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Arkema Quarter 4, 2024, Groundwater Monitoring Report

Arkema Inc. Facility, Portland, Oregon

PREPARED FOR
Legacy Site Services LLC

DATE
March 2025

REFERENCE
0732445



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Arkema Inc. Facility, Portland, Oregon

0732445



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ACRONYMS AND ABBREVIATIONS

Acronyms	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 4, 2024, 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



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1. INTRODUCTION

Environmental Resources Management, Inc. (ERM) has prepared this *Arkema Quarter 4, 2024, 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 4, 2024, 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 Oregon Department of Environmental Quality (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 GBW:

- 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 6 December 2024 and groundwater samples from 29 well locations between 9 December and 12 December 2024. One well location in the Approved Groundwater Monitoring Program, PA-21d, was not sampled and additional details are included in Section 2.5. 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, with exception of deviations further described in Section 2.5. 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 6 December 2024 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. For locations with transducers where a manual measurement was collected, when drift was 0.1 foot or greater, the transducer was recalibrated.

2.2 GROUNDWATER SAMPLE COLLECTION PROCEDURES

ERM collected groundwater samples from 29 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 29 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, turbidity) were collected with calibrated field water quality meters. ERM recorded field notes taken during sampling in field logs; field forms are provided as Appendix A.

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

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



2.3 SAMPLE SHIPPING AND INVESTIGATION-DERIVED WASTE

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

Investigation-derived waste generated during the groundwater monitoring included groundwater purged from monitoring wells, personal protective equipment, and disposable sampling equipment. Decontamination fluids and purge water were contained in 5-gallon buckets and then processed in the GWET system. Disposable sampling equipment and used personal protective equipment were disposed of as non-hazardous solid waste.

2.4 QUALITY ASSURANCE AND QUALITY CONTROL AND DATA VALIDATION

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

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

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

ERM completed data validation after receiving the laboratory analytical reports. Appendix B includes laboratory analytical reports and Appendix C includes data validation memos. QA/QC sample results were reviewed during data validation and additional details are included in the data validation memos (Appendix C). Based on the results of the data validation, qualifiers were assigned to the data, and it was determined that the qualified data are acceptable for decision making and meet the overall objectives of the monitoring program.

2.5 DEVIATIONS FROM GROUNDWATER MONITORING WORK PLAN

Deviations outside of the Approved Groundwater Monitoring Program include the following:

- One piezometer, PA-21d, was not sampled because the transducer was unable to be removed for groundwater sampling. ERM staff were able to remove and replace the transducer on 23 December 2024, and the piezometer was sampled during the Quarter 1, 2025, groundwater sampling event.
- Select wells sampled during Quarter 4, 2024, had unstable field parameters and drawdown over 1 foot. Additional details are provided below in Section 3.2.1.
- Potentially inaccurate turbidity measurements were recorded from well locations sampled on 9 December 2024 (PA-03, PA-08, PA-17iR, and PA-30d) due to issues with the field water



quality meters. New field water quality meters were received on 10 December 2024 and used for the remainder of the sampling event.

- Field parameter data for location PA-09 was lost due to a field device error.



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3. GROUNDWATER MONITORING RESULTS

3.1 GROUNDWATER ELEVATIONS

On 6 December 2024, ERM manually measured depth to groundwater to the nearest 0.01 foot in 56 wells at the Site using an electronic water level indicator. For the additional 72 wells with functioning transducers, ERM collected transducer groundwater elevation data on 6 December 2024. 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, the time period used for averaging transducer groundwater elevation data, and transducers recalibrated based on this event. 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.

3.2 GROUNDWATER SAMPLING RESULTS

ERM personnel completed groundwater sampling between 9 and 12 December 2024 at 29 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. The following well locations did not stabilize for select field parameters during the Quarter 4, 2024, groundwater monitoring event:

- Six monitoring locations (PA-04, PA-10i, PA-18d, PA-20d, PA-23d, and PA-27d) did not stabilize for turbidity.
- Three monitoring locations (PA-17iR, PA-23d, and MWA-56d) did not stabilize for dissolved oxygen.
- Two monitoring locations (PA-18d and PA-20d) did not stabilize for oxygen-reduction potential.
- Two monitoring locations (PA-04 and PA-23d) did not stabilize for temperature.
- Two monitoring locations (PA-23d and MWA-63) did not stabilize for specific conductivity.
- Four monitoring locations (PA-19d, PA-20d, PA-23d, PA-25d) had drawdown greater than 1 foot.

At each of the well locations with non-stabilized field parameters listed above, three well volumes were purged prior to sampling except at locations MWA-56d, MWA-63, PA-04, PA-10i, PA-17iR, PA-18d, and PA-27d. At the above listed well locations where three well volumes were not collected, field parameters were close to stabilization and the quality of the data is not considered to be affected. Field staff will receive additional training regarding field parameter stabilization prior to the next groundwater monitoring event.



Well locations were also gauged for total depth following sampling. Following the Quarter 4, 2024, groundwater monitoring event, well drawdown at each well location over the course of 2024 was reviewed. Five well locations (PA-19d, PA-20d, PA-21d, PA-23d, and PA-25d) with consistent drawdown greater than 1 foot were identified, and redevelopment will be attempted at these locations during March 2025. Well drawdown will continue to be monitored and will be re-evaluated following the final 2025 groundwater monitoring event.

3.2.2 ANALYTICAL RESULTS

Tables 4 and 5 present the analytical results for VOCs, and perchlorate and chloride, respectively, from the Quarter 4, 2024, 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 11,000 micrograms per liter ($\mu\text{g/L}$) at Deep Zone piezometer PA-19d.

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 5 out of 30 samples. The highest detected concentration of 1,2-dichlorobenzene was 0.30 $\mu\text{g/L}$ 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 35 $\mu\text{g/L}$ at Shallow Zone monitoring well MWA-63.
- TCE was detected in 4 out of 30 samples. The highest detected concentration of TCE was 6.9 $\mu\text{g/L}$ at Shallow Zone monitoring well MWA-63.
- cis-1,2-DCE was detected in 10 out of 30 samples. The highest detected concentration of cis-1,2-DCE was 12 $\mu\text{g/L}$ at Shallow Zone monitoring well MWA-63.
- Vinyl chloride was detected in 2 out of 30 samples. The highest detected concentration of vinyl chloride was 0.37 $\mu\text{g/L}$ at Intermediate Zone piezometer 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 9 out of 30 samples. The highest detected concentration of perchlorate was 74,000 $\mu\text{g/L}$ 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 31,000 milligrams per liter at Deep Zone piezometer PA-23d.



4. RECOMMENDATIONS

Following the Quarter 4, 2024, groundwater monitoring event, no changes are recommended to the GMWP at this time. ERM will attempt well redevelopment at well locations PA-19d, PA-20d, PA-21d, PA-23d, and PA-25d during March 2025.

ERM will conduct the Quarter 1, 2025, groundwater monitoring event according to the following schedule:

- Water levels will be measured on 17 February 2025.
- Sampling will begin 18 February 2025 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 (March 2025).

The Quarter 1, 2025, Groundwater Monitoring Report will be submitted to the ODEQ within 60 days after data validation (May 2025).



5. REFERENCES

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TABLES

Table 1
Groundwater Sampling Matrix
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Arkema Inc. Facility
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Analyte			Volatiles Organic Compounds	Volatiles Organic Compounds	Chloride	Perchlorate	Comments
Analytical Method			8260C	8260C_LL ^a	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*	--	--	--	--	

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Analyte			Volatiles Organic Compounds	Volatiles Organic Compounds	Chloride	Perchlorate	Comments
Analytical Method			8260C	8260C_LL ^a	300	314	
Location ID	Aquifer Classification	Groundwater Level Measurement					
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*	--	--	--	--	
EW-5	Shallow/Intermediate	X*	--	--	--	--	
EW-6	Shallow/Intermediate	X*	--	--	--	--	
EW-7	Shallow/Intermediate	X*	--	--	--	--	
EW-8	Shallow/Intermediate	X*	--	--	--	--	
EW-9	Shallow/Intermediate	X*	--	--	--	--	
EW-10	Shallow/Intermediate	X*	--	--	--	--	
EW-11	Shallow/Intermediate	X*	--	--	--	--	
EW-12	Shallow/Intermediate	X*	--	--	--	--	
EW-13	Shallow/Intermediate	X*	--	--	--	--	
EW-14	Shallow/Intermediate	X*	--	--	--	--	
MWA-83	Shallow/Intermediate	X	--	--	--	--	
MWA-84	Shallow/Intermediate	X	--	--	--	--	
MWA-85	Shallow/Intermediate	X	--	--	--	--	
MWA-86	Shallow/Intermediate	X	--	--	--	--	
MWA-87	Shallow/Intermediate	X	--	--	--	--	
MWA-88	Shallow/Intermediate	X	--	--	--	--	
MWA-89	Shallow/Intermediate	X	--	--	--	--	
MWA-07(i)	Intermediate	X	--	--	--	--	
MWA-08i	Intermediate	X*	--	--	--	--	
MWA-16i	Intermediate	X	--	--	--	--	
MWA-34iR	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	

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Analyte			Volatiles Organic Compounds	Volatiles Organic Compounds	Chloride	Perchlorate	Comments
Analytical Method			8260C	8260C_LL ^a	300	314	
Location ID	Aquifer Classification	Groundwater Level Measurement					
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*	--	--	--	--	Not sampled due to obstruction
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:

^a low level test

^b MWA-34i was abandoned on 30 May 2024 and reinstalled as MWA-34iR on 29 May 2024.

* = indicates locations where groundwater level measured with transducer

Table 2
Groundwater Elevation Results
Arkema Quarter 4, 2024, 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)	Transducer Recalibrated following Manual Measurement ^a
MWA-02*	12/6/2024	*	Shallow	36.20	--	9.40	
MWA-15r	12/6/2024	8:37:00 AM	Shallow	36.06	25.29	10.77	
MWA-18	12/6/2024	9:19:00 AM	Shallow	39.43	29.55	9.88	
MWA-19*	12/6/2024	*	Shallow	38.26	--	10.20	
MWA-20	12/6/2024	8:52:00 AM	Shallow	40.95	28.05	12.90	
MWA-22	12/6/2024	8:36:00 AM	Shallow	36.59	22.20	14.39	
MWA-24	12/6/2024	10:29:00 AM	Shallow	37.58	23.20	14.38	
MWA-29	12/6/2024	9:30:00 AM	Shallow	44.42	34.75	9.67	
MWA-33	12/6/2024	10:20:00 AM	Shallow	37.26	17.30	19.96	
MWA-40	12/6/2024	10:27:00 AM	Shallow	36.96	17.38	19.58	
MWA-41	12/6/2024	10:10:00 AM	Shallow	45.14	33.43	11.71	
MWA-42	12/6/2024	8:47:00 AM	Shallow	37.24	26.55	10.69	
MWA-43	12/6/2024	10:02:00 AM	Shallow	44.53	34.42	10.11	
MWA-46	12/6/2024	9:15:00 AM	Shallow	36.67	26.90	9.77	
MWA-47*	12/6/2024	*	Shallow	39.02	--	9.33	
MWA-61	12/6/2024	8:05:00 AM	Shallow	36.21	26.77	9.44	
MWA-63	12/6/2024	7:54:00 AM	Shallow	36.29	20.55	15.74	
MWA-69*	12/6/2024	*	Shallow	33.73	--	9.80	
MWA-71	12/6/2024	7:46:00 AM	Shallow	34.82	4.10	30.72	
MWA-72	12/6/2024	10:38:00 AM	Shallow	34.16	3.23	30.93	
MWA-73	12/6/2024	10:31:00 AM	Shallow	36.01	5.42	30.59	
MWA-82	12/6/2024	10:16:00 AM	Shallow	37.74	24.39	13.35	
PA-03*	12/6/2024	*	Shallow	37.10	--	26.76	
PA-04*	12/6/2024	*	Shallow	36.67	--	27.32	
PA-05*	12/6/2024	*	Shallow	37.22	--	6.79	
PA-06*	12/6/2024	*	Shallow	38.03	--	11.65	
PA-07*	12/6/2024	*	Shallow	39.30	--	13.27	
PA-08*	12/6/2024	*	Shallow	40.47	--	12.11	
PA-09*	12/6/2024	*	Shallow	40.24	--	11.21	
PA-28*	12/6/2024	*	Shallow	38.58	--	13.37	
PA-31	12/6/2024	6:56:00 AM	Shallow	36.25	8.88	27.37	
PA-33	12/6/2024	7:05:00 AM	Shallow	36.29	9.55	26.74	
PA-35	12/6/2024	7:57:00 AM	Shallow	35.91	27.25	8.66	
PA-36	12/6/2024	8:09:00 AM	Shallow	36.90	31.31	5.59	
PA-38	12/6/2024	10:00:00 AM	Shallow	42.93	29.81	13.12	
PA-41	12/6/2024	9:46:00 AM	Shallow	39.69	27.70	11.99	
PA-42	12/6/2024	10:01:00 AM	Shallow	40.60	28.46	12.14	
PA-43	12/6/2024	10:09:00 AM	Shallow	40.41	28.00	12.41	
RP-02-31	12/6/2024	7:34:00 AM	Shallow	42.49	31.37	11.12	
RP-10-30	12/6/2024	7:39:00 AM	Shallow	37.47	7.90	29.57	
RW-05*	12/6/2024	*	Shallow	34.80	--	24.84	
RW-07*	12/6/2024	*	Shallow	33.98	--	6.94	
RW-08*	12/6/2024	*	Shallow	34.21	--	8.37	
RW-10*	12/6/2024	*	Shallow	34.33	--	11.25	
RW-12*	12/6/2024	*	Shallow	35.58	--	12.22	
RW-14*	12/6/2024	*	Shallow	36.08	--	8.89	
RW-15*	12/6/2024	*	Shallow	35.81	--	13.02	
RW-17*	12/6/2024	*	Shallow	36.55	--	13.24	
RW-18*	12/6/2024	*	Shallow	36.51	--	13.04	
RW-20*	12/6/2024	*	Shallow	37.07	--	13.11	
RW-22*	12/6/2024	*	Shallow	38.02	--	12.56	
RW-23*	12/6/2024	*	Shallow	33.63	--	5.83	
RW-25*	12/6/2024	*	Shallow	38.06	--	6.42	

Table 2
Groundwater Elevation Results
Arkema Quarter 4, 2024, 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)	Transducer Recalibrated following Manual Measurement ^a
EW-1*	12/6/2024	*	Shallow/Intermediate	33.84	--	-0.96	
EW-2*	12/6/2024	*	Shallow/Intermediate	34.20	--	-0.30	
EW-3*	12/6/2024	*	Shallow/Intermediate	34.43	--	-2.56	
EW-4*	12/6/2024	*	Shallow/Intermediate	34.61	--	-3.01	
EW-5*	12/6/2024	*	Shallow/Intermediate	35.03	--	-5.65	
EW-6*	12/6/2024	*	Shallow/Intermediate	35.43	--	-5.50	
EW-7*	12/6/2024	*	Shallow/Intermediate	35.24	--	0.31	
EW-8*	12/6/2024	*	Shallow/Intermediate	35.07	--	0.76	
EW-9*	12/6/2024	*	Shallow/Intermediate	36.77	--	-3.25	
EW-10*	12/6/2024	*	Shallow/Intermediate	36.35	--	-4.87	
EW-11*	12/6/2024	*	Shallow/Intermediate	37.38	--	-7.36	
EW-12*	12/6/2024	*	Shallow/Intermediate	38.24	--	-3.00	X
EW-13*	12/6/2024	*	Shallow/Intermediate	39.79	--	-4.15	
EW-14*	12/6/2024	*	Shallow/Intermediate	40.03	--	-4.25	
MWA-83	12/6/2024	8:00:00 AM	Shallow/Intermediate	35.82	27.16	8.66	
MWA-84	12/6/2024	8:15:00 AM	Shallow/Intermediate	36.31	Dry	Dry	
MWA-85	12/6/2024	8:30:00 AM	Shallow/Intermediate	36.86	37.12	-0.26	
MWA-86	12/6/2024	8:43:00 AM	Shallow/Intermediate	37.15	Dry	Dry	
MWA-87	12/6/2024	8:55:00 AM	Shallow/Intermediate	37.68	36.81	0.86	
MWA-88	12/6/2024	9:25:00 AM	Shallow/Intermediate	39.36	38.42	0.94	
MWA-89	12/6/2024	10:05:00 AM	Shallow/Intermediate	41.65	42.63	-0.98	
MWA-07(i)	12/6/2024	10:32:00 AM	Intermediate	36.24	6.26	29.98	
MWA-08i*	12/6/2024	*	Intermediate	36.25	--	8.96	
MWA-16i	12/6/2024	8:20:00 AM	Intermediate	36.58	28.03	8.55	
MWA-34iR*	12/6/2024	*	Intermediate	37.36	--	9.16	
MWA-49i	12/6/2024	9:16:00 AM	Intermediate	36.68	27.96	8.72	
MWA-53i	12/6/2024	9:28:00 AM	Intermediate	44.63	35.23	9.40	
MWA-54i	12/6/2024	8:45:00 AM	Intermediate	37.35	25.05	12.30	
MWA-66i*	12/6/2024	*	Intermediate	33.35	--	8.81	
MWA-70i	12/6/2024	10:22:00 AM	Intermediate	37.62	21.85	15.77	
MWA-74i	12/6/2024	7:45:00 AM	Intermediate	34.72	10.64	24.08	
MWA-75i	12/6/2024	10:38:00 AM	Intermediate	34.09	4.42	29.67	
MWA-81i	12/6/2024	10:12:00 AM	Intermediate	44.62	34.23	10.39	
PA-10i*	12/6/2024	*	Intermediate	36.67	--	12.52	
PA-11i*	12/6/2024	*	Intermediate	37.63	--	9.73	
PA-12i*	12/6/2024	*	Intermediate	38.03	--	11.46	
PA-13i*	12/6/2024	*	Intermediate	38.48	--	10.59	
PA-14i*	12/6/2024	*	Intermediate	39.30	--	12.83	
PA-15i*	12/6/2024	*	Intermediate	40.62	--	10.09	
PA-16i*	12/6/2024	*	Intermediate	40.30	--	10.29	
PA-17iR*	12/6/2024	*	Intermediate	37.59	--	11.33	
PA-29i*	12/6/2024	*	Intermediate	39.18	--	8.98	
PA-32i	12/6/2024	7:00:00 AM	Intermediate	36.28	24.50	11.78	
PA-34i	12/6/2024	7:27:00 AM	Intermediate	36.02	24.00	12.02	
PA-37i	12/6/2024	8:10:00 AM	Intermediate	36.54	29.10	7.44	
PA-39i	12/6/2024	9:56:00 AM	Intermediate	40.11	29.80	10.31	
PA-40i	12/6/2024	9:57:00 AM	Intermediate	41.47	31.14	10.33	
PA-44i	12/6/2024	10:08:00 AM	Intermediate	40.36	30.02	10.34	
RW-06i*	12/6/2024	*	Intermediate	35.59	--	11.96	
RW-09i*	12/6/2024	*	Intermediate	33.73	--	9.61	
RW-11i*	12/6/2024	*	Intermediate	34.77	--	9.77	
RW-13i*	12/6/2024	*	Intermediate	36.09	--	12.10	
RW-16i*	12/6/2024	*	Intermediate	35.77	--	12.28	
RW-19i*	12/6/2024	*	Intermediate	36.56	--	10.48	
RW-21i*	12/6/2024	*	Intermediate	37.38	--	10.44	
RW-24i*	12/6/2024	*	Intermediate	34.03	--	7.79	
RW-26i*	12/6/2024	*	Intermediate	38.10	--	10.45	
MWA-11i(d)	12/6/2024	8:40:00 AM	Deep	36.49	26.56	9.93	
MWA-12i(d)	12/6/2024	10:35:00 AM	Deep	35.86	11.02	24.84	
MWA-31i(d)	12/6/2024	9:40:00 AM	Deep	38.36	29.78	8.58	
MWA-56d	12/6/2024	9:13:00 AM	Deep	36.68	27.50	9.18	
MWA-58d*	12/6/2024	*	Deep	37.97	--	8.23	

Table 2
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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)	Transducer Recalibrated following Manual Measurement ^a
PA-18d*	12/6/2024	*	Deep	36.55	--	10.48	
PA-19d*	12/6/2024	*	Deep	36.65	--	7.99	
PA-20d*	12/6/2024	*	Deep	37.91	--	9.59	
PA-21d*	12/6/2024	*	Deep	34.36	--	9.01	
PA-22d*	12/6/2024	*	Deep	38.75	--	10.55	X
PA-23d*	12/6/2024	*	Deep	39.31	--	8.11	
PA-24d*	12/6/2024	*	Deep	39.06	--	8.45	
PA-25d*	12/6/2024	*	Deep	40.44	--	12.12	X
PA-26d*	12/6/2024	*	Deep	40.33	--	10.62	
PA-27d*	12/6/2024	*	Deep	37.10	--	10.79	
PA-30d*	12/6/2024	*	Deep	37.34	--	9.41	
MWA-76g	12/6/2024	10:39:00 AM	Gravel	34.96	11.01	23.95	
MWA-77g	12/6/2024	07:44:00 AM	Gravel	34.03	20.20	13.83	

Notes:

^a For monitoring wells with transducers where manual measurements were collected, if drift was 0.1 foot or greater, the transducer

* = 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 10:39 AM for the groundwater elevation value.

Table 3
Field Parameters Measured in Groundwater
Arkema Quarter 4, 2024, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

				Analyte	pH	Temperature	Specific Conductivity	Oxidation-Reduction Potential	Dissolved Oxygen	Turbidity ^a
				Method	Field Measure	Field Measure	Field Measure	Field Measure	Field Measure	Field Measure
				Unit	SU	deg C	uS/cm	mV	mg/L	NTU
Location ID	Sample Date	Aquifer Classification	Sample ID							
MWA-41	11-Dec-24	Shallow	MWA-41-121124		7.19	11	319	165	0	2.44
MWA-63	10-Dec-24	Shallow	MWA-63-121024		7.04	12.9	581	95	6.84	11.9
MWA-82	11-Dec-24	Shallow	MWA-82-121124		9.53	14.7	475	132	0.17	127
PA-03	09-Dec-24	Shallow	PA-03-120924		10.42	12.9	803	-314	5.8	0
PA-04	10-Dec-24	Shallow	PA-04-121024		10.06	8.3	649	45	0.79	26
PA-08	09-Dec-24	Shallow	PA-08-120924		7.33	11.8	1355	-151	0.87	0
PA-09 ^b	10-Dec-24	Shallow	PA-09-121024		NM	NM	NM	NM	NM	NM
PA-31	10-Dec-24	Shallow	PA-31-121024		9.52	14	807	-72	0	38
MWA-81i	11-Dec-24	Intermediate	MWA-81i-121124		7.19	7.9	631	146	0.02	0.78
PA-10i	10-Dec-24	Intermediate	PA-10i-121024		7.66	12.7	846	-226	0	6.68
PA-15i	11-Dec-24	Intermediate	PA-15i-121124		7.56	13.3	766	-96.2	1.34	230
PA-16i	10-Dec-24	Intermediate	PA-16i-121024		6.83	14	368	-106.7	0.99	108
PA-17iR	09-Dec-24	Intermediate	PA-17iR-120924		9.29	13.1	962	-288	2.7	0
PA-32i	10-Dec-24	Intermediate	PA-32i-121024		7.68	11.7	1325	-68	1.17	5.3
PA-44i	11-Dec-24	Intermediate	PA-44i-121124		6.95	13.7	808	68	0	32.2
MWA-11i(d)	12-Dec-24	Deep	MWA-11i(d)-121224		7.06	12.8	2280	-222	0	2.85
MWA-31i(d)	12-Dec-24	Deep	MWA-31i(d)-121224		6.44	12.8	32.92	36	0.08	19.7
MWA-56d	12-Dec-24	Deep	MWA-56d-121224		6.62	13.9	30.65	83	0.08	1.23
MWA-58d	12-Dec-24	Deep	MWA-58d-121224		6.7	10.8	39	63	0.04	3.94
PA-18d	10-Dec-24	Deep	PA-18d-121024		8.6	9.45	1001	-280	0.98	7.4
PA-19d	12-Dec-24	Deep	PA-19d-121224		7.17	13	2669	-70.1	1.43	30.4
PA-20d	12-Dec-24	Deep	PA-20d-121224		6.71	14.5	2171	-70.5	1.14	3.09
PA-22d	12-Dec-24	Deep	PA-22d-121224		7.16	12.8	14.5	94.3	1.35	54.9
PA-23d	11-Dec-24	Deep	PA-23d-121124		6.9	14.9	66.43	-88.5	0.84	7.38
PA-24d	11-Dec-24	Deep	PA-24d-121124		6.56	13.2	66.23	-75.3	1.04	134
PA-25d	10-Dec-24	Deep	PA-25d-121024		7.02	13.6	646	-96.4	1.06	1.96
PA-26d	10-Dec-24	Deep	PA-26d-121024		7	13.2	618	-114.4	0.82	254
PA-27d	09-Dec-24	Deep	PA-27d-120924		7.07	15.4	2986	-220	0	6.6
PA-30d	12-Dec-24	Deep	PA-30d-121224		8.24	12.3	2449	-115.2	1.08	0

Notes:

^a Turbidity measurements collected on 9 December 2024 were potentially inaccurate due to issues with the field water quality meters.

