
Trichloroethene	14 J		20	5.2	ug/L			03/23/23 18:56	20
1,2-Dichloropropane	ND		20	3.6	ug/L			03/23/23 18:56	20
4-Methyl-2-pentanone (MIBK)	ND		100	50	ug/L			03/23/23 18:56	20
Dibromomethane	ND		20	6.8	ug/L			03/23/23 18:56	20
Bromodichloromethane	ND		20	5.8	ug/L			03/23/23 18:56	20
cis-1,3-Dichloropropene	ND		20	8.4	ug/L			03/23/23 18:56	20
Toluene	ND		20	7.8	ug/L			03/23/23 18:56	20
trans-1,3-Dichloropropene	ND		20	8.2	ug/L			03/23/23 18:56	20
1,1,2-Trichloroethane	ND		20	4.8	ug/L			03/23/23 18:56	20
Tetrachloroethene	ND		20	8.2	ug/L			03/23/23 18:56	20
1,3-Dichloropropane	ND		20	7.0	ug/L			03/23/23 18:56	20
Dibromochloromethane	ND		20	8.6	ug/L			03/23/23 18:56	20
1,2-Dibromoethane	ND		20	8.0	ug/L			03/23/23 18:56	20
Chlorobenzene	8900 E		20	8.8	ug/L			03/23/23 18:56	20
1,1,1,2-Tetrachloroethane	ND		20	3.6	ug/L			03/23/23 18:56	20
Ethylbenzene	ND		20	10	ug/L			03/23/23 18:56	20
m-Xylene & p-Xylene	ND		40	11	ug/L			03/23/23 18:56	20
o-Xylene	ND		20	7.8	ug/L			03/23/23 18:56	20
Styrene	ND		20	11	ug/L			03/23/23 18:56	20
Bromoform	ND		20	10	ug/L			03/23/23 18:56	20
Isopropylbenzene	ND		20	8.8	ug/L			03/23/23 18:56	20
Bromobenzene	ND		20	8.6	ug/L			03/23/23 18:56	20
1,1,2,2-Tetrachloroethane	ND		20	10	ug/L			03/23/23 18:56	20
1,2,3-Trichloropropane	ND		20	8.2	ug/L			03/23/23 18:56	20
N-Propylbenzene	ND		20	10	ug/L			03/23/23 18:56	20
2-Chlorotoluene	ND		20	10	ug/L			03/23/23 18:56	20

Euromins Seattle

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: PA-19d-030923

Lab Sample ID: 580-124516-5

Date Collected: 03/09/23 09:48

Matrix: Water

Date Received: 03/09/23 15:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		20	7.6	ug/L			03/23/23 18:56	20
t-Butylbenzene	ND		40	12	ug/L			03/23/23 18:56	20
1,2,4-Trimethylbenzene	ND		60	12	ug/L			03/23/23 18:56	20
sec-Butylbenzene	ND		20	9.8	ug/L			03/23/23 18:56	20
4-Isopropyltoluene	ND		20	5.6	ug/L			03/23/23 18:56	20
1,3-Dichlorobenzene	ND		20	9.6	ug/L			03/23/23 18:56	20
1,4-Dichlorobenzene	ND		20	9.2	ug/L			03/23/23 18:56	20
n-Butylbenzene	ND		20	8.8	ug/L			03/23/23 18:56	20
1,2-Dichlorobenzene	ND		20	9.2	ug/L			03/23/23 18:56	20
1,2-Dibromo-3-Chloropropane	ND		60	11	ug/L			03/23/23 18:56	20
1,2,4-Trichlorobenzene	ND		20	6.6	ug/L			03/23/23 18:56	20
Hexachlorobutadiene	ND		60	16	ug/L			03/23/23 18:56	20
Naphthalene	ND		60	19	ug/L			03/23/23 18:56	20
1,2,3-Trichlorobenzene	ND		40	8.6	ug/L			03/23/23 18:56	20
1,3,5-Trimethylbenzene	ND		20	11	ug/L			03/23/23 18:56	20
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	92		80 - 120					03/23/23 18:56	20
1,2-Dichloroethane-d4 (Surr)	100		80 - 120					03/23/23 18:56	20
4-Bromofluorobenzene (Surr)	94		80 - 120					03/23/23 18:56	20
Dibromofluoromethane (Surr)	109		80 - 120					03/23/23 18:56	20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	12000	H	200	88	ug/L			03/29/23 16:24	200
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120					03/29/23 16:24	200
1,2-Dichloroethane-d4 (Surr)	107		80 - 120					03/29/23 16:24	200
4-Bromofluorobenzene (Surr)	91		80 - 120					03/29/23 16:24	200
Dibromofluoromethane (Surr)	101		80 - 120					03/29/23 16:24	200

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	10	ug/L			03/17/23 19:27	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	350		15	4.3	mg/L			03/20/23 21:24	10

Client Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: PA-30d-030923

Lab Sample ID: 580-124516-6

Date Collected: 03/09/23 10:50

Matrix: Water

Date Received: 03/09/23 15:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		200	110	ug/L			03/23/23 19:20	200
Chloromethane	ND		200	56	ug/L			03/23/23 19:20	200
Vinyl chloride	ND		200	44	ug/L			03/23/23 19:20	200
Bromomethane	ND		200	42	ug/L			03/23/23 19:20	200
Chloroethane	ND		200	70	ug/L			03/23/23 19:20	200
Trichlorofluoromethane	ND		200	72	ug/L			03/23/23 19:20	200
Carbon disulfide	ND		200	110	ug/L			03/23/23 19:20	200
1,1-Dichloroethene	ND		200	56	ug/L			03/23/23 19:20	200
Acetone	ND		3000	640	ug/L			03/23/23 19:20	200
Methylene Chloride	ND		600	290	ug/L			03/23/23 19:20	200
Methyl tert-butyl ether	ND		200	88	ug/L			03/23/23 19:20	200
trans-1,2-Dichloroethene	ND		200	78	ug/L			03/23/23 19:20	200
1,1-Dichloroethane	ND		200	44	ug/L			03/23/23 19:20	200
2-Butanone (MEK)	ND		3000	940	ug/L			03/23/23 19:20	200
2,2-Dichloropropane	ND		200	64	ug/L			03/23/23 19:20	200
cis-1,2-Dichloroethene	ND		200	70	ug/L			03/23/23 19:20	200
Bromochloromethane	ND		200	58	ug/L			03/23/23 19:20	200
Chloroform	ND		200	52	ug/L			03/23/23 19:20	200
1,1,1-Trichloroethane	ND		200	78	ug/L			03/23/23 19:20	200
Carbon tetrachloride	ND		200	60	ug/L			03/23/23 19:20	200
1,1-Dichloropropene	ND		200	58	ug/L			03/23/23 19:20	200
Benzene	ND		200	48	ug/L			03/23/23 19:20	200
1,2-Dichloroethane	ND		200	84	ug/L			03/23/23 19:20	200
Trichloroethene	ND		200	52	ug/L			03/23/23 19:20	200
1,2-Dichloropropane	ND		200	36	ug/L			03/23/23 19:20	200
4-Methyl-2-pentanone (MIBK)	ND		1000	500	ug/L			03/23/23 19:20	200
Dibromomethane	ND		200	68	ug/L			03/23/23 19:20	200
Bromodichloromethane	ND		200	58	ug/L			03/23/23 19:20	200
cis-1,3-Dichloropropene	ND		200	84	ug/L			03/23/23 19:20	200
Toluene	ND		200	78	ug/L			03/23/23 19:20	200
trans-1,3-Dichloropropene	ND		200	82	ug/L			03/23/23 19:20	200
1,1,2-Trichloroethane	ND		200	48	ug/L			03/23/23 19:20	200
Tetrachloroethene	ND		200	82	ug/L			03/23/23 19:20	200
1,3-Dichloropropane	ND		200	70	ug/L			03/23/23 19:20	200
Dibromochloromethane	ND		200	86	ug/L			03/23/23 19:20	200
1,2-Dibromoethane	ND		200	80	ug/L			03/23/23 19:20	200
Chlorobenzene	24000		200	88	ug/L			03/23/23 19:20	200
1,1,1,2-Tetrachloroethane	ND		200	36	ug/L			03/23/23 19:20	200
Ethylbenzene	ND		200	100	ug/L			03/23/23 19:20	200
m-Xylene & p-Xylene	ND		400	110	ug/L			03/23/23 19:20	200
o-Xylene	ND		200	78	ug/L			03/23/23 19:20	200
Styrene	ND		200	110	ug/L			03/23/23 19:20	200
Bromoform	ND		200	100	ug/L			03/23/23 19:20	200
Isopropylbenzene	ND		200	88	ug/L			03/23/23 19:20	200
Bromobenzene	ND		200	86	ug/L			03/23/23 19:20	200
1,1,2,2-Tetrachloroethane	ND		200	100	ug/L			03/23/23 19:20	200
1,2,3-Trichloropropane	ND		200	82	ug/L			03/23/23 19:20	200
N-Propylbenzene	ND		200	100	ug/L			03/23/23 19:20	200
2-Chlorotoluene	ND		200	100	ug/L			03/23/23 19:20	200

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: PA-30d-030923

Lab Sample ID: 580-124516-6

Date Collected: 03/09/23 10:50

Matrix: Water

Date Received: 03/09/23 15:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		200	76	ug/L			03/23/23 19:20	200
t-Butylbenzene	ND		400	120	ug/L			03/23/23 19:20	200
1,2,4-Trimethylbenzene	ND		600	120	ug/L			03/23/23 19:20	200
sec-Butylbenzene	ND		200	98	ug/L			03/23/23 19:20	200
4-Isopropyltoluene	ND		200	56	ug/L			03/23/23 19:20	200
1,3-Dichlorobenzene	ND		200	96	ug/L			03/23/23 19:20	200
1,4-Dichlorobenzene	ND		200	92	ug/L			03/23/23 19:20	200
n-Butylbenzene	ND		200	88	ug/L			03/23/23 19:20	200
1,2-Dichlorobenzene	ND		200	92	ug/L			03/23/23 19:20	200
1,2-Dibromo-3-Chloropropane	ND		600	110	ug/L			03/23/23 19:20	200
1,2,4-Trichlorobenzene	ND		200	66	ug/L			03/23/23 19:20	200
Hexachlorobutadiene	ND		600	160	ug/L			03/23/23 19:20	200
Naphthalene	ND		600	190	ug/L			03/23/23 19:20	200
1,2,3-Trichlorobenzene	ND		400	86	ug/L			03/23/23 19:20	200
1,3,5-Trimethylbenzene	ND		200	110	ug/L			03/23/23 19:20	200

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	94		80 - 120		03/23/23 19:20	200
1,2-Dichloroethane-d4 (Surr)	103		80 - 120		03/23/23 19:20	200
4-Bromofluorobenzene (Surr)	94		80 - 120		03/23/23 19:20	200
Dibromofluoromethane (Surr)	108		80 - 120		03/23/23 19:20	200

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		40	20	ug/L			03/17/23 19:45	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	300		15	4.3	mg/L			03/20/23 21:59	10

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: MWA-63-030923

Lab Sample ID: 580-124516-7

Date Collected: 03/09/23 12:01

Matrix: Water

Date Received: 03/09/23 15:30

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			03/23/23 19:44	10
Chloromethane	ND		10	2.8	ug/L			03/23/23 19:44	10
Vinyl chloride	ND		10	2.2	ug/L			03/23/23 19:44	10
Bromomethane	ND		10	2.1	ug/L			03/23/23 19:44	10
Chloroethane	ND		10	3.5	ug/L			03/23/23 19:44	10
Trichlorofluoromethane	ND		10	3.6	ug/L			03/23/23 19:44	10
Carbon disulfide	ND		10	5.3	ug/L			03/23/23 19:44	10
1,1-Dichloroethene	ND		10	2.8	ug/L			03/23/23 19:44	10
Acetone	ND		150	32	ug/L			03/23/23 19:44	10
Methylene Chloride	ND		30	14	ug/L			03/23/23 19:44	10
Methyl tert-butyl ether	ND		10	4.4	ug/L			03/23/23 19:44	10
trans-1,2-Dichloroethene	ND		10	3.9	ug/L			03/23/23 19:44	10
1,1-Dichloroethane	ND		10	2.2	ug/L			03/23/23 19:44	10
2-Butanone (MEK)	ND		150	47	ug/L			03/23/23 19:44	10
2,2-Dichloropropane	ND		10	3.2	ug/L			03/23/23 19:44	10
cis-1,2-Dichloroethene	ND		10	3.5	ug/L			03/23/23 19:44	10
Bromochloromethane	ND		10	2.9	ug/L			03/23/23 19:44	10
Chloroform	80		10	2.6	ug/L			03/23/23 19:44	10
1,1,1-Trichloroethane	ND		10	3.9	ug/L			03/23/23 19:44	10
Carbon tetrachloride	ND		10	3.0	ug/L			03/23/23 19:44	10
1,1-Dichloropropene	ND		10	2.9	ug/L			03/23/23 19:44	10
Benzene	ND		10	2.4	ug/L			03/23/23 19:44	10
1,2-Dichloroethane	ND		10	4.2	ug/L			03/23/23 19:44	10
Trichloroethene	ND		10	2.6	ug/L			03/23/23 19:44	10
1,2-Dichloropropane	ND		10	1.8	ug/L			03/23/23 19:44	10
4-Methyl-2-pentanone (MIBK)	ND		50	25	ug/L			03/23/23 19:44	10
Dibromomethane	ND		10	3.4	ug/L			03/23/23 19:44	10
Bromodichloromethane	ND		10	2.9	ug/L			03/23/23 19:44	10
cis-1,3-Dichloropropene	ND		10	4.2	ug/L			03/23/23 19:44	10
Toluene	ND		10	3.9	ug/L			03/23/23 19:44	10
trans-1,3-Dichloropropene	ND		10	4.1	ug/L			03/23/23 19:44	10
1,1,2-Trichloroethane	ND		10	2.4	ug/L			03/23/23 19:44	10
Tetrachloroethene	13		10	4.1	ug/L			03/23/23 19:44	10
1,3-Dichloropropane	ND		10	3.5	ug/L			03/23/23 19:44	10
Dibromochloromethane	ND		10	4.3	ug/L			03/23/23 19:44	10
1,2-Dibromoethane	ND		10	4.0	ug/L			03/23/23 19:44	10
Chlorobenzene	5.6 J		10	4.4	ug/L			03/23/23 19:44	10
1,1,1,2-Tetrachloroethane	ND		10	1.8	ug/L			03/23/23 19:44	10
Ethylbenzene	ND		10	5.0	ug/L			03/23/23 19:44	10
m-Xylene & p-Xylene	ND		20	5.3	ug/L			03/23/23 19:44	10
o-Xylene	ND		10	3.9	ug/L			03/23/23 19:44	10
Styrene	ND		10	5.3	ug/L			03/23/23 19:44	10
Bromoform	ND		10	5.1	ug/L			03/23/23 19:44	10
Isopropylbenzene	ND		10	4.4	ug/L			03/23/23 19:44	10
Bromobenzene	ND		10	4.3	ug/L			03/23/23 19:44	10
1,1,2,2-Tetrachloroethane	ND		10	5.2	ug/L			03/23/23 19:44	10
1,2,3-Trichloropropane	ND		10	4.1	ug/L			03/23/23 19:44	10
N-Propylbenzene	ND		10	5.0	ug/L			03/23/23 19:44	10
2-Chlorotoluene	ND		10	5.1	ug/L			03/23/23 19:44	10

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: MWA-63-030923

Lab Sample ID: 580-124516-7

Date Collected: 03/09/23 12:01

Matrix: Water

Date Received: 03/09/23 15:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		10	3.8	ug/L			03/23/23 19:44	10
t-Butylbenzene	ND		20	5.8	ug/L			03/23/23 19:44	10
1,2,4-Trimethylbenzene	ND		30	6.1	ug/L			03/23/23 19:44	10
sec-Butylbenzene	ND		10	4.9	ug/L			03/23/23 19:44	10
4-Isopropyltoluene	ND		10	2.8	ug/L			03/23/23 19:44	10
1,3-Dichlorobenzene	ND		10	4.8	ug/L			03/23/23 19:44	10
1,4-Dichlorobenzene	ND		10	4.6	ug/L			03/23/23 19:44	10
n-Butylbenzene	ND		10	4.4	ug/L			03/23/23 19:44	10
1,2-Dichlorobenzene	ND		10	4.6	ug/L			03/23/23 19:44	10
1,2-Dibromo-3-Chloropropane	ND		30	5.7	ug/L			03/23/23 19:44	10
1,2,4-Trichlorobenzene	ND		10	3.3	ug/L			03/23/23 19:44	10
Hexachlorobutadiene	ND		30	7.9	ug/L			03/23/23 19:44	10
Naphthalene	ND		30	9.3	ug/L			03/23/23 19:44	10
1,2,3-Trichlorobenzene	ND		20	4.3	ug/L			03/23/23 19:44	10
1,3,5-Trimethylbenzene	ND		10	5.5	ug/L			03/23/23 19:44	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 120		03/23/23 19:44	10
1,2-Dichloroethane-d4 (Surr)	102		80 - 120		03/23/23 19:44	10
4-Bromofluorobenzene (Surr)	87		80 - 120		03/23/23 19:44	10
Dibromofluoromethane (Surr)	107		80 - 120		03/23/23 19:44	10

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	10	ug/L			03/17/23 16:10	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	5.5		1.5	0.43	mg/L			03/20/23 22:11	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: MWA-11i(d)-030923

Lab Sample ID: 580-124516-8

Date Collected: 03/09/23 12:57

Matrix: Water

Date Received: 03/09/23 15:30

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			03/14/23 14:16	1
Chloromethane	0.28	J	0.50	0.14	ug/L			03/14/23 14:16	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/14/23 14:16	1
Bromomethane	ND		0.50	0.13	ug/L			03/14/23 14:16	1
Chloroethane	ND		0.50	0.096	ug/L			03/14/23 14:16	1
Carbon disulfide	ND		0.30	0.083	ug/L			03/14/23 14:16	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/14/23 14:16	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			03/14/23 14:16	1
Acetone	ND		10	3.1	ug/L			03/14/23 14:16	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/14/23 14:16	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/14/23 14:16	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/14/23 14:16	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			03/14/23 14:16	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			03/14/23 14:16	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/14/23 14:16	1
cis-1,2-Dichloroethene	0.12	J	0.20	0.055	ug/L			03/14/23 14:16	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/14/23 14:16	1
Chloroform	ND		0.20	0.030	ug/L			03/14/23 14:16	1
1,1,1-Trichloroethane	0.044	J	0.20	0.025	ug/L			03/14/23 14:16	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/14/23 14:16	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/14/23 14:16	1
Benzene	ND		0.20	0.030	ug/L			03/14/23 14:16	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/14/23 14:16	1
Trichloroethene	ND		0.20	0.066	ug/L			03/14/23 14:16	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/14/23 14:16	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/14/23 14:16	1
Dibromomethane	ND		0.20	0.062	ug/L			03/14/23 14:16	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/14/23 14:16	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/14/23 14:16	1
Toluene	ND		0.20	0.050	ug/L			03/14/23 14:16	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/14/23 14:16	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/14/23 14:16	1
Tetrachloroethene	ND		0.24	0.084	ug/L			03/14/23 14:16	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/14/23 14:16	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/14/23 14:16	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/14/23 14:16	1
Chlorobenzene	ND		0.20	0.060	ug/L			03/14/23 14:16	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/14/23 14:16	1
Ethylbenzene	ND		0.20	0.030	ug/L			03/14/23 14:16	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			03/14/23 14:16	1
o-Xylene	ND		0.50	0.15	ug/L			03/14/23 14:16	1
Styrene	ND		1.0	0.19	ug/L			03/14/23 14:16	1
Bromoform	ND		0.50	0.16	ug/L			03/14/23 14:16	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/14/23 14:16	1
Bromobenzene	ND		0.20	0.038	ug/L			03/14/23 14:16	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/14/23 14:16	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/14/23 14:16	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/14/23 14:16	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			03/14/23 14:16	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: MWA-11i(d)-030923

Lab Sample ID: 580-124516-8

Date Collected: 03/09/23 12:57

Matrix: Water

Date Received: 03/09/23 15:30

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			03/14/23 14:16	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/14/23 14:16	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/14/23 14:16	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/14/23 14:16	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/14/23 14:16	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/14/23 14:16	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 14:16	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 14:16	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/14/23 14:16	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			03/14/23 14:16	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/14/23 14:16	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/14/23 14:16	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/14/23 14:16	1
Naphthalene	ND		1.0	0.22	ug/L			03/14/23 14:16	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/14/23 14:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		03/14/23 14:16	1
Dibromofluoromethane (Surr)	101		80 - 120		03/14/23 14:16	1
4-Bromofluorobenzene (Surr)	102		80 - 120		03/14/23 14:16	1
1,2-Dichloroethane-d4 (Surr)	100		80 - 120		03/14/23 14:16	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		40	20	ug/L			03/17/23 19:09	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	1200		150	43	mg/L			03/20/23 22:46	100

Client Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: PA-18d-030923

Lab Sample ID: 580-124516-9

Date Collected: 03/09/23 07:50

Matrix: Water

Date Received: 03/09/23 15:30

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			03/23/23 22:35	1
Chloromethane	0.69	J	1.0	0.28	ug/L			03/23/23 22:35	1
Vinyl chloride	0.26	J	1.0	0.22	ug/L			03/23/23 22:35	1
Bromomethane	ND		1.0	0.21	ug/L			03/23/23 22:35	1
Chloroethane	ND		1.0	0.35	ug/L			03/23/23 22:35	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			03/23/23 22:35	1
Carbon disulfide	ND		1.0	0.53	ug/L			03/23/23 22:35	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			03/23/23 22:35	1
Acetone	ND		15	3.2	ug/L			03/23/23 22:35	1
Methylene Chloride	ND		3.0	1.4	ug/L			03/23/23 22:35	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			03/23/23 22:35	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			03/23/23 22:35	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			03/23/23 22:35	1
2-Butanone (MEK)	ND		15	4.7	ug/L			03/23/23 22:35	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			03/23/23 22:35	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			03/23/23 22:35	1
Bromochloromethane	ND		1.0	0.29	ug/L			03/23/23 22:35	1
Chloroform	ND		1.0	0.26	ug/L			03/23/23 22:35	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			03/23/23 22:35	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			03/23/23 22:35	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			03/23/23 22:35	1
Benzene	ND		1.0	0.24	ug/L			03/23/23 22:35	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			03/23/23 22:35	1
Trichloroethene	ND		1.0	0.26	ug/L			03/23/23 22:35	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			03/23/23 22:35	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			03/23/23 22:35	1
Dibromomethane	ND		1.0	0.34	ug/L			03/23/23 22:35	1
Bromodichloromethane	ND		1.0	0.29	ug/L			03/23/23 22:35	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			03/23/23 22:35	1
Toluene	ND		1.0	0.39	ug/L			03/23/23 22:35	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			03/23/23 22:35	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			03/23/23 22:35	1
Tetrachloroethene	ND		1.0	0.41	ug/L			03/23/23 22:35	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			03/23/23 22:35	1
Dibromochloromethane	ND		1.0	0.43	ug/L			03/23/23 22:35	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			03/23/23 22:35	1
Chlorobenzene	ND		1.0	0.44	ug/L			03/23/23 22:35	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			03/23/23 22:35	1
Ethylbenzene	ND		1.0	0.50	ug/L			03/23/23 22:35	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			03/23/23 22:35	1
o-Xylene	ND		1.0	0.39	ug/L			03/23/23 22:35	1
Styrene	ND		1.0	0.53	ug/L			03/23/23 22:35	1
Bromoform	ND		1.0	0.51	ug/L			03/23/23 22:35	1
Isopropylbenzene	ND		1.0	0.44	ug/L			03/23/23 22:35	1
Bromobenzene	ND		1.0	0.43	ug/L			03/23/23 22:35	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			03/23/23 22:35	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			03/23/23 22:35	1
N-Propylbenzene	ND		1.0	0.50	ug/L			03/23/23 22:35	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			03/23/23 22:35	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: PA-18d-030923