^b Field data for the well location was lost due to a field device error.

uS/cm = microSiemens per centimeter

deg C = degrees Celsius

mg/L = milligrams per liter

mV = millivolts

NM = not measured

NTU = nephelometric turbidity units

SU = standard units

Table 4
Volatile Organic Compounds Results
Arkema Quarter 4, 2024, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Analyte Unit					1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene
FSWP SHSC (shaded values indicate results above the value shown)					NE	11	0.4	1.6	47	710	NE	NE	NE	0.076	NE
Location ID	Sample Date	Sample Type	Aquifer Classification	Sample ID											
MWA-41	12/11/2024	N	Shallow	MWA-41-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.084 U	< 0.47 U	< 0.050 U	< 0.36 U	< 0.23 U
MWA-63	12/10/2024	N	Shallow	MWA-63-121024	0.41 j	< 0.39 U	0.69 j	1.1	1.2	0.64 j	< 0.29 U	< 0.43 U	< 0.41 U	< 0.33 U	< 0.61 U
MWA-82	12/11/2024	N	Shallow	MWA-82-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.084 U	< 0.47 U	< 0.050 U	< 0.36 U	< 0.23 U
PA-03	12/9/2024	N	Shallow	PA-03-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.14 j	< 0.035 U	< 0.084 U	< 0.47 U	< 0.050 U	< 0.36 U	< 0.23 U
PA-04	12/10/2024	N	Shallow	PA-04-121024	< 0.11 U	0.031 j	< 0.056 U	< 0.070 U	0.31	0.35	< 0.084 U	< 0.47 U	< 0.050 U	< 0.36 U	< 0.23 U
PA-08	12/9/2024	N	Shallow	PA-08-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.096 j	< 0.035 U	< 0.084 U	< 0.47 U	< 0.050 U	< 0.36 U	< 0.23 U
PA-09	12/10/2024	N	Shallow	PA-09-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.084 U	< 0.47 U	< 0.050 U	< 0.36 U	< 0.23 U
PA-31	12/10/2024	N	Shallow	PA-31-121024	< 0.11 U	0.23	< 0.056 U	< 0.070 U	0.23	0.80	< 0.084 U	< 0.47 U	< 0.050 U	< 0.36 U	< 0.23 U
MWA-81i	12/11/2024	N	Intermediate	MWA-81i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.084 U	< 0.47 U	< 0.050 U	< 0.36 U	< 0.23 U
PA-10i	12/10/2024	N	Intermediate	PA-10i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	0.068 j	< 0.084 U	< 0.47 U	< 0.050 U	< 0.36 U	< 0.23 U
PA-15i	12/11/2024	N	Intermediate	PA-15i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.20	< 0.035 U	< 0.084 U	< 0.47 U	< 0.050 U	< 0.36 U	< 0.23 U
PA-16i	12/10/2024	N	Intermediate	PA-16i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.067 j	< 0.035 U	< 0.084 U	< 0.47 U	< 0.050 U	< 0.36 U	< 0.23 U
PA-17iR	12/9/2024	N	Intermediate	PA-17iR-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.13 j	0.16 j	< 0.084 U	< 0.47 U	< 0.050 U	< 0.36 U	< 0.23 U
PA-32i	12/10/2024	N	Intermediate	PA-32i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.10 j	0.069 j	< 0.084 U	< 0.47 U	< 0.050 U	< 0.36 U	< 0.23 U
PA-32i	12/10/2024	FD	Intermediate	DUP-01-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.11 j	0.071 j	< 0.084 U	< 0.47 U	< 0.050 U	< 0.36 U	< 0.23 U
PA-44i	12/11/2024	N	Intermediate	PA-44i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.19 j	< 0.035 U	< 0.084 U	< 0.47 U	< 0.050 U	< 0.36 U	< 0.23 U
MWA-11i(d)	12/12/2024	N	Deep	MWA-11i(d)-121224	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.084 U	< 0.47 U	< 0.050 U	< 0.36 U	< 0.23 U
MWA-31i(d)	12/12/2024	N	Deep	MWA-31i(d)-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.35 j	< 0.28 U	< 0.29 U	< 0.43 U	< 0.41 U	< 0.33 U	< 0.61 U
MWA-56d	12/12/2024	N	Deep	MWA-56d-121224	< 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	< 6.1 U
MWA-58d	12/12/2024	N	Deep	MWA-58d-121224	< 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	< 6.1 U
PA-18d	12/10/2024	N	Deep	PA-18d-121024	< 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	< 0.61 U
PA-19d	12/12/2024	N	Deep	PA-19d-121224	< 18 U	< 39 U	< 52 U	< 24 U	< 22 U	< 28 U	< 29 U	< 43 U	< 41 U	< 33 U	< 61 U
PA-20d	12/12/2024	N	Deep	PA-20d-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.28 j	< 0.28 U	< 0.29 U	< 0.43 U	< 0.41 U	< 0.33 U	< 0.61 U
PA-20d	12/12/2024	FD	Deep	DUP-02-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.32 j	< 0.28 U	< 0.29 U	< 0.43 U	< 0.41 U	< 0.33 U	< 0.61 U
PA-22d	12/12/2024	N	Deep	PA-22d-121224	< 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	< 0.61 U
PA-23d	12/11/2024	N	Deep	PA-23d-121124	< 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	< 0.61 U
PA-24d	12/11/2024	N	Deep	PA-24d-121124	< 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	< 0.61 U
PA-25d	12/10/2024	N	Deep	PA-25d-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.084 U	< 0.47 U	< 0.050 U	< 0.36 U	< 0.23 U
PA-26d	12/10/2024	N	Deep	PA-26d-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.084 U	< 0.47 U	< 0.050 U	< 0.36 U	< 0.23 U
PA-27d	12/9/2024	N	Deep	PA-27d-120924	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.37 j	< 0.28 U	< 0.29 U	< 0.43 U	< 0.41 U	< 0.33 U	< 0.61 U
PA-30d	12/12/2024	N	Deep	PA-30d-121224	< 90 U	< 200 U	< 260 U	< 120 U	< 110 U	< 140 U	< 150 U	< 220 U	< 210 U	< 170 U	< 310 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 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 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 4, 2024, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Analyte Unit					1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dibromo-3-chloropropane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene
FSWP SHSC (shaded values indicate results above the value shown)					NE	11	0.4	1.6	47	710	NE	14	3.7	1.5	NE
Location ID	Sample Date	Sample Type	Aquifer Classification	Sample ID											
MWA-41	12/11/2024	N	Shallow	MWA-41-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.48 U	< 0.038 U	< 0.12 U	< 0.060 U	< 0.19 U
MWA-63	12/10/2024	N	Shallow	MWA-63-121024	0.41 j	< 0.39 U	0.69 j	1.1	1.2	0.64 j	< 0.57 U	< 0.46 U	1.2	0.18 j	< 0.55 U
MWA-82	12/11/2024	N	Shallow	MWA-82-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.48 U	0.041 j	< 0.12 U	< 0.060 U	< 0.19 U
PA-03	12/9/2024	N	Shallow	PA-03-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.14 j	< 0.035 U	< 0.48 U	< 0.038 U	< 0.12 U	< 0.060 U	< 0.19 U
PA-04	12/10/2024	N	Shallow	PA-04-121024	< 0.11 U	0.031 j	< 0.056 U	< 0.070 U	0.31	0.35	< 0.48 U	< 0.038 U	< 0.12 U	< 0.060 U	< 0.19 U
PA-08	12/9/2024	N	Shallow	PA-08-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.096 j	< 0.035 U	< 0.48 U	0.056 j	< 0.12 U	< 0.060 U	< 0.19 U
PA-09	12/10/2024	N	Shallow	PA-09-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.48 U	< 0.038 U	< 0.12 U	< 0.060 U	< 0.19 U
PA-31	12/10/2024	N	Shallow	PA-31-121024	< 0.11 U	0.23	< 0.056 U	< 0.070 U	0.23	0.80	< 0.48 U	< 0.038 U	< 0.12 U	< 0.060 U	< 0.19 U
MWA-81i	12/11/2024	N	Intermediate	MWA-81i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.48 U	< 0.038 U	< 0.12 U	< 0.060 U	< 0.19 U
PA-10i	12/10/2024	N	Intermediate	PA-10i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	0.068 j	< 0.48 U	0.22 j	< 0.12 U	< 0.060 U	< 0.19 U
PA-15i	12/11/2024	N	Intermediate	PA-15i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.20	< 0.035 U	< 0.48 U	< 0.038 U	< 0.12 U	< 0.060 U	< 0.19 U
PA-16i	12/10/2024	N	Intermediate	PA-16i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.067 j	< 0.035 U	< 0.48 U	< 0.038 U	< 0.12 U	< 0.060 U	< 0.19 U
PA-17iR	12/9/2024	N	Intermediate	PA-17iR-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.13 j	0.16 j	< 0.48 U	< 0.038 U	< 0.12 U	< 0.060 U	< 0.19 U
PA-32i	12/10/2024	N	Intermediate	PA-32i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.10 j	0.069 j	< 0.48 U	0.30	< 0.12 U	< 0.060 U	< 0.19 U
PA-32i	12/10/2024	FD	Intermediate	DUP-01-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.11 j	0.071 j	< 0.48 U	0.30	< 0.12 U	< 0.060 U	< 0.19 U
PA-44i	12/11/2024	N	Intermediate	PA-44i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.19 j	< 0.035 U	< 0.48 U	< 0.038 U	< 0.12 U	< 0.060 U	< 0.19 U
MWA-11i(d)	12/12/2024	N	Deep	MWA-11i(d)-121224	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.48 U	< 0.038 U	< 0.12 U	< 0.060 U	< 0.19 U
MWA-31i(d)	12/12/2024	N	Deep	MWA-31i(d)-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.35 j	< 0.28 U	< 0.57 U	< 0.46 U	< 0.42 U	< 0.18 U	< 0.55 U
MWA-56d	12/12/2024	N	Deep	MWA-56d-121224	< 1.8 U	< 3.9 U	< 5.2 U	< 2.4 U	< 2.2 U	< 2.8 U	< 5.7 U	< 4.6 U	< 4.2 U	< 1.8 U	< 5.5 U
MWA-58d	12/12/2024	N	Deep	MWA-58d-121224	< 1.8 U	< 3.9 U	< 5.2 U	< 2.4 U	< 2.2 U	< 2.8 U	< 5.7 U	< 4.6 U	< 4.2 U	< 1.8 U	< 5.5 U
PA-18d	12/10/2024	N	Deep	PA-18d-121024	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.57 U	< 0.46 U	< 0.42 U	< 0.18 U	< 0.55 U
PA-19d	12/12/2024	N	Deep	PA-19d-121224	< 18 U	< 39 U	< 52 U	< 24 U	< 22 U	< 28 U	< 57 U	< 46 U	< 42 U	< 18 U	< 55 U
PA-20d	12/12/2024	N	Deep	PA-20d-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.28 j	< 0.28 U	< 0.57 U	< 0.46 U	< 0.42 U	< 0.18 U	< 0.55 U
PA-20d	12/12/2024	FD	Deep	DUP-02-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.32 j	< 0.28 U	< 0.57 U	< 0.46 U	< 0.42 U	< 0.18 U	< 0.55 U
PA-22d	12/12/2024	N	Deep	PA-22d-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.57 U	< 0.46 U	< 0.42 U	< 0.18 U	< 0.55 U
PA-23d	12/11/2024	N	Deep	PA-23d-121124	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.57 U	< 0.46 U	< 0.42 U	< 0.18 U	< 0.55 U
PA-24d	12/11/2024	N	Deep	PA-24d-121124	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.57 U	< 0.46 U	< 0.42 U	< 0.18 U	< 0.55 U
PA-25d	12/10/2024	N	Deep	PA-25d-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.48 U	< 0.038 U	< 0.12 U	< 0.060 U	< 0.19 U
PA-26d	12/10/2024	N	Deep	PA-26d-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.48 U	< 0.038 U	0.36	< 0.060 U	< 0.19 U
PA-27d	12/9/2024	N	Deep	PA-27d-120924	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.37 j	< 0.28 U	< 0.57 U	< 0.46 U	< 0.42 U	< 0.18 U	< 0.55 U
PA-30d	12/12/2024	N	Deep	PA-30d-121224	< 90 U	< 200 U	< 260 U	< 120 U	< 110 U	< 140 U	< 290 U	< 230 U	< 210 U	< 90 U	< 280 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 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 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 4, 2024, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Analyte Unit					1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone (Methyl ethyl ketone)
FSWP SHSC (shaded values indicate results above the value shown)					NE	11	0.4	1.6	47	710	10	NE	15	NE	14000
Location ID	Sample Date	Sample Type	Aquifer Classification	Sample ID											
MWA-41	12/11/2024	N	Shallow	MWA-41-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.050 U	< 0.056 U	< 0.050 U	< 0.060 U	< 2.5 U
MWA-63	12/10/2024	N	Shallow	MWA-63-121024	0.41 j	< 0.39 U	0.69 j	1.1	1.2	0.64 j	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U	< 4.7 U
MWA-82	12/11/2024	N	Shallow	MWA-82-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.050 U	< 0.056 U	< 0.050 U	< 0.060 U	< 2.5 U
PA-03	12/9/2024	N	Shallow	PA-03-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.14 j	< 0.035 U	< 0.050 U	< 0.056 U	< 0.050 U	< 0.060 U	< 2.5 U
PA-04	12/10/2024	N	Shallow	PA-04-121024	< 0.11 U	0.031 j	< 0.056 U	< 0.070 U	0.31	0.35	< 0.050 U	< 0.056 U	< 0.050 U	< 0.060 U	< 2.5 U
PA-08	12/9/2024	N	Shallow	PA-08-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.096 j	< 0.035 U	< 0.050 U	< 0.056 U	< 0.050 U	< 0.060 U	< 2.5 U
PA-09	12/10/2024	N	Shallow	PA-09-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.050 U	< 0.056 U	< 0.050 U	< 0.060 U	< 2.5 U
PA-31	12/10/2024	N	Shallow	PA-31-121024	< 0.11 U	0.23	< 0.056 U	< 0.070 U	0.23	0.80	< 0.050 U	< 0.056 U	< 0.050 U	< 0.060 U	< 2.5 U
MWA-81i	12/11/2024	N	Intermediate	MWA-81i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.050 U	< 0.056 U	< 0.050 U	< 0.060 U	< 2.5 U
PA-10i	12/10/2024	N	Intermediate	PA-10i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	0.068 j	< 0.050 U	< 0.056 U	< 0.050 U	< 0.060 U	< 2.5 U
PA-15i	12/11/2024	N	Intermediate	PA-15i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.20	< 0.035 U	< 0.050 U	< 0.056 U	< 0.050 U	< 0.060 U	< 2.5 U
PA-16i	12/10/2024	N	Intermediate	PA-16i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.067 j	< 0.035 U	< 0.050 U	< 0.056 U	< 0.050 U	< 0.060 U	< 2.5 U
PA-17iR	12/9/2024	N	Intermediate	PA-17iR-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.13 j	0.16 j	< 0.050 U	< 0.056 U	< 0.050 U	< 0.060 U	< 2.5 U
PA-32i	12/10/2024	N	Intermediate	PA-32i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.10 j	0.069 j	< 0.050 U	< 0.056 U	< 0.050 U	< 0.060 U	< 2.5 U
PA-32i	12/10/2024	FD	Intermediate	DUP-01-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.11 j	0.071 j	< 0.050 U	< 0.056 U	< 0.050 U	< 0.060 U	< 2.5 U
PA-44i	12/11/2024	N	Intermediate	PA-44i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.19 j	< 0.035 U	< 0.050 U	< 0.056 U	< 0.050 U	< 0.060 U	< 2.5 U
MWA-11i(d)	12/12/2024	N	Deep	MWA-11i(d)-121224	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.050 U	< 0.056 U	< 0.050 U	< 0.060 U	< 2.5 U
MWA-31i(d)	12/12/2024	N	Deep	MWA-31i(d)-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.35 j	< 0.28 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U	< 4.7 U
MWA-56d	12/12/2024	N	Deep	MWA-56d-121224	< 1.8 U	< 3.9 U	< 5.2 U	< 2.4 U	< 2.2 U	< 2.8 U	< 4.8 U	< 3.5 U	< 4.6 U	< 3.2 U	< 47 U
MWA-58d	12/12/2024	N	Deep	MWA-58d-121224	< 1.8 U	< 3.9 U	< 5.2 U	< 2.4 U	< 2.2 U	< 2.8 U	< 4.8 U	< 3.5 U	< 4.6 U	< 3.2 U	< 47 U
PA-18d	12/10/2024	N	Deep	PA-18d-121024	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U	< 4.7 U
PA-19d	12/12/2024	N	Deep	PA-19d-121224	< 18 U	< 39 U	< 52 U	< 24 U	< 22 U	< 28 U	< 48 U	< 35 U	< 46 U	< 32 U	< 470 U
PA-20d	12/12/2024	N	Deep	PA-20d-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.28 j	< 0.28 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U	< 4.7 U
PA-20d	12/12/2024	FD	Deep	DUP-02-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.32 j	< 0.28 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U	< 4.7 U
PA-22d	12/12/2024	N	Deep	PA-22d-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U	< 4.7 U
PA-23d	12/11/2024	N	Deep	PA-23d-121124	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U	< 4.7 U
PA-24d	12/11/2024	N	Deep	PA-24d-121124	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U	< 4.7 U
PA-25d	12/10/2024	N	Deep	PA-25d-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.050 U	< 0.056 U	< 0.050 U	< 0.060 U	< 2.5 U
PA-26d	12/10/2024	N	Deep	PA-26d-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.050 U	< 0.056 U	< 0.050 U	< 0.060 U	< 2.5 U
PA-27d	12/9/2024	N	Deep	PA-27d-120924	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.37 j	< 0.28 U	< 0.48 U	< 0.35 U	< 0.46 U	< 0.32 U	< 4.7 U
PA-30d	12/12/2024	N	Deep	PA-30d-121224	< 90 U	< 200 U	< 260 U	< 120 U	< 110 U	< 140 U	< 240 U	< 180 U	< 230 U	< 160 U	< 2,400 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 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 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 4, 2024, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Analyte					1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone	Acetone	Benzene
Unit					µg/L	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	1500	1.4
Location ID	Sample Date	Sample Type	Aquifer Classification	Sample ID											
MWA-41	12/11/2024	N	Shallow	MWA-41-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.12 U	< 0.25 U	< 2.7 U	< 3.1 U	< 0.030 U
MWA-63	12/10/2024	N	Shallow	MWA-63-121024	0.41 j	< 0.39 U	0.69 j	1.1	1.2	0.64 j	< 0.38 U	< 0.28 U	< 2.5 U	< 3.2 U	< 0.24 U
MWA-82	12/11/2024	N	Shallow	MWA-82-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.12 U	< 0.25 U	< 2.7 U	< 3.1 U	< 0.030 U
PA-03	12/9/2024	N	Shallow	PA-03-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.14 j	< 0.035 U	< 0.12 U	< 0.25 U	< 2.7 U	< 3.1 U	< 0.20 U
PA-04	12/10/2024	N	Shallow	PA-04-121024	< 0.11 U	0.031 j	< 0.056 U	< 0.070 U	0.31	0.35	< 0.12 U	< 0.25 U	< 2.7 U	< 3.1 U	< 0.20 U
PA-08	12/9/2024	N	Shallow	PA-08-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.096 j	< 0.035 U	< 0.12 U	< 0.25 U	< 2.7 U	< 3.1 U	< 0.20 U
PA-09	12/10/2024	N	Shallow	PA-09-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.12 U	< 0.25 U	< 2.7 U	< 3.1 U	< 0.20 U
PA-31	12/10/2024	N	Shallow	PA-31-121024	< 0.11 U	0.23	< 0.056 U	< 0.070 U	0.23	0.80	< 0.12 U	< 0.25 U	< 2.7 U	< 3.1 U	< 0.20 U
MWA-81i	12/11/2024	N	Intermediate	MWA-81i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.12 U	< 0.25 U	< 2.7 U	< 3.1 U	< 0.030 U
PA-10i	12/10/2024	N	Intermediate	PA-10i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	0.068 j	< 0.12 U	< 0.25 U	< 2.7 U	< 3.1 U	< 0.20 U
PA-15i	12/11/2024	N	Intermediate	PA-15i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.20	< 0.035 U	< 0.12 U	< 0.25 U	< 2.7 U	< 3.1 U	< 0.030 U
PA-16i	12/10/2024	N	Intermediate	PA-16i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.067 j	< 0.035 U	< 0.12 U	< 0.25 U	< 2.7 U	< 3.1 U	< 0.20 U
PA-17iR	12/9/2024	N	Intermediate	PA-17iR-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.13 j	0.16 j	< 0.12 U	< 0.25 U	< 2.7 U	< 3.1 U	0.14 j
PA-32i	12/10/2024	N	Intermediate	PA-32i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.10 j	0.069 j	< 0.12 U	< 0.25 U	< 2.7 U	< 3.1 U	< 0.20 U
PA-32i	12/10/2024	FD	Intermediate	DUP-01-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.11 j	0.071 j	< 0.12 U	< 0.25 U	< 2.7 U	< 3.1 U	< 0.20 U
PA-44i	12/11/2024	N	Intermediate	PA-44i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.19 j	< 0.035 U	< 0.12 U	< 0.25 U	< 2.7 U	< 3.1 U	< 0.030 U
MWA-11i(d)	12/12/2024	N	Deep	MWA-11i(d)-121224	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.12 U	< 0.25 U	< 2.7 U	< 3.1 U	< 0.20 U
MWA-31i(d)	12/12/2024	N	Deep	MWA-31i(d)-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.35 j	< 0.28 U	< 0.38 U	< 0.28 U	< 2.5 U	< 3.2 U	< 0.24 U
MWA-56d	12/12/2024	N	Deep	MWA-56d-121224	< 1.8 U	< 3.9 U	< 5.2 U	< 2.4 U	< 2.2 U	< 2.8 U	< 3.8 U	< 2.8 U	< 25 U	< 32 U	< 2.4 U
MWA-58d	12/12/2024	N	Deep	MWA-58d-121224	< 1.8 U	< 3.9 U	< 5.2 U	< 2.4 U	< 2.2 U	< 2.8 U	< 3.8 U	< 2.8 U	< 25 U	< 32 U	< 2.4 U
PA-18d	12/10/2024	N	Deep	PA-18d-121024	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.38 U	< 0.28 U	< 2.5 U	< 3.2 U	< 0.24 U
PA-19d	12/12/2024	N	Deep	PA-19d-121224	< 18 U	< 39 U	< 52 U	< 24 U	< 22 U	< 28 U	< 38 U	< 28 U	< 250 U	< 320 U	39 j
PA-20d	12/12/2024	N	Deep	PA-20d-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.28 j	< 0.28 U	< 0.38 U	< 0.28 U	< 2.5 U	< 3.2 U	< 0.24 U
PA-20d	12/12/2024	FD	Deep	DUP-02-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.32 j	< 0.28 U	< 0.38 U	< 0.28 U	< 2.5 U	< 3.2 U	< 0.24 U
PA-22d	12/12/2024	N	Deep	PA-22d-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.38 U	< 0.28 U	< 2.5 U	< 3.2 U	< 0.24 U
PA-23d	12/11/2024	N	Deep	PA-23d-121124	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.38 U	< 0.28 U	< 2.5 U	< 3.2 U	< 0.24 U
PA-24d	12/11/2024	N	Deep	PA-24d-121124	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.38 U	< 0.28 U	< 2.5 U	< 3.2 U	< 0.24 U
PA-25d	12/10/2024	N	Deep	PA-25d-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.12 U	< 0.25 U	< 2.7 U	< 3.1 U	< 0.20 UJ
PA-26d	12/10/2024	N	Deep	PA-26d-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.12 U	< 0.25 U	< 2.7 U	< 3.1 U	< 0.20 U
PA-27d	12/9/2024	N	Deep	PA-27d-120924	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.37 j	< 0.28 U	< 0.38 U	< 0.28 U	< 2.5 U	< 3.2 U	< 0.24 U
PA-30d	12/12/2024	N	Deep	PA-30d-121224	< 90 U	< 200 U	< 260 U	< 120 U	< 110 U	< 140 U	< 190 U	< 140 U	< 1,300 U	< 1,600 U	< 120 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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Table 4
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Arkema Quarter 4, 2024, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Analyte Unit					1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	Bromobenzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon disulfide
FSWP SHSC (shaded values indicate results above the value shown)					NE	11	0.4	1.6	47	710	NE	1.7	14	150	0.92
Location ID	Sample Date	Sample Type	Aquifer Classification	Sample ID											
MWA-41	12/11/2024	N	Shallow	MWA-41-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U	< 0.20 U
MWA-63	12/10/2024	N	Shallow	MWA-63-121024	0.41 j	< 0.39 U	0.69 j	1.1	1.2	0.64 j	< 0.43 U	3.0	< 0.51 U	< 0.21 U	< 0.53 U
MWA-82	12/11/2024	N	Shallow	MWA-82-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 UJ	< 0.20 U
PA-03	12/9/2024	N	Shallow	PA-03-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.14 j	< 0.035 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U	< 0.20 U
PA-04	12/10/2024	N	Shallow	PA-04-121024	< 0.11 U	0.031 j	< 0.056 U	< 0.070 U	0.31	0.35	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U	< 0.20 U
PA-08	12/9/2024	N	Shallow	PA-08-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.096 j	< 0.035 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U	< 0.20 U
PA-09	12/10/2024	N	Shallow	PA-09-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U	< 0.20 U
PA-31	12/10/2024	N	Shallow	PA-31-121024	< 0.11 U	0.23	< 0.056 U	< 0.070 U	0.23	0.80	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U	< 0.20 U
MWA-81i	12/11/2024	N	Intermediate	MWA-81i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U	< 0.20 U
PA-10i	12/10/2024	N	Intermediate	PA-10i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	0.068 j	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U	< 0.20 U
PA-15i	12/11/2024	N	Intermediate	PA-15i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.20	< 0.035 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U	< 0.20 U
PA-16i	12/10/2024	N	Intermediate	PA-16i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.067 j	< 0.035 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U	< 0.20 U
PA-17iR	12/9/2024	N	Intermediate	PA-17iR-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.13 j	0.16 j	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U	< 0.20 U
PA-32i	12/10/2024	N	Intermediate	PA-32i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.10 j	0.069 j	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U	< 0.20 U
PA-32i	12/10/2024	FD	Intermediate	DUP-01-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.11 j	0.071 j	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U	< 0.20 U
PA-44i	12/11/2024	N	Intermediate	PA-44i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.19 j	< 0.035 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 UJ	< 0.20 U
MWA-11i(d)	12/12/2024	N	Deep	MWA-11i(d)-121224	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U	< 0.20 U
MWA-31i(d)	12/12/2024	N	Deep	MWA-31i(d)-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.35 j	< 0.28 U	< 0.43 U	< 0.29 U	2.1	< 0.21 UJ	< 0.53 U
MWA-56d	12/12/2024	N	Deep	MWA-56d-121224	< 1.8 U	< 3.9 U	< 5.2 U	< 2.4 U	< 2.2 U	< 2.8 U	< 4.3 U	< 2.9 U	< 5.1 U	< 2.1 UJ	< 5.3 U
MWA-58d	12/12/2024	N	Deep	MWA-58d-121224	< 1.8 U	< 3.9 U	< 5.2 U	< 2.4 U	< 2.2 U	< 2.8 U	< 4.3 U	< 2.9 U	< 5.1 U	< 2.1 UJ	< 5.3 U
PA-18d	12/10/2024	N	Deep	PA-18d-121024	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.43 U	< 0.29 U	< 0.51 U	< 0.21 U	< 0.53 U
PA-19d	12/12/2024	N	Deep	PA-19d-121224	< 18 U	< 39 U	< 52 U	< 24 U	< 22 U	< 28 U	< 43 U	< 29 U	< 51 U	< 21 UJ	< 53 U
PA-20d	12/12/2024	N	Deep	PA-20d-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.28 j	< 0.28 U	< 0.43 U	< 0.29 U	< 0.51 U	< 0.21 UJ	< 0.53 U
PA-20d	12/12/2024	FD	Deep	DUP-02-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.32 j	< 0.28 U	< 0.43 U	< 0.29 U	< 0.51 U	< 0.21 U	< 0.53 U
PA-22d	12/12/2024	N	Deep	PA-22d-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.43 U	< 0.29 U	< 0.51 U	< 0.21 UJ	< 0.53 U
PA-23d	12/11/2024	N	Deep	PA-23d-121124	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.43 U	< 0.29 U	< 0.51 U	< 0.21 UJ	< 0.53 U
PA-24d	12/11/2024	N	Deep	PA-24d-121124	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.43 U	< 0.29 U	< 0.51 U	< 0.21 U	< 0.53 U
PA-25d	12/10/2024	N	Deep	PA-25d-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U	< 0.20 U
PA-26d	12/10/2024	N	Deep	PA-26d-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.038 U	< 0.060 U	< 0.16 U	< 0.13 U	< 0.20 U
PA-27d	12/9/2024	N	Deep	PA-27d-120924	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.37 j	< 0.28 U	< 0.43 U	< 0.29 U	< 0.51 U	< 0.21 U	< 0.53 U
PA-30d	12/12/2024	N	Deep	PA-30d-121224	< 90 U	< 200 U	< 260 U	< 120 U	< 110 U	< 140 U	< 220 U	< 150 U	< 260 U	< 110 U	< 270 U

Notes:
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Analyte Unit					1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform
FSWP SHSC (shaded values indicate results above the value shown)					NE	11	0.4	1.6	47	710	0.16	64	NE	NE	28
Location ID	Sample Date	Sample Type	Aquifer Classification	Sample ID											
MWA-41	12/11/2024	N	Shallow	MWA-41-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.24 U	< 0.030 U
MWA-63	12/10/2024	N	Shallow	MWA-63-121024	0.41 j	< 0.39 U	0.69 j	1.1	1.2	0.64 j	< 0.30 U	< 0.44 U	< 0.29 U	< 0.35 U	3,900
MWA-82	12/11/2024	N	Shallow	MWA-82-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.24 UJ	0.76
PA-03	12/9/2024	N	Shallow	PA-03-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.14 j	< 0.035 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.24 U	< 0.030 U
PA-04	12/10/2024	N	Shallow	PA-04-121024	< 0.11 U	0.031 j	< 0.056 U	< 0.070 U	0.31	0.35	< 0.025 U	< 0.060 U	< 0.050 U	< 0.24 U	0.038 j
PA-08	12/9/2024	N	Shallow	PA-08-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.096 j	< 0.035 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.24 U	0.10 j
PA-09	12/10/2024	N	Shallow	PA-09-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.24 U	< 0.030 U
PA-31	12/10/2024	N	Shallow	PA-31-121024	< 0.11 U	0.23	< 0.056 U	< 0.070 U	0.23	0.80	< 0.025 U	< 0.060 U	< 0.050 U	< 0.24 U	0.13 j
MWA-81i	12/11/2024	N	Intermediate	MWA-81i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.24 U	< 0.030 U
PA-10i	12/10/2024	N	Intermediate	PA-10i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	0.068 j	< 0.025 U	0.64	< 0.050 U	< 0.24 U	< 0.030 U
PA-15i	12/11/2024	N	Intermediate	PA-15i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.20	< 0.035 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.24 U	< 0.030 U
PA-16i	12/10/2024	N	Intermediate	PA-16i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.067 j	< 0.035 U	< 0.025 U	0.15 j	< 0.050 U	< 0.24 U	< 0.030 U
PA-17iR	12/9/2024	N	Intermediate	PA-17iR-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.13 j	0.16 j	< 0.025 U	0.12 j	< 0.050 U	< 0.24 U	< 0.030 U
PA-32i	12/10/2024	N	Intermediate	PA-32i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.10 j	0.069 j	< 0.025 U	0.29	< 0.050 U	< 0.24 U	< 0.030 U
PA-32i	12/10/2024	FD	Intermediate	DUP-01-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.11 j	0.071 j	< 0.025 U	0.31	< 0.050 U	0.26 j	< 0.030 U
PA-44i	12/11/2024	N	Intermediate	PA-44i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.19 j	< 0.035 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.24 UJ	< 0.030 U
MWA-11i(d)	12/12/2024	N	Deep	MWA-11i(d)-121224	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.24 U	< 0.030 U
MWA-31i(d)	12/12/2024	N	Deep	MWA-31i(d)-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.35 j	< 0.28 U	< 0.30 U	< 0.44 U	< 0.29 U	< 0.35 UJ	37
MWA-56d	12/12/2024	N	Deep	MWA-56d-121224	< 1.8 U	< 3.9 U	< 5.2 U	< 2.4 U	< 2.2 U	< 2.8 U	< 3.0 U	< 4.4 U	< 2.9 U	< 3.5 UJ	160 J-
MWA-58d	12/12/2024	N	Deep	MWA-58d-121224	< 1.8 U	< 3.9 U	< 5.2 U	< 2.4 U	< 2.2 U	< 2.8 U	< 3.0 U	< 4.4 U	< 2.9 U	< 3.5 UJ	190
PA-18d	12/10/2024	N	Deep	PA-18d-121024	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.30 U	< 0.44 U	< 0.29 U	< 0.35 U	< 0.26 U
PA-19d	12/12/2024	N	Deep	PA-19d-121224	< 18 U	< 39 U	< 52 U	< 24 U	< 22 U	< 28 U	< 30 U	11,000	< 29 U	< 35 UJ	< 26 U
PA-20d	12/12/2024	N	Deep	PA-20d-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.28 j	< 0.28 U	< 0.30 U	1.7	< 0.29 U	< 0.35 UJ	< 0.26 U
PA-20d	12/12/2024	FD	Deep	DUP-02-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.32 j	< 0.28 U	< 0.30 U	1.8	< 0.29 U	< 0.35 U	< 0.26 U
PA-22d	12/12/2024	N	Deep	PA-22d-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.30 U	< 0.44 U	< 0.29 U	< 0.35 UJ	15
PA-23d	12/11/2024	N	Deep	PA-23d-121124	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.30 U	< 0.44 U	< 0.29 U	< 0.35 UJ	< 0.26 U
PA-24d	12/11/2024	N	Deep	PA-24d-121124	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.30 U	< 0.44 U	< 0.29 U	< 0.35 U	< 0.26 U
PA-25d	12/10/2024	N	Deep	PA-25d-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.24 U	< 0.030 U
PA-26d	12/10/2024	N	Deep	PA-26d-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.025 U	< 0.060 U	< 0.050 U	< 0.24 U	< 0.030 U
PA-27d	12/9/2024	N	Deep	PA-27d-120924	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.37 j	< 0.28 U	< 0.30 U	< 0.44 U	< 0.29 U	< 0.35 U	< 0.26 U
PA-30d	12/12/2024	N	Deep	PA-30d-121224	< 90 U	< 200 U	< 260 U	< 120 U	< 110 U	< 140 U	< 150 U	7,000	< 150 U	< 180 U	< 130 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 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 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 4, 2024, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Analyte Unit					1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethane	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Dibromochloro methane	Dibromomethane
FSWP SHSC (shaded values indicate results above the value shown)					NE	11	0.4	1.6	47	710	NE	590	NE	1.3	NE
Location ID	Sample Date	Sample Type	Aquifer Classification	Sample ID											
MWA-41	12/11/2024	N	Shallow	MWA-41-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.14 U	< 0.055 U	< 0.090 U	< 0.055 U	< 0.062 U
MWA-63	12/10/2024	N	Shallow	MWA-63-121024	0.41 j	< 0.39 U	0.69 j	1.1	1.2	0.64 j	< 0.28 U	12	< 0.42 U	< 0.43 U	< 0.34 U
MWA-82	12/11/2024	N	Shallow	MWA-82-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.14 U	< 0.055 U	< 0.090 U	< 0.055 U	< 0.062 U
PA-03	12/9/2024	N	Shallow	PA-03-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.14 j	< 0.035 U	0.42 j	< 0.055 U	< 0.090 U	< 0.055 U	< 0.062 U
PA-04	12/10/2024	N	Shallow	PA-04-121024	< 0.11 U	0.031 j	< 0.056 U	< 0.070 U	0.31	0.35	< 0.14 U	< 0.055 U	< 0.090 U	< 0.055 U	< 0.062 U
PA-08	12/9/2024	N	Shallow	PA-08-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.096 j	< 0.035 U	0.17 j	0.081 j	< 0.090 U	< 0.055 U	< 0.062 U
PA-09	12/10/2024	N	Shallow	PA-09-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.14 U	< 0.055 U	< 0.090 U	< 0.055 U	< 0.062 U
PA-31	12/10/2024	N	Shallow	PA-31-121024	< 0.11 U	0.23	< 0.056 U	< 0.070 U	0.23	0.80	0.23 J+	< 0.055 U	< 0.090 U	< 0.055 U	< 0.062 U
MWA-81i	12/11/2024	N	Intermediate	MWA-81i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.14 U	< 0.055 U	< 0.090 U	< 0.055 U	< 0.062 U
PA-10i	12/10/2024	N	Intermediate	PA-10i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	0.068 j	< 0.14 U	0.20	< 0.090 U	< 0.055 U	< 0.062 U
PA-15i	12/11/2024	N	Intermediate	PA-15i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.20	< 0.035 U	< 0.14 U	0.064 j	< 0.090 U	< 0.055 U	< 0.062 U
PA-16i	12/10/2024	N	Intermediate	PA-16i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.067 j	< 0.035 U	< 0.14 U	0.070 j	< 0.090 U	< 0.055 U	< 0.062 U
PA-17iR	12/9/2024	N	Intermediate	PA-17iR-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.13 j	0.16 j	< 0.14 U	0.10 j	< 0.090 U	< 0.055 U	< 0.062 U
PA-32i	12/10/2024	N	Intermediate	PA-32i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.10 j	0.069 j	< 0.14 U	0.12 j	< 0.090 U	< 0.055 U	< 0.062 U
PA-32i	12/10/2024	FD	Intermediate	DUP-01-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.11 j	0.071 j	0.21 J+	0.11 j	< 0.090 U	< 0.055 U	< 0.062 U
PA-44i	12/11/2024	N	Intermediate	PA-44i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.19 j	< 0.035 U	< 0.14 U	< 0.055 U	< 0.090 U	< 0.055 U	< 0.062 U
MWA-11i(d)	12/12/2024	N	Deep	MWA-11i(d)-121224	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.14 U	0.13 j	< 0.090 U	< 0.055 U	< 0.062 U
MWA-31i(d)	12/12/2024	N	Deep	MWA-31i(d)-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.35 j	< 0.28 U	< 0.28 U	< 0.35 U	< 0.42 U	< 0.43 U	< 0.34 U
MWA-56d	12/12/2024	N	Deep	MWA-56d-121224	< 1.8 U	< 3.9 U	< 5.2 U	< 2.4 U	< 2.2 U	< 2.8 U	< 2.8 U	< 3.5 U	< 4.2 U	< 4.3 U	< 3.4 U
MWA-58d	12/12/2024	N	Deep	MWA-58d-121224	< 1.8 U	< 3.9 U	< 5.2 U	< 2.4 U	< 2.2 U	< 2.8 U	< 2.8 U	< 3.5 U	< 4.2 U	< 4.3 U	< 3.4 U
PA-18d	12/10/2024	N	Deep	PA-18d-121024	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.28 U	< 0.35 U	< 0.42 U	< 0.43 U	< 0.34 U
PA-19d	12/12/2024	N	Deep	PA-19d-121224	< 18 U	< 39 U	< 52 U	< 24 U	< 22 U	< 28 U	< 28 U	< 35 U	< 42 U	< 43 U	< 34 U
PA-20d	12/12/2024	N	Deep	PA-20d-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.28 j	< 0.28 U	< 0.28 U	< 0.35 U	< 0.42 U	< 0.43 U	< 0.34 U
PA-20d	12/12/2024	FD	Deep	DUP-02-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.32 j	< 0.28 U	< 0.28 U	< 0.35 U	< 0.42 U	< 0.43 U	< 0.34 U
PA-22d	12/12/2024	N	Deep	PA-22d-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.28 U	< 0.35 U	< 0.42 U	< 0.43 U	< 0.34 U
PA-23d	12/11/2024	N	Deep	PA-23d-121124	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.28 U	< 0.35 U	< 0.42 U	< 0.43 U	< 0.34 U
PA-24d	12/11/2024	N	Deep	PA-24d-121124	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.28 U	< 0.35 U	< 0.42 U	< 0.43 U	< 0.34 U
PA-25d	12/10/2024	N	Deep	PA-25d-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.14 U	< 0.055 U	< 0.090 U	< 0.055 U	< 0.062 U
PA-26d	12/10/2024	N	Deep	PA-26d-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	0.27 J+	< 0.055 U	< 0.090 U	< 0.055 U	< 0.062 U
PA-27d	12/9/2024	N	Deep	PA-27d-120924	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.37 j	< 0.28 U	< 0.28 U	0.85 j	< 0.42 U	< 0.43 U	< 0.34 U
PA-30d	12/12/2024	N	Deep	PA-30d-121224	< 90 U	< 200 U	< 260 U	< 120 U	< 110 U	< 140 U	< 140 UJ	< 180 U	< 210 U	< 220 U	< 170 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.
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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 4, 2024, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Analyte Unit					1,1,1,2-Tetrachloroethane	1,1,1,1-Trichloroethane	1,1,1,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	Dichlorodifluoromethane (Freon 12)	Ethylbenzene	Ethylene dibromide	Hexachlorobutadiene	Isopropylbenzene (Cumene)
FSWP SHSC (shaded values indicate results above the value shown)					NE	11	0.4	1.6	47	710	NE	7.3	NE	0.01	NE
Location ID	Sample Date	Sample Type	Aquifer Classification	Sample ID											
MWA-41	12/11/2024	N	Shallow	MWA-41-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.13 U	< 0.082 U	< 0.067 U	< 0.16 U	< 0.27 U
MWA-63	12/10/2024	N	Shallow	MWA-63-121024	0.41 j	< 0.39 U	0.69 j	1.1	1.2	0.64 j	< 0.53 U	< 0.50 U	< 0.40 U	< 0.79 U	< 0.44 U
MWA-82	12/11/2024	N	Shallow	MWA-82-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.13 UJ	< 0.082 U	< 0.067 U	< 0.16 U	< 0.27 U
PA-03	12/9/2024	N	Shallow	PA-03-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.14 j	< 0.035 U	< 0.13 U	< 0.082 U	< 0.067 U	< 0.16 U	< 0.27 U
PA-04	12/10/2024	N	Shallow	PA-04-121024	< 0.11 U	0.031 j	< 0.056 U	< 0.070 U	0.31	0.35	< 0.13 U	< 0.082 U	< 0.067 U	< 0.16 U	< 0.27 U
PA-08	12/9/2024	N	Shallow	PA-08-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.096 j	< 0.035 U	< 0.13 U	< 0.082 U	< 0.067 U	< 0.16 U	< 0.27 U
PA-09	12/10/2024	N	Shallow	PA-09-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.13 U	< 0.082 U	< 0.067 U	< 0.16 U	< 0.27 U
PA-31	12/10/2024	N	Shallow	PA-31-121024	< 0.11 U	0.23	< 0.056 U	< 0.070 U	0.23	0.80	< 0.13 U	< 0.082 U	< 0.067 U	< 0.16 U	< 0.27 U
MWA-81i	12/11/2024	N	Intermediate	MWA-81i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.13 U	< 0.082 U	< 0.067 U	< 0.16 U	< 0.27 U
PA-10i	12/10/2024	N	Intermediate	PA-10i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	0.068 j	< 0.13 U	< 0.082 U	< 0.067 U	< 0.16 U	< 0.27 U
PA-15i	12/11/2024	N	Intermediate	PA-15i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.20	< 0.035 U	< 0.13 U	< 0.082 U	< 0.067 U	< 0.16 U	< 0.27 U
PA-16i	12/10/2024	N	Intermediate	PA-16i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.067 j	< 0.035 U	< 0.13 U	< 0.082 U	< 0.067 U	< 0.16 U	< 0.27 U
PA-17iR	12/9/2024	N	Intermediate	PA-17iR-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.13 j	0.16 j	< 0.13 U	< 0.082 U	< 0.067 U	< 0.16 U	< 0.27 U
PA-32i	12/10/2024	N	Intermediate	PA-32i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.10 j	0.069 j	< 0.13 U	< 0.082 U	< 0.067 U	< 0.16 U	< 0.27 U
PA-32i	12/10/2024	FD	Intermediate	DUP-01-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.11 j	0.071 j	< 0.13 U	< 0.082 U	< 0.067 U	< 0.16 U	< 0.27 U
PA-44i	12/11/2024	N	Intermediate	PA-44i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.19 j	< 0.035 U	< 0.13 UJ	< 0.082 U	< 0.067 U	< 0.16 U	< 0.27 U
MWA-11i(d)	12/12/2024	N	Deep	MWA-11i(d)-121224	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.13 U	< 0.082 U	< 0.067 U	< 0.16 U	< 0.27 U
MWA-31i(d)	12/12/2024	N	Deep	MWA-31i(d)-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.35 j	< 0.28 U	< 0.53 UJ	< 0.50 U	< 0.40 U	< 0.79 U	< 0.44 U
MWA-56d	12/12/2024	N	Deep	MWA-56d-121224	< 1.8 U	< 3.9 U	< 5.2 U	< 2.4 U	< 2.2 U	< 2.8 U	< 5.3 UJ	< 5.0 U	< 4.0 U	< 7.9 U	< 4.4 U
MWA-58d	12/12/2024	N	Deep	MWA-58d-121224	< 1.8 U	< 3.9 U	< 5.2 U	< 2.4 U	< 2.2 U	< 2.8 U	< 5.3 UJ	< 5.0 U	< 4.0 U	< 7.9 U	< 4.4 U
PA-18d	12/10/2024	N	Deep	PA-18d-121024	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.53 U	< 0.50 U	< 0.40 U	< 0.79 U	< 0.44 U
PA-19d	12/12/2024	N	Deep	PA-19d-121224	< 18 U	< 39 U	< 52 U	< 24 U	< 22 U	< 28 U	< 53 UJ	< 50 U	< 40 U	< 79 U	< 44 U
PA-20d	12/12/2024	N	Deep	PA-20d-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.28 j	< 0.28 U	< 0.53 UJ	< 0.50 U	< 0.40 U	< 0.79 U	< 0.44 U
PA-20d	12/12/2024	FD	Deep	DUP-02-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.32 j	< 0.28 U	< 0.53 U	< 0.50 U	< 0.40 U	< 0.79 U	< 0.44 U
PA-22d	12/12/2024	N	Deep	PA-22d-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.53 UJ	< 0.50 U	< 0.40 U	< 0.79 U	< 0.44 U
PA-23d	12/11/2024	N	Deep	PA-23d-121124	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.53 UJ	< 0.50 U	< 0.40 U	< 0.79 U	< 0.44 U
PA-24d	12/11/2024	N	Deep	PA-24d-121124	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.53 U	< 0.50 U	< 0.40 U	< 0.79 U	< 0.44 U
PA-25d	12/10/2024	N	Deep	PA-25d-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.13 U	< 0.082 U	< 0.067 U	< 0.16 U	< 0.27 U
PA-26d	12/10/2024	N	Deep	PA-26d-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.13 U	< 0.082 U	< 0.067 U	< 0.16 U	< 0.27 U
PA-27d	12/9/2024	N	Deep	PA-27d-120924	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.37 j	< 0.28 U	< 0.53 U	< 0.50 U	< 0.40 U	< 0.79 U	< 0.44 U
PA-30d	12/12/2024	N	Deep	PA-30d-121224	< 90 U	< 200 U	< 260 U	< 120 U	< 110 U	< 140 U	< 270 U	< 250 U	< 200 U	< 400 U	< 220 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
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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 low, as the associated QC results are outside the lower control limits.
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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 4, 2024, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Analyte Unit					1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	m,p-Xylenes	Methyl tert-butyl ether	Methylene chloride	Naphthalene	n-Butylbenzene
FSWP SHSC (shaded values indicate results above the value shown)					NE	11	0.4	1.6	47	710	1.8	NE	59	12	NE
Location ID	Sample Date	Sample Type	Aquifer Classification	Sample ID											
MWA-41	12/11/2024	N	Shallow	MWA-41-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.52 U	< 0.35 U
MWA-63	12/10/2024	N	Shallow	MWA-63-121024	0.41 j	< 0.39 U	0.69 j	1.1	1.2	0.64 j	< 0.53 U	< 0.44 U	< 1.4 U	< 0.93 U	< 0.44 U
MWA-82	12/11/2024	N	Shallow	MWA-82-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.52 U	< 0.35 U
PA-03	12/9/2024	N	Shallow	PA-03-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.14 j	< 0.035 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.52 U	< 0.35 U
PA-04	12/10/2024	N	Shallow	PA-04-121024	< 0.11 U	0.031 j	< 0.056 U	< 0.070 U	0.31	0.35	< 0.12 U	< 0.070 U	< 1.2 U	< 0.52 U	< 0.35 U
PA-08	12/9/2024	N	Shallow	PA-08-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.096 j	< 0.035 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.52 U	< 0.35 U
PA-09	12/10/2024	N	Shallow	PA-09-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.52 U	< 0.35 U
PA-31	12/10/2024	N	Shallow	PA-31-121024	< 0.11 U	0.23	< 0.056 U	< 0.070 U	0.23	0.80	< 0.12 U	< 0.070 U	< 1.2 U	< 0.52 U	< 0.35 U
MWA-81i	12/11/2024	N	Intermediate	MWA-81i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.52 U	< 0.35 U
PA-10i	12/10/2024	N	Intermediate	PA-10i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	0.068 j	< 0.12 U	< 0.070 U	< 1.2 U	< 0.52 U	< 0.35 U
PA-15i	12/11/2024	N	Intermediate	PA-15i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.20	< 0.035 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.52 U	< 0.35 U
PA-16i	12/10/2024	N	Intermediate	PA-16i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.067 j	< 0.035 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.52 U	< 0.35 U
PA-17iR	12/9/2024	N	Intermediate	PA-17iR-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.13 j	0.16 j	< 0.12 U	< 0.070 U	< 1.2 U	< 0.52 U	< 0.35 U
PA-32i	12/10/2024	N	Intermediate	PA-32i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.10 j	0.069 j	< 0.12 U	< 0.070 U	< 1.2 U	< 0.52 U	< 0.35 U
PA-32i	12/10/2024	FD	Intermediate	DUP-01-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.11 j	0.071 j	< 0.12 U	< 0.070 U	< 1.2 U	< 0.52 U	< 0.35 U
PA-44i	12/11/2024	N	Intermediate	PA-44i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.19 j	< 0.035 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.52 U	< 0.35 U
MWA-11i(d)	12/12/2024	N	Deep	MWA-11i(d)-121224	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.52 U	< 0.35 U
MWA-31i(d)	12/12/2024	N	Deep	MWA-31i(d)-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.35 j	< 0.28 U	< 0.53 U	< 0.44 U	< 1.4 U	< 0.93 U	< 0.44 U
MWA-56d	12/12/2024	N	Deep	MWA-56d-121224	< 1.8 U	< 3.9 U	< 5.2 U	< 2.4 U	< 2.2 U	< 2.8 U	< 5.3 U	< 4.4 U	< 14 U	< 9.3 U	< 4.4 U
MWA-58d	12/12/2024	N	Deep	MWA-58d-121224	< 1.8 U	< 3.9 U	< 5.2 U	< 2.4 U	< 2.2 U	< 2.8 U	< 5.3 U	< 4.4 U	< 14 U	< 9.3 U	< 4.4 U
PA-18d	12/10/2024	N	Deep	PA-18d-121024	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.53 U	< 0.44 U	< 1.4 U	< 0.93 U	< 0.44 U
PA-19d	12/12/2024	N	Deep	PA-19d-121224	< 18 U	< 39 U	< 52 U	< 24 U	< 22 U	< 28 U	< 53 U	< 44 U	< 140 U	< 93 U	< 44 U
PA-20d	12/12/2024	N	Deep	PA-20d-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.28 j	< 0.28 U	< 0.53 U	< 0.44 U	< 1.4 U	< 0.93 U	< 0.44 U
PA-20d	12/12/2024	FD	Deep	DUP-02-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.32 j	< 0.28 U	< 0.53 U	< 0.44 U	< 1.4 U	< 0.93 U	< 0.44 U
PA-22d	12/12/2024	N	Deep	PA-22d-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.53 U	< 0.44 U	< 1.4 U	< 0.93 U	< 0.44 U
PA-23d	12/11/2024	N	Deep	PA-23d-121124	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.53 U	< 0.44 U	< 1.4 U	< 0.93 U	< 0.44 U
PA-24d	12/11/2024	N	Deep	PA-24d-121124	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.53 U	< 0.44 U	< 1.4 U	< 0.93 U	< 0.44 U
PA-25d	12/10/2024	N	Deep	PA-25d-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.12 U	< 0.070 U	< 1.2 U	< 0.52 U	< 0.35 U
PA-26d	12/10/2024	N	Deep	PA-26d-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.12 U	0.11 j	< 1.2 U	< 0.52 U	< 0.35 U
PA-27d	12/9/2024	N	Deep	PA-27d-120924	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.37 j	< 0.28 U	< 0.53 U	< 0.44 U	< 1.4 U	< 0.93 U	< 0.44 U
PA-30d	12/12/2024	N	Deep	PA-30d-121224	< 90 U	< 200 U	< 260 U	< 120 U	< 110 U	< 140 U	< 270 U	< 220 U	< 720 U	< 470 U	< 220 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.