Lab Sample ID: 580-124516-9

Date Collected: 03/09/23 07:50

Matrix: Water

Date Received: 03/09/23 15:30

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			03/23/23 22:35	1
t-Butylbenzene	ND		2.0	0.58	ug/L			03/23/23 22:35	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			03/23/23 22:35	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			03/23/23 22:35	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			03/23/23 22:35	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			03/23/23 22:35	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			03/23/23 22:35	1
n-Butylbenzene	ND		1.0	0.44	ug/L			03/23/23 22:35	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			03/23/23 22:35	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			03/23/23 22:35	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			03/23/23 22:35	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			03/23/23 22:35	1
Naphthalene	ND		3.0	0.93	ug/L			03/23/23 22:35	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			03/23/23 22:35	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			03/23/23 22:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 120		03/23/23 22:35	1
1,2-Dichloroethane-d4 (Surr)	99		80 - 120		03/23/23 22:35	1
4-Bromofluorobenzene (Surr)	89		80 - 120		03/23/23 22:35	1
Dibromofluoromethane (Surr)	107		80 - 120		03/23/23 22:35	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		40	20	ug/L			03/17/23 20:03	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	50		15	4.3	mg/L			03/20/23 23:10	10

Client Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: Dup-02-030923

Lab Sample ID: 580-124516-10

Date Collected: 03/09/23 07:51

Matrix: Water

Date Received: 03/09/23 15:30

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			03/23/23 22:59	1
Chloromethane	ND		1.0	0.28	ug/L			03/23/23 22:59	1
Vinyl chloride	0.26	J	1.0	0.22	ug/L			03/23/23 22:59	1
Bromomethane	ND		1.0	0.21	ug/L			03/23/23 22:59	1
Chloroethane	ND		1.0	0.35	ug/L			03/23/23 22:59	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			03/23/23 22:59	1
Carbon disulfide	ND		1.0	0.53	ug/L			03/23/23 22:59	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			03/23/23 22:59	1
Acetone	ND		15	3.2	ug/L			03/23/23 22:59	1
Methylene Chloride	ND		3.0	1.4	ug/L			03/23/23 22:59	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			03/23/23 22:59	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			03/23/23 22:59	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			03/23/23 22:59	1
2-Butanone (MEK)	ND		15	4.7	ug/L			03/23/23 22:59	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			03/23/23 22:59	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			03/23/23 22:59	1
Bromochloromethane	ND		1.0	0.29	ug/L			03/23/23 22:59	1
Chloroform	ND		1.0	0.26	ug/L			03/23/23 22:59	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			03/23/23 22:59	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			03/23/23 22:59	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			03/23/23 22:59	1
Benzene	ND		1.0	0.24	ug/L			03/23/23 22:59	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			03/23/23 22:59	1
Trichloroethene	ND		1.0	0.26	ug/L			03/23/23 22:59	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			03/23/23 22:59	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			03/23/23 22:59	1
Dibromomethane	ND		1.0	0.34	ug/L			03/23/23 22:59	1
Bromodichloromethane	ND		1.0	0.29	ug/L			03/23/23 22:59	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			03/23/23 22:59	1
Toluene	ND		1.0	0.39	ug/L			03/23/23 22:59	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			03/23/23 22:59	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			03/23/23 22:59	1
Tetrachloroethene	ND		1.0	0.41	ug/L			03/23/23 22:59	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			03/23/23 22:59	1
Dibromochloromethane	ND		1.0	0.43	ug/L			03/23/23 22:59	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			03/23/23 22:59	1
Chlorobenzene	ND		1.0	0.44	ug/L			03/23/23 22:59	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			03/23/23 22:59	1
Ethylbenzene	ND		1.0	0.50	ug/L			03/23/23 22:59	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			03/23/23 22:59	1
o-Xylene	ND		1.0	0.39	ug/L			03/23/23 22:59	1
Styrene	ND		1.0	0.53	ug/L			03/23/23 22:59	1
Bromoform	ND		1.0	0.51	ug/L			03/23/23 22:59	1
Isopropylbenzene	ND		1.0	0.44	ug/L			03/23/23 22:59	1
Bromobenzene	ND		1.0	0.43	ug/L			03/23/23 22:59	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			03/23/23 22:59	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			03/23/23 22:59	1
N-Propylbenzene	ND		1.0	0.50	ug/L			03/23/23 22:59	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			03/23/23 22:59	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: Dup-02-030923

Lab Sample ID: 580-124516-10

Date Collected: 03/09/23 07:51

Matrix: Water

Date Received: 03/09/23 15:30

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			03/23/23 22:59	1
t-Butylbenzene	ND		2.0	0.58	ug/L			03/23/23 22:59	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			03/23/23 22:59	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			03/23/23 22:59	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			03/23/23 22:59	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			03/23/23 22:59	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			03/23/23 22:59	1
n-Butylbenzene	ND		1.0	0.44	ug/L			03/23/23 22:59	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			03/23/23 22:59	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			03/23/23 22:59	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			03/23/23 22:59	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			03/23/23 22:59	1
Naphthalene	ND		3.0	0.93	ug/L			03/23/23 22:59	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			03/23/23 22:59	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			03/23/23 22:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 120		03/23/23 22:59	1
1,2-Dichloroethane-d4 (Surr)	104		80 - 120		03/23/23 22:59	1
4-Bromofluorobenzene (Surr)	89		80 - 120		03/23/23 22:59	1
Dibromofluoromethane (Surr)	110		80 - 120		03/23/23 22:59	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		40	20	ug/L			03/17/23 20:21	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	53		15	4.3	mg/L			03/20/23 23:21	10

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: MWA-31i(d)-030923

Lab Sample ID: 580-124516-11

Date Collected: 03/09/23 09:40

Matrix: Water

Date Received: 03/09/23 15:30

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			03/23/23 20:57	1
Chloromethane	ND		1.0	0.28	ug/L			03/23/23 20:57	1
Vinyl chloride	ND		1.0	0.22	ug/L			03/23/23 20:57	1
Bromomethane	ND		1.0	0.21	ug/L			03/23/23 20:57	1
Chloroethane	ND		1.0	0.35	ug/L			03/23/23 20:57	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			03/23/23 20:57	1
Carbon disulfide	ND		1.0	0.53	ug/L			03/23/23 20:57	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			03/23/23 20:57	1
Acetone	ND		15	3.2	ug/L			03/23/23 20:57	1
Methylene Chloride	1.5	J	3.0	1.4	ug/L			03/23/23 20:57	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			03/23/23 20:57	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			03/23/23 20:57	1
1,1-Dichloroethane	0.42	J	1.0	0.22	ug/L			03/23/23 20:57	1
2-Butanone (MEK)	ND		15	4.7	ug/L			03/23/23 20:57	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			03/23/23 20:57	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			03/23/23 20:57	1
Bromochloromethane	ND		1.0	0.29	ug/L			03/23/23 20:57	1
Chloroform	83		1.0	0.26	ug/L			03/23/23 20:57	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			03/23/23 20:57	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			03/23/23 20:57	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			03/23/23 20:57	1
Benzene	ND		1.0	0.24	ug/L			03/23/23 20:57	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			03/23/23 20:57	1
Trichloroethene	ND		1.0	0.26	ug/L			03/23/23 20:57	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			03/23/23 20:57	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			03/23/23 20:57	1
Dibromomethane	ND		1.0	0.34	ug/L			03/23/23 20:57	1
Bromodichloromethane	ND		1.0	0.29	ug/L			03/23/23 20:57	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			03/23/23 20:57	1
Toluene	ND		1.0	0.39	ug/L			03/23/23 20:57	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			03/23/23 20:57	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			03/23/23 20:57	1
Tetrachloroethene	ND		1.0	0.41	ug/L			03/23/23 20:57	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			03/23/23 20:57	1
Dibromochloromethane	ND		1.0	0.43	ug/L			03/23/23 20:57	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			03/23/23 20:57	1
Chlorobenzene	0.58	J	1.0	0.44	ug/L			03/23/23 20:57	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			03/23/23 20:57	1
Ethylbenzene	ND		1.0	0.50	ug/L			03/23/23 20:57	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			03/23/23 20:57	1
o-Xylene	ND		1.0	0.39	ug/L			03/23/23 20:57	1
Styrene	ND		1.0	0.53	ug/L			03/23/23 20:57	1
Bromoform	ND		1.0	0.51	ug/L			03/23/23 20:57	1
Isopropylbenzene	ND		1.0	0.44	ug/L			03/23/23 20:57	1
Bromobenzene	ND		1.0	0.43	ug/L			03/23/23 20:57	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			03/23/23 20:57	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			03/23/23 20:57	1
N-Propylbenzene	ND		1.0	0.50	ug/L			03/23/23 20:57	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			03/23/23 20:57	1

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Client Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: MWA-31i(d)-030923

Lab Sample ID: 580-124516-11

Date Collected: 03/09/23 09:40

Matrix: Water

Date Received: 03/09/23 15:30

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			03/23/23 20:57	1
t-Butylbenzene	ND		2.0	0.58	ug/L			03/23/23 20:57	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			03/23/23 20:57	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			03/23/23 20:57	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			03/23/23 20:57	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			03/23/23 20:57	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			03/23/23 20:57	1
n-Butylbenzene	ND		1.0	0.44	ug/L			03/23/23 20:57	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			03/23/23 20:57	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			03/23/23 20:57	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			03/23/23 20:57	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			03/23/23 20:57	1
Naphthalene	ND		3.0	0.93	ug/L			03/23/23 20:57	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			03/23/23 20:57	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			03/23/23 20:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 120		03/23/23 20:57	1
1,2-Dichloroethane-d4 (Surr)	112		80 - 120		03/23/23 20:57	1
4-Bromofluorobenzene (Surr)	90		80 - 120		03/23/23 20:57	1
Dibromofluoromethane (Surr)	107		80 - 120		03/23/23 20:57	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	97000		8000	4000	ug/L			03/17/23 18:16	2000

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	25000		1500	430	mg/L			03/20/23 23:45	1000

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: MWA-56d-030923

Lab Sample ID: 580-124516-12

Date Collected: 03/09/23 11:55

Matrix: Water

Date Received: 03/09/23 15:30

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			03/23/23 21:46	1
Chloromethane	0.30	J	1.0	0.28	ug/L			03/23/23 21:46	1
Vinyl chloride	ND		1.0	0.22	ug/L			03/23/23 21:46	1
Bromomethane	ND		1.0	0.21	ug/L			03/23/23 21:46	1
Chloroethane	ND		1.0	0.35	ug/L			03/23/23 21:46	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			03/23/23 21:46	1
Carbon disulfide	ND		1.0	0.53	ug/L			03/23/23 21:46	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			03/23/23 21:46	1
Acetone	ND		15	3.2	ug/L			03/23/23 21:46	1
Methylene Chloride	ND		3.0	1.4	ug/L			03/23/23 21:46	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			03/23/23 21:46	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			03/23/23 21:46	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			03/23/23 21:46	1
2-Butanone (MEK)	ND		15	4.7	ug/L			03/23/23 21:46	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			03/23/23 21:46	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			03/23/23 21:46	1
Bromochloromethane	ND		1.0	0.29	ug/L			03/23/23 21:46	1
Chloroform	180	E	1.0	0.26	ug/L			03/23/23 21:46	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			03/23/23 21:46	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			03/23/23 21:46	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			03/23/23 21:46	1
Benzene	ND		1.0	0.24	ug/L			03/23/23 21:46	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			03/23/23 21:46	1
Trichloroethene	ND		1.0	0.26	ug/L			03/23/23 21:46	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			03/23/23 21:46	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			03/23/23 21:46	1
Dibromomethane	ND		1.0	0.34	ug/L			03/23/23 21:46	1
Bromodichloromethane	0.82	J	1.0	0.29	ug/L			03/23/23 21:46	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			03/23/23 21:46	1
Toluene	ND		1.0	0.39	ug/L			03/23/23 21:46	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			03/23/23 21:46	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			03/23/23 21:46	1
Tetrachloroethene	ND		1.0	0.41	ug/L			03/23/23 21:46	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			03/23/23 21:46	1
Dibromochloromethane	ND		1.0	0.43	ug/L			03/23/23 21:46	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			03/23/23 21:46	1
Chlorobenzene	ND		1.0	0.44	ug/L			03/23/23 21:46	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			03/23/23 21:46	1
Ethylbenzene	ND		1.0	0.50	ug/L			03/23/23 21:46	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			03/23/23 21:46	1
o-Xylene	ND		1.0	0.39	ug/L			03/23/23 21:46	1
Styrene	ND		1.0	0.53	ug/L			03/23/23 21:46	1
Bromoform	ND		1.0	0.51	ug/L			03/23/23 21:46	1
Isopropylbenzene	ND		1.0	0.44	ug/L			03/23/23 21:46	1
Bromobenzene	ND		1.0	0.43	ug/L			03/23/23 21:46	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			03/23/23 21:46	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			03/23/23 21:46	1
N-Propylbenzene	ND		1.0	0.50	ug/L			03/23/23 21:46	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			03/23/23 21:46	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: MWA-56d-030923

Lab Sample ID: 580-124516-12

Date Collected: 03/09/23 11:55

Matrix: Water

Date Received: 03/09/23 15:30

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			03/23/23 21:46	1
t-Butylbenzene	ND		2.0	0.58	ug/L			03/23/23 21:46	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			03/23/23 21:46	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			03/23/23 21:46	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			03/23/23 21:46	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			03/23/23 21:46	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			03/23/23 21:46	1
n-Butylbenzene	ND		1.0	0.44	ug/L			03/23/23 21:46	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			03/23/23 21:46	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			03/23/23 21:46	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			03/23/23 21:46	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			03/23/23 21:46	1
Naphthalene	ND		3.0	0.93	ug/L			03/23/23 21:46	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			03/23/23 21:46	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			03/23/23 21:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		03/23/23 21:46	1
1,2-Dichloroethane-d4 (Surr)	108		80 - 120		03/23/23 21:46	1
4-Bromofluorobenzene (Surr)	88		80 - 120		03/23/23 21:46	1
Dibromofluoromethane (Surr)	108		80 - 120		03/23/23 21:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	160	H	10	2.6	ug/L			03/29/23 16:48	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 120		03/29/23 16:48	10
1,2-Dichloroethane-d4 (Surr)	109		80 - 120		03/29/23 16:48	10
4-Bromofluorobenzene (Surr)	95		80 - 120		03/29/23 16:48	10
Dibromofluoromethane (Surr)	106		80 - 120		03/29/23 16:48	10

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	15000		800	400	ug/L			03/17/23 18:33	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	16000		1500	430	mg/L			03/21/23 00:32	1000

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: MWA-58d-030923

Lab Sample ID: 580-124516-13

Date Collected: 03/09/23 13:15

Matrix: Water

Date Received: 03/09/23 15:30

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			03/23/23 22:10	5
Chloromethane	ND		5.0	1.4	ug/L			03/23/23 22:10	5
Vinyl chloride	ND		5.0	1.1	ug/L			03/23/23 22:10	5
Bromomethane	ND		5.0	1.1	ug/L			03/23/23 22:10	5
Chloroethane	ND		5.0	1.8	ug/L			03/23/23 22:10	5
Trichlorofluoromethane	ND		5.0	1.8	ug/L			03/23/23 22:10	5
Carbon disulfide	ND		5.0	2.7	ug/L			03/23/23 22:10	5
1,1-Dichloroethene	ND		5.0	1.4	ug/L			03/23/23 22:10	5
Acetone	ND		75	16	ug/L			03/23/23 22:10	5
Methylene Chloride	ND		15	7.2	ug/L			03/23/23 22:10	5
Methyl tert-butyl ether	ND		5.0	2.2	ug/L			03/23/23 22:10	5
trans-1,2-Dichloroethene	ND		5.0	2.0	ug/L			03/23/23 22:10	5
1,1-Dichloroethane	ND		5.0	1.1	ug/L			03/23/23 22:10	5
2-Butanone (MEK)	ND		75	24	ug/L			03/23/23 22:10	5
2,2-Dichloropropane	ND		5.0	1.6	ug/L			03/23/23 22:10	5
cis-1,2-Dichloroethene	ND		5.0	1.8	ug/L			03/23/23 22:10	5
Bromochloromethane	ND		5.0	1.5	ug/L			03/23/23 22:10	5
Chloroform	210		5.0	1.3	ug/L			03/23/23 22:10	5
1,1,1-Trichloroethane	ND		5.0	2.0	ug/L			03/23/23 22:10	5
Carbon tetrachloride	ND		5.0	1.5	ug/L			03/23/23 22:10	5
1,1-Dichloropropene	ND		5.0	1.5	ug/L			03/23/23 22:10	5
Benzene	ND		5.0	1.2	ug/L			03/23/23 22:10	5
1,2-Dichloroethane	ND		5.0	2.1	ug/L			03/23/23 22:10	5
Trichloroethene	ND		5.0	1.3	ug/L			03/23/23 22:10	5
1,2-Dichloropropane	ND		5.0	0.90	ug/L			03/23/23 22:10	5
4-Methyl-2-pentanone (MIBK)	ND		25	13	ug/L			03/23/23 22:10	5
Dibromomethane	ND		5.0	1.7	ug/L			03/23/23 22:10	5
Bromodichloromethane	1.6 J		5.0	1.5	ug/L			03/23/23 22:10	5
cis-1,3-Dichloropropene	ND		5.0	2.1	ug/L			03/23/23 22:10	5
Toluene	ND		5.0	2.0	ug/L			03/23/23 22:10	5
trans-1,3-Dichloropropene	ND		5.0	2.1	ug/L			03/23/23 22:10	5
1,1,2-Trichloroethane	ND		5.0	1.2	ug/L			03/23/23 22:10	5
Tetrachloroethene	ND		5.0	2.1	ug/L			03/23/23 22:10	5
1,3-Dichloropropane	ND		5.0	1.8	ug/L			03/23/23 22:10	5
Dibromochloromethane	ND		5.0	2.2	ug/L			03/23/23 22:10	5
1,2-Dibromoethane	ND		5.0	2.0	ug/L			03/23/23 22:10	5
Chlorobenzene	ND		5.0	2.2	ug/L			03/23/23 22:10	5
1,1,1,2-Tetrachloroethane	ND		5.0	0.90	ug/L			03/23/23 22:10	5
Ethylbenzene	ND		5.0	2.5	ug/L			03/23/23 22:10	5
m-Xylene & p-Xylene	ND		10	2.7	ug/L			03/23/23 22:10	5
o-Xylene	ND		5.0	2.0	ug/L			03/23/23 22:10	5
Styrene	ND		5.0	2.7	ug/L			03/23/23 22:10	5
Bromoform	ND		5.0	2.6	ug/L			03/23/23 22:10	5
Isopropylbenzene	ND		5.0	2.2	ug/L			03/23/23 22:10	5
Bromobenzene	ND		5.0	2.2	ug/L			03/23/23 22:10	5
1,1,2,2-Tetrachloroethane	ND		5.0	2.6	ug/L			03/23/23 22:10	5
1,2,3-Trichloropropane	ND		5.0	2.1	ug/L			03/23/23 22:10	5
N-Propylbenzene	ND		5.0	2.5	ug/L			03/23/23 22:10	5
2-Chlorotoluene	ND		5.0	2.6	ug/L			03/23/23 22:10	5

Euromins Seattle

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: MWA-58d-030923

Lab Sample ID: 580-124516-13

Date Collected: 03/09/23 13:15

Matrix: Water

Date Received: 03/09/23 15:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		5.0	1.9	ug/L			03/23/23 22:10	5
t-Butylbenzene	ND		10	2.9	ug/L			03/23/23 22:10	5
1,2,4-Trimethylbenzene	ND		15	3.1	ug/L			03/23/23 22:10	5
sec-Butylbenzene	ND		5.0	2.5	ug/L			03/23/23 22:10	5
4-Isopropyltoluene	ND		5.0	1.4	ug/L			03/23/23 22:10	5
1,3-Dichlorobenzene	ND		5.0	2.4	ug/L			03/23/23 22:10	5
1,4-Dichlorobenzene	ND		5.0	2.3	ug/L			03/23/23 22:10	5
n-Butylbenzene	ND		5.0	2.2	ug/L			03/23/23 22:10	5
1,2-Dichlorobenzene	ND		5.0	2.3	ug/L			03/23/23 22:10	5
1,2-Dibromo-3-Chloropropane	ND		15	2.9	ug/L			03/23/23 22:10	5
1,2,4-Trichlorobenzene	ND		5.0	1.7	ug/L			03/23/23 22:10	5
Hexachlorobutadiene	ND		15	4.0	ug/L			03/23/23 22:10	5
Naphthalene	ND		15	4.7	ug/L			03/23/23 22:10	5
1,2,3-Trichlorobenzene	ND		10	2.2	ug/L			03/23/23 22:10	5
1,3,5-Trimethylbenzene	ND		5.0	2.8	ug/L			03/23/23 22:10	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		03/23/23 22:10	5
1,2-Dichloroethane-d4 (Surr)	105		80 - 120		03/23/23 22:10	5
4-Bromofluorobenzene (Surr)	90		80 - 120		03/23/23 22:10	5
Dibromofluoromethane (Surr)	111		80 - 120		03/23/23 22:10	5

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	49000		4000	2000	ug/L			03/17/23 18:51	1000