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Table 4
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Arkema Quarter 4, 2024, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Analyte					1,1,1,2-Tetrachloroethane	1,1,1,1-Trichloroethane	1,1,1,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	n-Propylbenzene	o-Chlorotoluene (2-chlorotoluene)	o-Xylene	sec-Butylbenzene	Styrene
Unit					µg/L	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	13	NE	NE
Location ID	Sample Date	Sample Type	Aquifer Classification	Sample ID											
MWA-41	12/11/2024	N	Shallow	MWA-41-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.091 U	< 0.12 U	< 0.23 U	< 0.17 U	< 0.33 U
MWA-63	12/10/2024	N	Shallow	MWA-63-121024	0.41 j	< 0.39 U	0.69 j	1.1	1.2	0.64 j	< 0.50 U	< 0.51 U	< 0.39 U	< 0.49 U	< 0.53 U
MWA-82	12/11/2024	N	Shallow	MWA-82-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.091 U	< 0.12 U	< 0.23 U	< 0.17 U	< 0.33 U
PA-03	12/9/2024	N	Shallow	PA-03-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.14 j	< 0.035 U	< 0.091 U	< 0.12 U	< 0.23 U	< 0.17 U	< 0.33 U
PA-04	12/10/2024	N	Shallow	PA-04-121024	< 0.11 U	0.031 j	< 0.056 U	< 0.070 U	0.31	0.35	< 0.091 U	< 0.12 U	< 0.23 U	< 0.17 U	< 0.33 U
PA-08	12/9/2024	N	Shallow	PA-08-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.096 j	< 0.035 U	< 0.091 U	< 0.12 U	< 0.23 U	< 0.17 U	< 0.33 U
PA-09	12/10/2024	N	Shallow	PA-09-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.091 U	< 0.12 U	< 0.23 U	< 0.17 U	< 0.33 U
PA-31	12/10/2024	N	Shallow	PA-31-121024	< 0.11 U	0.23	< 0.056 U	< 0.070 U	0.23	0.80	< 0.091 U	< 0.12 U	< 0.23 U	< 0.17 U	< 0.33 U
MWA-81i	12/11/2024	N	Intermediate	MWA-81i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.091 U	< 0.12 U	< 0.23 U	< 0.17 U	< 0.33 U
PA-10i	12/10/2024	N	Intermediate	PA-10i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	0.068 j	< 0.091 U	< 0.12 U	< 0.23 U	< 0.17 U	< 0.33 U
PA-15i	12/11/2024	N	Intermediate	PA-15i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.20	< 0.035 U	< 0.091 U	< 0.12 U	< 0.23 U	< 0.17 U	< 0.33 U
PA-16i	12/10/2024	N	Intermediate	PA-16i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.067 j	< 0.035 U	< 0.091 U	< 0.12 U	< 0.23 U	< 0.17 U	< 0.33 U
PA-17iR	12/9/2024	N	Intermediate	PA-17iR-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.13 j	0.16 j	< 0.091 U	< 0.12 U	< 0.23 U	< 0.17 U	< 0.33 U
PA-32i	12/10/2024	N	Intermediate	PA-32i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.10 j	0.069 j	< 0.091 U	< 0.12 U	< 0.23 U	< 0.17 U	< 0.33 U
PA-32i	12/10/2024	FD	Intermediate	DUP-01-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.11 j	0.071 j	< 0.091 U	< 0.12 U	< 0.23 U	< 0.17 U	< 0.33 U
PA-44i	12/11/2024	N	Intermediate	PA-44i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.19 j	< 0.035 U	< 0.091 U	< 0.12 U	< 0.23 U	< 0.17 U	< 0.33 U
MWA-11i(d)	12/12/2024	N	Deep	MWA-11i(d)-121224	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.091 U	< 0.12 U	< 0.23 U	< 0.17 U	< 0.33 U
MWA-31i(d)	12/12/2024	N	Deep	MWA-31i(d)-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.35 j	< 0.28 U	< 0.50 U	< 0.51 U	< 0.39 U	< 0.49 U	< 0.53 U
MWA-56d	12/12/2024	N	Deep	MWA-56d-121224	< 1.8 U	< 3.9 U	< 5.2 U	< 2.4 U	< 2.2 U	< 2.8 U	< 5.0 U	< 5.1 U	< 3.9 U	< 4.9 U	< 5.3 U
MWA-58d	12/12/2024	N	Deep	MWA-58d-121224	< 1.8 U	< 3.9 U	< 5.2 U	< 2.4 U	< 2.2 U	< 2.8 U	< 5.0 U	< 5.1 U	< 3.9 U	< 4.9 U	< 5.3 U
PA-18d	12/10/2024	N	Deep	PA-18d-121024	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.50 U	< 0.51 U	< 0.39 U	< 0.49 U	< 0.53 U
PA-19d	12/12/2024	N	Deep	PA-19d-121224	< 18 U	< 39 U	< 52 U	< 24 U	< 22 U	< 28 U	< 50 U	< 51 U	< 39 U	< 49 U	< 53 U
PA-20d	12/12/2024	N	Deep	PA-20d-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.28 j	< 0.28 U	< 0.50 U	< 0.51 U	< 0.39 U	< 0.49 U	< 0.53 U
PA-20d	12/12/2024	FD	Deep	DUP-02-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.32 j	< 0.28 U	< 0.50 U	< 0.51 U	< 0.39 U	< 0.49 U	< 0.53 U
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PA-23d	12/11/2024	N	Deep	PA-23d-121124	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.50 U	< 0.51 U	< 0.39 U	< 0.49 U	< 0.53 U
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PA-26d	12/10/2024	N	Deep	PA-26d-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.091 U	< 0.12 U	< 0.23 U	< 0.17 U	< 0.33 U
PA-27d	12/9/2024	N	Deep	PA-27d-120924	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.37 j	< 0.28 U	< 0.50 U	< 0.51 U	< 0.39 U	< 0.49 U	< 0.53 U
PA-30d	12/12/2024	N	Deep	PA-30d-121224	< 90 U	< 200 U	< 260 U	< 120 U	< 110 U	< 140 U	< 250 U	< 260 U	< 200 U	< 250 U	< 270 U

Notes:
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FSWP SHSC (shaded values indicate results above the value shown)					NE	11	0.4	1.6	47	710	NE	0.33	9.8	1000	NE
Location ID	Sample Date	Sample Type	Aquifer Classification	Sample ID											
MWA-41	12/11/2024	N	Shallow	MWA-41-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.26 U	< 0.084 U	< 0.050 U	< 0.033 U	< 0.092 U
MWA-63	12/10/2024	N	Shallow	MWA-63-121024	0.41 j	< 0.39 U	0.69 j	1.1	1.2	0.64 j	< 0.58 U	35	< 0.39 U	< 0.39 U	< 0.41 U
MWA-82	12/11/2024	N	Shallow	MWA-82-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.26 U	0.42	< 0.050 U	< 0.033 U	< 0.092 U
PA-03	12/9/2024	N	Shallow	PA-03-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.14 j	< 0.035 U	< 0.26 U	< 0.084 U	0.18 j	< 0.033 U	< 0.092 U
PA-04	12/10/2024	N	Shallow	PA-04-121024	< 0.11 U	0.031 j	< 0.056 U	< 0.070 U	0.31	0.35	< 0.26 U	0.16 j	< 0.050 U	< 0.033 U	< 0.092 U
PA-08	12/9/2024	N	Shallow	PA-08-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.096 j	< 0.035 U	< 0.26 U	0.27	< 0.050 U	< 0.033 U	< 0.092 U
PA-09	12/10/2024	N	Shallow	PA-09-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.26 U	< 0.084 U	< 0.050 U	< 0.033 U	< 0.092 U
PA-31	12/10/2024	N	Shallow	PA-31-121024	< 0.11 U	0.23	< 0.056 U	< 0.070 U	0.23	0.80	< 0.26 U	0.25	0.095 j	< 0.033 U	< 0.092 U
MWA-81i	12/11/2024	N	Intermediate	MWA-81i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.26 U	< 0.084 U	< 0.050 U	< 0.033 U	< 0.092 U
PA-10i	12/10/2024	N	Intermediate	PA-10i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	0.068 j	< 0.26 U	< 0.084 U	< 0.050 U	< 0.033 U	< 0.092 U
PA-15i	12/11/2024	N	Intermediate	PA-15i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.20	< 0.035 U	< 0.26 U	< 0.084 U	< 0.050 U	< 0.033 U	< 0.092 U
PA-16i	12/10/2024	N	Intermediate	PA-16i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.067 j	< 0.035 U	< 0.26 U	< 0.084 U	2.6	< 0.033 U	< 0.092 U
PA-17iR	12/9/2024	N	Intermediate	PA-17iR-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.13 j	0.16 j	< 0.26 U	< 0.084 U	< 0.050 U	< 0.033 U	< 0.092 U
PA-32i	12/10/2024	N	Intermediate	PA-32i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.10 j	0.069 j	< 0.26 U	< 0.084 U	< 0.050 U	< 0.033 U	< 0.092 U
PA-32i	12/10/2024	FD	Intermediate	DUP-01-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.11 j	0.071 j	< 0.26 U	< 0.084 U	< 0.050 U	< 0.033 U	< 0.092 U
PA-44i	12/11/2024	N	Intermediate	PA-44i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.19 j	< 0.035 U	< 0.26 U	< 0.084 U	< 0.050 U	< 0.033 U	< 0.092 U
MWA-11i(d)	12/12/2024	N	Deep	MWA-11i(d)-121224	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.26 U	< 0.084 U	< 0.050 U	< 0.033 U	< 0.092 U
MWA-31i(d)	12/12/2024	N	Deep	MWA-31i(d)-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.35 j	< 0.28 U	< 0.58 U	0.45 j	< 0.39 U	< 0.39 U	< 0.41 U
MWA-56d	12/12/2024	N	Deep	MWA-56d-121224	< 1.8 U	< 3.9 U	< 5.2 U	< 2.4 U	< 2.2 U	< 2.8 U	< 5.8 U	< 4.1 U	< 3.9 U	< 3.9 U	< 4.1 U
MWA-58d	12/12/2024	N	Deep	MWA-58d-121224	< 1.8 U	< 3.9 U	< 5.2 U	< 2.4 U	< 2.2 U	< 2.8 U	< 5.8 U	< 4.1 U	< 3.9 U	< 3.9 U	< 4.1 U
PA-18d	12/10/2024	N	Deep	PA-18d-121024	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.58 U	< 0.41 U	< 0.39 U	< 0.39 U	< 0.41 U
PA-19d	12/12/2024	N	Deep	PA-19d-121224	< 18 U	< 39 U	< 52 U	< 24 U	< 22 U	< 28 U	< 58 U	< 41 U	< 39 U	< 39 U	< 41 U
PA-20d	12/12/2024	N	Deep	PA-20d-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.28 j	< 0.28 U	< 0.58 U	< 0.41 U	< 0.39 U	< 0.39 U	< 0.41 U
PA-20d	12/12/2024	FD	Deep	DUP-02-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.32 j	< 0.28 U	< 0.58 U	< 0.41 U	< 0.39 U	< 0.39 U	< 0.41 U
PA-22d	12/12/2024	N	Deep	PA-22d-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.58 U	< 0.41 U	< 0.39 U	< 0.39 U	< 0.41 U
PA-23d	12/11/2024	N	Deep	PA-23d-121124	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.58 U	< 0.41 U	< 0.39 U	< 0.39 U	< 0.41 U
PA-24d	12/11/2024	N	Deep	PA-24d-121124	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.58 U	< 0.41 U	< 0.39 U	< 0.39 U	< 0.41 U
PA-25d	12/10/2024	N	Deep	PA-25d-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.26 U	< 0.084 U	< 0.050 U	< 0.033 U	< 0.092 U
PA-26d	12/10/2024	N	Deep	PA-26d-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.26 U	< 0.084 U	< 0.050 U	< 0.033 U	< 0.092 U
PA-27d	12/9/2024	N	Deep	PA-27d-120924	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.37 j	< 0.28 U	< 0.58 U	< 0.41 U	< 0.39 U	< 0.39 U	< 0.41 U
PA-30d	12/12/2024	N	Deep	PA-30d-121224	< 90 U	< 200 U	< 260 U	< 120 U	< 110 U	< 140 U	< 290 U	< 210 U	< 200 U	< 200 U	< 210 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 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 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 4, 2024, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Analyte					1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	Trichloroethene	Trichlorofluoromethane (Freon 11)	Vinyl chloride
Unit					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	3	NE	0.24
Location ID	Sample Date	Sample Type	Aquifer Classification	Sample ID									
MWA-41	12/11/2024	N	Shallow	MWA-41-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.066 U	< 0.12 U	< 0.040 U
MWA-63	12/10/2024	N	Shallow	MWA-63-121024	0.41 j	< 0.39 U	0.69 j	1.1	1.2	0.64 j	6.9	< 0.36 U	< 0.22 U
MWA-82	12/11/2024	N	Shallow	MWA-82-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	0.15 j	< 0.12 U	< 0.040 U
PA-03	12/9/2024	N	Shallow	PA-03-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.14 j	< 0.035 U	< 0.066 U	< 0.12 U	< 0.040 U
PA-04	12/10/2024	N	Shallow	PA-04-121024	< 0.11 U	0.031 j	< 0.056 U	< 0.070 U	0.31	0.35	< 0.066 U	< 0.12 U	< 0.040 U
PA-08	12/9/2024	N	Shallow	PA-08-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.096 j	< 0.035 U	0.14 j	< 0.12 U	< 0.040 U
PA-09	12/10/2024	N	Shallow	PA-09-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.066 U	< 0.12 U	< 0.040 U
PA-31	12/10/2024	N	Shallow	PA-31-121024	< 0.11 U	0.23	< 0.056 U	< 0.070 U	0.23	0.80	0.091 j	< 0.12 U	< 0.040 U
MWA-81i	12/11/2024	N	Intermediate	MWA-81i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.066 U	< 0.12 U	< 0.040 U
PA-10i	12/10/2024	N	Intermediate	PA-10i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	0.068 j	< 0.066 U	< 0.12 U	0.37
PA-15i	12/11/2024	N	Intermediate	PA-15i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.20	< 0.035 U	< 0.066 U	< 0.12 U	< 0.040 U
PA-16i	12/10/2024	N	Intermediate	PA-16i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.067 j	< 0.035 U	< 0.066 U	< 0.12 U	< 0.040 U
PA-17iR	12/9/2024	N	Intermediate	PA-17iR-120924	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.13 j	0.16 j	< 0.066 U	< 0.12 U	< 0.040 U
PA-32i	12/10/2024	N	Intermediate	PA-32i-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.10 j	0.069 j	< 0.066 U	< 0.12 U	< 0.040 U
PA-32i	12/10/2024	FD	Intermediate	DUP-01-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.11 j	0.071 j	< 0.066 U	< 0.12 U	< 0.040 U
PA-44i	12/11/2024	N	Intermediate	PA-44i-121124	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	0.19 j	< 0.035 U	< 0.066 U	< 0.12 U	< 0.040 U
MWA-11i(d)	12/12/2024	N	Deep	MWA-11i(d)-121224	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.066 U	< 0.12 U	< 0.040 U
MWA-31i(d)	12/12/2024	N	Deep	MWA-31i(d)-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.35 j	< 0.28 U	< 0.26 U	< 0.36 U	< 0.22 U
MWA-56d	12/12/2024	N	Deep	MWA-56d-121224	< 1.8 U	< 3.9 U	< 5.2 U	< 2.4 U	< 2.2 U	< 2.8 U	< 2.6 U	< 3.6 U	< 2.2 U
MWA-58d	12/12/2024	N	Deep	MWA-58d-121224	< 1.8 U	< 3.9 U	< 5.2 U	< 2.4 U	< 2.2 U	< 2.8 U	< 2.6 U	< 3.6 U	< 2.2 U
PA-18d	12/10/2024	N	Deep	PA-18d-121024	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.26 U	< 0.36 U	0.26 j
PA-19d	12/12/2024	N	Deep	PA-19d-121224	< 18 U	< 39 U	< 52 U	< 24 U	< 22 U	< 28 U	< 26 U	< 36 U	< 22 U
PA-20d	12/12/2024	N	Deep	PA-20d-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.28 j	< 0.28 U	< 0.26 U	< 0.36 U	< 0.22 U
PA-20d	12/12/2024	FD	Deep	DUP-02-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.32 j	< 0.28 U	< 0.26 U	< 0.36 U	< 0.22 U
PA-22d	12/12/2024	N	Deep	PA-22d-121224	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.26 U	< 0.36 U	< 0.22 U
PA-23d	12/11/2024	N	Deep	PA-23d-121124	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.26 U	< 0.36 U	< 0.22 U
PA-24d	12/11/2024	N	Deep	PA-24d-121124	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	< 0.22 U	< 0.28 U	< 0.26 U	< 0.36 U	< 0.22 U
PA-25d	12/10/2024	N	Deep	PA-25d-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.066 U	< 0.12 U	< 0.040 U
PA-26d	12/10/2024	N	Deep	PA-26d-121024	< 0.11 U	< 0.025 U	< 0.056 U	< 0.070 U	< 0.064 U	< 0.035 U	< 0.066 U	< 0.12 U	< 0.040 U
PA-27d	12/9/2024	N	Deep	PA-27d-120924	< 0.18 U	< 0.39 U	< 0.52 U	< 0.24 U	0.37 j	< 0.28 U	< 0.26 U	< 0.36 U	< 0.22 U
PA-30d	12/12/2024	N	Deep	PA-30d-121224	< 90 U	< 200 U	< 260 U	< 120 U	< 110 U	< 140 U	< 130 U	< 180 U	< 110 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 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 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 4, 2024, 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	1800
Location ID	Sample Date	Sample Type	Aquifer Classification	Sample ID		
MWA-41	12/11/2024	N	Shallow	MWA-41-121124	4.9 J+	< 0.91 U
MWA-63	12/10/2024	N	Shallow	MWA-63-121024	15 J+	< 4.5 U
MWA-82	12/11/2024	N	Shallow	MWA-82-121124	9.2 J+	56
PA-03	12/9/2024	N	Shallow	PA-03-120924	4.3 J+	< 9.1 U
PA-04	12/10/2024	N	Shallow	PA-04-121024	5.2 J+	< 9.1 U
PA-08	12/9/2024	N	Shallow	PA-08-120924	230	33
PA-09	12/10/2024	N	Shallow	PA-09-121024	6.6 J+	< 4.5 U
PA-31	12/10/2024	N	Shallow	PA-31-121024	4.2 J+	< 4.5 U
MWA-81i	12/11/2024	N	Intermediate	MWA-81i-121124	33 J+	< 0.91 U
PA-10i	12/10/2024	N	Intermediate	PA-10i-121024	25 J+	< 91 U
PA-15i	12/11/2024	N	Intermediate	PA-15i-121124	64	< 9.1 U
PA-16i	12/10/2024	N	Intermediate	PA-16i-121024	15 J+	< 9.1 U
PA-17iR	12/9/2024	N	Intermediate	PA-17iR-120924	49	< 91 U
PA-32i	12/10/2024	N	Intermediate	PA-32i-121024	79	< 91 U
PA-32i	12/10/2024	FD	Intermediate	DUP-01-121024	78	< 91 U
PA-44i	12/11/2024	N	Intermediate	PA-44i-121124	55	< 9.1 U
MWA-11i(d)	12/12/2024	N	Deep	MWA-11i(d)-121224	570	< 0.91 U
MWA-31i(d)	12/12/2024	N	Deep	MWA-31i(d)-121224	13,000	74,000
MWA-56d	12/12/2024	N	Deep	MWA-56d-121224	12,000	13,000
MWA-58d	12/12/2024	N	Deep	MWA-58d-121224	17,000	51,000
PA-18d	12/10/2024	N	Deep	PA-18d-121024	65	< 91 U
PA-19d	12/12/2024	N	Deep	PA-19d-121224	300	100
PA-20d	12/12/2024	N	Deep	PA-20d-121224	580	48
PA-20d	12/12/2024	FD	Deep	DUP-02-121224	590	46
PA-22d	12/12/2024	N	Deep	PA-22d-121224	5,000	14,000
PA-23d	12/11/2024	N	Deep	PA-23d-121124	31,000	< 0.91 U
PA-24d	12/11/2024	N	Deep	PA-24d-121124	30,000	< 0.91 U
PA-25d	12/10/2024	N	Deep	PA-25d-121024	30 J+	< 0.91 U
PA-26d	12/10/2024	N	Deep	PA-26d-121024	80	< 0.91 U
PA-27d	12/9/2024	N	Deep	PA-27d-120924	590	< 9.1 U
PA-30d	12/12/2024	N	Deep	PA-30d-121224	250	< 91 U

Notes:

Bolded values indicate concentrations above the Method Detection Limit.

Shaded values indicate concentrations above the FSWP SHSC.

< = Compound not detected. Method Detection Limit shown.

µg/L = micrograms per liter

mg/L = milligrams per liter

FD = Field Duplicate Sample

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

N = Normal Environmental Sample

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

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

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

U = Analyte was analyzed for, but not detected above, the limit displayed.



FIGURES



Legend

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

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

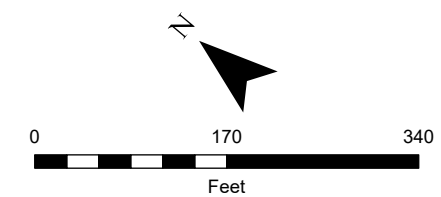
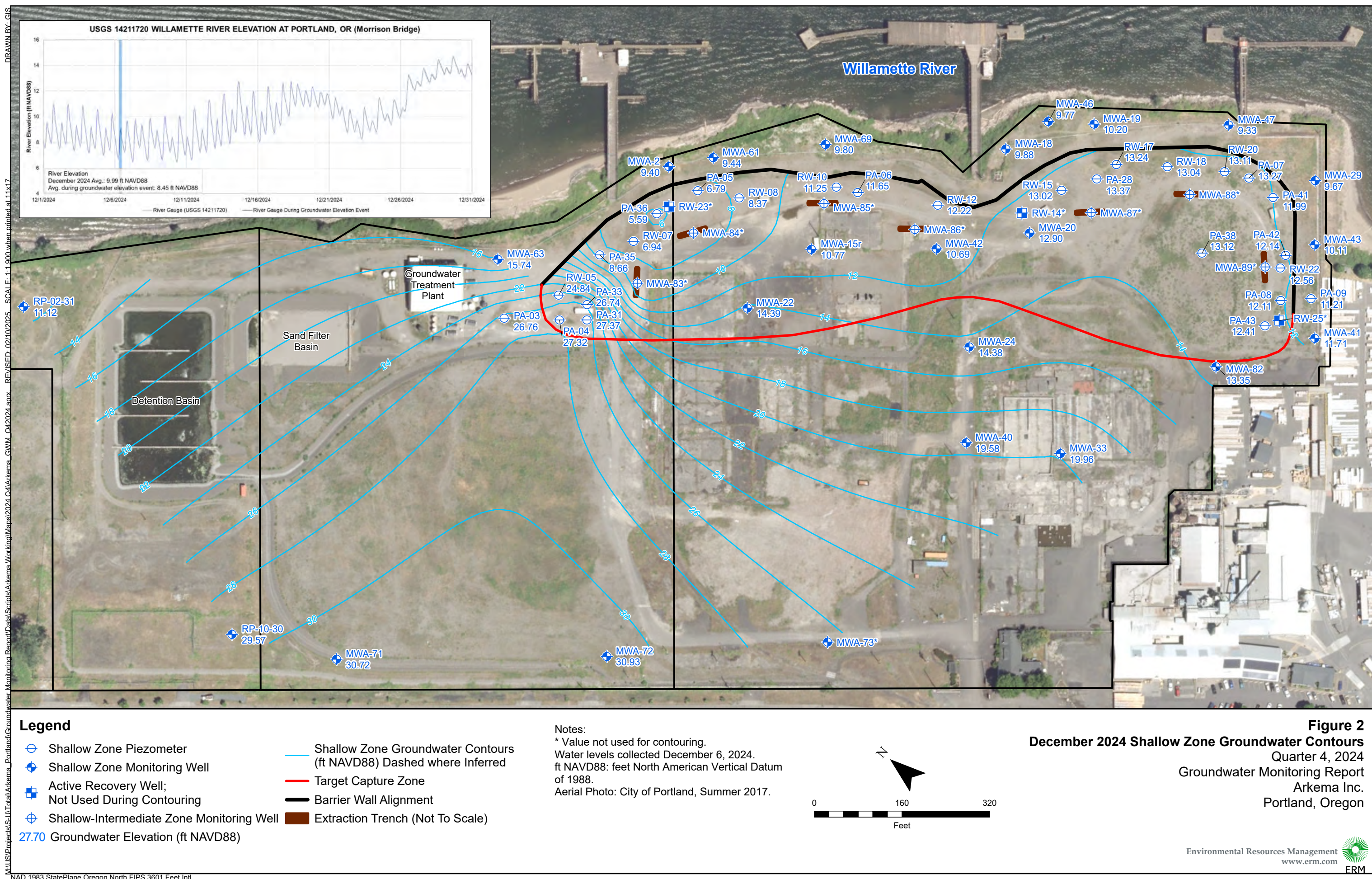
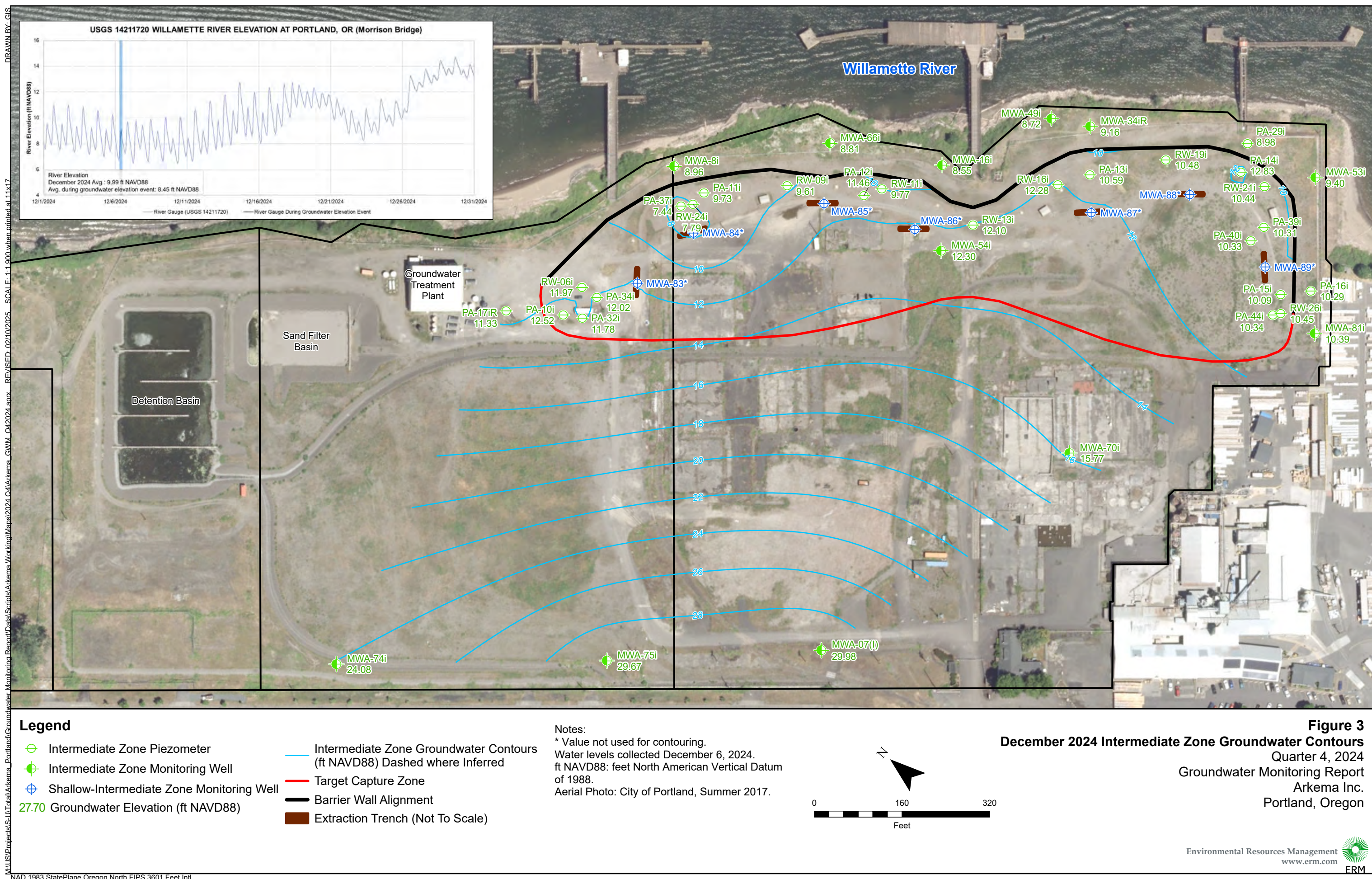