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	22000		1500	430	mg/L			03/21/23 00:55	1000

QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

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

Lab Sample ID: MB 580-420328/7
Matrix: Water
Analysis Batch: 420328

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Dichlorodifluoromethane	ND		0.40	0.13	ug/L			03/14/23 12:49	1
Chloromethane	ND		0.50	0.14	ug/L			03/14/23 12:49	1
Vinyl chloride	ND		0.10	0.040	ug/L			03/14/23 12:49	1
Bromomethane	ND		0.50	0.13	ug/L			03/14/23 12:49	1
Chloroethane	ND		0.50	0.096	ug/L			03/14/23 12:49	1
Carbon disulfide	ND		0.30	0.083	ug/L			03/14/23 12:49	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			03/14/23 12:49	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			03/14/23 12:49	1
Acetone	ND		10	3.1	ug/L			03/14/23 12:49	1
Methylene Chloride	ND		5.0	1.2	ug/L			03/14/23 12:49	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			03/14/23 12:49	1
2-Butanone (MEK)	ND		10	2.5	ug/L			03/14/23 12:49	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			03/14/23 12:49	1
1,1-Dichloroethane	ND		0.20	0.025	ug/L			03/14/23 12:49	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			03/14/23 12:49	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			03/14/23 12:49	1
Chlorobromomethane	ND		0.20	0.050	ug/L			03/14/23 12:49	1
Chloroform	ND		0.20	0.030	ug/L			03/14/23 12:49	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			03/14/23 12:49	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			03/14/23 12:49	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			03/14/23 12:49	1
Benzene	ND		0.20	0.030	ug/L			03/14/23 12:49	1
1,2-Dichloroethane	ND		0.20	0.043	ug/L			03/14/23 12:49	1
Trichloroethene	ND		0.20	0.066	ug/L			03/14/23 12:49	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			03/14/23 12:49	1
4-Methyl-2-pentanone (MIBK)	ND		10	1.7	ug/L			03/14/23 12:49	1
Dibromomethane	ND		0.20	0.062	ug/L			03/14/23 12:49	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			03/14/23 12:49	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			03/14/23 12:49	1
Toluene	ND		0.20	0.050	ug/L			03/14/23 12:49	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			03/14/23 12:49	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			03/14/23 12:49	1
Tetrachloroethene	ND		0.24	0.084	ug/L			03/14/23 12:49	1
1,3-Dichloropropane	ND		0.20	0.025	ug/L			03/14/23 12:49	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			03/14/23 12:49	1
Ethylene Dibromide	ND		0.10	0.025	ug/L			03/14/23 12:49	1
Chlorobenzene	ND		0.20	0.060	ug/L			03/14/23 12:49	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.038	ug/L			03/14/23 12:49	1
Ethylbenzene	ND		0.20	0.030	ug/L			03/14/23 12:49	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			03/14/23 12:49	1
o-Xylene	ND		0.50	0.15	ug/L			03/14/23 12:49	1
Styrene	ND		1.0	0.19	ug/L			03/14/23 12:49	1
Bromoform	ND		0.50	0.16	ug/L			03/14/23 12:49	1
Isopropylbenzene	ND		1.0	0.19	ug/L			03/14/23 12:49	1
Bromobenzene	ND		0.20	0.038	ug/L			03/14/23 12:49	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			03/14/23 12:49	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			03/14/23 12:49	1
N-Propylbenzene	ND		0.30	0.091	ug/L			03/14/23 12:49	1

QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

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

Lab Sample ID: MB 580-420328/7
Matrix: Water
Analysis Batch: 420328

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			03/14/23 12:49	1
4-Chlorotoluene	ND		0.30	0.12	ug/L			03/14/23 12:49	1
1,3,5-Trimethylbenzene	ND		0.50	0.15	ug/L			03/14/23 12:49	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			03/14/23 12:49	1
1,2,4-Trimethylbenzene	ND		0.50	0.20	ug/L			03/14/23 12:49	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			03/14/23 12:49	1
4-Isopropyltoluene	ND		0.50	0.15	ug/L			03/14/23 12:49	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 12:49	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			03/14/23 12:49	1
n-Butylbenzene	ND		1.0	0.23	ug/L			03/14/23 12:49	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			03/14/23 12:49	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.17	ug/L			03/14/23 12:49	1
1,2,4-Trichlorobenzene	ND		0.50	0.17	ug/L			03/14/23 12:49	1
Hexachlorobutadiene	ND		0.50	0.067	ug/L			03/14/23 12:49	1
Naphthalene	ND		1.0	0.22	ug/L			03/14/23 12:49	1
1,2,3-Trichlorobenzene	ND		0.50	0.15	ug/L			03/14/23 12:49	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		03/14/23 12:49	1
Dibromofluoromethane (Surr)	98		80 - 120		03/14/23 12:49	1
4-Bromofluorobenzene (Surr)	102		80 - 120		03/14/23 12:49	1
1,2-Dichloroethane-d4 (Surr)	99		80 - 120		03/14/23 12:49	1

Lab Sample ID: LCS 580-420328/4
Matrix: Water
Analysis Batch: 420328

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	5.12		ug/L		102	20 - 150
Chloromethane	5.00	4.27		ug/L		85	32 - 150
Vinyl chloride	5.00	4.66		ug/L		93	41 - 150
Bromomethane	5.00	4.47		ug/L		89	51 - 148
Chloroethane	5.00	4.93		ug/L		99	54 - 140
Carbon disulfide	5.00	5.52		ug/L		110	54 - 142
Trichlorofluoromethane	5.00	5.16		ug/L		103	60 - 132
1,1-Dichloroethene	5.00	5.83		ug/L		117	60 - 129
Acetone	25.0	25.5		ug/L		102	49 - 150
Methylene Chloride	5.00	5.60		ug/L		112	40 - 142
Methyl tert-butyl ether	5.00	5.22		ug/L		104	61 - 131
2-Butanone (MEK)	25.0	26.6		ug/L		107	37 - 150
trans-1,2-Dichloroethene	5.00	5.40		ug/L		108	69 - 121
1,1-Dichloroethane	5.00	5.03		ug/L		101	74 - 120
2,2-Dichloropropane	5.00	5.12		ug/L		102	55 - 140
cis-1,2-Dichloroethene	5.00	5.28		ug/L		106	72 - 120
Chlorobromomethane	5.00	5.34		ug/L		107	79 - 121
Chloroform	5.00	5.11		ug/L		102	75 - 120
1,1,1-Trichloroethane	5.00	5.19		ug/L		104	70 - 121
Carbon tetrachloride	5.00	5.16		ug/L		103	66 - 130

QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

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

Lab Sample ID: LCS 580-420328/4
Matrix: Water
Analysis Batch: 420328

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	5.15		ug/L		103	72 - 125
Benzene	5.00	5.09		ug/L		102	80 - 120
1,2-Dichloroethane	5.00	4.98		ug/L		100	74 - 127
Trichloroethene	5.00	5.09		ug/L		102	72 - 120
1,2-Dichloropropane	5.00	4.73		ug/L		95	69 - 130
4-Methyl-2-pentanone (MIBK)	25.00	24.2		ug/L		97	63 - 137
Dibromomethane	5.00	5.23		ug/L		105	65 - 141
Dichlorobromomethane	5.00	4.81		ug/L		96	74 - 131
cis-1,3-Dichloropropene	5.00	4.64		ug/L		93	77 - 131
Toluene	5.00	5.09		ug/L		102	80 - 126
trans-1,3-Dichloropropene	5.00	4.78		ug/L		96	71 - 138
1,1,2-Trichloroethane	5.00	5.27		ug/L		105	73 - 127
Tetrachloroethene	5.00	5.02		ug/L		100	75 - 124
1,3-Dichloropropane	5.00	4.84		ug/L		97	69 - 138
Chlorodibromomethane	5.00	5.12		ug/L		102	62 - 141
Ethylene Dibromide	5.00	5.34		ug/L		107	61 - 143
Chlorobenzene	5.00	5.14		ug/L		103	74 - 123
1,1,1,2-Tetrachloroethane	5.00	5.07		ug/L		101	69 - 127
Ethylbenzene	5.00	5.03		ug/L		101	80 - 124
m-Xylene & p-Xylene	5.00	4.95		ug/L		99	75 - 124
o-Xylene	5.00	5.09		ug/L		102	71 - 124
Styrene	5.00	5.02		ug/L		100	74 - 127
Bromoform	5.00	4.80		ug/L		96	48 - 127
Isopropylbenzene	5.00	4.97		ug/L		99	71 - 123
Bromobenzene	5.00	5.11		ug/L		102	74 - 130
1,1,2,2-Tetrachloroethane	5.00	5.13		ug/L		103	67 - 136
1,2,3-Trichloropropane	5.00	5.36		ug/L		107	67 - 135
N-Propylbenzene	5.00	5.01		ug/L		100	72 - 126
2-Chlorotoluene	5.00	5.17		ug/L		103	73 - 120
4-Chlorotoluene	5.00	5.03		ug/L		101	75 - 124
1,3,5-Trimethylbenzene	5.00	4.97		ug/L		99	75 - 123
tert-Butylbenzene	5.00	5.06		ug/L		101	70 - 129
1,2,4-Trimethylbenzene	5.00	5.00		ug/L		100	71 - 127
sec-Butylbenzene	5.00	4.97		ug/L		99	75 - 126
4-Isopropyltoluene	5.00	5.07		ug/L		101	78 - 125
1,3-Dichlorobenzene	5.00	5.26		ug/L		105	72 - 125
1,4-Dichlorobenzene	5.00	5.21		ug/L		104	71 - 129
n-Butylbenzene	5.00	4.95		ug/L		99	69 - 127
1,2-Dichlorobenzene	5.00	5.25		ug/L		105	72 - 129
1,2-Dibromo-3-Chloropropane	5.00	4.76		ug/L		95	55 - 135
1,2,4-Trichlorobenzene	5.00	5.30		ug/L		106	60 - 130
Hexachlorobutadiene	5.00	5.23		ug/L		105	63 - 130
Naphthalene	5.00	5.31		ug/L		106	54 - 137
1,2,3-Trichlorobenzene	5.00	5.36		ug/L		107	60 - 136

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	101		80 - 120

QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

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

Lab Sample ID: LCS 580-420328/4
Matrix: Water
Analysis Batch: 420328

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

<u>Surrogate</u>	<u>LCS</u>	<u>LCS</u>	<u>Limits</u>
	<u>%Recovery</u>	<u>Qualifier</u>	
4-Bromofluorobenzene (Surr)	100		80 - 120
1,2-Dichloroethane-d4 (Surr)	96		80 - 120

Lab Sample ID: LCSD 580-420328/5
Matrix: Water
Analysis Batch: 420328

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

<u>Analyte</u>	<u>Spike</u>	<u>LCSD</u>	<u>LCSD</u>	<u>Unit</u>	<u>D</u>	<u>%Rec</u>	<u>%Rec</u>	<u>RPD</u>	<u>RPD</u>
	<u>Added</u>	<u>Result</u>	<u>Qualifier</u>			<u>Limits</u>		<u>Limit</u>	
Dichlorodifluoromethane	5.00	5.06		ug/L		101	20 - 150	1	30
Chloromethane	5.00	4.09		ug/L		82	32 - 150	4	33
Vinyl chloride	5.00	4.73		ug/L		95	41 - 150	2	32
Bromomethane	5.00	4.50		ug/L		90	51 - 148	1	35
Chloroethane	5.00	5.05		ug/L		101	54 - 140	2	33
Carbon disulfide	5.00	5.97		ug/L		119	54 - 142	8	34
Trichlorofluoromethane	5.00	5.10		ug/L		102	60 - 132	1	32
1,1-Dichloroethene	5.00	5.77		ug/L		115	60 - 129	1	29
Acetone	25.0	27.6		ug/L		110	49 - 150	8	24
Methylene Chloride	5.00	6.09		ug/L		122	40 - 142	8	25
Methyl tert-butyl ether	5.00	5.32		ug/L		106	61 - 131	2	27
2-Butanone (MEK)	25.0	26.7		ug/L		107	37 - 150	0	35
trans-1,2-Dichloroethene	5.00	5.33		ug/L		107	69 - 121	1	27
1,1-Dichloroethane	5.00	5.08		ug/L		102	74 - 120	1	26
2,2-Dichloropropane	5.00	5.03		ug/L		101	55 - 140	2	31
cis-1,2-Dichloroethene	5.00	5.30		ug/L		106	72 - 120	0	22
Chlorobromomethane	5.00	5.29		ug/L		106	79 - 121	1	20
Chloroform	5.00	5.08		ug/L		102	75 - 120	1	21
1,1,1-Trichloroethane	5.00	5.08		ug/L		102	70 - 121	2	24
Carbon tetrachloride	5.00	5.07		ug/L		101	66 - 130	2	24
1,1-Dichloropropene	5.00	4.99		ug/L		100	72 - 125	3	23
Benzene	5.00	5.03		ug/L		101	80 - 120	1	22
1,2-Dichloroethane	5.00	5.00		ug/L		100	74 - 127	0	21
Trichloroethene	5.00	5.04		ug/L		101	72 - 120	1	22
1,2-Dichloropropane	5.00	4.84		ug/L		97	69 - 130	2	22
4-Methyl-2-pentanone (MIBK)	25.0	24.1		ug/L		97	63 - 137	0	26
Dibromomethane	5.00	5.35		ug/L		107	65 - 141	2	22
Dichlorobromomethane	5.00	4.72		ug/L		94	74 - 131	2	21
cis-1,3-Dichloropropene	5.00	4.62		ug/L		92	77 - 131	0	24
Toluene	5.00	4.96		ug/L		99	80 - 126	3	20
trans-1,3-Dichloropropene	5.00	4.67		ug/L		93	71 - 138	2	26
1,1,2-Trichloroethane	5.00	5.18		ug/L		104	73 - 127	2	22
Tetrachloroethene	5.00	4.75		ug/L		95	75 - 124	6	20
1,3-Dichloropropane	5.00	4.84		ug/L		97	69 - 138	0	19
Chlorodibromomethane	5.00	5.10		ug/L		102	62 - 141	1	22
Ethylene Dibromide	5.00	5.35		ug/L		107	61 - 143	0	22
Chlorobenzene	5.00	5.07		ug/L		101	74 - 123	1	21
1,1,1,2-Tetrachloroethane	5.00	4.94		ug/L		99	69 - 127	2	22
Ethylbenzene	5.00	4.91		ug/L		98	80 - 124	2	22
m-Xylene & p-Xylene	5.00	4.91		ug/L		98	75 - 124	1	22

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

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

Lab Sample ID: LCSD 580-420328/5
Matrix: Water
Analysis Batch: 420328

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	4.93		ug/L		99	71 - 124	3	23
Styrene	5.00	4.93		ug/L		99	74 - 127	2	22
Bromoform	5.00	4.83		ug/L		97	48 - 127	1	23
Isopropylbenzene	5.00	4.86		ug/L		97	71 - 123	2	23
Bromobenzene	5.00	4.92		ug/L		98	74 - 130	4	23
1,1,2,2-Tetrachloroethane	5.00	5.08		ug/L		102	67 - 136	1	24
1,2,3-Trichloropropane	5.00	5.37		ug/L		107	67 - 135	0	25
N-Propylbenzene	5.00	4.82		ug/L		96	72 - 126	4	20
2-Chlorotoluene	5.00	5.06		ug/L		101	73 - 120	2	22
4-Chlorotoluene	5.00	5.03		ug/L		101	75 - 124	0	23
1,3,5-Trimethylbenzene	5.00	4.89		ug/L		98	75 - 123	1	23
tert-Butylbenzene	5.00	4.91		ug/L		98	70 - 129	3	24
1,2,4-Trimethylbenzene	5.00	4.87		ug/L		97	71 - 127	3	23
sec-Butylbenzene	5.00	4.81		ug/L		96	75 - 126	3	23
4-Isopropyltoluene	5.00	4.95		ug/L		99	78 - 125	2	24
1,3-Dichlorobenzene	5.00	5.13		ug/L		103	72 - 125	2	22
1,4-Dichlorobenzene	5.00	5.17		ug/L		103	71 - 129	1	22
n-Butylbenzene	5.00	4.78		ug/L		96	69 - 127	3	24
1,2-Dichlorobenzene	5.00	5.18		ug/L		104	72 - 129	1	22
1,2-Dibromo-3-Chloropropane	5.00	4.71		ug/L		94	55 - 135	1	29
1,2,4-Trichlorobenzene	5.00	5.19		ug/L		104	60 - 130	2	26
Hexachlorobutadiene	5.00	5.03		ug/L		101	63 - 130	4	26
Naphthalene	5.00	5.25		ug/L		105	54 - 137	1	28
1,2,3-Trichlorobenzene	5.00	5.27		ug/L		105	60 - 136	2	28

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
Toluene-d8 (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	101		80 - 120
4-Bromofluorobenzene (Surr)	102		80 - 120
1,2-Dichloroethane-d4 (Surr)	97		80 - 120

Lab Sample ID: MB 580-421205/6
Matrix: Water
Analysis Batch: 421205

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			03/23/23 12:51	1
Chloromethane	ND		1.0	0.28	ug/L			03/23/23 12:51	1
Vinyl chloride	ND		1.0	0.22	ug/L			03/23/23 12:51	1
Bromomethane	ND		1.0	0.21	ug/L			03/23/23 12:51	1
Chloroethane	ND		1.0	0.35	ug/L			03/23/23 12:51	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			03/23/23 12:51	1
Carbon disulfide	ND		1.0	0.53	ug/L			03/23/23 12:51	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			03/23/23 12:51	1
Acetone	ND		15	3.2	ug/L			03/23/23 12:51	1
Methylene Chloride	ND		3.0	1.4	ug/L			03/23/23 12:51	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			03/23/23 12:51	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			03/23/23 12:51	1

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QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

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

Lab Sample ID: MB 580-421205/6
Matrix: Water
Analysis Batch: 421205

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			03/23/23 12:51	1
2-Butanone (MEK)	ND		15	4.7	ug/L			03/23/23 12:51	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			03/23/23 12:51	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			03/23/23 12:51	1
Bromochloromethane	ND		1.0	0.29	ug/L			03/23/23 12:51	1
Chloroform	ND		1.0	0.26	ug/L			03/23/23 12:51	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			03/23/23 12:51	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			03/23/23 12:51	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			03/23/23 12:51	1
Benzene	ND		1.0	0.24	ug/L			03/23/23 12:51	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			03/23/23 12:51	1
Trichloroethene	ND		1.0	0.26	ug/L			03/23/23 12:51	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			03/23/23 12:51	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			03/23/23 12:51	1
Dibromomethane	ND		1.0	0.34	ug/L			03/23/23 12:51	1
Bromodichloromethane	ND		1.0	0.29	ug/L			03/23/23 12:51	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			03/23/23 12:51	1
Toluene	ND		1.0	0.39	ug/L			03/23/23 12:51	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			03/23/23 12:51	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			03/23/23 12:51	1
Tetrachloroethene	ND		1.0	0.41	ug/L			03/23/23 12:51	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			03/23/23 12:51	1
Dibromochloromethane	ND		1.0	0.43	ug/L			03/23/23 12:51	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			03/23/23 12:51	1
Chlorobenzene	ND		1.0	0.44	ug/L			03/23/23 12:51	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			03/23/23 12:51	1
Ethylbenzene	ND		1.0	0.50	ug/L			03/23/23 12:51	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			03/23/23 12:51	1
o-Xylene	ND		1.0	0.39	ug/L			03/23/23 12:51	1
Styrene	ND		1.0	0.53	ug/L			03/23/23 12:51	1
Bromoform	ND		1.0	0.51	ug/L			03/23/23 12:51	1
Isopropylbenzene	ND		1.0	0.44	ug/L			03/23/23 12:51	1
Bromobenzene	ND		1.0	0.43	ug/L			03/23/23 12:51	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.52	ug/L			03/23/23 12:51	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			03/23/23 12:51	1
N-Propylbenzene	ND		1.0	0.50	ug/L			03/23/23 12:51	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			03/23/23 12:51	1
4-Chlorotoluene	ND		1.0	0.38	ug/L			03/23/23 12:51	1
t-Butylbenzene	ND		2.0	0.58	ug/L			03/23/23 12:51	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			03/23/23 12:51	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			03/23/23 12:51	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			03/23/23 12:51	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			03/23/23 12:51	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			03/23/23 12:51	1
n-Butylbenzene	ND		1.0	0.44	ug/L			03/23/23 12:51	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			03/23/23 12:51	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			03/23/23 12:51	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			03/23/23 12:51	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			03/23/23 12:51	1

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

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

Lab Sample ID: MB 580-421205/6
Matrix: Water
Analysis Batch: 421205

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			03/23/23 12:51	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			03/23/23 12:51	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			03/23/23 12:51	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120					03/23/23 12:51	1
1,2-Dichloroethane-d4 (Surr)	100		80 - 120					03/23/23 12:51	1
4-Bromofluorobenzene (Surr)	94		80 - 120					03/23/23 12:51	1
Dibromofluoromethane (Surr)	100		80 - 120					03/23/23 12:51	1

Lab Sample ID: LCS 580-421205/7
Matrix: Water
Analysis Batch: 421205

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	11.3		ug/L		113	20 - 150
Chloromethane	10.0	10.3		ug/L		103	25 - 150
Vinyl chloride	10.0	10.5		ug/L		105	31 - 150
Bromomethane	10.0	10.1		ug/L		101	36 - 150
Chloroethane	10.0	9.35		ug/L		94	38 - 150
Trichlorofluoromethane	10.0	10.4		ug/L		104	45 - 148
Carbon disulfide	10.0	10.0		ug/L		100	63 - 134
1,1-Dichloroethene	10.0	10.7		ug/L		107	70 - 129
Acetone	50.0	48.8		ug/L		98	44 - 150
Methylene Chloride	10.0	9.56		ug/L		96	77 - 125
Methyl tert-butyl ether	10.0	9.98		ug/L		100	72 - 120
trans-1,2-Dichloroethene	10.0	10.3		ug/L		103	75 - 120
1,1-Dichloroethane	10.0	10.1		ug/L		101	80 - 120
2-Butanone (MEK)	50.0	52.3		ug/L		105	65 - 137
2,2-Dichloropropane	10.0	10.2		ug/L		102	66 - 126
cis-1,2-Dichloroethene	10.0	10.3		ug/L		103	76 - 120
Bromochloromethane	10.0	10.3		ug/L		103	78 - 120
Chloroform	10.0	10.0		ug/L		100	78 - 127
1,1,1-Trichloroethane	10.0	10.1		ug/L		101	74 - 130
Carbon tetrachloride	10.0	10.4		ug/L		104	72 - 129
1,1-Dichloropropene	10.0	10.2		ug/L		102	74 - 120
Benzene	10.0	10.3		ug/L		103	80 - 122
1,2-Dichloroethane	10.0	10.0		ug/L		100	69 - 126
Trichloroethene	10.0	10.2		ug/L		102	80 - 125
1,2-Dichloropropane	10.0	9.86		ug/L		99	80 - 120
4-Methyl-2-pentanone (MIBK)	50.0	50.4		ug/L		101	59 - 141
Dibromomethane	10.0	10.1		ug/L		101	80 - 120
Bromodichloromethane	10.0	9.91		ug/L		99	75 - 124
cis-1,3-Dichloropropene	10.0	9.95		ug/L		99	77 - 120
Toluene	10.0	10.0		ug/L		100	80 - 120
trans-1,3-Dichloropropene	10.0	9.70		ug/L		97	76 - 122
1,1,2-Trichloroethane	10.0	10.2		ug/L		102	80 - 121
Tetrachloroethene	10.0	10.5		ug/L		105	76 - 125

QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

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

Lab Sample ID: LCS 580-421205/7
Matrix: Water
Analysis Batch: 421205

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	10.0		ug/L		100	79 - 120
Dibromochloromethane	10.0	9.64		ug/L		96	73 - 125
1,2-Dibromoethane	10.0	10.0		ug/L		100	79 - 126
Chlorobenzene	10.0	10.3		ug/L		103	80 - 120
1,1,1,2-Tetrachloroethane	10.0	9.92		ug/L		99	79 - 120
Ethylbenzene	10.0	10.1		ug/L		101	80 - 120
m-Xylene & p-Xylene	10.0	10.2		ug/L		102	80 - 120
o-Xylene	10.0	10.2		ug/L		102	80 - 120
Styrene	10.0	10.3		ug/L		103	76 - 122
Bromoform	10.0	9.56		ug/L		96	56 - 139
Isopropylbenzene	10.0	10.3		ug/L		103	80 - 123
Bromobenzene	10.0	10.4		ug/L		104	80 - 120
1,1,2,2-Tetrachloroethane	10.0	9.89		ug/L		99	74 - 124
1,2,3-Trichloropropane	10.0	10.6		ug/L		106	76 - 124
N-Propylbenzene	10.0	10.3		ug/L		103	80 - 122
2-Chlorotoluene	10.0	10.7		ug/L		107	80 - 120
4-Chlorotoluene	10.0	11.0		ug/L		110	73 - 129
t-Butylbenzene	10.0	10.4		ug/L		104	75 - 123
1,2,4-Trimethylbenzene	10.0	10.3		ug/L		103	80 - 120
sec-Butylbenzene	10.0	10.5		ug/L		105	78 - 122
4-Isopropyltoluene	10.0	10.5		ug/L		105	77 - 126
1,3-Dichlorobenzene	10.0	10.5		ug/L		105	77 - 127
1,4-Dichlorobenzene	10.0	10.2		ug/L		102	80 - 120
n-Butylbenzene	10.0	10.1		ug/L		101	57 - 133
1,2-Dichlorobenzene	10.0	10.5		ug/L		105	80 - 120
1,2-Dibromo-3-Chloropropane	10.0	9.49		ug/L		95	65 - 133
1,2,4-Trichlorobenzene	10.0	10.0		ug/L		100	61 - 148
Hexachlorobutadiene	10.0	10.2		ug/L		102	74 - 131
Naphthalene	10.0	10.5		ug/L		105	63 - 150
1,2,3-Trichlorobenzene	10.0	9.82		ug/L		98	65 - 150
1,3,5-Trimethylbenzene	10.0	10.6		ug/L		106	80 - 122

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	102		80 - 120
1,2-Dichloroethane-d4 (Surr)	97		80 - 120
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	99		80 - 120

Lab Sample ID: LCSD 580-421205/8
Matrix: Water
Analysis Batch: 421205

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	11.5		ug/L		115	20 - 150	1	33
Chloromethane	10.0	10.7		ug/L		107	25 - 150	3	26
Vinyl chloride	10.0	10.1		ug/L		101	31 - 150	4	26
Bromomethane	10.0	10.5		ug/L		105	36 - 150	4	33
Chloroethane	10.0	10.2		ug/L		102	38 - 150	8	28

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QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

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

Lab Sample ID: LCSD 580-421205/8
Matrix: Water
Analysis Batch: 421205

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	10.1		ug/L		101	45 - 148	2	35
Carbon disulfide	10.0	9.89		ug/L		99	63 - 134	1	24
1,1-Dichloroethene	10.0	9.98		ug/L		100	70 - 129	7	23
Acetone	50.0	51.6		ug/L		103	44 - 150	5	33
Methylene Chloride	10.0	9.66		ug/L		97	77 - 125	1	18
Methyl tert-butyl ether	10.0	10.2		ug/L		102	72 - 120	2	18
trans-1,2-Dichloroethene	10.0	10.1		ug/L		101	75 - 120	2	21
1,1-Dichloroethane	10.0	10.1		ug/L		101	80 - 120	0	15
2-Butanone (MEK)	50.0	52.5		ug/L		105	65 - 137	0	34
2,2-Dichloropropane	10.0	10.1		ug/L		101	66 - 126	1	22
cis-1,2-Dichloroethene	10.0	10.4		ug/L		104	76 - 120	2	20
Bromochloromethane	10.0	9.89		ug/L		99	78 - 120	4	13
Chloroform	10.0	9.99		ug/L		100	78 - 127	0	14
1,1,1-Trichloroethane	10.0	9.89		ug/L		99	74 - 130	3	19
Carbon tetrachloride	10.0	9.99		ug/L		100	72 - 129	4	19
1,1-Dichloropropene	10.0	9.91		ug/L		99	74 - 120	3	14
Benzene	10.0	10.1		ug/L		101	80 - 122	2	14
1,2-Dichloroethane	10.0	10.2		ug/L		102	69 - 126	1	11
Trichloroethene	10.0	10.0		ug/L		100	80 - 125	2	13
1,2-Dichloropropane	10.0	9.81		ug/L		98	80 - 120	1	14
4-Methyl-2-pentanone (MIBK)	50.0	51.3		ug/L		103	59 - 141	2	22
Dibromomethane	10.0	9.84		ug/L		98	80 - 120	3	11
Bromodichloromethane	10.0	9.82		ug/L		98	75 - 124	1	13
cis-1,3-Dichloropropene	10.0	9.81		ug/L		98	77 - 120	1	35
Toluene	10.0	10.0		ug/L		100	80 - 120	0	13
trans-1,3-Dichloropropene	10.0	9.81		ug/L		98	76 - 122	1	20
1,1,2-Trichloroethane	10.0	9.88		ug/L		99	80 - 121	3	14
Tetrachloroethene	10.0	10.4		ug/L		104	76 - 125	1	13
1,3-Dichloropropane	10.0	10.3		ug/L		103	79 - 120	3	19
Dibromochloromethane	10.0	9.83		ug/L		98	73 - 125	2	13
1,2-Dibromoethane	10.0	10.2		ug/L		102	79 - 126	1	12
Chlorobenzene	10.0	10.1		ug/L		101	80 - 120	1	10
1,1,1,2-Tetrachloroethane	10.0	9.77		ug/L		98	79 - 120	1	16
Ethylbenzene	10.0	10.1		ug/L		101	80 - 120	0	14
m-Xylene & p-Xylene	10.0	10.1		ug/L		101	80 - 120	1	14
o-Xylene	10.0	10.2		ug/L		102	80 - 120	0	16
Styrene	10.0	9.91		ug/L		99	76 - 122	4	16
Bromoform	10.0	9.55		ug/L		95	56 - 139	0	21
Isopropylbenzene	10.0	10.1		ug/L		101	80 - 123	2	19
Bromobenzene	10.0	9.99		ug/L		100	80 - 120	4	24
1,1,2,2-Tetrachloroethane	10.0	10.4		ug/L		104	74 - 124	5	25
1,2,3-Trichloropropane	10.0	10.8		ug/L		108	76 - 124	2	26
N-Propylbenzene	10.0	10.1		ug/L		101	80 - 122	2	22
2-Chlorotoluene	10.0	10.3		ug/L		103	80 - 120	4	20
4-Chlorotoluene	10.0	10.5		ug/L		105	73 - 129	5	29
t-Butylbenzene	10.0	10.3		ug/L		103	75 - 123	1	21
1,2,4-Trimethylbenzene	10.0	10.2		ug/L		102	80 - 120	1	16
sec-Butylbenzene	10.0	10.2		ug/L		102	78 - 122	4	15
4-Isopropyltoluene	10.0	10.1		ug/L		101	77 - 126	4	20

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

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

Lab Sample ID: LCSD 580-421205/8
Matrix: Water
Analysis Batch: 421205

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	4	35
1,4-Dichlorobenzene	10.0	9.77		ug/L		98	80 - 120	4	17
n-Butylbenzene	10.0	9.95		ug/L		99	57 - 133	2	14
1,2-Dichlorobenzene	10.0	10.0		ug/L		100	80 - 120	5	15
1,2-Dibromo-3-Chloropropane	10.0	8.55		ug/L		85	65 - 133	11	25
1,2,4-Trichlorobenzene	10.0	9.48		ug/L		95	61 - 148	5	27
Hexachlorobutadiene	10.0	9.62		ug/L		96	74 - 131	6	22
Naphthalene	10.0	10.3		ug/L		103	63 - 150	3	33
1,2,3-Trichlorobenzene	10.0	9.40		ug/L		94	65 - 150	4	33
1,3,5-Trimethylbenzene	10.0	10.2		ug/L		102	80 - 122	4	21

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

Lab Sample ID: 580-124516-7 MS
Matrix: Water
Analysis Batch: 421205

Client Sample ID: MWA-63-030923
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Dichlorodifluoromethane	ND		100	127		ug/L		127	20 - 150
Chloromethane	ND		100	115		ug/L		115	25 - 150
Vinyl chloride	ND		100	117		ug/L		117	31 - 150
Bromomethane	ND		100	110		ug/L		110	36 - 150
Chloroethane	ND		100	108		ug/L		108	38 - 150
Trichlorofluoromethane	ND		100	119		ug/L		119	45 - 148
Carbon disulfide	ND		100	104		ug/L		104	63 - 134
1,1-Dichloroethene	ND		100	107		ug/L		107	70 - 129
Acetone	ND		500	445		ug/L		89	44 - 150
Methylene Chloride	ND		100	103		ug/L		103	77 - 125
Methyl tert-butyl ether	ND		100	89.3		ug/L		89	72 - 120
trans-1,2-Dichloroethene	ND		100	106		ug/L		106	75 - 120
1,1-Dichloroethane	ND		100	105		ug/L		105	80 - 120
2-Butanone (MEK)	ND		500	412		ug/L		82	65 - 137
2,2-Dichloropropane	ND		100	89.9		ug/L		90	66 - 126
cis-1,2-Dichloroethene	ND		100	107		ug/L		107	76 - 120
Bromochloromethane	ND		100	98.0		ug/L		98	78 - 120
Chloroform	80		100	183		ug/L		103	78 - 127
1,1,1-Trichloroethane	ND		100	110		ug/L		110	74 - 130
Carbon tetrachloride	ND		100	112		ug/L		112	72 - 129
1,1-Dichloropropene	ND		100	108		ug/L		108	74 - 120
Benzene	ND		100	108		ug/L		108	80 - 122
1,2-Dichloroethane	ND		100	105		ug/L		105	69 - 126
Trichloroethene	ND		100	107		ug/L		107	80 - 125
1,2-Dichloropropane	ND		100	106		ug/L		106	80 - 120
4-Methyl-2-pentanone (MIBK)	ND		500	454		ug/L		91	59 - 141

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QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

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

Lab Sample ID: 580-124516-7 MS

Client Sample ID: MWA-63-030923

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 421205

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Dibromomethane	ND		100	94.1		ug/L		94	80 - 120
Bromodichloromethane	ND		100	104		ug/L		104	75 - 124
cis-1,3-Dichloropropene	ND		100	96.3		ug/L		96	77 - 120
Toluene	ND		100	108		ug/L		108	80 - 120
trans-1,3-Dichloropropene	ND		100	94.4		ug/L		94	76 - 122
1,1,2-Trichloroethane	ND		100	101		ug/L		101	80 - 121
Tetrachloroethene	13		100	122		ug/L		110	76 - 125
1,3-Dichloropropane	ND		100	98.6		ug/L		99	79 - 120
Dibromochloromethane	ND		100	97.7		ug/L		98	73 - 125
1,2-Dibromoethane	ND		100	97.6		ug/L		98	79 - 126
Chlorobenzene	5.6	J	100	110		ug/L		105	80 - 120
1,1,1,2-Tetrachloroethane	ND		100	108		ug/L		108	79 - 120
Ethylbenzene	ND		100	108		ug/L		108	80 - 120
m-Xylene & p-Xylene	ND		100	106		ug/L		106	80 - 120
o-Xylene	ND		100	109		ug/L		109	80 - 120
Styrene	ND		100	108		ug/L		108	76 - 122
Bromoform	ND		100	92.0		ug/L		92	56 - 139
Isopropylbenzene	ND		100	109		ug/L		109	80 - 123
Bromobenzene	ND		100	109		ug/L		109	80 - 120
1,1,2,2-Tetrachloroethane	ND		100	100		ug/L		100	74 - 124
1,2,3-Trichloropropane	ND		100	99.2		ug/L		99	76 - 124
N-Propylbenzene	ND		100	114		ug/L		114	80 - 122
2-Chlorotoluene	ND		100	113		ug/L		113	80 - 120
4-Chlorotoluene	ND		100	113		ug/L		113	73 - 129
t-Butylbenzene	ND		100	115		ug/L		115	75 - 123
1,2,4-Trimethylbenzene	ND		100	114		ug/L		114	80 - 120
sec-Butylbenzene	ND		100	116		ug/L		116	78 - 122
4-Isopropyltoluene	ND		100	113		ug/L		113	77 - 126
1,3-Dichlorobenzene	ND		100	112		ug/L		112	77 - 127
1,4-Dichlorobenzene	ND		100	106		ug/L		106	80 - 120
n-Butylbenzene	ND		100	108		ug/L		108	57 - 133
1,2-Dichlorobenzene	ND		100	109		ug/L		109	80 - 120
1,2-Dibromo-3-Chloropropane	ND		100	84.7		ug/L		85	65 - 133
1,2,4-Trichlorobenzene	ND		100	89.7		ug/L		90	61 - 148
Hexachlorobutadiene	ND		100	104		ug/L		104	74 - 131
Naphthalene	ND		100	86.9		ug/L		87	63 - 150
1,2,3-Trichlorobenzene	ND		100	82.8		ug/L		83	65 - 150
1,3,5-Trimethylbenzene	ND		100	115		ug/L		115	80 - 122

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	100		80 - 120
1,2-Dichloroethane-d4 (Surr)	96		80 - 120
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	95		80 - 120

QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

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

Lab Sample ID: 580-124516-7 MSD

Matrix: Water

Analysis Batch: 421205

Client Sample ID: MWA-63-030923

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		100	126		ug/L		126	20 - 150	1	33
Chloromethane	ND		100	107		ug/L		107	25 - 150	7	26
Vinyl chloride	ND		100	113		ug/L		113	31 - 150	4	26
Bromomethane	ND		100	110		ug/L		110	36 - 150	1	33
Chloroethane	ND		100	107		ug/L		107	38 - 150	1	28
Trichlorofluoromethane	ND		100	119		ug/L		119	45 - 148	0	35
Carbon disulfide	ND		100	101		ug/L		101	63 - 134	3	24
1,1-Dichloroethene	ND		100	106		ug/L		106	70 - 129	1	23
Acetone	ND		500	421		ug/L		84	44 - 150	6	33
Methylene Chloride	ND		100	101		ug/L		101	77 - 125	2	18
Methyl tert-butyl ether	ND		100	89.6		ug/L		90	72 - 120	0	18
trans-1,2-Dichloroethene	ND		100	104		ug/L		104	75 - 120	2	21
1,1-Dichloroethane	ND		100	104		ug/L		104	80 - 120	1	15
2-Butanone (MEK)	ND		500	411		ug/L		82	65 - 137	0	34
2,2-Dichloropropane	ND		100	87.9		ug/L		88	66 - 126	2	22
cis-1,2-Dichloroethene	ND		100	108		ug/L		108	76 - 120	0	20
Bromochloromethane	ND		100	102		ug/L		102	78 - 120	4	13
Chloroform	80		100	180		ug/L		101	78 - 127	2	14
1,1,1-Trichloroethane	ND		100	105		ug/L		105	74 - 130	4	19
Carbon tetrachloride	ND		100	109		ug/L		109	72 - 129	2	19
1,1-Dichloropropene	ND		100	107		ug/L		107	74 - 120	1	14
Benzene	ND		100	105		ug/L		105	80 - 122	3	14
1,2-Dichloroethane	ND		100	98.0		ug/L		98	69 - 126	7	11
Trichloroethene	ND		100	107		ug/L		107	80 - 125	1	13
1,2-Dichloropropane	ND		100	100		ug/L		100	80 - 120	5	14
4-Methyl-2-pentanone (MIBK)	ND		500	427		ug/L		85	59 - 141	6	22
Dibromomethane	ND		100	94.7		ug/L		95	80 - 120	1	11
Bromodichloromethane	ND		100	100		ug/L		100	75 - 124	4	13
cis-1,3-Dichloropropene	ND		100	90.6		ug/L		91	77 - 120	6	35
Toluene	ND		100	103		ug/L		103	80 - 120	5	13
trans-1,3-Dichloropropene	ND		100	90.8		ug/L		91	76 - 122	4	20
1,1,2-Trichloroethane	ND		100	96.2		ug/L		96	80 - 121	5	14
Tetrachloroethene	13		100	121		ug/L		109	76 - 125	1	13
1,3-Dichloropropane	ND		100	95.6		ug/L		96	79 - 120	3	19
Dibromochloromethane	ND		100	96.5		ug/L		96	73 - 125	1	13
1,2-Dibromoethane	ND		100	95.9		ug/L		96	79 - 126	2	12
Chlorobenzene	5.6	J	100	104		ug/L		99	80 - 120	5	10
1,1,1,2-Tetrachloroethane	ND		100	106		ug/L		106	79 - 120	2	16
Ethylbenzene	ND		100	105		ug/L		105	80 - 120	3	14
m-Xylene & p-Xylene	ND		100	104		ug/L		104	80 - 120	3	14
o-Xylene	ND		100	104		ug/L		104	80 - 120	4	16
Styrene	ND		100	104		ug/L		104	76 - 122	4	16
Bromoform	ND		100	94.4		ug/L		94	56 - 139	3	21
Isopropylbenzene	ND		100	107		ug/L		107	80 - 123	2	19
Bromobenzene	ND		100	104		ug/L		104	80 - 120	5	24
1,1,2,2-Tetrachloroethane	ND		100	94.4		ug/L		94	74 - 124	6	25
1,2,3-Trichloropropane	ND		100	98.1		ug/L		98	76 - 124	1	26
N-Propylbenzene	ND		100	107		ug/L		107	80 - 122	6	22

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

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

Lab Sample ID: 580-124516-7 MSD

Client Sample ID: MWA-63-030923

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 421205

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Chlorotoluene	ND		100	113		ug/L		113	80 - 120	1	20
4-Chlorotoluene	ND		100	110		ug/L		110	73 - 129	3	29
t-Butylbenzene	ND		100	113		ug/L		113	75 - 123	1	21
1,2,4-Trimethylbenzene	ND		100	109		ug/L		109	80 - 120	4	16
sec-Butylbenzene	ND		100	110		ug/L		110	78 - 122	5	15
4-Isopropyltoluene	ND		100	107		ug/L		107	77 - 126	5	20
1,3-Dichlorobenzene	ND		100	107		ug/L		107	77 - 127	5	35
1,4-Dichlorobenzene	ND		100	105		ug/L		105	80 - 120	1	17
n-Butylbenzene	ND		100	103		ug/L		103	57 - 133	4	14
1,2-Dichlorobenzene	ND		100	104		ug/L		104	80 - 120	4	15
1,2-Dibromo-3-Chloropropane	ND		100	83.6		ug/L		84	65 - 133	1	25
1,2,4-Trichlorobenzene	ND		100	91.2		ug/L		91	61 - 148	2	27
Hexachlorobutadiene	ND		100	110		ug/L		110	74 - 131	6	22
Naphthalene	ND		100	86.4		ug/L		86	63 - 150	1	33
1,2,3-Trichlorobenzene	ND		100	86.2		ug/L		86	65 - 150	4	33
1,3,5-Trimethylbenzene	ND		100	109		ug/L		109	80 - 122	5	21

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	100		80 - 120
1,2-Dichloroethane-d4 (Surr)	93		80 - 120
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	100		80 - 120

Lab Sample ID: MB 580-421605/6

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 421605

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.53	ug/L			03/29/23 11:57	1
Chloromethane	ND		1.0	0.28	ug/L			03/29/23 11:57	1
Vinyl chloride	ND		1.0	0.22	ug/L			03/29/23 11:57	1
Bromomethane	ND		1.0	0.21	ug/L			03/29/23 11:57	1
Chloroethane	ND		1.0	0.35	ug/L			03/29/23 11:57	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			03/29/23 11:57	1
Carbon disulfide	ND		1.0	0.53	ug/L			03/29/23 11:57	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			03/29/23 11:57	1
Acetone	ND		15	3.2	ug/L			03/29/23 11:57	1
Methylene Chloride	ND		3.0	1.4	ug/L			03/29/23 11:57	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			03/29/23 11:57	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			03/29/23 11:57	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			03/29/23 11:57	1
2-Butanone (MEK)	ND		15	4.7	ug/L			03/29/23 11:57	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			03/29/23 11:57	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			03/29/23 11:57	1
Bromochloromethane	ND		1.0	0.29	ug/L			03/29/23 11:57	1
Chloroform	ND		1.0	0.26	ug/L			03/29/23 11:57	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			03/29/23 11:57	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			03/29/23 11:57	1

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QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