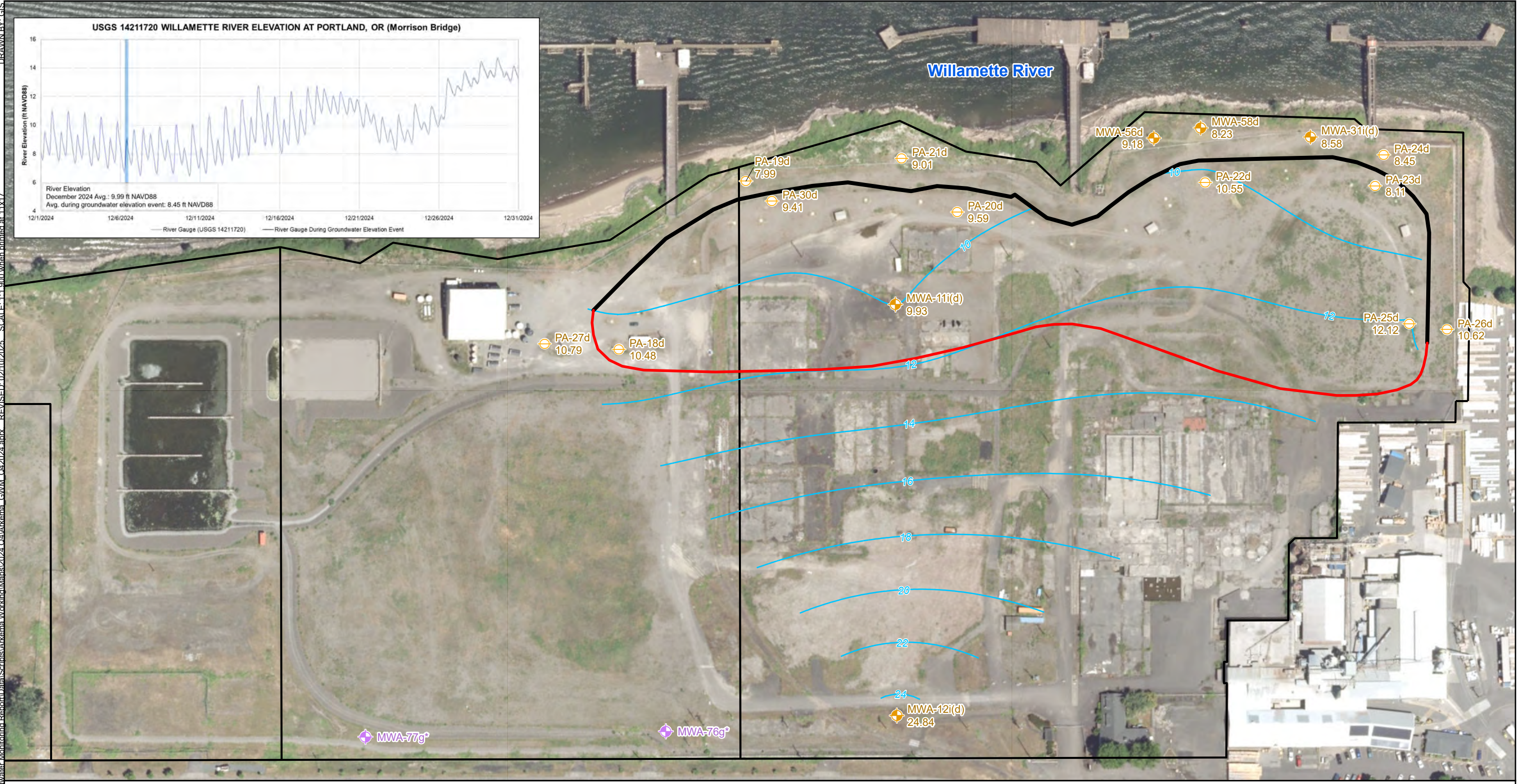
Figure 1
Site Layout
Quarter 4, 2024
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon



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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 December 6, 2024.
- ft NAVD88: feet North American Vertical Datum of 1988.
- Aerial Photo: City of Portland, Summer 2017.

0 160 320

Feet

Figure 4

December 2024 Deep Zone Groundwater Contours
Quarter 4, 2024
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

Environmental Resources Management
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M:\US\Projects\S-U\Total\Arkema Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working Maps\2024 Q4\Figure 5 Chlorobenzene Shallow.mxd, REVISED: 02/10/2025, SCALE: 1:1,440 when printed at 11x DRAWN BY: Jake Sullivan DATE: 2/10/2025



Legend

- | | |
|-----------------------|---|
| ● > 6,400 µg/L | — Target Capture Zone |
| ● >= 640 - 6,400 µg/L | — Barrier Wall Alignment |
| ● >= 64 - < 640 µg/L | — Parcel and Property Boundaries |
| ● < 64 µg/L | — Shallow Zone Groundwater Contours (ft NAVD88) December 2024 |
| ○ Not Detected | |
| ⊕ Not Sampled | |

Notes:
Samples collected December 9–12, 2024.
All results in micrograms per liter (µg/L).
Results in **red** exceed screening criteria.
Screening criteria for Chlorobenzene = 64 µg/L
See Table 4 for definition of qualifiers.
ND: Non-Detect
NS: Not Sampled

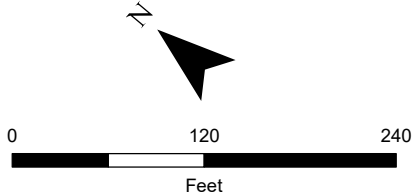
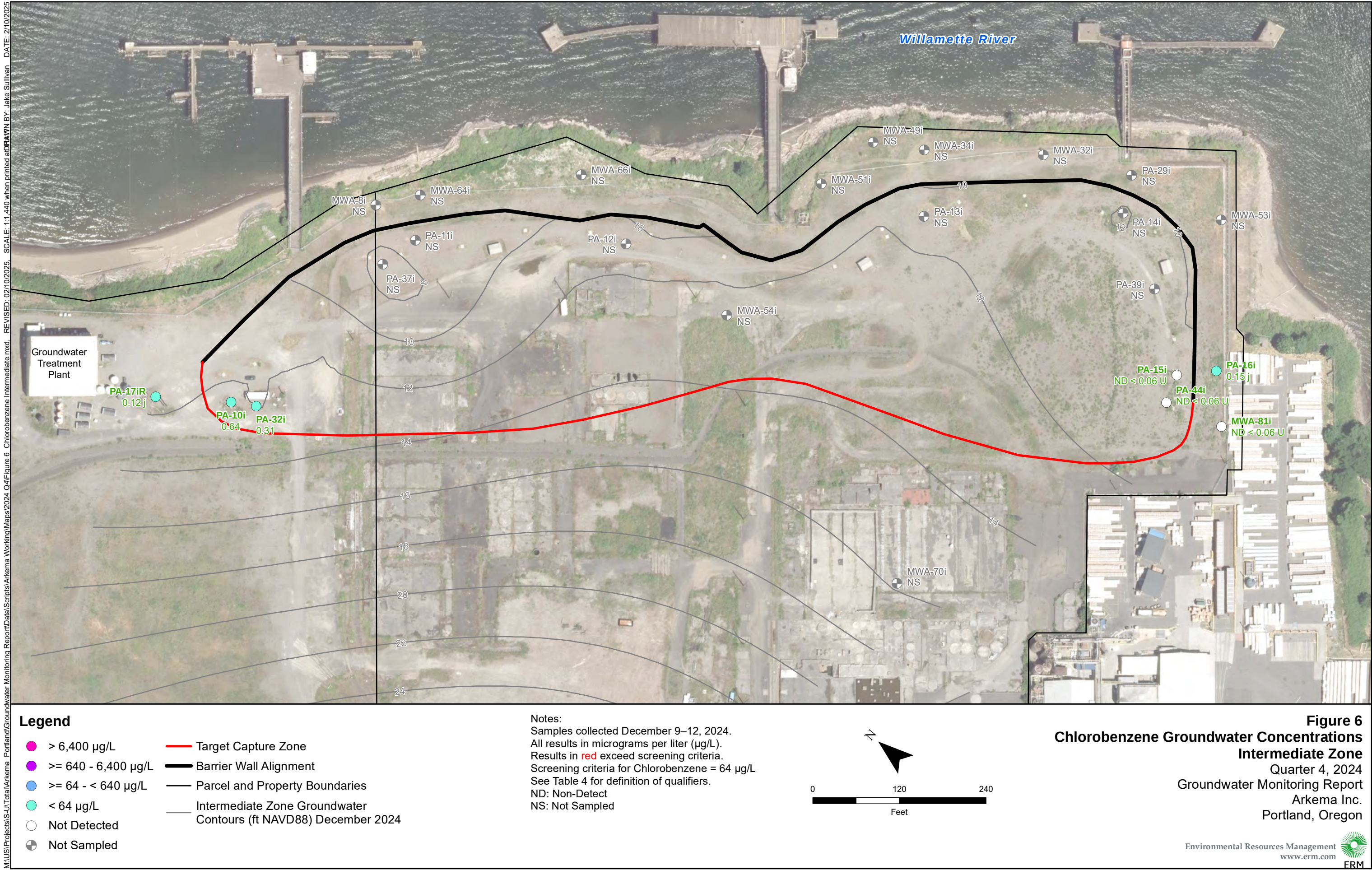
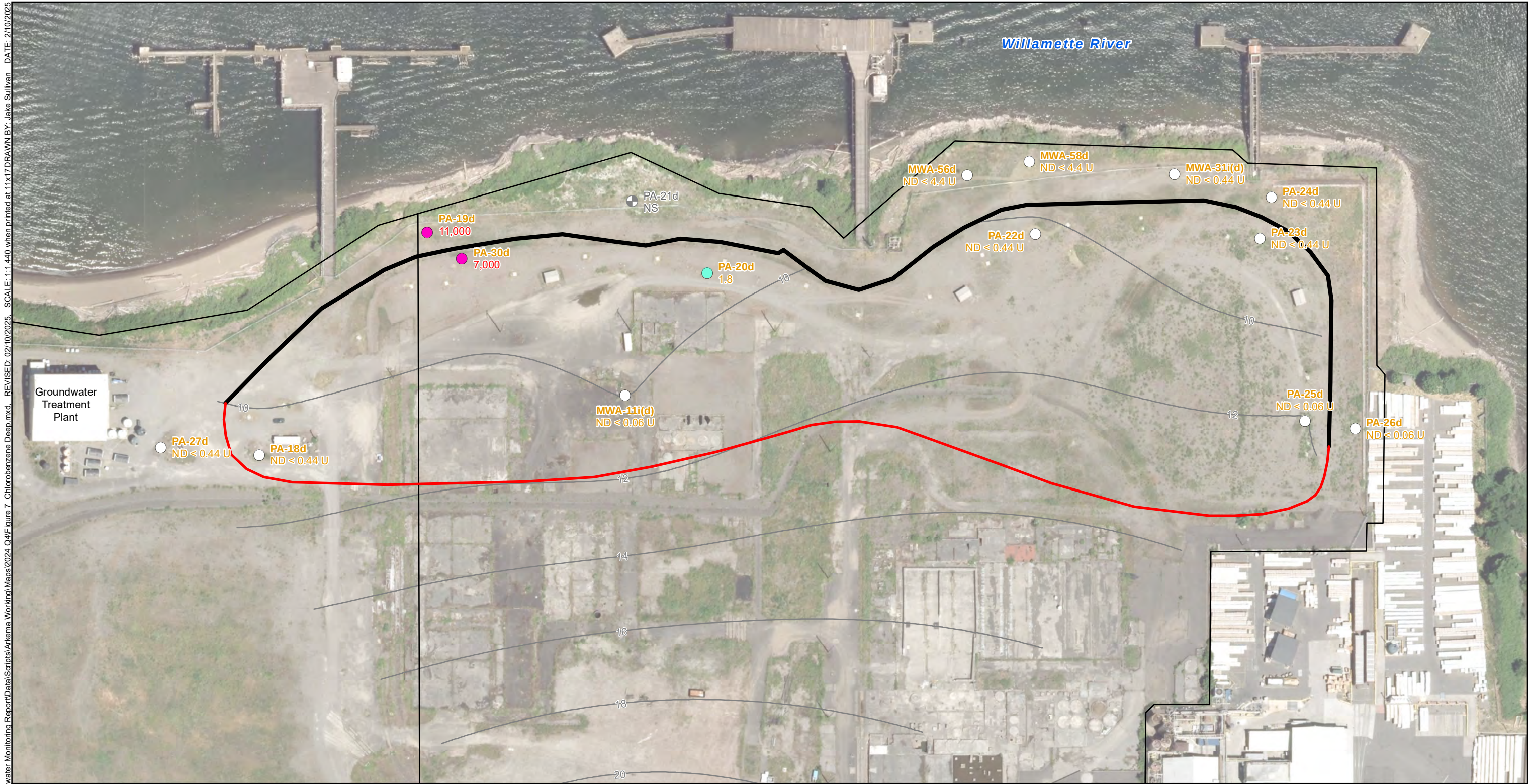


Figure 5
Chlorobenzene Groundwater Concentrations
Shallow Zone
Quarter 4, 2024
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

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



M:\US\Projects\S-U\Total\Arkema Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working Maps\2024 Q4\Figure 7 Chlorobenzene Deep.mxd, REVISED: 02/10/2025, SCALE: 1:1,440 when printed at 11x17 DRAWN BY: Jake Sullivan, DATE: 2/10/2025



Legend

- > 6,400 µg/L
- >= 640 - 6,400 µg/L
- >= 64 - < 640 µg/L
- < 64 µg/L
- Not Detected
- ⦿ Not Sampled
- Target Capture Zone
- Barrier Wall Alignment
- Parcel and Property Boundaries
- Deep Zone Groundwater Contours (ft NAVD88) December 2024

Notes:
Samples collected December 9–12, 2024.
All results in micrograms per liter (µg/L).
Results in red exceed screening criteria.
Screening criteria for Chlorobenzene = 64 µg/L
See Table 4 for definition of qualifiers.
ND: Non-Detect
NS: Not Sampled

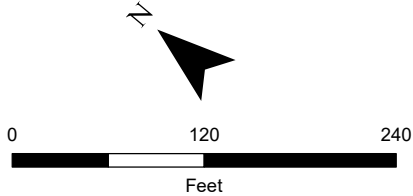


Figure 7
Chlorobenzene Groundwater Concentrations
Deep Zone
Quarter 4, 2024
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon



M:\US\Projects\S-U\Total\Arkema Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working Maps\2024 Q4\Figure 8 1,2-Dichlorobenzene Shallow.mxd, REVISED: 02/10/2025, SCALE: 1:1,440 when printed at DRAWN BY: Jake Sullivan, DATE: 2/10/2025

Legend

- | | |
|----------------------|---|
| ● > 1,400 µg/L | — Target Capture Zone |
| ● ≥ 140 - 1,400 µg/L | — Barrier Wall Alignment |
| ● ≥ 14 - < 140 µg/L | — Parcel and Property Boundaries |
| ● < 14 µg/L | — Shallow Zone Groundwater Contours (ft NAVD88) December 2024 |
| ○ Not Detected | |
| ⊕ Not Sampled | |

Notes:
Samples collected December 9–12, 2024.
All results in micrograms per liter (µg/L).
Results in **red** exceed screening criteria.
Screening criteria for 1,2-Dichlorobenzene = 14 µg/L
See Table 4 for definition of qualifiers.
ND: Non-Detect
NS: Not Sampled

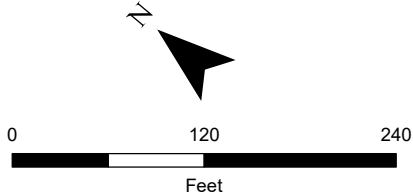


Figure 8
1,2-Dichlorobenzene Groundwater Concentrations
Shallow Zone
Quarter 4, 2024
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

M:\US\Projects\S-U\Total\Arkema Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working Maps\2024 Q4\Figure 9 1,2-Dichlorobenzene Intermediate Zone.mxd, REVISED: 02/10/2025, SCALE: 1:1,440 when printed, JAKE SULLIVAN, DATE: 2/10/2025



Legend

- | | |
|----------------------|--|
| ● > 1,400 µg/L | — Target Capture Zone |
| ● ≥ 140 - 1,400 µg/L | — Barrier Wall Alignment |
| ● ≥ 14 - < 140 µg/L | — Parcel and Property Boundaries |
| ● < 14 µg/L | — Intermediate Zone Groundwater Contours (ft NAVD88) December 2024 |
| ○ Not Detected | |
| ⊗ Not Sampled | |

Notes:
Samples collected December 9–12, 2024.
All results in micrograms per liter (µg/L).
Results in **red** exceed screening criteria.
Screening criteria for 1,2-Dichlorobenzene = 14 µg/L
See Table 4 for definition of qualifiers.
ND: Non-Detect
NS: Not Sampled

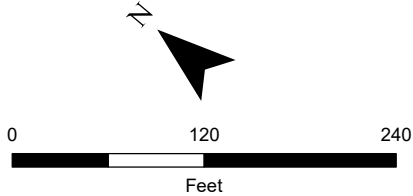


Figure 9
1,2-Dichlorobenzene Groundwater Concentrations
Intermediate Zone
Quarter 4, 2024
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

M:\US\Projects\S-U\Total\Arkema Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working Maps\2024 Q4\Figure 10 12-Dichlorobenzene Deep.mxd, REVISED: 02/10/2025, SCALE: 1:1,440 when printed at DRAWN BY: Jake Sullivan DATE: 2/10/2025





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) December 2024

Notes:
Samples collected December 9–12, 2024.
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 4, 2024
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

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M:\US\Projects\US-U\Total\Arkema Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working Maps\2024 Q4\Figure 12 VOCs PieChart Intermediate.mxd, REVISED: 02/10/2025, SCALE: 1:1,440 when printed aDRAWN BY: Tyler Harris DATE: 2/10/2025

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) December 2024

Notes:
Samples collected December 9–12, 2024.
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

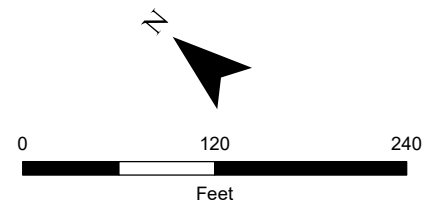
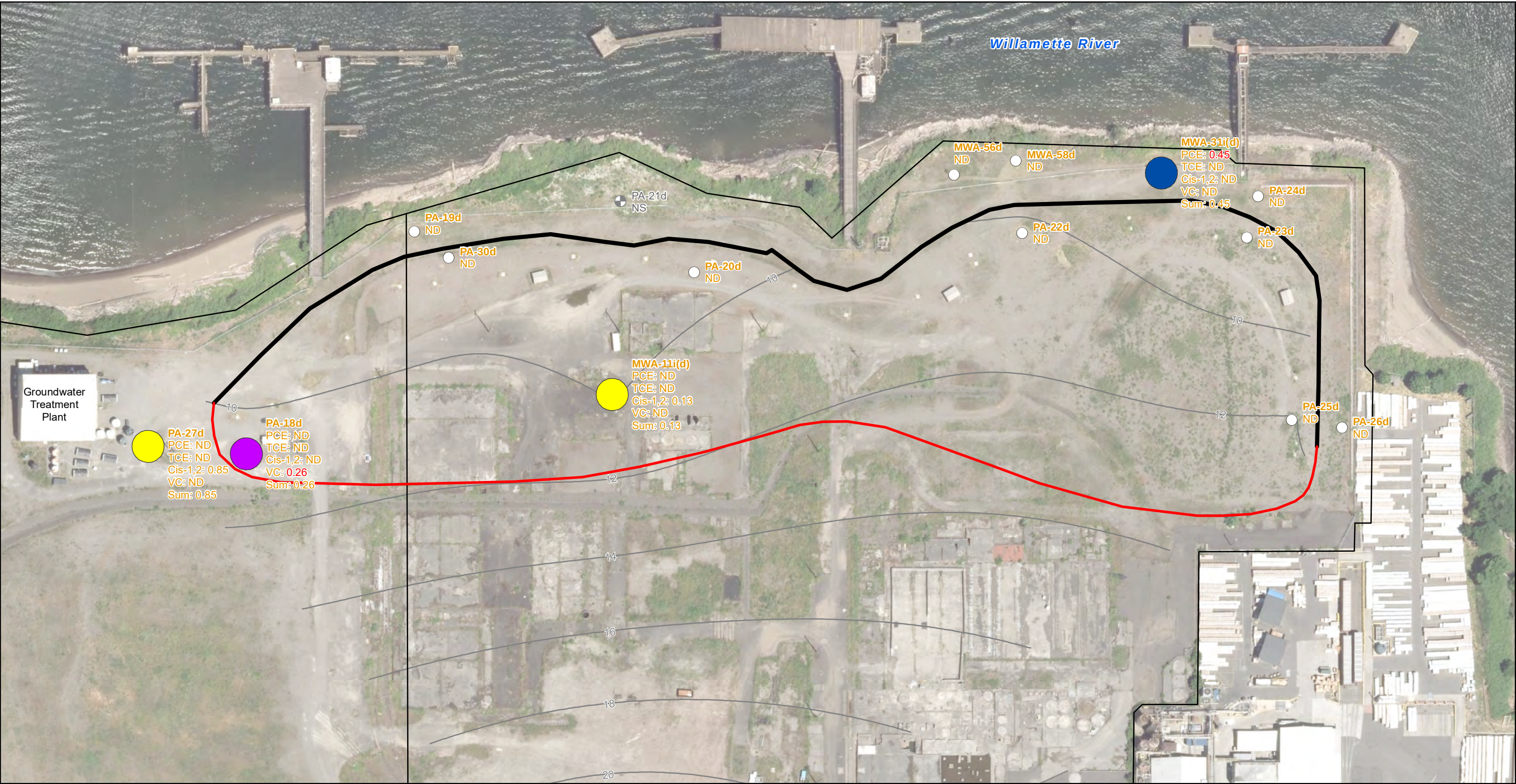


Figure 12
PCE, TCE, cis-1,2-DCE and
Vinyl Chloride Groundwater Concentrations
Intermediate Zone
Quarter 4, 2024
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

M:\US\Projects\S-U\Total\Arkema Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working Maps\2024 Q4\Figure 13 VOCs PieChart Deep.mxd, REVISED: 02/10/2025, SCALE: 1:1,440 when printed at 11x17 DRAWN BY: Tyler Harris DATE: 2/10/2025



Legend

Molar Ratio



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

- Not Detected
- ⊕ Not Sampled
- Target Capture Zone
- Barrier Wall Alignment
- Parcel and Property Boundaries
- Deep Zone Groundwater Contours (ft NAVD88) December 2024

Notes:
Samples collected December 9–12, 2024.
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
NS: Not Sampled

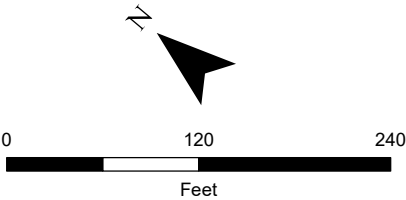


Figure 13
PCE, TCE, cis-1,2-DCE and
Vinyl Chloride Groundwater Concentrations
Deep Zone
Quarter 4, 2024
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

M:\US\Projects\S-U\Total\Arkema Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working Maps\2024 Q4\Figure 14 Perchlorate Shallow.mxd, REVISED: 02/10/2025, SCALE: 1:1,440 when printed at 11x17 DRAWN BY: Jake Sullivan, DATE: 2/10/2025



Legend

- | | |
|----------------------------|---|
| ● > 180,000 µg/L | — Target Capture Zone |
| ● >= 18,000 - 180,000 µg/L | — Barrier Wall Alignment |
| ● >= 1,800 - < 18,000 µg/L | — Parcel and Property Boundaries |
| ● < 1,800 µg/L | — Shallow Zone Groundwater Contours (ft NAVD88) December 2024 |
| ○ Not Detected | |
| ⊕ Not Sampled | |

Notes:
Samples collected December 9–12, 2024.
All results in micrograms per liter (µg/L).
Results in **red** exceed screening criteria.
Screening criteria for Perchlorate = 1,800 µg/L
See Table 5 for definition of qualifiers.
ND: Non-Detect
NS: Not Sampled