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

Lab Sample ID: MB 580-421605/6
Matrix: Water
Analysis Batch: 421605

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			03/29/23 11:57	1
Benzene	ND		1.0	0.24	ug/L			03/29/23 11:57	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			03/29/23 11:57	1
Trichloroethene	ND		1.0	0.26	ug/L			03/29/23 11:57	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			03/29/23 11:57	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			03/29/23 11:57	1
Dibromomethane	ND		1.0	0.34	ug/L			03/29/23 11:57	1
Bromodichloromethane	ND		1.0	0.29	ug/L			03/29/23 11:57	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			03/29/23 11:57	1
Toluene	ND		1.0	0.39	ug/L			03/29/23 11:57	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			03/29/23 11:57	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			03/29/23 11:57	1
Tetrachloroethene	ND		1.0	0.41	ug/L			03/29/23 11:57	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			03/29/23 11:57	1
Dibromochloromethane	ND		1.0	0.43	ug/L			03/29/23 11:57	1
1,2-Dibromoethane	ND		1.0	0.40	ug/L			03/29/23 11:57	1
Chlorobenzene	ND		1.0	0.44	ug/L			03/29/23 11:57	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			03/29/23 11:57	1
Ethylbenzene	ND		1.0	0.50	ug/L			03/29/23 11:57	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			03/29/23 11:57	1
o-Xylene	ND		1.0	0.39	ug/L			03/29/23 11:57	1
Styrene	ND		1.0	0.53	ug/L			03/29/23 11:57	1
Bromoform	ND		1.0	0.51	ug/L			03/29/23 11:57	1
Isopropylbenzene	ND		1.0	0.44	ug/L			03/29/23 11:57	1
Bromobenzene	ND		1.0	0.43	ug/L			03/29/23 11:57	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			03/29/23 11:57	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			03/29/23 11:57	1
N-Propylbenzene	ND		1.0	0.50	ug/L			03/29/23 11:57	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			03/29/23 11:57	1
4-Chlorotoluene	ND		1.0	0.38	ug/L			03/29/23 11:57	1
t-Butylbenzene	ND		2.0	0.58	ug/L			03/29/23 11:57	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			03/29/23 11:57	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			03/29/23 11:57	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			03/29/23 11:57	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			03/29/23 11:57	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			03/29/23 11:57	1
n-Butylbenzene	ND		1.0	0.44	ug/L			03/29/23 11:57	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			03/29/23 11:57	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			03/29/23 11:57	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			03/29/23 11:57	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			03/29/23 11:57	1
Naphthalene	ND		3.0	0.93	ug/L			03/29/23 11:57	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			03/29/23 11:57	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			03/29/23 11:57	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		03/29/23 11:57	1
1,2-Dichloroethane-d4 (Surr)	107		80 - 120		03/29/23 11:57	1

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QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

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

Lab Sample ID: MB 580-421605/6
Matrix: Water
Analysis Batch: 421605

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

<u>Surrogate</u>	<u>MB</u>	<u>MB</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	92		80 - 120		03/29/23 11:57	1
Dibromofluoromethane (Surr)	99		80 - 120		03/29/23 11:57	1

Lab Sample ID: LCS 580-421605/7
Matrix: Water
Analysis Batch: 421605

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

<u>Analyte</u>	<u>Spike</u>	<u>LCS</u>	<u>LCS</u>	<u>Unit</u>	<u>D</u>	<u>%Rec</u>	<u>%Rec</u>
	Added	Result	Qualifier				Limits
Dichlorodifluoromethane	10.0	9.39		ug/L		94	20 - 150
Chloromethane	10.0	10.5		ug/L		105	25 - 150
Vinyl chloride	10.0	10.9		ug/L		109	31 - 150
Bromomethane	10.0	9.84		ug/L		98	36 - 150
Chloroethane	10.0	10.5		ug/L		105	38 - 150
Trichlorofluoromethane	10.0	9.37		ug/L		94	45 - 148
Carbon disulfide	10.0	9.18		ug/L		92	63 - 134
1,1-Dichloroethene	10.0	9.70		ug/L		97	70 - 129
Acetone	50.0	45.1		ug/L		90	44 - 150
Methylene Chloride	10.0	9.04		ug/L		90	77 - 125
Methyl tert-butyl ether	10.0	9.81		ug/L		98	72 - 120
trans-1,2-Dichloroethene	10.0	9.41		ug/L		94	75 - 120
1,1-Dichloroethane	10.0	9.42		ug/L		94	80 - 120
2-Butanone (MEK)	50.0	49.7		ug/L		99	65 - 137
2,2-Dichloropropane	10.0	9.14		ug/L		91	66 - 126
cis-1,2-Dichloroethene	10.0	9.52		ug/L		95	76 - 120
Bromochloromethane	10.0	9.71		ug/L		97	78 - 120
Chloroform	10.0	10.0		ug/L		100	78 - 127
1,1,1-Trichloroethane	10.0	9.48		ug/L		95	74 - 130
Carbon tetrachloride	10.0	9.39		ug/L		94	72 - 129
1,1-Dichloropropene	10.0	9.56		ug/L		96	74 - 120
Benzene	10.0	9.69		ug/L		97	80 - 122
1,2-Dichloroethane	10.0	10.0		ug/L		100	69 - 126
Trichloroethene	10.0	9.44		ug/L		94	80 - 125
1,2-Dichloropropane	10.0	9.42		ug/L		94	80 - 120
4-Methyl-2-pentanone (MIBK)	50.0	50.6		ug/L		101	59 - 141
Dibromomethane	10.0	9.84		ug/L		98	80 - 120
Bromodichloromethane	10.0	9.02		ug/L		90	75 - 124
cis-1,3-Dichloropropene	10.0	9.44		ug/L		94	77 - 120
Toluene	10.0	9.84		ug/L		98	80 - 120
trans-1,3-Dichloropropene	10.0	9.57		ug/L		96	76 - 122
1,1,2-Trichloroethane	10.0	10.3		ug/L		103	80 - 121
Tetrachloroethene	10.0	9.99		ug/L		100	76 - 125
1,3-Dichloropropane	10.0	10.2		ug/L		102	79 - 120
Dibromochloromethane	10.0	8.96		ug/L		90	73 - 125
1,2-Dibromoethane	10.0	10.2		ug/L		102	79 - 126
Chlorobenzene	10.0	9.86		ug/L		99	80 - 120
1,1,1,2-Tetrachloroethane	10.0	9.37		ug/L		94	79 - 120
Ethylbenzene	10.0	9.94		ug/L		99	80 - 120
m-Xylene & p-Xylene	10.0	10.1		ug/L		101	80 - 120

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

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

Lab Sample ID: LCS 580-421605/7
Matrix: Water
Analysis Batch: 421605

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	10.2		ug/L		102	80 - 120
Styrene	10.0	10.3		ug/L		103	76 - 122
Bromoform	10.0	8.13		ug/L		81	56 - 139
Isopropylbenzene	10.0	9.93		ug/L		99	80 - 123
Bromobenzene	10.0	10.2		ug/L		102	80 - 120
1,1,2,2-Tetrachloroethane	10.0	10.4		ug/L		104	74 - 124
1,2,3-Trichloropropane	10.0	11.1		ug/L		111	76 - 124
N-Propylbenzene	10.0	9.89		ug/L		99	80 - 122
2-Chlorotoluene	10.0	10.2		ug/L		102	80 - 120
4-Chlorotoluene	10.0	10.1		ug/L		101	73 - 129
t-Butylbenzene	10.0	9.92		ug/L		99	75 - 123
1,2,4-Trimethylbenzene	10.0	10.1		ug/L		101	80 - 120
sec-Butylbenzene	10.0	9.88		ug/L		99	78 - 122
4-Isopropyltoluene	10.0	10.0		ug/L		100	77 - 126
1,3-Dichlorobenzene	10.0	10.3		ug/L		103	77 - 127
1,4-Dichlorobenzene	10.0	10.0		ug/L		100	80 - 120
n-Butylbenzene	10.0	9.82		ug/L		98	57 - 133
1,2-Dichlorobenzene	10.0	10.2		ug/L		102	80 - 120
1,2-Dibromo-3-Chloropropane	10.0	8.34		ug/L		83	65 - 133
1,2,4-Trichlorobenzene	10.0	9.89		ug/L		99	61 - 148
Hexachlorobutadiene	10.0	9.31		ug/L		93	74 - 131
Naphthalene	10.0	10.1		ug/L		101	63 - 150
1,2,3-Trichlorobenzene	10.0	9.32		ug/L		93	65 - 150
1,3,5-Trimethylbenzene	10.0	10.1		ug/L		101	80 - 122

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	102		80 - 120
1,2-Dichloroethane-d4 (Surr)	103		80 - 120
4-Bromofluorobenzene (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	95		80 - 120

Lab Sample ID: LCSD 580-421605/8
Matrix: Water
Analysis Batch: 421605

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	9.48		ug/L		95	20 - 150	1	33
Chloromethane	10.0	10.9		ug/L		109	25 - 150	4	26
Vinyl chloride	10.0	10.7		ug/L		107	31 - 150	2	26
Bromomethane	10.0	9.61		ug/L		96	36 - 150	2	33
Chloroethane	10.0	10.0		ug/L		100	38 - 150	5	28
Trichlorofluoromethane	10.0	9.24		ug/L		92	45 - 148	1	35
Carbon disulfide	10.0	9.24		ug/L		92	63 - 134	1	24
1,1-Dichloroethene	10.0	9.16		ug/L		92	70 - 129	6	23
Acetone	50.0	46.8		ug/L		94	44 - 150	4	33
Methylene Chloride	10.0	8.77		ug/L		88	77 - 125	3	18
Methyl tert-butyl ether	10.0	10.2		ug/L		102	72 - 120	3	18
trans-1,2-Dichloroethene	10.0	9.71		ug/L		97	75 - 120	3	21

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QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

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

Lab Sample ID: LCSD 580-421605/8
Matrix: Water
Analysis Batch: 421605

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	9.81		ug/L		98	80 - 120	4	15
2-Butanone (MEK)	50.0	50.9		ug/L		102	65 - 137	2	34
2,2-Dichloropropane	10.0	9.47		ug/L		95	66 - 126	4	22
cis-1,2-Dichloroethene	10.0	10.1		ug/L		101	76 - 120	6	20
Bromochloromethane	10.0	10.1		ug/L		101	78 - 120	4	13
Chloroform	10.0	9.76		ug/L		98	78 - 127	3	14
1,1,1-Trichloroethane	10.0	9.31		ug/L		93	74 - 130	2	19
Carbon tetrachloride	10.0	9.16		ug/L		92	72 - 129	2	19
1,1-Dichloropropene	10.0	9.58		ug/L		96	74 - 120	0	14
Benzene	10.0	9.72		ug/L		97	80 - 122	0	14
1,2-Dichloroethane	10.0	10.5		ug/L		105	69 - 126	4	11
Trichloroethene	10.0	9.69		ug/L		97	80 - 125	3	13
1,2-Dichloropropane	10.0	9.38		ug/L		94	80 - 120	0	14
4-Methyl-2-pentanone (MIBK)	50.0	54.5		ug/L		109	59 - 141	7	22
Dibromomethane	10.0	9.83		ug/L		98	80 - 120	0	11
Bromodichloromethane	10.0	8.95		ug/L		90	75 - 124	1	13
cis-1,3-Dichloropropene	10.0	9.82		ug/L		98	77 - 120	4	35
Toluene	10.0	10.2		ug/L		102	80 - 120	4	13
trans-1,3-Dichloropropene	10.0	9.90		ug/L		99	76 - 122	3	20
1,1,2-Trichloroethane	10.0	10.3		ug/L		103	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	5	19
Dibromochloromethane	10.0	9.36		ug/L		94	73 - 125	4	13
1,2-Dibromoethane	10.0	10.6		ug/L		106	79 - 126	3	12
Chlorobenzene	10.0	10.2		ug/L		102	80 - 120	3	10
1,1,1,2-Tetrachloroethane	10.0	9.88		ug/L		99	79 - 120	5	16
Ethylbenzene	10.0	10.0		ug/L		100	80 - 120	1	14
m-Xylene & p-Xylene	10.0	9.96		ug/L		100	80 - 120	2	14
o-Xylene	10.0	10.1		ug/L		101	80 - 120	1	16
Styrene	10.0	10.3		ug/L		103	76 - 122	0	16
Bromoform	10.0	8.55		ug/L		86	56 - 139	5	21
Isopropylbenzene	10.0	10.2		ug/L		102	80 - 123	3	19
Bromobenzene	10.0	10.3		ug/L		103	80 - 120	1	24
1,1,1,2,2-Tetrachloroethane	10.0	11.1		ug/L		111	74 - 124	6	25
1,2,3-Trichloropropane	10.0	11.3		ug/L		113	76 - 124	2	26
N-Propylbenzene	10.0	10.1		ug/L		101	80 - 122	3	22
2-Chlorotoluene	10.0	10.4		ug/L		104	80 - 120	1	20
4-Chlorotoluene	10.0	10.6		ug/L		106	73 - 129	5	29
t-Butylbenzene	10.0	10.0		ug/L		100	75 - 123	1	21
1,2,4-Trimethylbenzene	10.0	10.4		ug/L		104	80 - 120	2	16
sec-Butylbenzene	10.0	10.0		ug/L		100	78 - 122	2	15
4-Isopropyltoluene	10.0	9.88		ug/L		99	77 - 126	1	20
1,3-Dichlorobenzene	10.0	10.3		ug/L		103	77 - 127	0	35
1,4-Dichlorobenzene	10.0	10.3		ug/L		103	80 - 120	3	17
n-Butylbenzene	10.0	9.94		ug/L		99	57 - 133	1	14
1,2-Dichlorobenzene	10.0	10.2		ug/L		102	80 - 120	0	15
1,2-Dibromo-3-Chloropropane	10.0	8.99		ug/L		90	65 - 133	7	25
1,2,4-Trichlorobenzene	10.0	10.5		ug/L		105	61 - 148	6	27
Hexachlorobutadiene	10.0	10.2		ug/L		102	74 - 131	9	22

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QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

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

Lab Sample ID: LCSD 580-421605/8
Matrix: Water
Analysis Batch: 421605

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	10.9		ug/L		109	63 - 150	7	33
1,2,3-Trichlorobenzene	10.0	10.1		ug/L		101	65 - 150	9	33
1,3,5-Trimethylbenzene	10.0	10.2		ug/L		102	80 - 122	1	21

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
Toluene-d8 (Surr)	101		80 - 120
1,2-Dichloroethane-d4 (Surr)	101		80 - 120
4-Bromofluorobenzene (Surr)	96		80 - 120
Dibromofluoromethane (Surr)	95		80 - 120

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 320-661729/5
Matrix: Water
Analysis Batch: 661729

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			03/17/23 14:23	1

Lab Sample ID: LCS 320-661729/6
Matrix: Water
Analysis Batch: 661729

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	53.2		ug/L		107	85 - 115

Lab Sample ID: MRL 320-661729/4
Matrix: Water
Analysis Batch: 661729

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	3.48	J	ug/L		87	75 - 125

Lab Sample ID: 580-124516-7 MS
Matrix: Water
Analysis Batch: 661729

Client Sample ID: MWA-63-030923
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	ND		249	244		ug/L		98	80 - 120

Lab Sample ID: 580-124516-7 MSD
Matrix: Water
Analysis Batch: 661729

Client Sample ID: MWA-63-030923
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		249	241		ug/L		97	80 - 120	1	20

QC Sample Results

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 580-420978/3
Matrix: Water
Analysis Batch: 420978

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			03/20/23 19:39	1

Lab Sample ID: LCS 580-420978/4
Matrix: Water
Analysis Batch: 420978

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 580-420978/5
Matrix: Water
Analysis Batch: 420978

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	53.1		mg/L		106	90 - 110	0	15

Lab Sample ID: 580-124516-7 MS
Matrix: Water
Analysis Batch: 420978

Client Sample ID: MWA-63-030923
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5.5		50.0	58.5		mg/L		106	90 - 110

Lab Sample ID: 580-124516-7 MSD
Matrix: Water
Analysis Batch: 420978

Client Sample ID: MWA-63-030923
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	5.5		50.0	60.3		mg/L		110	90 - 110	3	15

Lab Chronicle

Client: ERM-West
 Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: TB-030923

Lab Sample ID: 580-124516-1

Date Collected: 03/09/23 00:01

Matrix: Water

Date Received: 03/09/23 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420328	JBT	EET SEA	03/14/23 13:11

Client Sample ID: RB-02-030923

Lab Sample ID: 580-124516-2

Date Collected: 03/09/23 06:20

Matrix: Water

Date Received: 03/09/23 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421205	JSM	EET SEA	03/23/23 17:43
Total/NA	Analysis	314.0		1	661729	AP1	EET SAC	03/17/23 15:53
Total/NA	Analysis	300.0		1	420978	CA	EET SEA	03/20/23 20:14

Client Sample ID: PA-20d-030923

Lab Sample ID: 580-124516-3

Date Collected: 03/09/23 07:25

Matrix: Water

Date Received: 03/09/23 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421205	JSM	EET SEA	03/23/23 18:08
Total/NA	Analysis	314.0		5	661729	AP1	EET SAC	03/17/23 17:04
Total/NA	Analysis	300.0		100	420978	CA	EET SEA	03/20/23 20:26

Client Sample ID: PA-21d-030923

Lab Sample ID: 580-124516-4

Date Collected: 03/09/23 08:19

Matrix: Water

Date Received: 03/09/23 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		100	421205	JSM	EET SEA	03/23/23 18:32
Total/NA	Analysis	8260D	DL	500	421605	JJY	EET SEA	03/29/23 15:35
Total/NA	Analysis	314.0		50	661729	AP1	EET SAC	03/17/23 17:58
Total/NA	Analysis	300.0		10	420978	CA	EET SEA	03/20/23 21:01

Client Sample ID: PA-19d-030923

Lab Sample ID: 580-124516-5

Date Collected: 03/09/23 09:48

Matrix: Water

Date Received: 03/09/23 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		20	421205	JSM	EET SEA	03/23/23 18:56
Total/NA	Analysis	8260D	DL	200	421605	JJY	EET SEA	03/29/23 16:24
Total/NA	Analysis	314.0		5	661729	AP1	EET SAC	03/17/23 19:27
Total/NA	Analysis	300.0		10	420978	CA	EET SEA	03/20/23 21:24

Lab Chronicle

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: PA-30d-030923

Lab Sample ID: 580-124516-6

Date Collected: 03/09/23 10:50

Matrix: Water

Date Received: 03/09/23 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		200	421205	JSM	EET SEA	03/23/23 19:20
Total/NA	Analysis	314.0		10	661729	AP1	EET SAC	03/17/23 19:45
Total/NA	Analysis	300.0		10	420978	CA	EET SEA	03/20/23 21:59

Client Sample ID: MWA-63-030923

Lab Sample ID: 580-124516-7

Date Collected: 03/09/23 12:01

Matrix: Water

Date Received: 03/09/23 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		10	421205	JSM	EET SEA	03/23/23 19:44
Total/NA	Analysis	314.0		5	661729	AP1	EET SAC	03/17/23 16:10
Total/NA	Analysis	300.0		1	420978	CA	EET SEA	03/20/23 22:11

Client Sample ID: MWA-11i(d)-030923

Lab Sample ID: 580-124516-8

Date Collected: 03/09/23 12:57

Matrix: Water

Date Received: 03/09/23 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	420328	JBT	EET SEA	03/14/23 14:16
Total/NA	Analysis	314.0		10	661729	AP1	EET SAC	03/17/23 19:09
Total/NA	Analysis	300.0		100	420978	CA	EET SEA	03/20/23 22:46

Client Sample ID: PA-18d-030923

Lab Sample ID: 580-124516-9

Date Collected: 03/09/23 07:50

Matrix: Water

Date Received: 03/09/23 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421205	JSM	EET SEA	03/23/23 22:35
Total/NA	Analysis	314.0		10	661729	AP1	EET SAC	03/17/23 20:03
Total/NA	Analysis	300.0		10	420978	CA	EET SEA	03/20/23 23:10

Client Sample ID: Dup-02-030923

Lab Sample ID: 580-124516-10

Date Collected: 03/09/23 07:51

Matrix: Water

Date Received: 03/09/23 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421205	JSM	EET SEA	03/23/23 22:59
Total/NA	Analysis	314.0		10	661729	AP1	EET SAC	03/17/23 20:21
Total/NA	Analysis	300.0		10	420978	CA	EET SEA	03/20/23 23:21

Lab Chronicle

Client: ERM-West
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Client Sample ID: MWA-31i(d)-030923

Lab Sample ID: 580-124516-11

Date Collected: 03/09/23 09:40

Matrix: Water

Date Received: 03/09/23 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421205	JSM	EET SEA	03/23/23 20:57
Total/NA	Analysis	314.0		2000	661729	AP1	EET SAC	03/17/23 18:16
Total/NA	Analysis	300.0		1000	420978	CA	EET SEA	03/20/23 23:45

Client Sample ID: MWA-56d-030923

Lab Sample ID: 580-124516-12

Date Collected: 03/09/23 11:55

Matrix: Water

Date Received: 03/09/23 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	421205	JSM	EET SEA	03/23/23 21:46
Total/NA	Analysis	8260D	DL	10	421605	JJY	EET SEA	03/29/23 16:48
Total/NA	Analysis	314.0		200	661729	AP1	EET SAC	03/17/23 18:33
Total/NA	Analysis	300.0		1000	420978	CA	EET SEA	03/21/23 00:32

Client Sample ID: MWA-58d-030923

Lab Sample ID: 580-124516-13

Date Collected: 03/09/23 13:15

Matrix: Water

Date Received: 03/09/23 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		5	421205	JSM	EET SEA	03/23/23 22:10
Total/NA	Analysis	314.0		1000	661729	AP1	EET SAC	03/17/23 18:51
Total/NA	Analysis	300.0		1000	420978	CA	EET SEA	03/21/23 00:55

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
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Laboratory: Eurofins Seattle

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

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4167	07-07-23

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
Project/Site: Arkema - Q1 2023 Groundwater Event-I

Job ID: 580-124516-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-124516-1	TB-030923	Water	03/09/23 00:01	03/09/23 15:30
580-124516-2	RB-02-030923	Water	03/09/23 06:20	03/09/23 15:30
580-124516-3	PA-20d-030923	Water	03/09/23 07:25	03/09/23 15:30
580-124516-4	PA-21d-030923	Water	03/09/23 08:19	03/09/23 15:30
580-124516-5	PA-19d-030923	Water	03/09/23 09:48	03/09/23 15:30
580-124516-6	PA-30d-030923	Water	03/09/23 10:50	03/09/23 15:30
580-124516-7	MWA-63-030923	Water	03/09/23 12:01	03/09/23 15:30
580-124516-8	MWA-11i(d)-030923	Water	03/09/23 12:57	03/09/23 15:30
580-124516-9	PA-18d-030923	Water	03/09/23 07:50	03/09/23 15:30
580-124516-10	Dup-02-030923	Water	03/09/23 07:51	03/09/23 15:30
580-124516-11	MWA-31i(d)-030923	Water	03/09/23 09:40	03/09/23 15:30
580-124516-12	MWA-56d-030923	Water	03/09/23 11:55	03/09/23 15:30
580-124516-13	MWA-58d-030923	Water	03/09/23 13:15	03/09/23 15:30

- 1
- 2
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Chain of Custody Record



580-124516 Chain of Custody

Client Information
 Client Contact: **ST/MR**
 Lab PM: **Cruz, Sheri L**
 Avery Soplata, Andrew Gardner, and Sarah Seekins
 Phone: **sheri.cruz@testamericainc.com**
 E-Mail: **sheri.cruz@testamericainc.com**

Address: 1050 SW 6th Avenue Suite 1650
 City: **Portland**
 State, Zip: **OR, 97204**
 Phone: **158D**
 PO #: **PN 0682894.207**
 WO #: **0682894**
 Project #: **Arkema - Q1 2023 Groundwater event**
 SSO#: **0682894**
 Email: **avery.soplata@erm.com, andrew.gardner@erm.com and sarah.seekins@erm.com**

Due Date Requested:
TAT Requested (days): 15BD
Field Filtered Sample (Yes or No)
8260C regular level standard VOA list-Seattle
8260C_LL - Standard VOA list-Seattle
300.0_28D-Chloride-Seattle
314 Perchlorate

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=water/oil, BT=issue, A=air)	Preservation Code:	Analysis Requested	Total Number of containers	Special Instructions/Note:
TRB-030923	3/19/23		G	Water			2	
RB-02-030923		0620		Water			5	
PA-20d-030923		0725		Water			5	
PA-21d-030923		0819		Water			8	Dil voc
PA-19d-030923		0948		Water			8	Dil voc
PA-30d-030923		1050		Water			8	Dil voc
MWA-63-030923		1201		Water			15	
MWA-11(d)-030923		1257		Water			5	
PA-18d-030923		0750		Water			5	
Dup-02-030923		0751		Water			5	
MWA-31(d)-030923		0940		Water			5	

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.

Relinquished by: *[Signature]* Date: **3/19/23**
 Relinquished by: *[Signature]* Date: **3/19/23**
 Relinquished by: *[Signature]* Date: _____
 Custody Seals Intact: Yes No
 Cooler Temperature(s) °C and Other Remarks: **1.8**

Chain of Custody Record

Client Information Avery Soplata, Andrew Gardner, and Sarah Seekins 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 #: 0682894 Site: Arkema - Q1 2023 Groundwater event		Lab PM: Cruz, Sheri L E-Mail: sheri.cruz@testamericainc.com Camer Tracking No(s): Job #: 2 of 2	
Due Date Requested: TAT Requested (days): 15BD PO #: PN 0682894.207 WO #:		Analysis Requested 8260C regular level standard VOA list-Seattle 8260C_LL - Standard VOA list-Seattle 300.0_28D-Chloride-Seattle 314 Perchlorate	
Sample Identification MW A-56d - 030923 MW A-58d - 030923		Field Filled Sample (Yes or No) A N N N A N N N X X X X X X X X	
Sample Date 3/9/23 ↓	Sample Time 1155 ↓	Sample Type G ↓	Matrix Water Water Water Water Water Water Water Water
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)			
Empty Kit Relinquished by: <i>SM</i> Relinquished by: <i>SM</i> Relinquished by:			
Date/Time: 3/9/23 Date/Time:		Date/Time: 3/9/23 1530 Date/Time:	
Date:		Date:	
Relinquished by: <i>SM</i> Relinquished by:		Relinquished by: <i>SM</i> Relinquished by:	
Custody Seal Intact: Δ Yes Δ No		Custody Seal No.:	

Login Sample Receipt Checklist

Client: ERM-West

Job Number: 580-124516-1

Login Number: 124516

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: 580-124516-1

Login Number: 124516

List Number: 2

Creator: Cahill, Nicholas P

List Source: Eurofins Sacramento

List Creation: 03/11/23 12:05 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.	N/A	
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	2.5c
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?	False	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	No headspace left for 314
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	

APPENDIX C DATA VALIDATION MEMOS



Memo

To	Sarah Seekins
From	Tyler Lucas
Date	14 April 2023
Reference	0682868
Subject	Data Review of Arkema First Quarter 2023 Groundwater Samples: Eurofins Data Packages: 580-124438-1, 580-124498-1, and 580-124516-1.

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.

NON-PREFERRED RESULTS

The laboratory re-analyzed several samples for volatile organic compounds (VOCs) due to laboratory quality control failures in the initial analysis. ERM selected the preferred results between the initial and the re-analysis based on professional judgment. The non-preferred results and professional judgment used for the selection are presented in Table 1.

HOLDING TIME AND PRESERVATION EVALUATION

The samples were prepared and analyzed within the method-prescribed time period from the date of collection, with the exceptions listed in Table 2. Two samples were re-analyzed for chlorobenzene and another sample for chloroform due to calibration range exceedance in the initial analyses. Consequently, the detected results were qualified as estimates with no bias (J).

A total of 34 samples reported containers not having any headspace for analysis method 314. All detected analytes were reported as estimates with a low bias (J-) and the non-detected results were qualified as estimates (UJ). The qualified data is presented in Table 3.

The sample shipments were received at the laboratory within the method-prescribed temperature preservation requirements of less than 6°C. 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 4. Non-detected results or results greater than five times the blank concentration for organics (or 10 times for the common laboratory contaminant acetone and inorganics) were considered not affected by the blank contamination and were not qualified. Associated sample results were less than the RL and less than five times (ten times for acetone and inorganics) the method blank concentration, as adjusted for dilution, were qualified as non-detect (U) at the reporting limit.

CONTINUING CALIBRATION VERIFICATION EVALUATION

The CCV recoveries were within the laboratory's limits of acceptance, with the exceptions noted in Table 5. No qualifications were applied for non-detected results associated with high CCV recoveries or if the sample results were not associated with the CCV recoveries. Sample results associated with CCV recoveries that were described as "out" with no bias indicated were qualified as estimates (J) with no bias for detected results and non-detects as estimates (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, with the exceptions listed in Table 6. Non-detect results were not affected by high RPDs and were not qualified. Additionally, no qualifications were required based upon high LCS/LCSD recoveries if the associated samples were non-detected, or if an outlier could be verified by another in-control recovery. No data was qualified as a result of LCS/LCSD non-conformance.

MATRIX SPIKE EVALUATION

The laboratory prepared two samples for matrix spike (MS) and matrix spike duplicate (MSD) analysis. The recoveries and RPDs were within laboratory limits of acceptance, with several exceptions listed in Table 6. No qualifications were required based upon high MS/MSD recoveries if the associated samples were non-detected. Detected sample results associated with high recoveries were qualified as estimates with a high bias (J+). When only one of the matrix analytes were outside of recovery and paired with a detected result, data was qualified as estimates with no bias (J).

SURROGATE SPIKE EVALUATION

The surrogate recoveries were within acceptable limits. No data was qualified on the bases of surrogate performance.

FIELD DUPLICATE EVALUATION

Two samples were submitted in duplicate. ERM calculated the differences or RPDs between detected results in Table 7. 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 reporting limit (RL). A control limit of \pm 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.

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
Samples with Non-Preferred Results
First Quarter 2023 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	Sample ID	Method	Analysis Date/Time	Reason	Analyte	Result	Units
580-124516-1	PA-21D-030923	SW8260D	3/23/2023 18:32	Sample exceeded instrument calibration range and was reanalyzed.	Chlorobenzene	33,000	µg/L
	PA-19D-030923		3/23/2023 18:56	Sample exceeded instrument calibration range and was reanalyzed.		8,900	µg/L
	MWA-56D-030923		3/23/2023 21:46	Sample exceeded instrument calibration range and was reanalyzed.	Chloroform	180	µg/L

Lab packages reviewed: 580-124438-1, 580-124498-1, and 580-124516-1

Notes:

µg/L = Micrograms per liter

Table 2
Samples with Exceeded Holding Times
First Quarter 2023 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	Sample ID	Method	Analysis Holding Time	Time Exceeded	Affected Analyte	ERM Qualifier
580-124516-1	PA-21D-030923	SW8260D	14 days	6 days	Chlorobenzene (03/29/23 15:35)	J
	PA-19D-030923	SW8260D	14 days	6 days	Chlorobenzene (03/29/23 16:24)	J
	MWA-56D-030923	SW8260D	14 days	6 days	Chloroform (03/29/23 16:48)	J

Lab packages reviewed: 580-124438-1, 580-124498-1, and 580-124516-1

Notes:

J = Estimated detected result

Table 3
Samples with Exceeded Preservation Requirements
First Quarter 2023 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	Sample ID	Method	Preservation Condition	Limits	ERM Qualifier
580-124438-1	MWA-82-030623	314	No headspace	> 1mm headspace	J-
	MWA-41-030623				UJ
	MWA-81I-030623				UJ
	PA-44I-030623				UJ
	RB-01-030723				UJ
	PA-32I-030723				UJ
	PA-31-030723				UJ
	PA-08-030723				UJ
	PA-09-030723				UJ
	PA-03-030723				UJ
580-124498-1	PA-25D-030823	314	No headspace	> 1mm headspace	UJ
	PA-15I-030823				UJ
	PA-26D-030823				UJ
	PA-16I-030823				UJ
	Dup-01-030823				UJ
	PA-23D-030823				UJ
	PA-24D-030823				UJ
	PA-22D-030823				J-
	PA-04-030823				UJ
	PA-17IR-030823				UJ
	PA-27D-030823				UJ
	PA-10I-030823				UJ

Table 3
Samples with Exceeded Preservation Requirements
First Quarter 2023 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	Sample ID	Method	Preservation Condition	Limits	ERM Qualifier
580-124516-1	PA-20D-030923	314	No headspace	> 1mm headspace	UJ
	PA-21D-030923				J-
	PA-19D-030923				UJ
	PA-30D-030923				UJ
	MWA-63-030923				UJ
	MWA-11I(D)-030923				UJ
	PA-18D-030923				UJ
	Dup-02-030923				UJ
	RB-02-030923				UJ
	MWA-31I(D)-030923				J-
	MWA-56D-030923				J-
	MWA-58D-030923				J-

Lab packages reviewed: 580-124438-1, 580-124498-1, and 580-124516-1

Notes:

J- = Detected results are estimated with a low bias

mm = Millimeters

UJ = Nondetected, estimated report limit

Table 4
Blank and Associated Suspect Sample Detections
First 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
580-124438-1	MB 580-420030/7	None for qualification, samples ND	Hexachlorobutadiene	0.0672	0.50	--	--	µg/L	--
	RB-01-030723	None for qualification, samples ND	Acetone	47	10	--	--	µg/L	--
		None for qualification, samples ND	2-Butanone (MEK)	2.7	10	--	--	µg/L	--
		PA-31-030723	Chloroform	0.045	0.20	0.14	0.20	µg/L	0.20 U
		None for qualification, samples ND	Chlorobenzene	0.41	0.20	--	--	µg/L	--
580-124516-1	RB-02-030923	None for qualification, samples ND	Acetone	39	15	--	--	µg/L	--

Lab packages reviewed: 580-124438-1, 580-124498-1, and 580-124516-1

Notes:

U = Sample result are non-detected at a raised reporting limit

MB = Method blank

RB = Rinse blank

µg/L = Micrograms per liter

Table 5
Calibration Verification Recoveries Outside of Acceptable Limits
First Quarter 2023 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	CCV Sample ID	Analyte	CCV Recovery (%)	CCV Limits (%)	Associated Sample	Reported Concentration	Units	ERM Qualifier
580-124438-1	Batch 580-420030 CCV	1,2-Dibromo-3-Chloropropane	Out	NR	MWA-82-030623	ND	µg/L	UJ
					MWA-41-030623	ND	µg/L	UJ
					MWA-81I-030623	ND	µg/L	UJ
					PA-44I-030623	ND	µg/L	UJ
					RB-01-030723	ND	µg/L	UJ
580-124498-1	Batch 580-420560 CCV	Dibromomethane	High	NR	None for qualification, all associated samples ND	ND	µg/L	--
		Bromoform	High	NR				
		Chloromethane	Out	NR	PA-23D-030823	ND	µg/L	UJ
					PA-24D-030823	ND	µg/L	UJ
					PA-22D-030823	ND	µg/L	UJ
PA-27D-030823	ND	µg/L	UJ					
580-124516-1	580-420328 CCV	Carbon disulfide	High	NR	None for qualification, sample ND	ND	µg/L	--

Lab packages reviewed: 580-124438-1, 580-124498-1, and 580-124516-1

Notes:

CCV = Continuing calibration verification

High = Recovery above maximum acceptable limit

ND = Not detected

NR = Not reported

Out = Result was outside of control limits

µg/L = Micrograms per liter

UJ = Non-detected, estimated report limit

Table 6
Spike Recoveries Outside of Acceptable Limits
First Quarter 2023 Groundwater Samples
Arkema Portland
Portland, Oregon

Lab Package	Spike Sample ID	Associated Sample	Analyte	Recovery (%)	Limit (%)	RPD	RPD Limit	Result	Units	ERM Qualifier
LCS/LCSD										
580-124498-1	LCS 580-420560/7 LCSD 580-420560/8	None for qualification, LCS %R passes	Dibromomethane	119/122	80-120	2	11	--	µg/L	--
MS/MSD										
580-124438-1	PA-31-030723 MS/ PA-31-030723 MSD	PA-31-030723	Carbon disulfide	148/143	52-142	3	34	ND	µg/L	--
			1,1-Dichloroethene	144/137	60-129	5	29	0.94	µg/L	J+
			trans-1,2-Dichloroethene	130/130	69-121	1	27	ND	µg/L	--
			1,1-Dichloroethane	121/118	74-120	2	26	0.41	µg/L	--
			cis-1,2-Dichloroethene	124/122	72-120	1	22	ND	µg/L	--
			Chloroform	121/122	75-120	2	24	0.14	µg/L	0.20 U ¹
			1,1,1-Trichloroethane	125/122	70-121	2	24	0.23	µg/L	J+
	PA-31-030723 MS/ PA-31-030723 MSD	PA-31-030723	Trichloroethene	122/118	72-120	4	22	0.086	µg/L	--
580-124498-1	PA-25D-030823 MS/ PA-25D-030823 MSD	PA-25D-030823	Chloride	111/111	90-10	0	15	11	mg/L	J+

Lab packages reviewed: 580-124438-1, 580-124498-1, and 580-124516-1

Notes:

1 = Qualified non-detect at the reporting limit due to additional blank contamination

J+ = Detected results are estimated with a high bias

LCS/LCSD = Laboratory control sample/laboratory control sample duplicate

mg/L = Milligrams per liter

MS/MSD = Matrix spike/matrix spike duplicate

ND = Not detected

RPD = Relative percent difference

µg/L = Micrograms per liter

Table 7
Field Duplicate Evaluation
First 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						
580-124498-1	PA-16I-030823/ Dup-01-030823	1,1-Dichloroethane	0.31	0.31	0.20	0.20	0.00	0.40	µg/L	--	--	--
		Chloride	530	520	30	15	--	--	mg/L	1.9	30	--
		Chloromethane	ND ¹	0.15	0.50	0.50	NA	NA	µg/L	--	--	--
		cis-1,2-Dichloroethene	0.24	0.26	0.20	0.20	0.02	0.40	µg/L	--	--	--
		m,p-Xylenes	0.14	0.15	0.50	0.50	NA	NA	µg/L	--	--	--
		o-Xylene	0.23	0.26	0.50	0.50	NA	NA	µg/L	--	--	--
		Trichloroethene	0.071	0.084	0.20	0.20	NA	NA	µg/L	--	--	--
580-124516-1	PA-18D-030923/ DUP-02-030923	Chloride	50	53	15	15	3	30	mg/L	--	--	--
		Chloromethane	0.69	ND ¹	1.0	1.0	NA	NA	µg/L	--	--	--
		Vinyl chloride	0.26	0.26	1.0	1.0	NA	NA	µg/L	--	--	--

Lab packages reviewed: 580-124438-1, 580-124498-1, and 580-124516-1

Notes:

1 = Difference calculated between reporting limit of non-detect result and detected result

mg/L = Milligrams per liter

NA = Not applicable, both results below reporting limits

ND = Not detected

RPD = Relative percent difference

µg/L = Micrograms per liter

**APPENDIX D PRIOR GROUNDWATER MONITORING PROGRAM DATA
TABLES AND GRAPHS**

Appendix D
Prior Groundwater Monitoring Plan Data Table
Arkema Quarter 1, 2023, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Aquifer	Well ID	Cluster	Sample ID	Date	Chloride	Chlorobenzene	Perchlorate
					ug/L	ug/L	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-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	< 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-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	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-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-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
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-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

Appendix D
Prior Groundwater Monitoring Plan Data Table
Arkema Quarter 1, 2023, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Aquifer	Well ID	Cluster	Sample ID	Date	Chloride	Chlorobenzene	Perchlorate
					ug/L	ug/L	ug/L
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-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
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81i-102319	10/23/2019	49,800	< 0.44 U	< 9.5 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	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	< 9.5 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-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-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
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-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	< 9.5 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

Appendix D
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Aquifer	Well ID	Cluster	Sample ID	Date	Chloride	Chlorobenzene	Perchlorate
					ug/L	ug/L	ug/L
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	< 0.44 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-44i	GCC6 & Proximal Wells	PA-44i-102919	10/29/2019	243,000	< 0.44 U	< 48 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
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	< 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-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
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-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-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	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

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Aquifer	Well ID	Cluster	Sample ID	Date	Chloride	Chlorobenzene	Perchlorate
					ug/L	ug/L	ug/L
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-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-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-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-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-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-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	09/21/2021	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

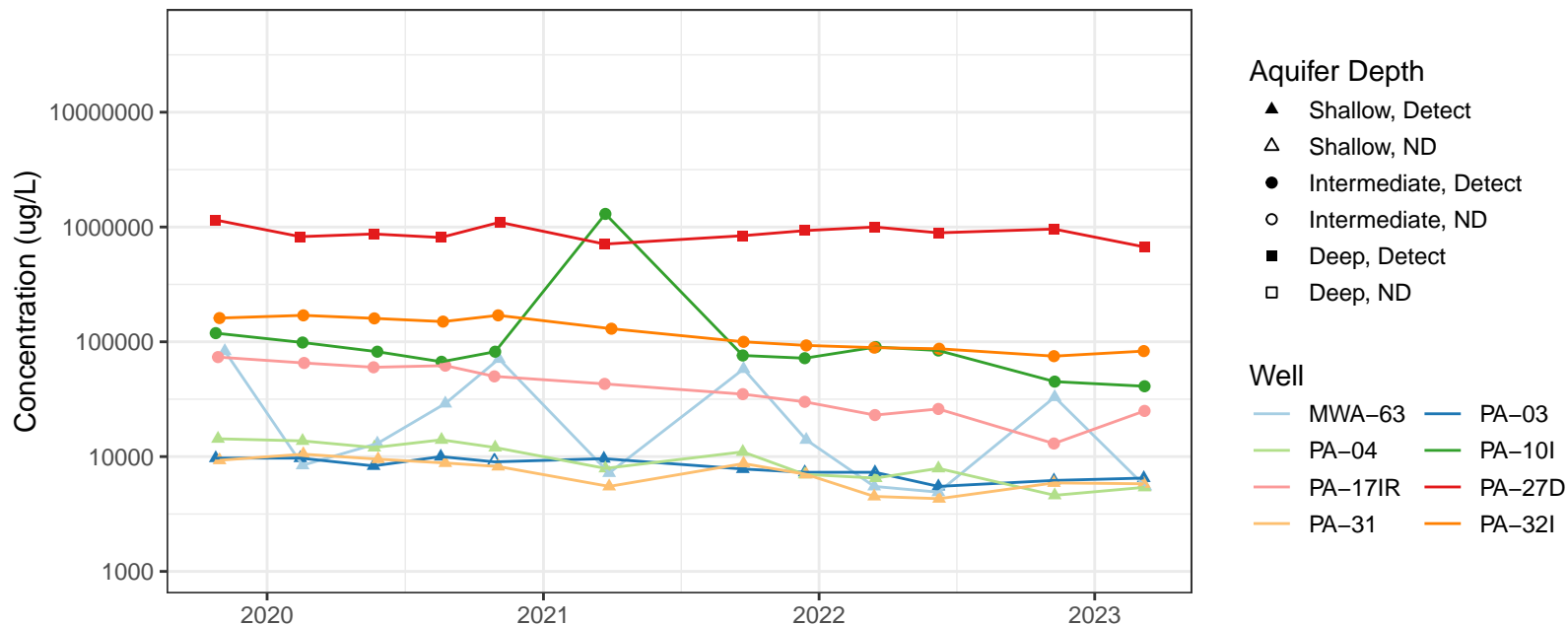
Appendix D
 Prior Groundwater Monitoring Plan Data Table
 Arkema Quarter 1, 2023, Groundwater Monitoring Report
 Arkema Inc. Facility
 Portland, Oregon

Aquifer	Well ID	Cluster	Sample ID	Date	Chloride	Chlorobenzene	Perchlorate
					ug/L	ug/L	ug/L
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-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
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-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

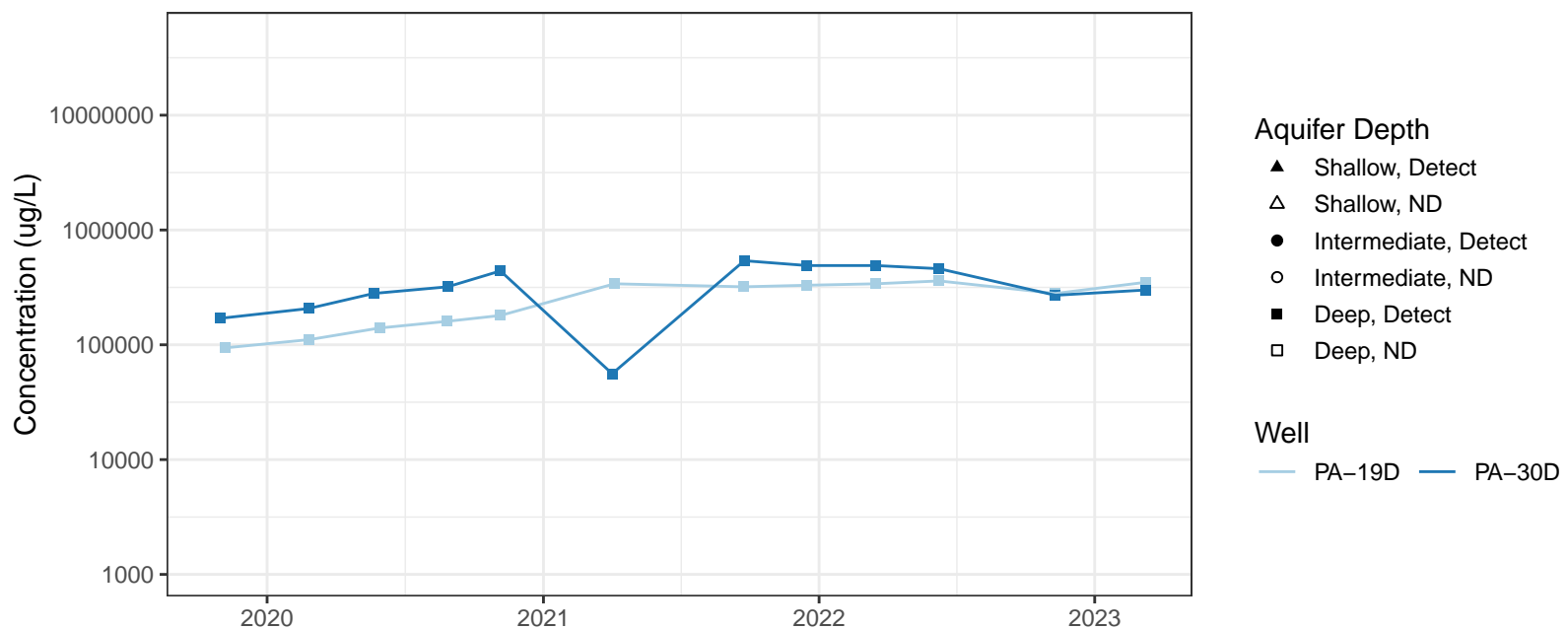
Notes:
 Bolded values indicate concentrations above the Reportable Detection Limit.
 < = Compound not detected. Reportable detection limit shown.
 ug/L = micrograms per liter

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).