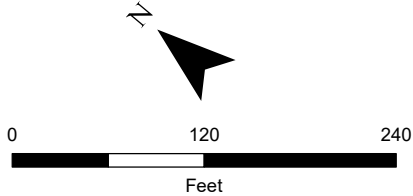
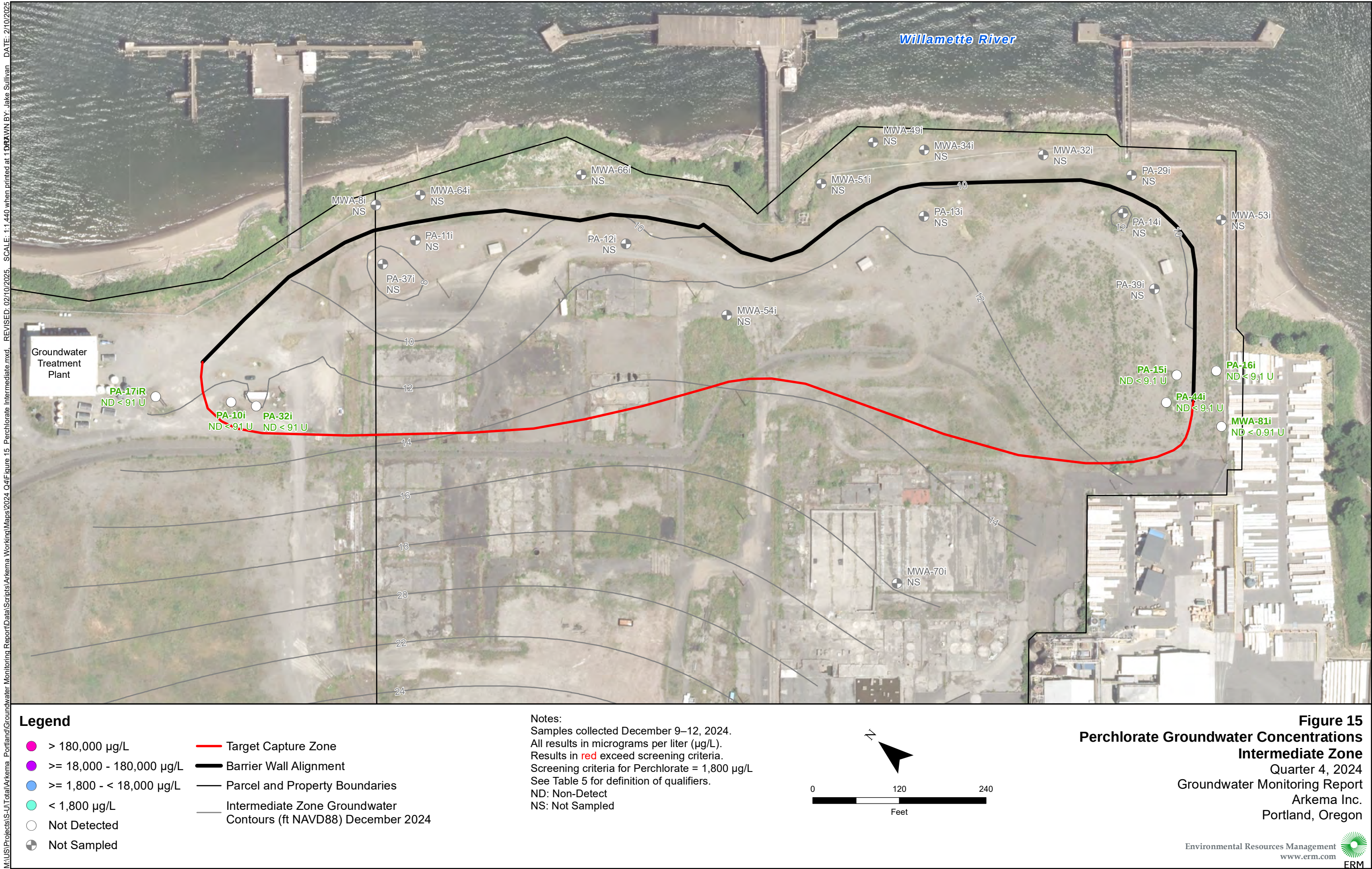


Figure 14
Perchlorate Groundwater Concentrations
Shallow Zone
Quarter 4, 2024
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon



M:\US\Projects\S-U\Total\Arkema Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working Maps\2024 Q4\Figure 16 Perchlorate Deep.mxd, REVISED: 02/10/2025, SCALE: 1:1,440 when printed at 11x17 DRAWN BY: Jake Sullivan DATE: 2/10/2025





M:\US\Projects\S-U\Total\Arkema Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working Maps\2024 Q4\Figure 17 Chloride Shallow.mxd REVISED: 02/10/2025 SCALE: 1:1,440 when printed at 11x17 DRAWN BY: Jake Sullivan DATE: 2/10/2025

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) December 2024

Notes:
Samples collected December 9–12, 2024.
All results in milligrams per liter (mg/L).
Results in **red** exceed screening criteria.
Screening criteria for Chloride = 230 mg/L
See Table 5 for definition of qualifiers.
NS: Not Sampled

N

0

120

240

Feet

Figure 17
Chloride Groundwater Concentrations
Shallow Zone
Quarter 4, 2024
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

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

M:\US\Projects\S-U\Total\Arkema Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working Maps\2024 Q4\Figure 18 Chloride Intermediate.mxd, REVISED: 02/10/2025, SCALE: 1:1,440 when printed at 11x17 DRAWN BY: Jake Sullivan, DATE: 2/10/2025



Legend

- | | |
|--------------------------|--|
| ● > 23,000 mg/L | — Target Capture Zone |
| ● >= 2,300 - 23,000 mg/L | — Barrier Wall Alignment |
| ● >= 230 - < 2,300 mg/L | — Parcel and Property Boundaries |
| ● < 230 mg/L | — Intermediate Zone Groundwater Contours (ft NAVD88) December 2024 |
| ○ Not Detected | |
| ⊙ Not Sampled | |

Notes:
Samples collected December 9–12, 2024.
All results in milligrams per liter (mg/L).
Results in **red** exceed screening criteria.
Screening criteria for Chloride = 230 mg/L
See Table 5 for definition of qualifiers.
NS: Not Sampled

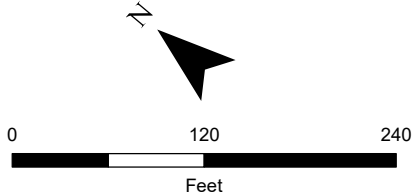
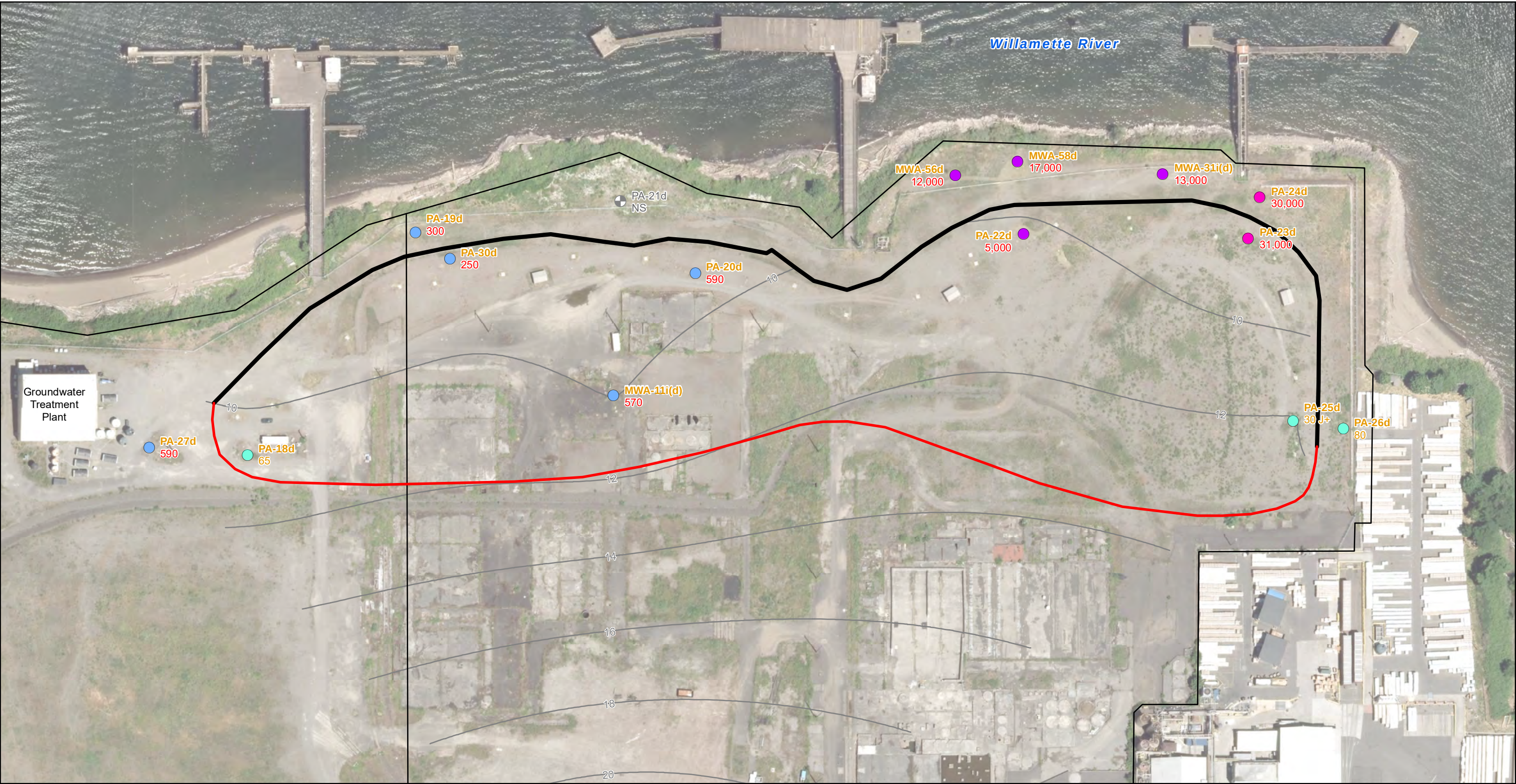


Figure 18
Chloride Groundwater Concentrations
Intermediate Zone
Quarter 4, 2024
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

M:\US\Projects\S-U\Total\Arkema Portland\Groundwater Monitoring Report\Data\Scripts\Arkema Working Maps\2024 Q4\Figure 19 Chloride Deep.mxd, REVISED: 02/10/2025, SCALE: 1:1,440 when printed at 11x17, DRAWN BY: Jake Sullivan, DATE: 2/10/2025



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
- Deep Zone Groundwater Contours (ft NAVD88) December 2024

Notes:
Samples collected December 9–12, 2024.
All results in milligrams per liter (mg/L).
Results in **red** exceed screening criteria.
Screening criteria for Chloride = 230 mg/L
See Table 5 for definition of qualifiers.
NS: Not Sampled

0 120 240
Feet

Figure 19
Chloride Groundwater Concentrations
Deep Zone
Quarter 4, 2024
Groundwater Monitoring Report
Arkema Inc.
Portland, Oregon

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APPENDIX A FIELD FORMS



Low Flow Groundwater Sampling Field Data Form

Well ID: MWA-81I
Well Permit No:

Date: 2024/12/11
40 dawn

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low Flow / 48 (ft)	Reference Elevation 44.62 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 34.47 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 80 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / - ()
Sampler paul vannevel Lake Whiting	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 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
07:25	34.5	100	0.25	7.75	7.26	682	NM	0.93	130	2.57	NM	
07:28	35.45	100	0.4	7.2	7.2	622	NM	0.6	133	1.73	NM	
07:31	34.47	100	0.6	7.1	7.19	601	NM	0.49	135	1.29	NM	
07:34	34.5	100	0.8	7.3	7.19	601	NM	0.4	137	1.26	NM	
07:38	34.5	100	1	7.45	7.19	609	NM	0.33	139	1.02	NM	
07:41	34.5	57.7	1.2	7.8	7.2	610	NM	0.25	140	1.12	NM	
07:44	34.5	70.7	1.4	7.9	7.19	619	NM	0.23	141	0.94	NM	
07:47	34.5	70.7	1.6	7.9	7.19	626	NM	0.15	142	0.72	NM	
07:50	34.5	57.7	1.8	8.1	7.19	623	NM	0.09	143	0.84	NM	
07:53	34.5	70.7	2	8	7.19	620	NM	0.04	144	0.79	NM	
07:56	34.5	79.1	2.25	7.9	7.19	631	NM	0.02	145	0.76	NM	
07:59	34.5	100	2.45	7.9	7.19	631	NM	0.02	146	0.78	NM	

Sample ID(s): MWA-81i-121124	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:			
		PV 	01/03/2025 16:17



Low Flow Groundwater Sampling Field Data Form

Well ID: MWA-82
Well Permit No:

Date: 2024/12/11

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low Flow / 30 (ft)	Reference Elevation 37.74 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 24.32 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 90.5 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / - ()
Sampler paul vannevel Lake Whiting	Volume of Water in Well / Total Volume Purged () / 1.6 (l)	Well Construction

Well Head Vapor Measurements PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA												
Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
11:13	23.3		0.25	12.9	9.66	498	NM	2.34	150	115	NM	
11:15	24.3	70.7	0.35	13.38	9.62	494	NM	0.65	147	138	NM	
11:18	24.32	102.1	0.6	13.8	9.63	489	NM	0.37	143	129	NM	
11:20	24.3	102.1	0.85	14	9.6	484	NM	0.24	139	133	NM	
11:23	24.3	142.9	1.2	14.2	9.57	482	NM	0.19	138	131	NM	
11:26	24.3	72.2	1.45	14.6	9.53	481	NM	0.17	136	138	NM	
11:29	24.3	53	1.6	14.7	9.53	475	NM	0.17	132	127	NM	

Sample ID(s): MWA-82-121124	Additional Comments	SAMPLER NAME AND SIGNATURE		Date Time
Analysis:		PV		
				01/03/2025 16:18



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-20D
Well Permit No:

Date: 2024/12/12
Rainy 40 degrees

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 28.8 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 0 (mL/min)	Well Diameter / Well Screen Interval 1 (in) / - ()
Sampler paul vannevel	Volume of Water in Well / Total Volume Purged () / 15.725 (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 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
08:26	30.8		0.15	11.05	7.96	3005	NM	3.67	-79.6	7.08	NM	
08:29	35.58	185.6	0.675	13.2	7.16	2618	NM	1.35	-90.9	2.17	NM	
08:59	50.6	175	5.925	14.4	6.72	2446	NM	1.05	-102	2.17	NM	
09:29	53.61	175.2	11.175	14.45	6.74	2244	NM	1.12	-85.5	10.4	NM	
09:55	54.12	174.7	15.725	14.5	6.71	2171	NM	1.14	-70.5	3.09	NM	

Sample ID(s): Dup-02-121224,PA-20d-121224	Additional Comments 1in bladder pump used	SAMPLER NAME AND SIGNATURE PV 	Date Time 12/17/2024 04:56
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-21D
Well Permit No:

Date:

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth / ()	Reference Elevation 34.36 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product () / None
Project Number 0732445	Sample Equipment NA	Total Well Depth ()
Project Name 20241209-GWMonitor	Average Purge Rate ()	Well Diameter / Well Screen Interval (in) / - ()
Sampler	Volume of Water in Well / Total Volume Purged () / ()	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 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments

Sample ID(s):	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-22D
Well Permit No:

Date: 2024/12/12
Rainy 40 degrees

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 28.88 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 0 (mL/min)	Well Diameter / Well Screen Interval 1 (in) / - ()
Sampler paul vannevel	Volume of Water in Well / Total Volume Purged () / 1.85 (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 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
07:05	29.39		0.1	11.23	7.98	15.31	NM	2.93	96.5	9.82	NM	
07:08	29.39	123.7	0.45	12	7.64	13.7	NM	1.59	93.9	15.6	NM	
07:11	29.39	110.7	0.8	12.3	7.4	13.96	NM	1.57	93.1	43.9	NM	
07:14	29.37	123.7	1.15	12.7	7.27	14.08	NM	1.34	93.6	56	NM	
07:17	29.39	123.7	1.5	12.78	7.21	14.38	NM	1.4	93.9	58.4	NM	
07:20	29.37	110.7	1.85	12.8	7.16	14.5	NM	1.35	94.3	54.9	NM	

Sample ID(s): PA-22d-121224	Additional Comments 1in bladder pump used	SAMPLER NAME AND SIGNATURE PV	Date Time 12/17/2024 04:45
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-23D
Well Permit No:

Date: 2024/12/11
Cloudy 45 degrees

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low Flow / 80.5 (ft)	Reference Elevation 39.31 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 31.85 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 0 (mL/min)	Well Diameter / Well Screen Interval 1 (in) / - ()
Sampler paul vannevel	Volume of Water in Well / Total Volume Purged () / 23.795 (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 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
10:27	34.85		0.3	12.4	6.88	68.83	NM	4.33	-36.5	80.2	NM	
10:30	38.5	238.6	0.975	13.9	6.8	66.44	NM	1.82	-47.2	44.3	NM	
11:00	58.21	217.9	7.52	14.3	6.84	66.83	NM	1.89	-73.9	40.3	NM	
11:30	57.71	155	12.17	13.8	6.93	55.7	NM	1.27	-88.2	14.3	NM	
12:00	57.31	155.2	16.82	14.1	6.92	47.07	NM	1.14	-89.4	5.75	NM	
12:30	58.2	155.2	21.47	14.9	6.91	47.33	NM	1.04	-87.5	7.45	NM	
12:45	58.18	155	23.795	14.9	6.9	66.43	NM	0.84	-88.5	7.38	NM	

Sample ID(s): PA-23d-121124	Additional Comments 1in bladder pump used	SAMPLER NAME AND SIGNATURE PV 	Date Time 12/17/2024 06:05
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-24D
Well Permit No:

Date: 2024/12/11
Cloudy 40 degrees

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low Flow / 80.5 (ft)	Reference Elevation 39.06 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 31.7 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 0 (mL/min)	Well Diameter / Well Screen Interval 1 (in) / - ()
Sampler paul vannevel	Volume of Water in Well / Total Volume Purged () / 2.25 (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 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
09:08	34.4		0	12.1	6.37	65.39	NM	2.04	-13.7	50.9	NM	
09:11	34.55	132.6	0.375	12.48	6.37	65.11	NM	1.88	-25.7	44.3	NM	
09:14	34.65	132.6	0.75	12.9	6.41	65.21	NM	1.39	-53.3	83.4	NM	
09:17	34.66	118.6	1.125	13.1	6.47	65.65	NM	1.25	-64.2	105	NM	
09:20	34.66	132.6	1.5	13.1	6.51	66.03	NM	1.09	-70.6	116	NM	
09:23	34.55	132.6	1.875	13.18	6.54	66.21	NM	1.12	-73	122	NM	
09:26	34.55	118.6	2.25	13.2	6.56	66.23	NM	1.04	-75.3	134	NM	

Sample ID(s): PA-24d-121124	Additional Comments 1in bladder pump used	SAMPLER NAME AND SIGNATURE PV 	Date Time 01/03/2025 16:20
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-25D
Well Permit No:

Date: 2024/12/10
Cloudy 45 degrees

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low Flow / 80 (ft)	Reference Elevation 40.44 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 30.45 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 0 (mL/min)	Well Diameter / Well Screen Interval 1 (in) / - ()
Sampler paul vannevel	Volume of Water in Well / Total Volume Purged () / 24.375 (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 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
13:00	31.6		0	11.68	7.05	613	NM	2.49	15.6	18.9	NM	
13:03	33.91	132.6	0.375	12.4	7.05	600	NM	3.2	22.9	15.3	NM	
13:06	36.45	118.6	0.75	12.8	7.11	588	NM	4.64	33.3	17.9	NM	
13:36	46.55	125	4.5	13.2	7.03	613	NM	3.89	-74.9	11.5	NM	
14:06	49.05	125.1	8.25	13.2	7.03	653	NM	1.72	-91.3	5.03	NM	
14:36	49.32	124.9	12	13.68	7.04	641	NM	1.13	-97.9	2.89	NM	
15:06	49.6	125	15.75	13.7	7.05	650	NM	0.96	-100.2	3.19	NM	
15:36	49.7	125.1	19.5	13.8	7.05	656	NM	0.93	-100.4	2.29	NM	
16:06	49.65	124.9	23.25	13.8	7.05	646	NM	1.11	-95.9	2.1	NM	
16:15	49.7	125.8	24.375	13.6	7.02	646	NM	1.06	-96.4	1.96	NM	

Sample ID(s): PA-25d-121024	Additional Comments 1in bladder pump used	SAMPLER NAME AND SIGNATURE PV 	Date Time 12/17/2024 05:53
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-26D
Well Permit No:

Date: 2024/12/10
Foggy 30

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low Flow / 80 (ft)	Reference Elevation 40.33 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 29.89 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 0 (mL/min)	Well Diameter / Well Screen Interval 1 (in) / - ()
Sampler paul vannevel	Volume of Water in Well / Total Volume Purged () / 2.55 (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 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
08:10	32.3		0	11.5	7.23	298	NM	4.51	-37.9	18.5	NM	
08:13	32.3	115.5	0.4	12.4	6.86	412	NM	3.73	-58.7	14.5	NM	At 0815 pump stopped working, troubleshooting
08:27	31.4	3.6	0.45	10.88	6.87	457	NM	4.03	-65.7	30.1	NM	
08:30	31.95	94.9	0.75	11.9	6.87	494	NM	2.79	-78.4	69.8	NM	
08:33	32	106.1	1.05	12.3	6.83	554	NM	1.9	-93.1	113	NM	
08:36	32.31	94.9	1.35	12.9	6.89	602	NM	1.44	-103.8	159	NM	
08:39	32.1	94.9	1.65	12.8	6.91	603	NM	1.21	-107.1	224	NM	
08:42	32.01	106.1	1.95	12.9	6.95	613	NM	0.97	-109.7	273	NM	
08:45	31.99	94.9	2.25	13	6.99	627	NM	0.88	-111.7	273	NM	
08:48	32.1	94.9	2.55	13.2	7	618	NM	0.82	-114.4	254	NM	

Sample ID(s): PA-26d-121024	Additional Comments 1in bladder used	SAMPLER NAME AND SIGNATURE PV	Date Time 12/17/2024 05:39
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-30D
Well Permit No:

Date: 2024/12/13
Cloudy 45 degrees

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low Flow / 50 (ft)	Reference Elevation 37.34 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 27.05 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 0 (mL/min)	Well Diameter / Well Screen Interval 1 (in) / - ()
Sampler paul vannevel	Volume of Water in Well / Total Volume Purged () / 4000 (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 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
13:43	27.45	0.3	2.25	13.2	8.21	2448	NM	1.08	-106.9	264	NM	
13:46	27.55	64.9	0.1	10.93	8.03	2160	NM	9.98	1	412	NM	Had to pause pump after reading the trouble shoot pump issues noticed
13:52	27.45	64.9	0.5	12.8	8.1	2409	NM	8.4	26.7	144	NM	
13:55	27.45	64.9	0.85	13	8.14	2439	NM	4.16	11	113	NM	
13:58	27.45	101	1.2	13	8.17	2445	NM	2.13	-32.7	273	NM	
14:01	27.45	110.7	1.55	13.1	8.18	2447	NM	1.34	-76.7	259	NM	
14:04	27.45	123.7	1.9	13.1	8.19	2445	NM	1.14	-96.4	275	NM	
14:07	27.45	110	2.25	13.2	8.21	2448	NM	1.08	-106.9	264	NM	
14:10	27.45	110	2.6	13.2	8.21	2467	NM	1.05	-113.4	312	NM	
14:13	27.45	110	2.95	13	8.22	2454	NM	1.05	-113.8	NM	NM	Turbidity meter stopped working
14:16	27.42	110.7	3.3	12.6	8.23	2466	NM	1.08	-114.5	NM	NM	
14:19	27.45		3.65	12.4	8.24	2441	NM	1.08	-115.3	NM	NM	
14:22	27.45		4	12.3	8.24	2449	NM	1.08	-115.2	NM	NM	

Sample ID(s): PA-30d-121224	Additional Comments 1 in bladder pump used	SAMPLER NAME AND SIGNATURE PV 	Date Time 01/03/2025 16:23
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-32I
Well Permit No:

Date: 2024/12/10
45 foggy

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low Flow / 38 (ft)	Reference Elevation 36.28 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 24.18 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 107.5 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / - ()
Sampler paul vannevel Lake Whiting	Volume of Water in Well / Total Volume Purged () / 3 (l)	Well Construction

Well Head Vapor Measurements PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA												
Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
12:27	24.2		0.5	11.93	8.59	177	NM	6.71	6.4	37	NM	
12:30	24.2	106.1	0.8	11.4	7.93	772	NM	2.84	-9	7.13	NM	
12:33	24.2	88.4	1.05	11.6	7.73	1236	NM	1.41	-48	5.89	NM	
12:36	24.2	126.5	1.45	11.3	7.71	1312	NM	0.59	-79	7.07	NM	
12:39	24.2	123.7	1.8	11.2	7.69	1322	NM	0.66	-73	7.37	NM	
12:42	24.21	106.1	2.1	11.3	7.71	1307	NM	1.1	-65	7.71	NM	
12:45	24.2	106.1	2.4	11.4	7.68	1325	NM	1.26	-68	4.42	NM	
12:48	24.2	123.7	2.75	11.5	7.68	1329	NM	1.24	-67	5.35	NM	
12:51	24.2	79.1	3	11.7	7.68	1325	NM	1.17	-68	5.3	NM	

Sample ID(s): DUP-01-121024,PA-32i-121024	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:			
		Lpw 	12/10/2024 21:10



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-04
Well Permit No:

Date: 2024/12/10
35 foggy

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 9.2 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 76.9 (mL/min)	Well Diameter / Well Screen Interval 1 (in) / - ()
Sampler paul vannevel Lake Whiting	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 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
06:53	9.34	63.2	0.1	6.28	10.1	778	NM	2.6	69	133	NM	
06:56	9.34	102.1	0.3	6.38	10.9	733	NM	1.29	65	217	NM	
06:59	9.35	102.1	0.55	6.85	10.9	690	NM	1	60	91.5	NM	
07:02	9.35	70.7	0.75	7.3	10.08	708	NM	0.93	57	72.3	NM	
07:05	9.35	81.6	0.95	7.5	10.08	684	NM	0.83	53	47.8	NM	
07:08	9.35	79.1	1.2	7.5	10.07	719	NM	0.77	50	38.7	NM	
07:11	9.35	94.9	1.5	8	10.07	660	NM	0.75	47	32.2	NM	
07:14	9.35	35.4	1.6	8.4	10.06	705	NM	0.76	53	28.7	NM	
07:17	9.35	63.2	1.8	8.3	10.06	649	NM	0.79	45	26	NM	

Sample ID(s): PA-04-121024	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:			
		PV 	12/17/2024 17:05



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-08
Well Permit No:

Date: 2024/12/09
Cloudy 35 degrees

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low Flow / 30 (ft)	Reference Elevation 40.47 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 28.4 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 108.2 (mL/min)	Well Diameter / Well Screen Interval 1 (in) / - ()
Sampler paul vannevel	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 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
08:05	28.42		0	9.9	7.47	1575	NM	2.99	-250	0	NM	
08:08	28.42	88.4	0.25	10.5	7.28	1613	NM	1	-233	0	NM	
08:11	28.43	88.4	0.5	11	7.26	1571	NM	0.93	-222	0	NM	
08:14	28.43	102.8	0.825	11.5	7.26	1536	NM	0.97	-210	0	NM	
08:17	28.45	97.2	1.1	11.8	7.28	1486	NM	0.89	-200	0	NM	
08:20	28.45	88.4	1.35	11.8	7.29	1468	NM	0.87	-189	0	NM	
08:23	28.45	126.5	1.75	11.9	7.33	1405	NM	0.89	-170	0	NM	
08:25	28.45	150	2.05	11.8	7.37	1367	NM	0.87	-157	0	NM	
08:28	28.45	123.7	2.4	11.8	7.33	1355	NM	0.87	-151	0	NM	

Sample ID(s): PA-08-120924	Additional Comments Peri pump used	SAMPLER NAME AND SIGNATURE PV 	Date Time 12/09/2024 19:13
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-15I
Well Permit No:

Date: 2024/12/11
Cloudy 35 degrees

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low Flow / 42.5 (ft)	Reference Elevation 40.62 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 30.37 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 0 (mL/min)	Well Diameter / Well Screen Interval 1 (in) / - ()
Sampler paul vannevel	Volume of Water in Well / Total Volume Purged () / 1.5 (l)	Well Construction

Well Head Vapor Measurements PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA												
Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
07:36	30.58		0	10.9	8.62	640	NM	2.46	-64	139	NM	
07:39	30.64	132.6	0.375	12.28	7.99	707	NM	1.45	-84.1	218	NM	
07:42	30.64	118.6	0.75	12.9	7.76	724	NM	1.22	-90.4	233	NM	
07:45	30.66	118.6	1.125	13.1	7.64	757	NM	1.14	-95.6	242	NM	
07:48	30.65	132.6	1.5	13.3	7.56	766	NM	1.34	-96.2	230	NM	

Sample ID(s): PA-15i-121124	Additional Comments 1in bladder pump used	SAMPLER NAME AND SIGNATURE PV 	Date Time 12/17/2024 05:04
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-16I
Well Permit No:

Date: 2024/12/10
Cloudy 45 degrees

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low Flow / 43 (ft)	Reference Elevation 40.3 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 30.3 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 0 (mL/min)	Well Diameter / Well Screen Interval 1 (in) / - ()
Sampler paul vannevel	Volume of Water in Well / Total Volume Purged () / 1.5 (l)	Well Construction

Well Head Vapor Measurements PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA												
Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
11:24	30.75		0	11.35	7.35	229	NM	2.74	-98.4	164	NM	
11:27	30.75	79.1	0.25	12.6	6.9	255	NM	1.19	-111.7	98.7	NM	
11:30	30.85	79.1	0.5	13.4	6.78	309	NM	1.04	-124	86.1	NM	
11:33	30.73	88.4	0.75	13.6	6.82	328	NM	1.28	-120.3	101	NM	
11:36	30.85	79.1	1	13.8	6.84	349	NM	1.02	-117.1	97.6	NM	
11:39	30.81	79.1	1.25	13.9	6.83	359	NM	0.99	-111	105	NM	
11:42	30.76	88.4	1.5	14	6.83	368	NM	0.99	-106.7	108	NM	

Sample ID(s): PA-16i-121024	Additional Comments 1in bladder pump used.	SAMPLER NAME AND SIGNATURE PV 	Date Time 12/17/2024 05:13
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-18D
Well Permit No:

Date: 2024/12/10
35 foggy

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 26.45 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 0 (mL/min)	Well Diameter / Well Screen Interval 1 (in) / - ()
Sampler paul vannevel Lake Whiting	Volume of Water in Well / Total Volume Purged () / 2.575 (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 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
08:23	26.73		0.25	5.28	8.14	405	NM	9.39	84	11.3	NM	
08:26	27.1	70.7	0.45	7.4	7.81	399	NM	6.88	94	7.58	NM	
08:29	27.4	70.7	0.65	8.35	7.52	408	NM	4.3	103	6.08	NM	
08:32	27.32	79.1	0.9	8.1	7.65	400	NM	5.27	100	4.45	NM	
08:35	27.6	176.8	1.15	8.7	7.46	421	NM	3.2	100	4.36	NM	
08:38	27.6	35.4	1.25	8.7	7.49	473	NM	2.24	96	2.8	NM	
08:41	27.6	97.2	1.5	8.7	7.73	608	NM	1.67	88	2.48	NM	
08:44	27.6	97.2	1.8	8.9	8.05	776	NM	1.33	25	2.43	NM	
08:47	27.6	70.7	2	8.9	8.37	808	NM	1.11	-148	4.72	NM	
08:50	27.6	97.2	2.15	9.5	8.55	942	NM	0.96	-232	8.24	NM	
08:53	27.55	53	2.3	9.45	8.59	998	NM	0.99	-278	7.4	NM	
08:56	27.55	97.2	2.575	9.45	8.6	1001	NM	0.98	-280	7.4	NM	

Sample ID(s): PA-18d-121024	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:			
		Lpw 	12/10/2024 22:26



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-27D
Well Permit No:

Date: 2024/12/09
50 sunny

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 26.2 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 17.7 (mL/min)	Well Diameter / Well Screen Interval 1 (in) / - ()
Sampler paul vannevel	Volume of Water in Well / Total Volume Purged () / 0.9 (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 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
13:48	27.8		0.1	17.5	7.23	2737	NM	0.26	-243	0.38	NM	
13:51	28.08			16.3	7.15	2950	NM	0.16	-234	11	NM	
13:54	28.31		0.6	15.7	7.13	2948	NM	0.03	-238	7.51	NM	
13:57	28.43		0.85	15.4	7.1	2960	NM	0	-231	7.33	NM	
14:00	28.48	17.7	0.9	15.4	7.07	2986	NM	0	-220	6.6	NM	

Sample ID(s): PA-27d-120924	Additional Comments Peri pump used	SAMPLER NAME AND SIGNATURE Lpw	Date Time 12/09/2024 22:24
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-03
Well Permit No:

Date: 2024/12/09
Overcast 40°

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low Flow / 24 (ft)	Reference Elevation 37.1 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 9.8 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 70.4 (mL/min)	Well Diameter / Well Screen Interval 1 (in) / - ()
Sampler paul vannevel	Volume of Water in Well / Total Volume Purged () / 0.9 (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 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
10:22	10.7		0	12.03	10.15	817	NM	4.18	-311	0	NM	
10:28	1.07	56.7	0.3	12.8	10.4	804	NM	8.5	-310	0	NM	
10:31	10.71	79.1	0.55	12.9	10.42	799	NM	6.6	-313	0	NM	
10:33	10.68	70.7	0.75	12.9	10.42	802	NM	6.1	-314	0	NM	
10:36	10.71	75	0.9	12.9	10.42	803	NM	5.8	-314	0	NM	

Sample ID(s): PA-03-120924	Additional Comments Peri pump used	SAMPLER NAME AND SIGNATURE Lake Whiting	Date Time 12/09/2024 18:54
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-31
Well Permit No:

Date: 2024/12/10
45 foggy

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low Flow / 23 (ft)	Reference Elevation 36.25 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 9.5 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 111.3 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / - ()
Sampler paul vannevel Lake Whiting	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 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
11:18	9.3		0.5	11.43	9.5	737	NM	4.45	-54	22.3	NM	
11:21	9.3	88.4	0.75	12.5	9.5	715	NM	1.68	-59	29.1	NM	
11:24	9.3	79.1	1	13.4	9.51	766	NM	0.35	-64	34.2	NM	
11:27	9.3	115.5	1.4	13.8	9.51	792	NM	0.12	-67	40.4	NM	
11:30	9.3	158.1	1.9	13.9	9.52	800	NM	0.02	-69	39	NM	
11:33	9.3	115.5	2.3	14	9.52	807	NM	0	-72	38	NM	

Sample ID(s): PA-31-121024	Additional Comments	SAMPLER NAME AND SIGNATURE Lake Whiting 	Date Time 12/10/2024 21:18
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: MWA-63
Well Permit No:

Date: 2024/12/10
40 foggy

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low Flow / 24 (ft)	Reference Elevation 36.29 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 21.55 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 88 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / - ()
Sampler paul vannevel Lake Whiting	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 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
10:18	23.25	106.1	0.5	10.5	7.7	606	NM	8.1	42	33.2	NM	
10:21	22.95	106.1	0.8	11.78	7.39	595	NM	7.26	60.7	19.4	NM	
10:24	22.95	122.5	1.1	12.2	7.19	585	NM	7.12	71	18.2	NM	
10:27	23	43.3	1.25	12.5	7.08	584	NM	6.99	81	18	NM	
10:30	22.96	63.2	1.45	12.7	7.05	759	NM	6.92	86	12.7	NM	
10:33	22.97	88.4	1.7	12.7	7.03	582	NM	6.87	90	12	NM	
10:36	23	86.6	2	12.9	7.04	581	NM	6.84	95	11.9	NM	

Sample ID(s): MWA-63-121024	Additional Comments	SAMPLER NAME AND SIGNATURE Lake whiting	Date Time 12/10/2024 21:23
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: MWA-41
Well Permit No:

Date: 2024/12/11
40 overcast

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low Flow / 40 (ft)	Reference Elevation 45.14 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 33.5 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 76.7 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / - ()
Sampler paul vannevel Lake Whiting	Volume of Water in Well / Total Volume Purged () / 3.9 (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 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
08:59	33.5		0.25	9.75	7.33	418	NM	0.75	154	11.5	NM	
09:02	33.5	176.8	0.5	10.9	7.33	328	NM	0.37	155	12.6	NM	
09:05	33.5	79.1	0.75	11.2	7.28	315	NM	0.34	157	13	NM	
09:09	33.51	57.7	1	11.63	7.25	317	NM	0.31	159	13	NM	
09:12	33.5	57.7	1.4	12.8	7.23	316	NM	0.26	161	9.92	NM	
09:15	33.5	70.7	1.6	11.9	7.22	317	NM	0.24	162	8.89	NM	
09:18	33.51	57.7	1.8	11.9	7.2	316	NM	0.22	163	7.5	NM	
09:21	33.5	142.9	2.15	11.8	7.2	315	NM	0.17	164	7.29	NM	
09:24	33.5	53	2.3	11.48	7.18	316	NM	0.15	165	5.96	NM	
09:27	33.5	94.9	2.6	11.1	7.18	318	NM	0.12	166	5.23	NM	
09:30	33.51	35.4	2.7	11.1	7.18	315	NM	0.09	167	4.57	NM	
09:33	33.5	63.2	2.9	11.15	7.2	317	NM	0.06	168	3.59	NM	
09:36	33.5	70.7	3.1	11	7.19	319	NM	0.05	168	3.07	NM	
09:39	33.5	81.6	3.3	11	7.18	319	NM	0.03	169	2.67	NM	
09:42	33.5	53.5	3.5	11	7.19	320	NM	0	169	2.96	NM	
09:45	33.5	53	3.65	10.95	7.19	321	NM	0	170	2.46	NM	
09:48	33.5	79.1	3.9	11	7.19	319	NM	0	165	2.44	NM	

Sample ID(s): MWA-41-121124	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:			
		Lpw 	12/11/2024 18:48



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-44I
Well Permit No:

Date: 2024/12/11
45 sunny windy

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 30 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 123.2 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / - ()
Sampler paul vannevel Lake Whiting	Volume of Water in Well / Total Volume Purged () / 5.5 (l)	Well Construction

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
12:40	29.97		0.25	11.6	8.56	227	NM	7.95	81	5.18	NM	
12:43	29.97	106.1	0.4	11.9	8.54	228	NM	7.55	97	5.13	NM	
12:46	29.97	94.9	0.7	12.5	8.46	219	NM	7.42	106	4.33	NM	
12:49	29.97	86.6	1	13.3	8.39	218	NM	7.31	105	5.92	NM	
12:52	29.97	159.1	1.45	13.5	8.31	224	NM	7.18	107	11.8	NM	
12:55	29.97	126.5	1.85	13.3	8.02	251	NM	6.63	100	18.4	NM	
12:58	29.97	175	2.2	13.4	7.69	326	NM	5.23	95	23.3	NM	
13:01	29.97	144.3	2.7	13.2	7.35	486	NM	3.3	90	25.9	NM	
13:04	29.97	106.1	3	13.1	7.19	613	NM	1.63	88	28.4	NM	
13:07	29.96	142.9	3.35	13.2	7.07	684	NM	0.9	85	28.3	NM	
13:10	29.97	106.1	3.65	13.2	7.03	726	NM	0.51	81	29.5	NM	
13:13	29.97	110.7	4	13.4	6.99	757	NM	0.3	78	30.8	NM	
13:16	29.97	141.4	4.4	13.5	6.96	776	NM	0.12	76	31	NM	
13:19	29.97	110.7	4.75	13.6	6.98	788	NM	0.08	73	31.5	NM	
13:22	29.97	158.1	5.25	13.7	6.97	800	NM	0	70	32	NM	
13:25	29.97	79.1	5.5	13.7	6.95	808	NM	0	68	32.2	NM	

Sample ID(s): PA-44i-121124	Additional Comments	SAMPLER NAME AND SIGNATURE Lake whiting 	Date Time 12/12/2024 14:32
Analysis:			



Low Flow Groundwater Sampling Field Data Form

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

Date: 2024/12/12
40 rainy dawn

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low Flow / 56 (ft)	Reference Elevation 38.36 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 30.15 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 112.1 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / - ()
Sampler paul vannevel lake whiting	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 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
07:05	30.22		0.25	11.25	6.65	29.79	NM	2.67	94	20.7	NM	
07:08	30.23	79.1	0.5	12.2	6.67	31.19	NM	0.78	73	12.2	NM	
07:11	30.24	94.9	0.8	12.8	6.64	32.04	NM	0.36	52	11.5	NM	
07:14	30.24	120.3	1.25	12.8	6.53	32.58	NM	0.19	40	16.8	NM	
07:17	30.24	125	1.5	12.8	6.48	32.79	NM	0.14	39	20.1	NM	
07:20	30.24	94.9	1.8	12.9	6.45	32.85	NM	0.09	37	20.9	NM	
07:23	30.24	158.1	2.3	12.8	6.44	32.92	NM	0.08	36	19.7	NM	

Sample ID(s): MWA-31i(d)-121224	Additional Comments	SAMPLER NAME AND SIGNATURE Lake whiting	Date Time 12/12/2024 15:45
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-10I
Well Permit No:

Date: 2024/12/10
55 overcast

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low Flow / 35 (ft)	Reference Elevation ()
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 24.3 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 112.9 (mL/min)	Well Diameter / Well Screen Interval 1 (in) /
Sampler paul vannevel Lake Whiting	Volume of Water in Well / Total Volume Purged () / 1.85 (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 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
15:03	24.4		0.5	11.3	7.94	858	NM	1.24	-140	18.1	NM	
15:06	24.4	115.5	0.9	12.3	7.69	844	NM	0	-186	18.1	NM	
15:09	24.4	88.4	1.15	12.7	7.66	844	NM	0	-207	8.04	NM	
15:12	24.4	106.1	1.45	12.7	7.66	843	NM	0	-218	6.68	NM	
15:15	24.4	141.4	1.85	12.7	7.66	846	NM	0	-226	6.68	NM	

Sample ID(s): PA-10i-121024	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:			
		Lpw 	12/10/2024 23:30



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-17IR
Well Permit No:

Date: 2024/12/09
40 overcast

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 26.5 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 43.3 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / - (ft)
Sampler paul vannevel Lake whiting	Volume of Water in Well / Total Volume Purged () / 3.1 (l)	Well Construction

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
11:32	27.1	70.7	0	10.78	7.75	108	NM	25.3	-187	0	NM	
11:35	27.18	142.9	0.35	11.2	6.75	95	NM	8.3	-184	0	NM	
11:38	27.28	61.2	0.5	11.5	6.44	84	NM	6.5	-184	0	NM	
11:41	27.46	53	0.65	11.7	6.35	75	NM	5.3	-184	0	NM	
11:44	27.43	61.2	0.8	11.7	6.31	75	NM	4.6	-186	0	NM	
11:47	27.45	63.2	1	11.7	6.33	81	NM	3.8	-195	0	NM	
11:50	27.5	53	1.15	11.7	6.66	108	NM	4	-216	0	NM	
11:53	27.58	88.4	1.4	12	7.14	254	NM	3.9	-231	0	NM	
11:56	27.6	86.6	1.7	12.4	7.53	347	NM	4.2	-242	0	NM	
11:59	27.61	70.7	1.9	12.7	7.93	426	NM	3.6	-251	0	NM	
12:02	27.65	40.8	2	12.8	8.58	548	NM	3.6	-265	0	NM	
12:05	27.65	35.4	2.1	13	8.91	674	NM	3	-273	0	NM	
12:08	27.65	57.7	2.3	13.1	9.08	777	NM	3	-279	0	NM	
12:11	26.65	63.2	2.5	13.4	9.15	847	NM	2.4	-281	0	NM	
12:14	27.65	106.1	2.8	13.4	9.2	891	NM	1.3	-285	0	NM	
12:17	27.65	35.4	2.9	13.1	9.24	904	NM	1.3	-289	0	NM	
12:20	27.65	70.7	3	12.9	9.26	922	NM	2.2	-284	0	NM	
12:23	27.65	34.8	3.1	13.1	9.29	962	NM	2.7	-288	0	NM	

Sample ID(s): PA-17iR-120924	Additional Comments DO recorded incorrectly - please convert from % to mg	SAMPLER NAME AND SIGNATURE Lake whiting	Date Time 12/12/2024 18:07
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: MWA-58D
Well Permit No:

Date: 2024/12/12
45 raining

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low Flow / 56 (ft)	Reference Elevation 37.97 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 29.85 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 0 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / - ()
Sampler paul vannevel lake whiting	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 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
08:35	30.5		0.5	10.7	6.84	40.4	NM	1.65	54	20.2	NM	
08:39	30.45	82.5	0.85	10.18	6.73	39.44	NM	3.8	58	5.17	NM	
08:40	30.35	32	1	9.3	6.72	40.16	NM	0.3	58	4.46	NM	
08:45	30.35	32	1.15	10.4	6.71	40.14	NM	0.22	59	4.02	NM	
08:48	30.35	63.2	1.35	10.6	6.7	40	NM	0.14	60	3.26	NM	
08:51	30.35	88.4	1.6	10.9	6.7	40	NM	0.04	61	3.92	NM	
08:55	30.35	53.5	1.8	10.8	6.7	39	NM	0.04	63	3.94	NM	

Sample ID(s): MWA-58d-121224	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:			
		Lpw 	12/12/2024 18:46



Low Flow Groundwater Sampling Field Data Form

Well ID: MWA-56D
Well Permit No:

Date: 2024/12/12
45 rainy windy

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low Flow / 58 (ft)	Reference Elevation 36.68 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 28.15 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 0 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / - ()
Sampler paul vannevel lake whiting	Volume of Water in Well / Total Volume Purged () / 3.3 (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 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
11:10	28.16	0	0.25	10.5	7.48	3449	NM	3.64	62	3.86	NM	
11:13	28.15	123.7	0.6	12.4	6.89	3556	NM	1.19	74	4.11	NM	
11:16	28.15	86.6	0.9	13.2	6.7	4465	NM	0.77	79	1.9	NM	
11:19	28.15	94.9	1.2	1.6	6.6	6164	NM	0.47	83	1.58	NM	
11:21	28.15	122.5	1.5	1.7	6.58	8369	NM	0.35	83	1.96	NM	
11:40	28.2	26.1	2	11.38	6.67	17.88	NM	0.41	84	1.79	NM	Pump failed between parameters, new batteries installed
11:43	28.1	88.4	2.25	12.55	6.48	26.46	NM	0.68	84	2.61	NM	
11:46	28.1	102.1	2.5	13.53	6.5	29.27	NM	0.29	84	2.15	NM	
11:49	28.1	110.7	2.85	13.8	6.59	30.29	NM	0.08	83	1.25	NM	
11:52	28.1	129.9	3.3	13.9	6.62	30.65	NM	0.08	83	1.23	NM	

Sample ID(s): MWA-56d-121224	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
	Significant time delay between parameters during stab	PV 	01/03/2025 16:27
Analysis:			



Low Flow Groundwater Sampling Field Data Form

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

Date: 2024/12/12
45 rainy

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 26.5 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 124.6 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / - ()
Sampler paul vannevel lake whiting	Volume of Water in Well / Total Volume Purged () / 5.1 (l)	Well Construction

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
13:13	26.55		0.25	10.53	10.14	822	NM	5.46	-3	1.55	NM	
13:16	26.55	81.6	0.45	10.55	10.24	580	NM	4.67	-2	10.5	NM	
13:19	26.54	79.1	0.6	10	10.29	571	NM	4.54	-2	9.79	NM	
13:22	26.55	81.6	0.8	10.75	10.32	422	NM	4.43	-2	9.42	NM	
13:25	26.55	159.1	1.25	10.4	10.19	441	NM	3.16	0.8	6.55	NM	
13:27	26.55	79.1	1.5	11.9	9.85	576	NM	1.8	-45	7.25	NM	
13:30	26.57	122.5	1.8	12.4	8.44	1534	NM	0.73	-207	5.66	NM	
13:33	26.57	142.3	2.25	12.9	7.5	2056	NM	0.34	-239	2.6	NM	
13:36	26.57	173.9	2.8	13.2	7.28	2197	NM	0.11	-241	1.91	NM	
13:39	26.57	173.9	3.35	13.1	7.32	1732	NM	0.92	-215	10.7	NM	
13:42	26.57	142.3	3.8	13.3	7.17	2066	NM	0.43	-221	7.83	NM	
13:45	26.55	163.3	4.2	13.1	7.12	2205	NM	0.15	-222	5.27	NM	
13:48	26.65	141.4	4.6	12.8	7.08	2268	NM	0.03	-222	3.84	NM	
13:50	26.65	125	4.85	12.55	7.07	2284	NM	0	-222	2.9	NM	
13:53	26.65	79.1	5.1	12.8	7.06	2280	NM	0	-222	2.85	NM	

Sample ID(s): MWA-11i(d)-121224	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:			
		Lpw 	12/12/2024 22:16



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-09
Well Permit No:

Date: 2024/12/09
Cloudy 40 degrees

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low Flow / 30 (ft)	Reference Elevation 40.24 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 29.16 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 0 (mL/min)	Well Diameter / Well Screen Interval 1 (in) / - ()
Sampler paul vannevel Lake Whiting	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 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
10:07				NM	NM	NM	NM	NM	NM	NM	NM	All field parameter data lost due to iPad glitch.

Sample ID(s): PA-09-121024	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:			
		PV 	12/13/2024 17:17



Low Flow Groundwater Sampling Field Data Form

Well ID: PA-19D
Well Permit No:

Date: 2024/12/12
Rainy 45 degrees

Site ID ARKEMA-PORTLAND	Purge Method / Pump Intake Depth Low Flow / 47 (ft)	Reference Elevation 36.65 (ft)
Site Address , Portland, US-OR	Purge Equipment NA	Depth to Water / Free Product 29.05 (ft) / None
Project Number 0732445	Sample Equipment NA	Total Well Depth (ft)
Project Name 20241209-GWMonitor	Average Purge Rate 0 (mL/min)	Well Diameter / Well Screen Interval 1 (in) / - ()
Sampler paul vannevel	Volume of Water in Well / Total Volume Purged () / 9.6 (l)	Well Construction

Well Head Vapor Measurements PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA												
Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (l)	Temperature (C) ±3%	pH ±0.2pH units	Specific Conductivity (uS/cm) ±10%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 %	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
11:43	32.75		0.15	12	7.73	2763	NM	2.44	-62.1	112	NM	
11:46	35.25	159.1	0.6	12.55	7.46	2724	NM	1.47	-58.2	268	NM	
12:16	44.97	149.8	5.1	12.6	7.15	2733	NM	1.61	-67.1	97.7	NM	
12:46	45.85	149.8	9.6	13	7.17	2669	NM	1.43	-70.1	30.4	NM	

Sample ID(s): PA-19d-121224	Additional Comments 1in bladder pump used	SAMPLER NAME AND SIGNATURE PV 	Date Time 12/17/2024 04:34
Analysis:			



APPENDIX B LABORATORY ANALYTICAL REPORTS



ANALYTICAL REPORT

PREPARED FOR

Attn: Avery Soplata
ERM-West
1050 SW 6th Avenue
Suite 1650
Portland, Oregon 97204
Generated 1/6/2025 6:26:10 PM

JOB DESCRIPTION

Arkema - Q4 2024 Groundwater Event

JOB NUMBER

580-146493-1

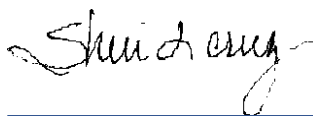
Eurofins Seattle

Job Notes

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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
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Case Narrative

Client: ERM-West
Project: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Job ID: 580-146493-1

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Job Narrative 580-146493-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 12/11/2024 2:34 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 time was 3.1°C.

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-480341 recovered above the upper control limit for Chloromethane, Acetone, 2-Butanone (MEK) and 4-Methyl-2-pentanone (MIBK). The samples associated with this CCV were non-detects below the RL for the affected analytes; therefore, the data have been reported. The associated samples are impacted: PA-27d-120924 (580-146493-1), PA-17iR-120924 (580-146493-2), PA-03-120924 (580-146493-3), PA-08-120924 (580-146493-4), TB-01-121024 (580-146493-5), PA-26d-121024 (580-146493-6), PA-09-121024 (580-146493-7), PA-16i-121024 (580-146493-8), PA-04-121024 (580-146493-9), Dup-01-121024 (580-146493-10), PA-32i-121024 (580-146493-11), PA-31-121024 (580-146493-12), MWA-63-121024 (580-146493-13), PA-18d-121024 (580-146493-14), PA-10i-121024 (580-146493-15) and (CCVIS 580-480341/3).

Method 8260D_LL: The continuing calibration verification (CCV) associated with batch 580-480341 recovered above the upper control limit for Chloromethane, Acetone, 2-Butanone (MEK) and 4-Methyl-2-pentanone (MIBK). The samples associated with this CCV were non-detects below the RL for the affected analytes; therefore, the data have been reported. The associated samples are impacted: PA-27d-120924 (580-146493-1), PA-17iR-120924 (580-146493-2), PA-03-120924 (580-146493-3), PA-08-120924 (580-146493-4), TB-01-121024 (580-146493-5), PA-26d-121024 (580-146493-6), PA-09-121024 (580-146493-7), PA-16i-121024 (580-146493-8), PA-04-121024 (580-146493-9), Dup-01-121024 (580-146493-10), PA-32i-121024 (580-146493-11), PA-31-121024 (580-146493-12), MWA-63-121024 (580-146493-13), PA-18d-121024 (580-146493-14), PA-10i-121024 (580-146493-15) and (CCVIS 580-480341/3).