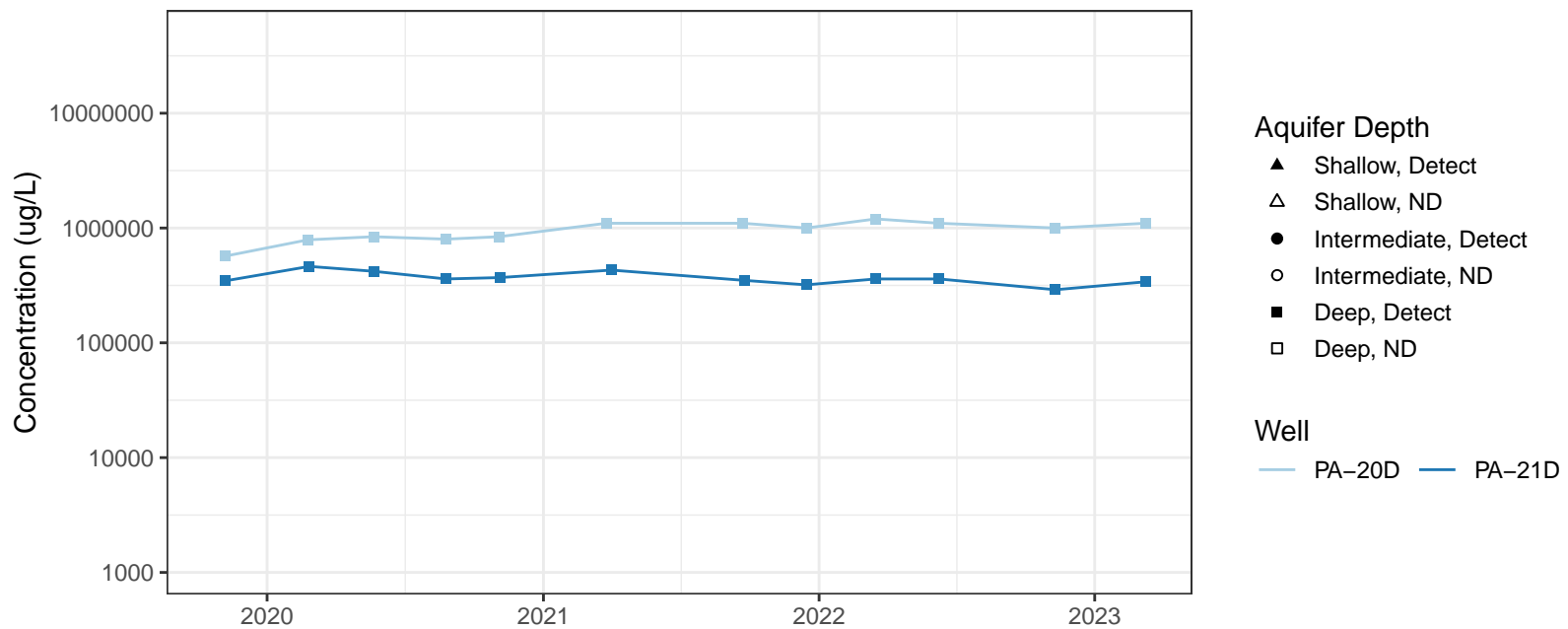
Chloride in GCC1 & Proximal Wells



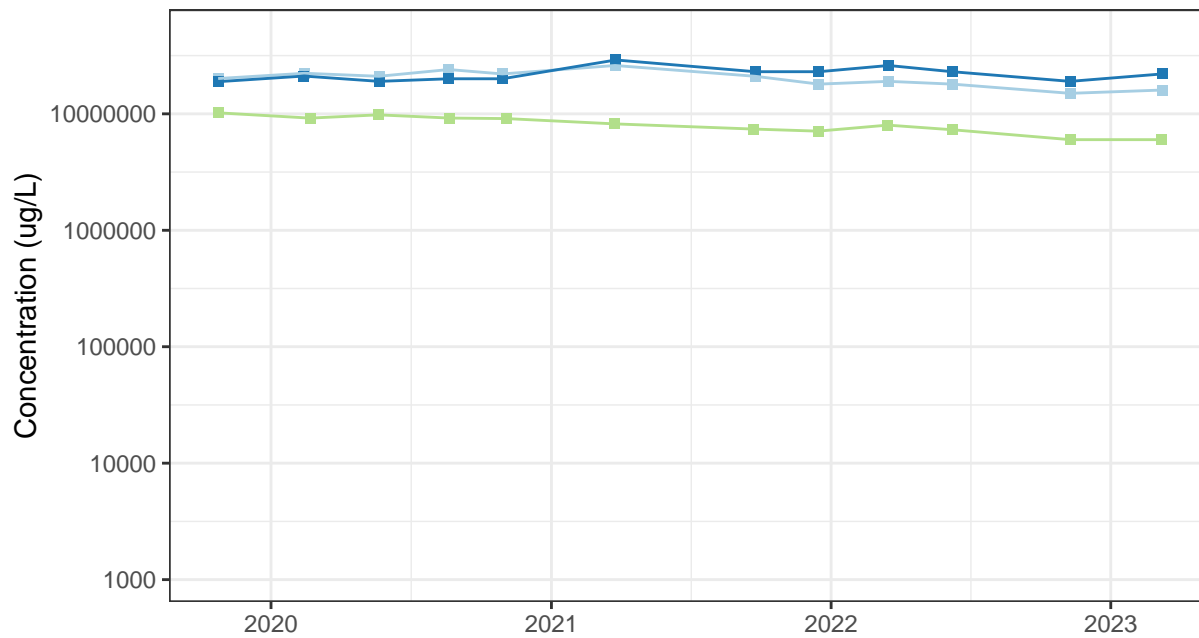
Chloride in GCC2



Chloride in GCC3



Chloride in GCC4 & Proximal Wells



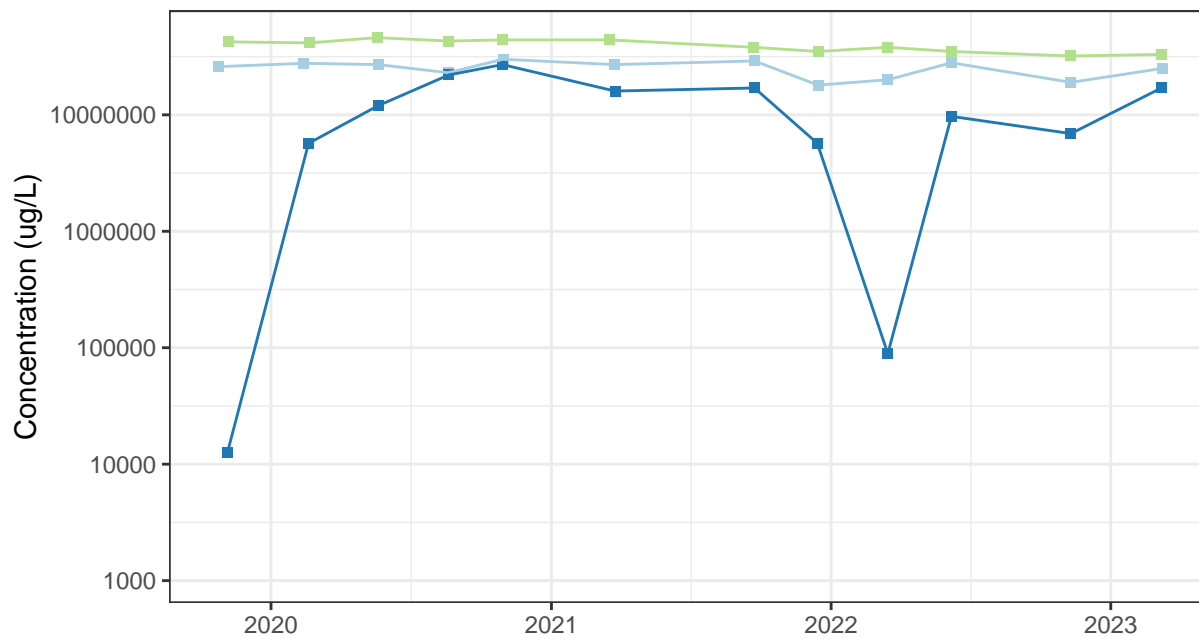
Aquifer Depth

- ▲ Shallow, Detect
- △ Shallow, ND
- Intermediate, Detect
- Intermediate, ND
- Deep, Detect
- Deep, ND

Well

- MWA-56D
- MWA-58D
- PA-22D

Chloride in GCC5 & Proximal Wells



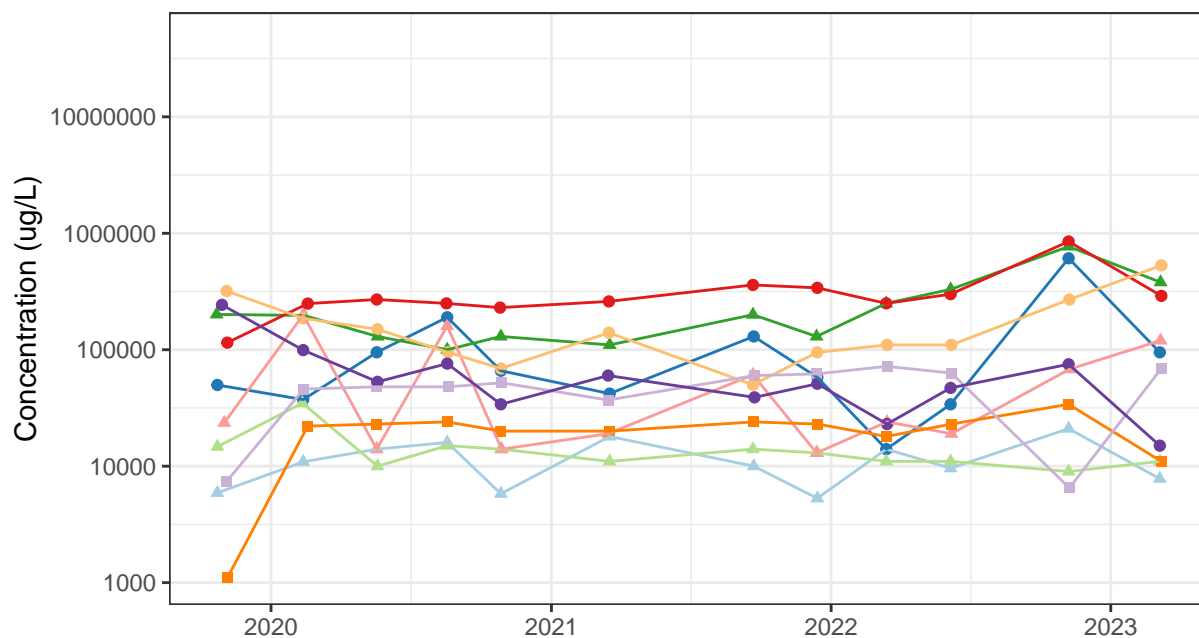
Aquifer Depth

- ▲ 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



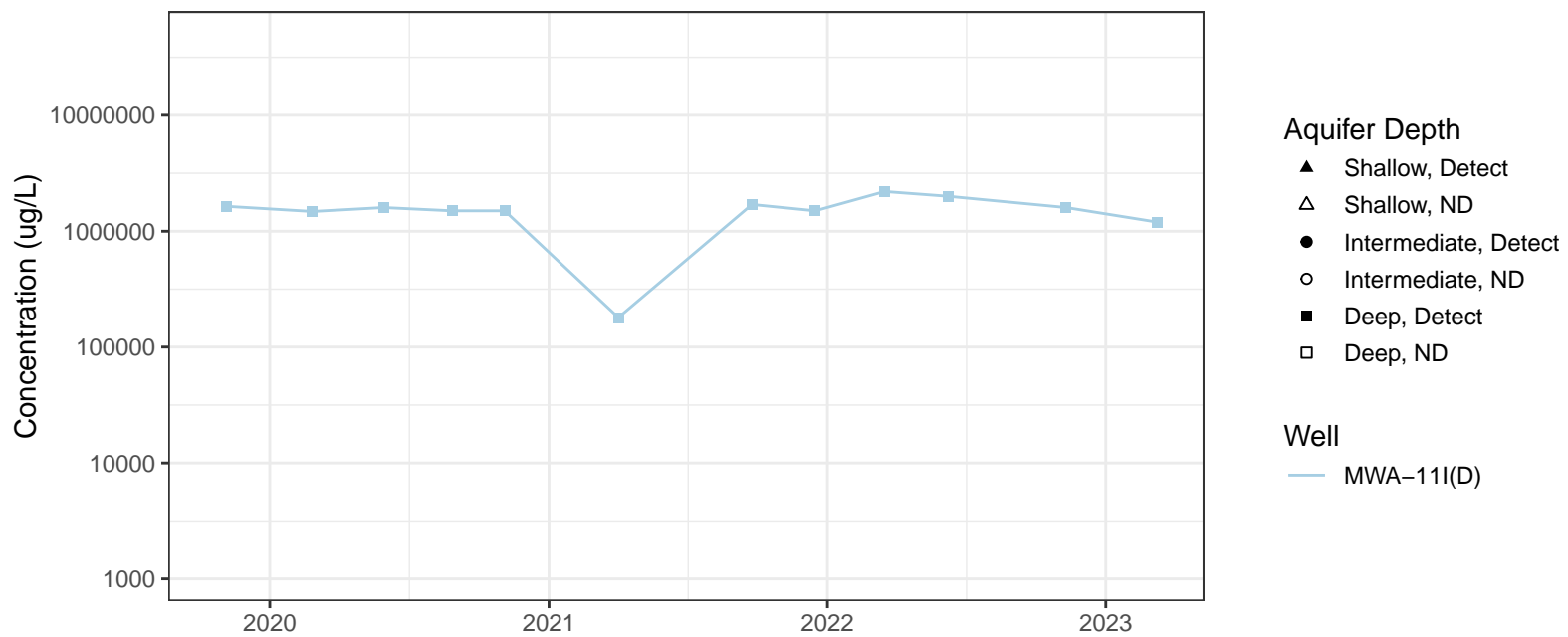
Aquifer Depth

- ▲ Shallow, Detect
- △ Shallow, ND
- Intermediate, Detect
- Intermediate, ND
- Deep, Detect
- Deep, ND

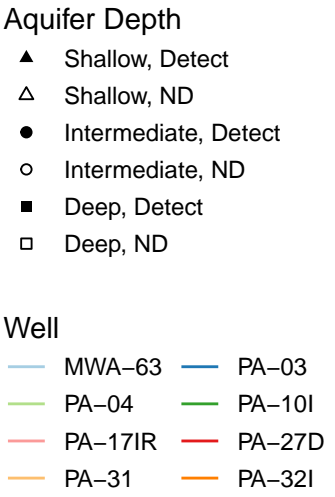
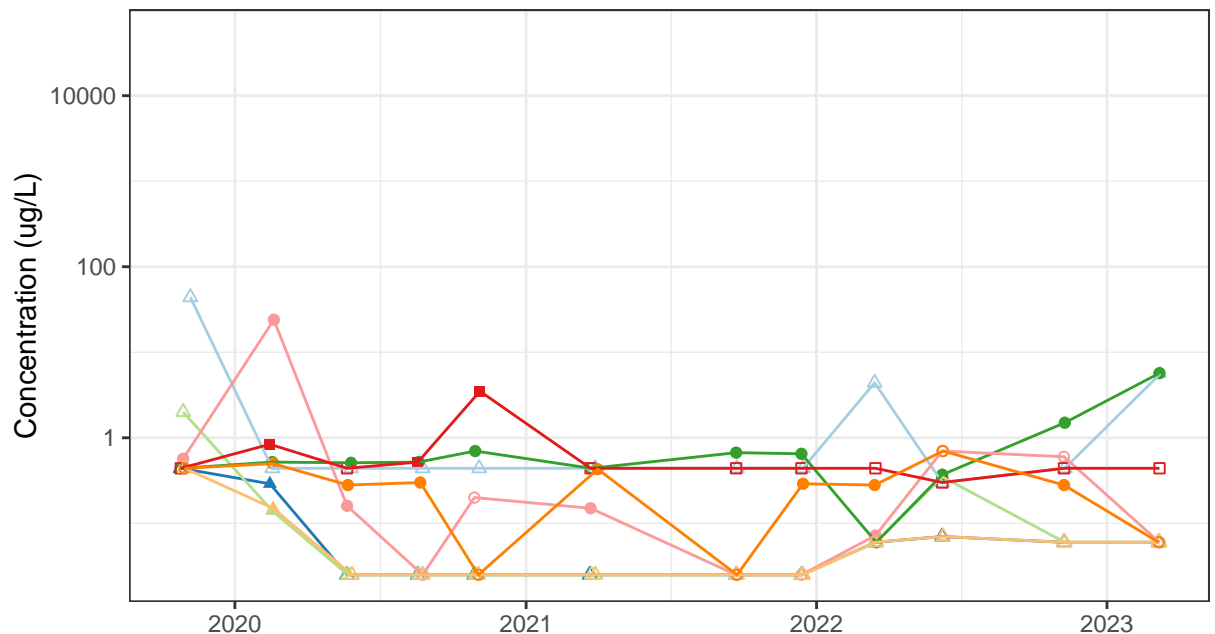
Well

- MWA-41
- MWA-81I
- MWA-82
- PA-08
- PA-09
- PA-15I
- PA-16I
- PA-25D
- PA-26D
- PA-44I

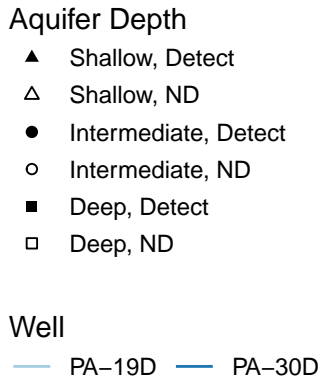
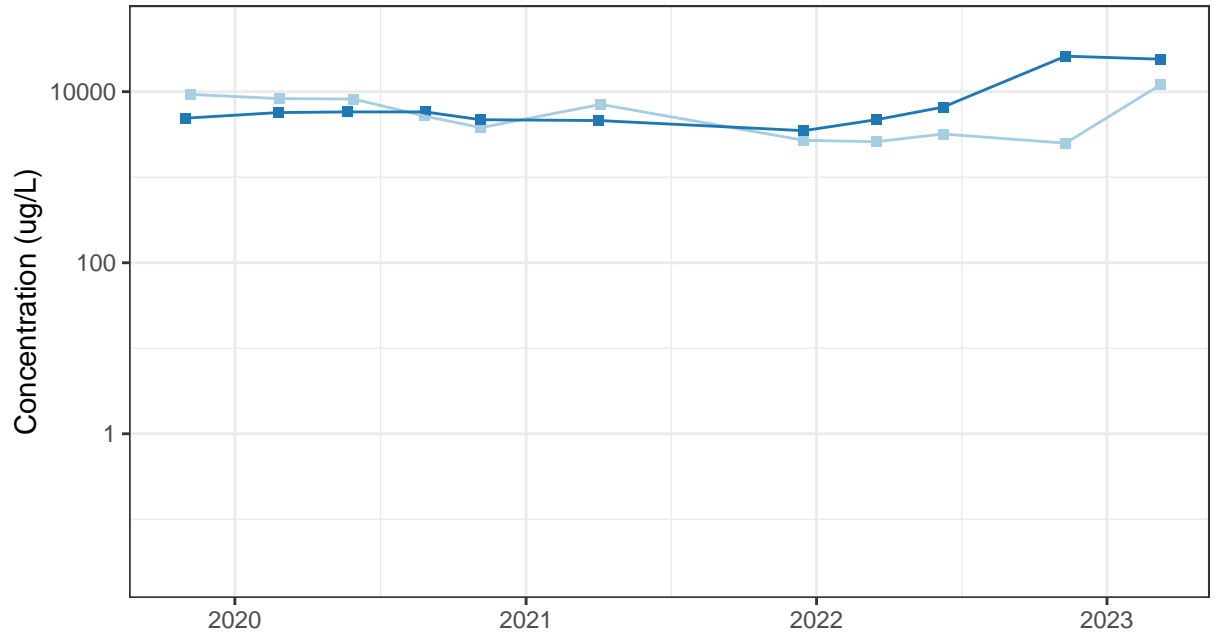
Chloride in Well Distal from BW and GCCs



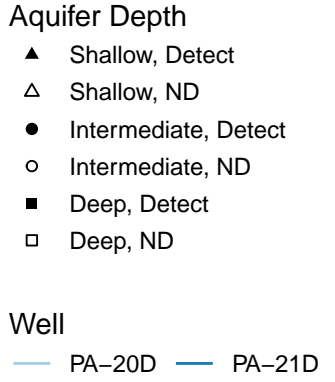
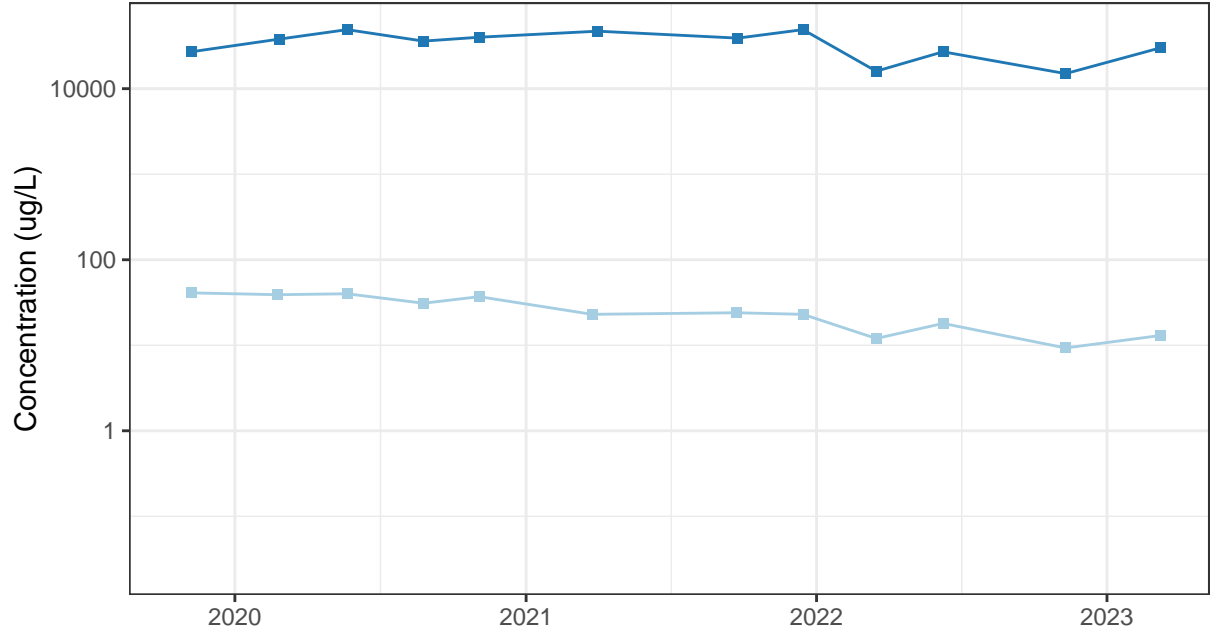
Chlorobenzene in GCC1 & Proximal Wells



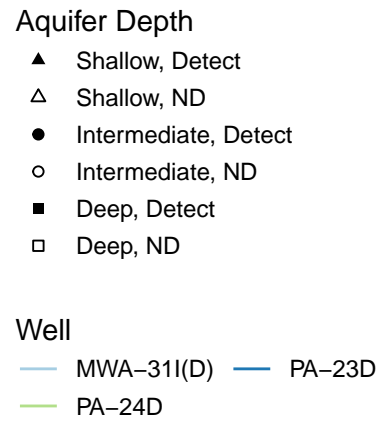
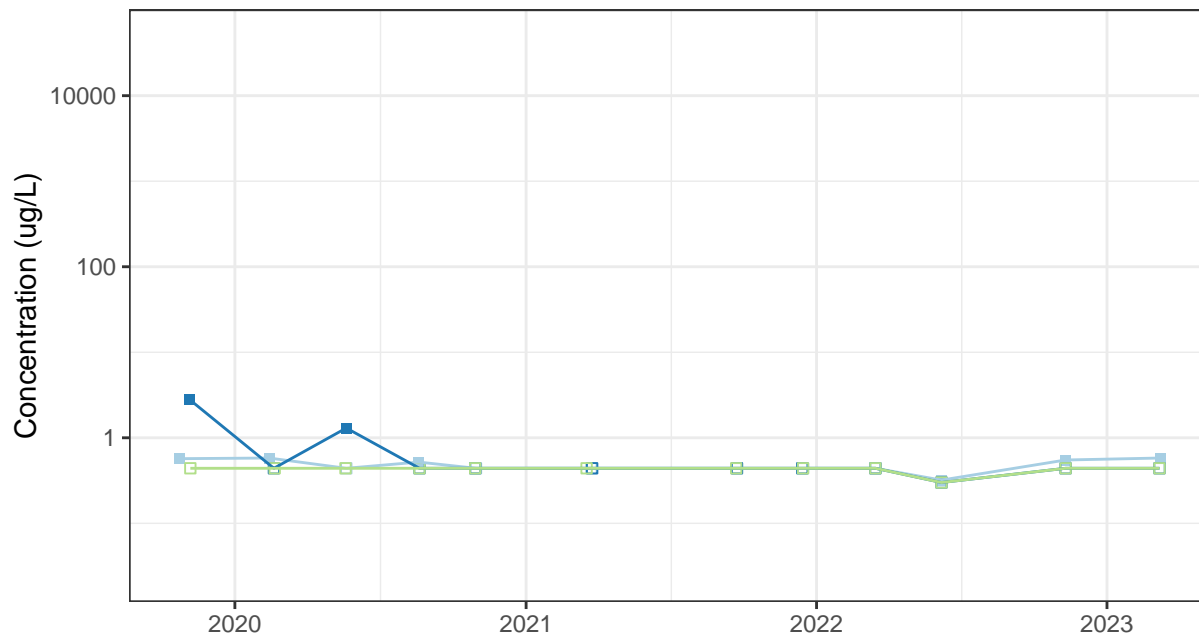
Chlorobenzene in GCC2



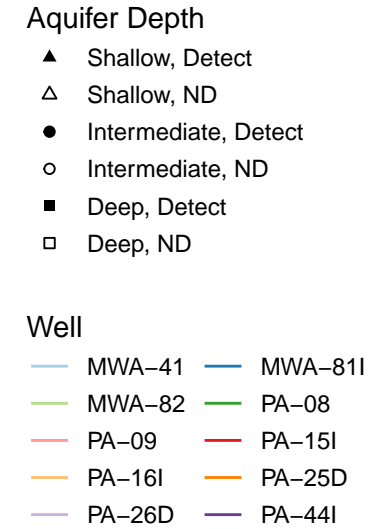
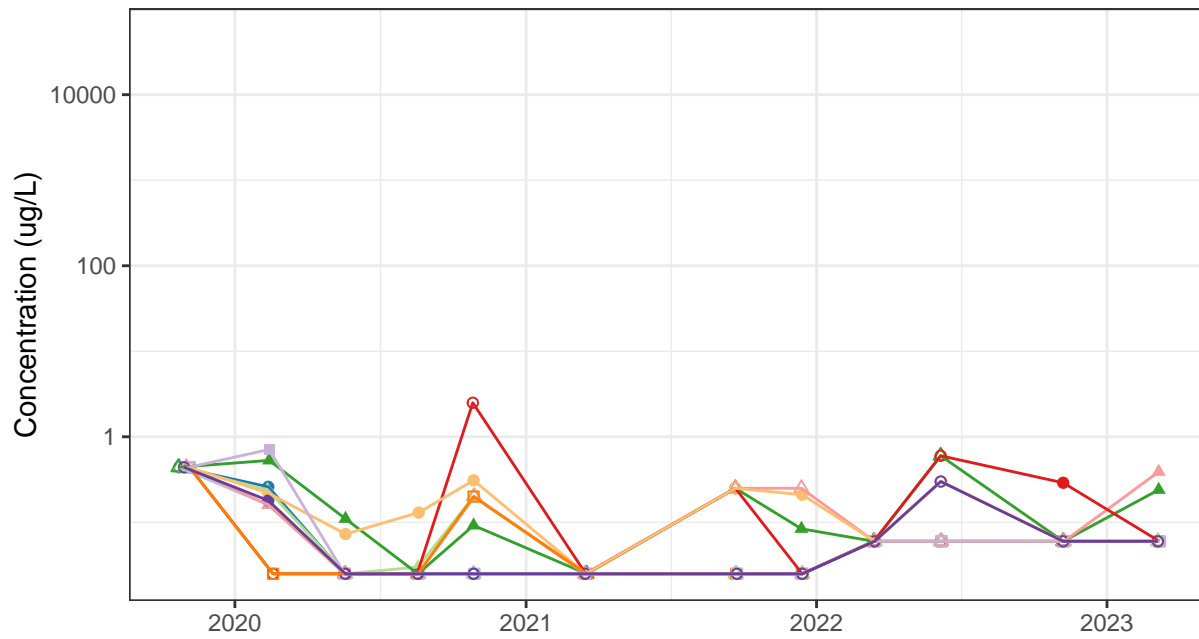
Chlorobenzene in GCC3



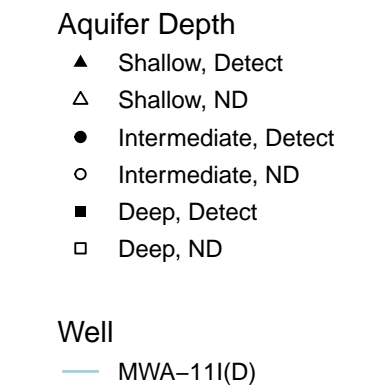
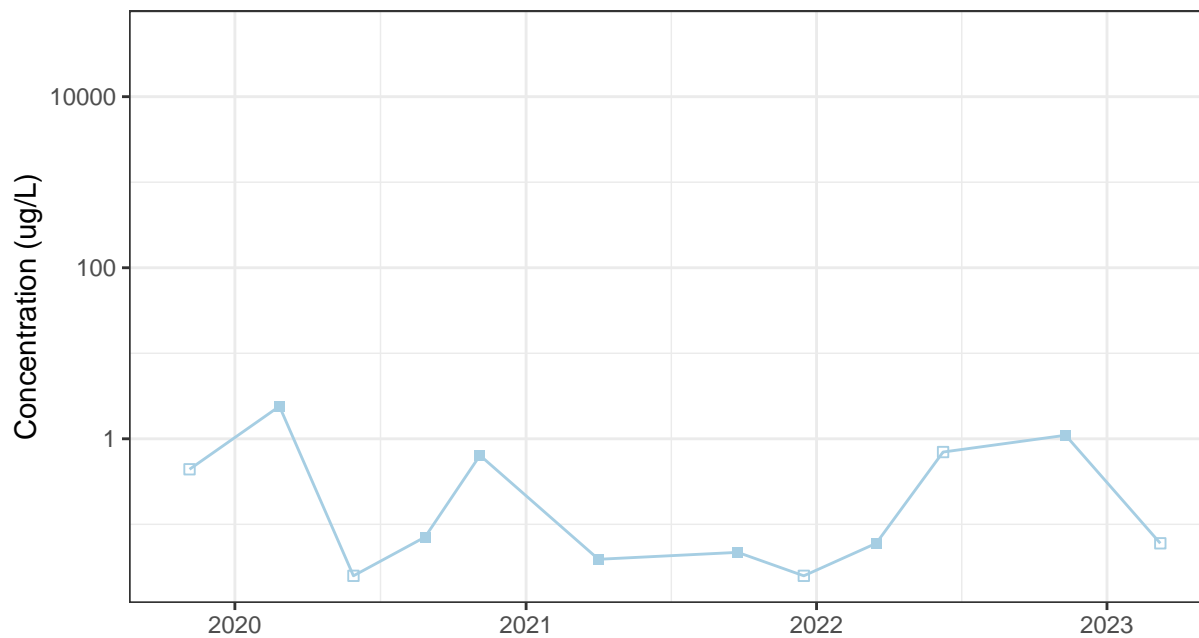
Chlorobenzene in GCC5 & Proximal Wells



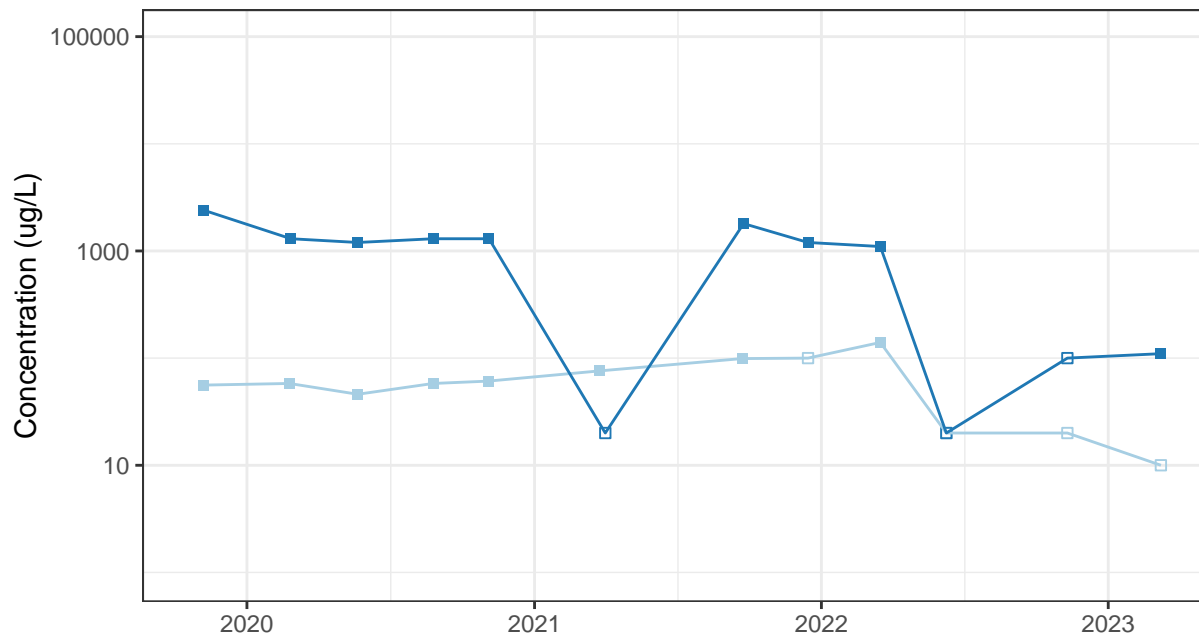
Chlorobenzene in GCC6 & Proximal Wells



Chlorobenzene in Well Distal from BW and GCCs



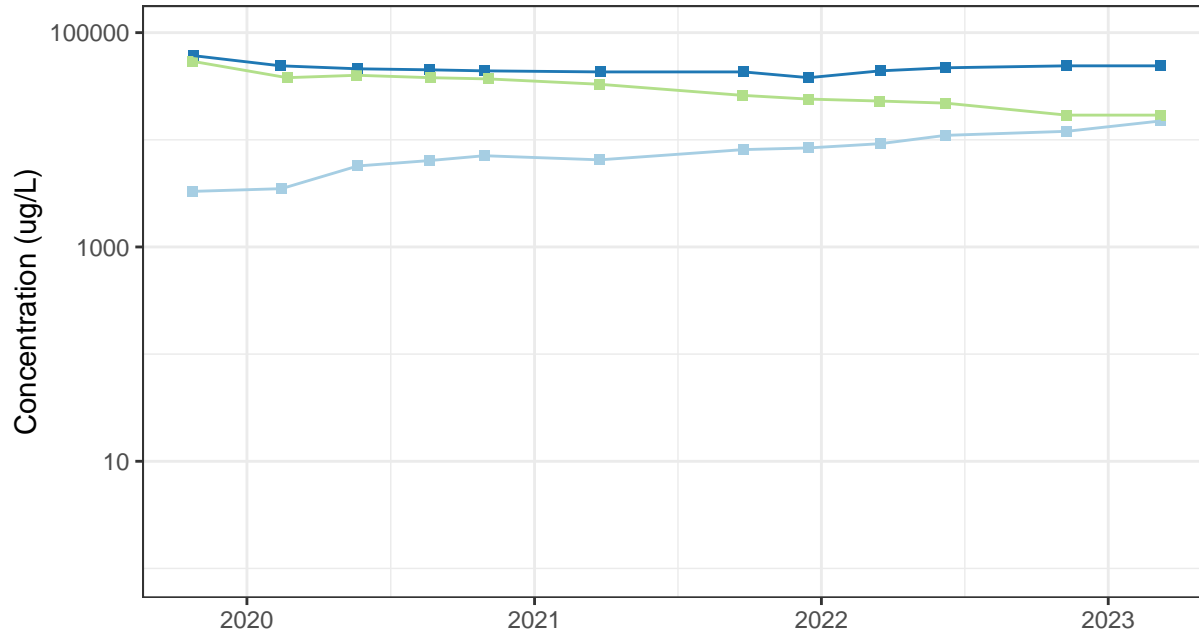
Perchlorate in GCC3



- Aquifer Depth**
- ▲ Shallow, Detect
 - △ Shallow, ND
 - Intermediate, Detect
 - Intermediate, ND
 - Deep, Detect
 - Deep, ND

- Well**
- PA-20D
 - PA-21D

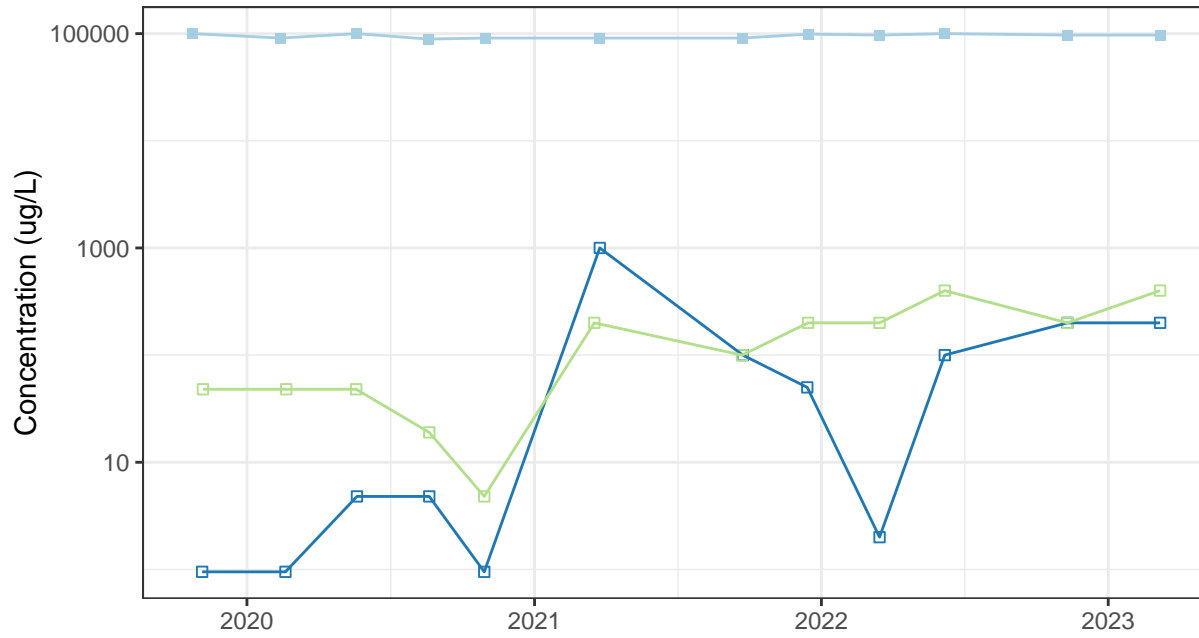
Perchlorate in GCC4 & Proximal Wells



- Aquifer Depth**
- ▲ Shallow, Detect
 - △ Shallow, ND
 - Intermediate, Detect
 - Intermediate, ND
 - Deep, Detect
 - Deep, ND

- Well**
- MWA-56D
 - MWA-58D
 - PA-22D

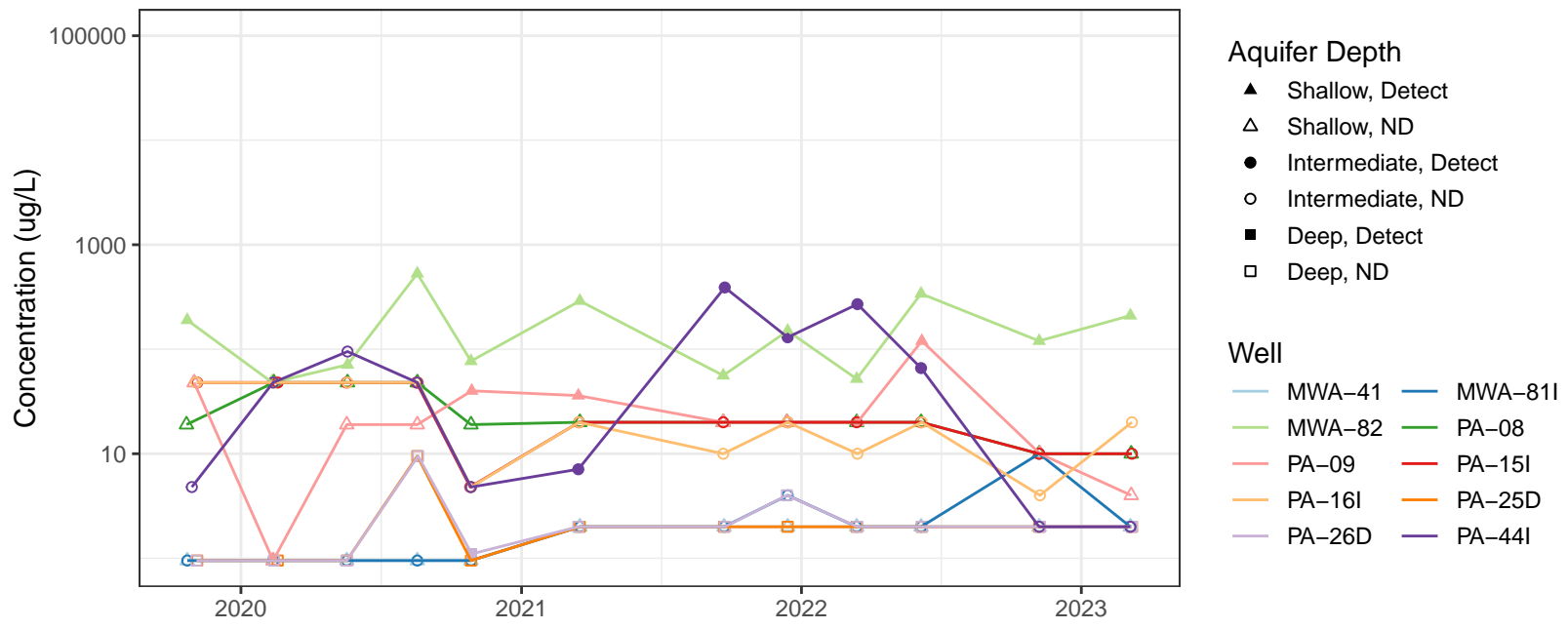
Perchlorate in GCC5 & Proximal Wells



- 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



APPENDIX E HISTORICAL DATA TABLE

Appendix E
Historical Data Table
Arkema Quarter 2, 2022, 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	< 2.80 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	

Appendix E
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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
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	< 0.010	< 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-81	GWG001	11/24/1998										1,700	
Intermediate	MWA-81	GW019906	1/27/1999		5.3 J		0.07 J		1 J	6.37 JT	2,660,000	4,800		
Intermediate	MWA-81	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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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	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

Qualifiers:
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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