Method 8260D_LL: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 580-480341 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.

HPLC/IC

Method 314.0: The following samples were diluted due to the nature of the sample matrix: PA-27d-120924 (580-146493-1), PA-17iR-120924 (580-146493-2), PA-03-120924 (580-146493-3), PA-09-121024 (580-146493-7), PA-16i-121024 (580-146493-8), PA-04-121024 (580-146493-9), Dup-01-121024 (580-146493-10), PA-32i-121024 (580-146493-11), PA-31-121024 (580-146493-12), MWA-63-121024 (580-146493-13), PA-18d-121024 (580-146493-14) and PA-10i-121024 (580-146493-15). 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

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

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Definitions/Glossary

Client: ERM-West

Job ID: 580-146493-1

Project/Site: Arkema - Q4 2024 Groundwater Event

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
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.
☼	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 - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-27d-120924

Lab Sample ID: 580-146493-1

Date Collected: 12/09/24 14:01

Matrix: Water

Date Received: 12/11/24 14:34

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			12/13/24 06:07	1
Chloromethane	ND		1.0	0.28	ug/L			12/13/24 06:07	1
Vinyl chloride	ND		1.0	0.22	ug/L			12/13/24 06:07	1
Bromomethane	ND		1.0	0.21	ug/L			12/13/24 06:07	1
Chloroethane	ND		1.0	0.35	ug/L			12/13/24 06:07	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			12/13/24 06:07	1
Carbon disulfide	ND		1.0	0.53	ug/L			12/13/24 06:07	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			12/13/24 06:07	1
Acetone	ND		15	3.2	ug/L			12/13/24 06:07	1
Methylene Chloride	ND		5.0	1.4	ug/L			12/13/24 06:07	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			12/13/24 06:07	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			12/13/24 06:07	1
1,1-Dichloroethane	0.37	J	1.0	0.22	ug/L			12/13/24 06:07	1
2-Butanone (MEK)	ND		15	4.7	ug/L			12/13/24 06:07	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			12/13/24 06:07	1
cis-1,2-Dichloroethene	0.85	J	1.0	0.35	ug/L			12/13/24 06:07	1
Chlorobromomethane	ND		1.0	0.29	ug/L			12/13/24 06:07	1
Chloroform	ND		1.0	0.26	ug/L			12/13/24 06:07	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			12/13/24 06:07	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			12/13/24 06:07	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			12/13/24 06:07	1
Benzene	ND		1.0	0.24	ug/L			12/13/24 06:07	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			12/13/24 06:07	1
Trichloroethene	ND		1.0	0.26	ug/L			12/13/24 06:07	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			12/13/24 06:07	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/13/24 06:07	1
Dibromomethane	ND		1.0	0.34	ug/L			12/13/24 06:07	1
Dichlorobromomethane	ND		1.0	0.29	ug/L			12/13/24 06:07	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/13/24 06:07	1
Toluene	ND		1.0	0.39	ug/L			12/13/24 06:07	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			12/13/24 06:07	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			12/13/24 06:07	1
Tetrachloroethene	ND		1.0	0.41	ug/L			12/13/24 06:07	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			12/13/24 06:07	1
Chlorodibromomethane	ND		1.0	0.43	ug/L			12/13/24 06:07	1
Ethylene Dibromide	ND		1.0	0.40	ug/L			12/13/24 06:07	1
Chlorobenzene	ND		1.0	0.44	ug/L			12/13/24 06:07	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			12/13/24 06:07	1
Ethylbenzene	ND		1.0	0.50	ug/L			12/13/24 06:07	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			12/13/24 06:07	1
o-Xylene	ND		1.0	0.39	ug/L			12/13/24 06:07	1
Styrene	ND		1.0	0.53	ug/L			12/13/24 06:07	1
Bromoform	ND		1.0	0.51	ug/L			12/13/24 06:07	1
Isopropylbenzene	ND		1.0	0.44	ug/L			12/13/24 06:07	1
Bromobenzene	ND		1.0	0.43	ug/L			12/13/24 06:07	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			12/13/24 06:07	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			12/13/24 06:07	1
N-Propylbenzene	ND		1.0	0.50	ug/L			12/13/24 06:07	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			12/13/24 06:07	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-27d-120924

Lab Sample ID: 580-146493-1

Date Collected: 12/09/24 14:01

Matrix: Water

Date Received: 12/11/24 14:34

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			12/13/24 06:07	1
tert-Butylbenzene	ND		2.0	0.58	ug/L			12/13/24 06:07	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			12/13/24 06:07	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			12/13/24 06:07	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			12/13/24 06:07	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			12/13/24 06:07	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/13/24 06:07	1
n-Butylbenzene	ND		1.0	0.44	ug/L			12/13/24 06:07	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			12/13/24 06:07	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			12/13/24 06:07	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			12/13/24 06:07	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			12/13/24 06:07	1
Naphthalene	ND		3.0	0.93	ug/L			12/13/24 06:07	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			12/13/24 06:07	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			12/13/24 06:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		12/13/24 06:07	1
1,2-Dichloroethane-d4 (Surr)	97		80 - 120		12/13/24 06:07	1
4-Bromofluorobenzene (Surr)	88		80 - 120		12/13/24 06:07	1
Dibromofluoromethane (Surr)	96		80 - 120		12/13/24 06:07	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	9.1	ug/L			12/18/24 18:47	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	590		150	43	mg/L			01/01/25 21:05	100

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-17iR-120924

Lab Sample ID: 580-146493-2

Date Collected: 12/09/24 12:25

Matrix: Water

Date Received: 12/11/24 14:34

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			12/13/24 06:30	1
Chloromethane	ND		0.50	0.14	ug/L			12/13/24 06:30	1
Vinyl chloride	ND		0.10	0.040	ug/L			12/13/24 06:30	1
Bromomethane	ND		0.50	0.13	ug/L			12/13/24 06:30	1
Chloroethane	ND		0.50	0.24	ug/L			12/13/24 06:30	1
Carbon disulfide	ND		0.40	0.20	ug/L			12/13/24 06:30	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			12/13/24 06:30	1
1,1-Dichloroethene	0.16	J	0.20	0.035	ug/L			12/13/24 06:30	1
Acetone	ND		10	3.1	ug/L			12/13/24 06:30	1
Methylene Chloride	ND		5.0	1.2	ug/L			12/13/24 06:30	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			12/13/24 06:30	1
2-Butanone (MEK)	ND		10	2.5	ug/L			12/13/24 06:30	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			12/13/24 06:30	1
1,1-Dichloroethane	0.13	J	0.20	0.064	ug/L			12/13/24 06:30	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			12/13/24 06:30	1
cis-1,2-Dichloroethene	0.10	J	0.20	0.055	ug/L			12/13/24 06:30	1
Chlorobromomethane	ND		0.20	0.050	ug/L			12/13/24 06:30	1
Chloroform	ND		0.20	0.030	ug/L			12/13/24 06:30	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			12/13/24 06:30	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			12/13/24 06:30	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			12/13/24 06:30	1
Benzene	0.14	J B	0.20	0.030	ug/L			12/13/24 06:30	1
1,2-Dichloroethane	ND		0.25	0.12	ug/L			12/13/24 06:30	1
Trichloroethene	ND		0.20	0.066	ug/L			12/13/24 06:30	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			12/13/24 06:30	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.7	ug/L			12/13/24 06:30	1
Dibromomethane	ND		0.20	0.062	ug/L			12/13/24 06:30	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			12/13/24 06:30	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			12/13/24 06:30	1
Toluene	ND		0.20	0.050	ug/L			12/13/24 06:30	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			12/13/24 06:30	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			12/13/24 06:30	1
Tetrachloroethene	ND		0.24	0.084	ug/L			12/13/24 06:30	1
1,3-Dichloropropane	ND		0.20	0.056	ug/L			12/13/24 06:30	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			12/13/24 06:30	1
Ethylene Dibromide	ND		0.15	0.067	ug/L			12/13/24 06:30	1
Chlorobenzene	0.12	J	0.20	0.060	ug/L			12/13/24 06:30	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.11	ug/L			12/13/24 06:30	1
Ethylbenzene	ND		0.20	0.082	ug/L			12/13/24 06:30	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			12/13/24 06:30	1
o-Xylene	ND		0.50	0.23	ug/L			12/13/24 06:30	1
Styrene	ND		1.0	0.33	ug/L			12/13/24 06:30	1
Bromoform	ND		0.50	0.16	ug/L			12/13/24 06:30	1
Isopropylbenzene	ND		1.0	0.27	ug/L			12/13/24 06:30	1
Bromobenzene	ND		0.20	0.038	ug/L			12/13/24 06:30	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			12/13/24 06:30	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			12/13/24 06:30	1
N-Propylbenzene	ND		0.30	0.091	ug/L			12/13/24 06:30	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			12/13/24 06:30	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-17iR-120924

Lab Sample ID: 580-146493-2

Date Collected: 12/09/24 12:25

Matrix: Water

Date Received: 12/11/24 14:34

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			12/13/24 06:30	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			12/13/24 06:30	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			12/13/24 06:30	1
1,2,4-Trimethylbenzene	ND		0.55	0.23	ug/L			12/13/24 06:30	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			12/13/24 06:30	1
4-Isopropyltoluene	ND		0.50	0.25	ug/L			12/13/24 06:30	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 06:30	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 06:30	1
n-Butylbenzene	ND		1.0	0.35	ug/L			12/13/24 06:30	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			12/13/24 06:30	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.48	ug/L			12/13/24 06:30	1
1,2,4-Trichlorobenzene	ND		1.5	0.36	ug/L			12/13/24 06:30	1
Hexachlorobutadiene	ND		0.50	0.16	ug/L			12/13/24 06:30	1
Naphthalene	ND		1.5	0.52	ug/L			12/13/24 06:30	1
1,2,3-Trichlorobenzene	ND		1.5	0.47	ug/L			12/13/24 06:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		12/13/24 06:30	1
Dibromofluoromethane (Surr)	96		80 - 120		12/13/24 06:30	1
4-Bromofluorobenzene (Surr)	90		80 - 120		12/13/24 06:30	1
1,2-Dichloroethane-d4 (Surr)	96		80 - 120		12/13/24 06:30	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		200	91	ug/L			12/18/24 19:28	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	49		1.5	0.43	mg/L			01/01/25 21:17	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-03-120924

Lab Sample ID: 580-146493-3

Date Collected: 12/09/24 10:37

Matrix: Water

Date Received: 12/11/24 14:34

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			12/13/24 06:53	1
Vinyl chloride	ND		0.10	0.040	ug/L			12/13/24 06:53	1
Bromomethane	ND		0.50	0.13	ug/L			12/13/24 06:53	1
Chloroethane	ND		0.50	0.24	ug/L			12/13/24 06:53	1
Carbon disulfide	ND		0.40	0.20	ug/L			12/13/24 06:53	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			12/13/24 06:53	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			12/13/24 06:53	1
Acetone	ND		10	3.1	ug/L			12/13/24 06:53	1
Methylene Chloride	ND		5.0	1.2	ug/L			12/13/24 06:53	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			12/13/24 06:53	1
2-Butanone (MEK)	ND		10	2.5	ug/L			12/13/24 06:53	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			12/13/24 06:53	1
1,1-Dichloroethane	0.14	J	0.20	0.064	ug/L			12/13/24 06:53	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			12/13/24 06:53	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			12/13/24 06:53	1
Chlorobromomethane	ND		0.20	0.050	ug/L			12/13/24 06:53	1
Chloroform	ND		0.20	0.030	ug/L			12/13/24 06:53	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			12/13/24 06:53	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			12/13/24 06:53	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			12/13/24 06:53	1
Benzene	0.088	J B	0.20	0.030	ug/L			12/13/24 06:53	1
1,2-Dichloroethane	ND		0.25	0.12	ug/L			12/13/24 06:53	1
Trichloroethene	ND		0.20	0.066	ug/L			12/13/24 06:53	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			12/13/24 06:53	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.7	ug/L			12/13/24 06:53	1
Dibromomethane	ND		0.20	0.062	ug/L			12/13/24 06:53	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			12/13/24 06:53	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			12/13/24 06:53	1
Toluene	0.18	J	0.20	0.050	ug/L			12/13/24 06:53	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			12/13/24 06:53	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			12/13/24 06:53	1
Tetrachloroethene	ND		0.24	0.084	ug/L			12/13/24 06:53	1
1,3-Dichloropropane	ND		0.20	0.056	ug/L			12/13/24 06:53	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			12/13/24 06:53	1
Ethylene Dibromide	ND		0.15	0.067	ug/L			12/13/24 06:53	1
Chlorobenzene	ND		0.20	0.060	ug/L			12/13/24 06:53	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.11	ug/L			12/13/24 06:53	1
Ethylbenzene	ND		0.20	0.082	ug/L			12/13/24 06:53	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			12/13/24 06:53	1
o-Xylene	ND		0.50	0.23	ug/L			12/13/24 06:53	1
Styrene	ND		1.0	0.33	ug/L			12/13/24 06:53	1
Bromoform	ND		0.50	0.16	ug/L			12/13/24 06:53	1
Isopropylbenzene	ND		1.0	0.27	ug/L			12/13/24 06:53	1
Bromobenzene	ND		0.20	0.038	ug/L			12/13/24 06:53	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			12/13/24 06:53	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			12/13/24 06:53	1
N-Propylbenzene	ND		0.30	0.091	ug/L			12/13/24 06:53	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			12/13/24 06:53	1
4-Chlorotoluene	ND		0.30	0.12	ug/L			12/13/24 06:53	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-03-120924

Lab Sample ID: 580-146493-3

Date Collected: 12/09/24 10:37

Matrix: Water

Date Received: 12/11/24 14:34

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			12/13/24 06:53	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			12/13/24 06:53	1
1,2,4-Trimethylbenzene	ND		0.55	0.23	ug/L			12/13/24 06:53	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			12/13/24 06:53	1
4-Isopropyltoluene	ND		0.50	0.25	ug/L			12/13/24 06:53	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 06:53	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 06:53	1
n-Butylbenzene	ND		1.0	0.35	ug/L			12/13/24 06:53	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			12/13/24 06:53	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.48	ug/L			12/13/24 06:53	1
1,2,4-Trichlorobenzene	ND		1.5	0.36	ug/L			12/13/24 06:53	1
Hexachlorobutadiene	ND		0.50	0.16	ug/L			12/13/24 06:53	1
Naphthalene	ND		1.5	0.52	ug/L			12/13/24 06:53	1
1,2,3-Trichlorobenzene	ND		1.5	0.47	ug/L			12/13/24 06:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		12/13/24 06:53	1
Dibromofluoromethane (Surr)	96		80 - 120		12/13/24 06:53	1
4-Bromofluorobenzene (Surr)	88		80 - 120		12/13/24 06:53	1
1,2-Dichloroethane-d4 (Surr)	97		80 - 120		12/13/24 06:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.42	J	0.50	0.14	ug/L			12/16/24 17:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 120		12/16/24 17:12	1
Dibromofluoromethane (Surr)	102		80 - 120		12/16/24 17:12	1
4-Bromofluorobenzene (Surr)	103		80 - 120		12/16/24 17:12	1
1,2-Dichloroethane-d4 (Surr)	103		80 - 120		12/16/24 17:12	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	9.1	ug/L			12/18/24 20:10	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	4.3		1.5	0.43	mg/L			01/01/25 21:41	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-08-120924

Lab Sample ID: 580-146493-4

Date Collected: 12/09/24 08:29

Matrix: Water

Date Received: 12/11/24 14:34

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			12/13/24 07:16	1
Vinyl chloride	ND		0.10	0.040	ug/L			12/13/24 07:16	1
Bromomethane	ND		0.50	0.13	ug/L			12/13/24 07:16	1
Chloroethane	ND		0.50	0.24	ug/L			12/13/24 07:16	1
Carbon disulfide	ND		0.40	0.20	ug/L			12/13/24 07:16	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			12/13/24 07:16	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			12/13/24 07:16	1
Acetone	ND		10	3.1	ug/L			12/13/24 07:16	1
Methylene Chloride	ND		5.0	1.2	ug/L			12/13/24 07:16	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			12/13/24 07:16	1
2-Butanone (MEK)	ND		10	2.5	ug/L			12/13/24 07:16	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			12/13/24 07:16	1
1,1-Dichloroethane	0.096	J	0.20	0.064	ug/L			12/13/24 07:16	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			12/13/24 07:16	1
cis-1,2-Dichloroethene	0.081	J	0.20	0.055	ug/L			12/13/24 07:16	1
Chlorobromomethane	ND		0.20	0.050	ug/L			12/13/24 07:16	1
Chloroform	0.10	J	0.20	0.030	ug/L			12/13/24 07:16	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			12/13/24 07:16	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			12/13/24 07:16	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			12/13/24 07:16	1
Benzene	0.041	J B	0.20	0.030	ug/L			12/13/24 07:16	1
1,2-Dichloroethane	ND		0.25	0.12	ug/L			12/13/24 07:16	1
Trichloroethene	0.14	J	0.20	0.066	ug/L			12/13/24 07:16	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			12/13/24 07:16	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.7	ug/L			12/13/24 07:16	1
Dibromomethane	ND		0.20	0.062	ug/L			12/13/24 07:16	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			12/13/24 07:16	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			12/13/24 07:16	1
Toluene	ND		0.20	0.050	ug/L			12/13/24 07:16	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			12/13/24 07:16	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			12/13/24 07:16	1
Tetrachloroethene	0.27		0.24	0.084	ug/L			12/13/24 07:16	1
1,3-Dichloropropane	ND		0.20	0.056	ug/L			12/13/24 07:16	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			12/13/24 07:16	1
Ethylene Dibromide	ND		0.15	0.067	ug/L			12/13/24 07:16	1
Chlorobenzene	ND		0.20	0.060	ug/L			12/13/24 07:16	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.11	ug/L			12/13/24 07:16	1
Ethylbenzene	ND		0.20	0.082	ug/L			12/13/24 07:16	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			12/13/24 07:16	1
o-Xylene	ND		0.50	0.23	ug/L			12/13/24 07:16	1
Styrene	ND		1.0	0.33	ug/L			12/13/24 07:16	1
Bromoform	ND		0.50	0.16	ug/L			12/13/24 07:16	1
Isopropylbenzene	ND		1.0	0.27	ug/L			12/13/24 07:16	1
Bromobenzene	ND		0.20	0.038	ug/L			12/13/24 07:16	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			12/13/24 07:16	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			12/13/24 07:16	1
N-Propylbenzene	ND		0.30	0.091	ug/L			12/13/24 07:16	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			12/13/24 07:16	1
4-Chlorotoluene	ND		0.30	0.12	ug/L			12/13/24 07:16	1

Eurofins Seattle

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-08-120924

Lab Sample ID: 580-146493-4

Date Collected: 12/09/24 08:29

Matrix: Water

Date Received: 12/11/24 14:34

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			12/13/24 07:16	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			12/13/24 07:16	1
1,2,4-Trimethylbenzene	ND		0.55	0.23	ug/L			12/13/24 07:16	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			12/13/24 07:16	1
4-Isopropyltoluene	ND		0.50	0.25	ug/L			12/13/24 07:16	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 07:16	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 07:16	1
n-Butylbenzene	ND		1.0	0.35	ug/L			12/13/24 07:16	1
1,2-Dichlorobenzene	0.056	J	0.30	0.038	ug/L			12/13/24 07:16	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.48	ug/L			12/13/24 07:16	1
1,2,4-Trichlorobenzene	ND		1.5	0.36	ug/L			12/13/24 07:16	1
Hexachlorobutadiene	ND		0.50	0.16	ug/L			12/13/24 07:16	1
Naphthalene	ND		1.5	0.52	ug/L			12/13/24 07:16	1
1,2,3-Trichlorobenzene	ND		1.5	0.47	ug/L			12/13/24 07:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		12/13/24 07:16	1
Dibromofluoromethane (Surr)	100		80 - 120		12/13/24 07:16	1
4-Bromofluorobenzene (Surr)	88		80 - 120		12/13/24 07:16	1
1,2-Dichloroethane-d4 (Surr)	101		80 - 120		12/13/24 07:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.17	J	0.50	0.14	ug/L			12/16/24 17:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 120		12/16/24 17:35	1
Dibromofluoromethane (Surr)	102		80 - 120		12/16/24 17:35	1
4-Bromofluorobenzene (Surr)	102		80 - 120		12/16/24 17:35	1
1,2-Dichloroethane-d4 (Surr)	104		80 - 120		12/16/24 17:35	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	33		20	9.1	ug/L			12/18/24 20:52	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	230		15	4.3	mg/L			01/01/25 22:16	10

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: TB-01-121024

Lab Sample ID: 580-146493-5

Date Collected: 12/10/24 00:01

Matrix: Water

Date Received: 12/11/24 14:34

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			12/13/24 05:20	1
Chloromethane	ND		0.50	0.14	ug/L			12/13/24 05:20	1
Vinyl chloride	ND		0.10	0.040	ug/L			12/13/24 05:20	1
Bromomethane	ND		0.50	0.13	ug/L			12/13/24 05:20	1
Chloroethane	ND		0.50	0.24	ug/L			12/13/24 05:20	1
Carbon disulfide	ND		0.40	0.20	ug/L			12/13/24 05:20	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			12/13/24 05:20	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			12/13/24 05:20	1
Acetone	ND		10	3.1	ug/L			12/13/24 05:20	1
Methylene Chloride	ND		5.0	1.2	ug/L			12/13/24 05:20	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			12/13/24 05:20	1
2-Butanone (MEK)	ND		10	2.5	ug/L			12/13/24 05:20	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			12/13/24 05:20	1
1,1-Dichloroethane	ND		0.20	0.064	ug/L			12/13/24 05:20	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			12/13/24 05:20	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			12/13/24 05:20	1
Chlorobromomethane	ND		0.20	0.050	ug/L			12/13/24 05:20	1
Chloroform	ND		0.20	0.030	ug/L			12/13/24 05:20	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			12/13/24 05:20	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			12/13/24 05:20	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			12/13/24 05:20	1
Benzene	0.034	J B	0.20	0.030	ug/L			12/13/24 05:20	1
1,2-Dichloroethane	ND		0.25	0.12	ug/L			12/13/24 05:20	1
Trichloroethene	ND		0.20	0.066	ug/L			12/13/24 05:20	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			12/13/24 05:20	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.7	ug/L			12/13/24 05:20	1
Dibromomethane	ND		0.20	0.062	ug/L			12/13/24 05:20	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			12/13/24 05:20	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			12/13/24 05:20	1
Toluene	ND		0.20	0.050	ug/L			12/13/24 05:20	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			12/13/24 05:20	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			12/13/24 05:20	1
Tetrachloroethene	ND		0.24	0.084	ug/L			12/13/24 05:20	1
1,3-Dichloropropane	ND		0.20	0.056	ug/L			12/13/24 05:20	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			12/13/24 05:20	1
Ethylene Dibromide	ND		0.15	0.067	ug/L			12/13/24 05:20	1
Chlorobenzene	ND		0.20	0.060	ug/L			12/13/24 05:20	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.11	ug/L			12/13/24 05:20	1
Ethylbenzene	ND		0.20	0.082	ug/L			12/13/24 05:20	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			12/13/24 05:20	1
o-Xylene	ND		0.50	0.23	ug/L			12/13/24 05:20	1
Styrene	ND		1.0	0.33	ug/L			12/13/24 05:20	1
Bromoform	ND		0.50	0.16	ug/L			12/13/24 05:20	1
Isopropylbenzene	ND		1.0	0.27	ug/L			12/13/24 05:20	1
Bromobenzene	ND		0.20	0.038	ug/L			12/13/24 05:20	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			12/13/24 05:20	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			12/13/24 05:20	1
N-Propylbenzene	ND		0.30	0.091	ug/L			12/13/24 05:20	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			12/13/24 05:20	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: TB-01-121024

Lab Sample ID: 580-146493-5

Date Collected: 12/10/24 00:01

Matrix: Water

Date Received: 12/11/24 14:34

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			12/13/24 05:20	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			12/13/24 05:20	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			12/13/24 05:20	1
1,2,4-Trimethylbenzene	ND		0.55	0.23	ug/L			12/13/24 05:20	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			12/13/24 05:20	1
4-Isopropyltoluene	ND		0.50	0.25	ug/L			12/13/24 05:20	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 05:20	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 05:20	1
n-Butylbenzene	ND		1.0	0.35	ug/L			12/13/24 05:20	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			12/13/24 05:20	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.48	ug/L			12/13/24 05:20	1
1,2,4-Trichlorobenzene	ND		1.5	0.36	ug/L			12/13/24 05:20	1
Hexachlorobutadiene	ND		0.50	0.16	ug/L			12/13/24 05:20	1
Naphthalene	ND		1.5	0.52	ug/L			12/13/24 05:20	1
1,2,3-Trichlorobenzene	ND		1.5	0.47	ug/L			12/13/24 05:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		12/13/24 05:20	1
Dibromofluoromethane (Surr)	96		80 - 120		12/13/24 05:20	1
4-Bromofluorobenzene (Surr)	89		80 - 120		12/13/24 05:20	1
1,2-Dichloroethane-d4 (Surr)	96		80 - 120		12/13/24 05:20	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-26d-121024

Lab Sample ID: 580-146493-6

Date Collected: 12/10/24 08:49

Matrix: Water

Date Received: 12/11/24 14:34

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			12/13/24 07:39	1
Chloromethane	0.27	J	0.50	0.14	ug/L			12/13/24 07:39	1
Vinyl chloride	ND		0.10	0.040	ug/L			12/13/24 07:39	1
Bromomethane	ND		0.50	0.13	ug/L			12/13/24 07:39	1
Chloroethane	ND		0.50	0.24	ug/L			12/13/24 07:39	1
Carbon disulfide	ND		0.40	0.20	ug/L			12/13/24 07:39	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			12/13/24 07:39	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			12/13/24 07:39	1
Acetone	ND		10	3.1	ug/L			12/13/24 07:39	1
Methylene Chloride	ND		5.0	1.2	ug/L			12/13/24 07:39	1
Methyl tert-butyl ether	0.11	J	0.30	0.070	ug/L			12/13/24 07:39	1
2-Butanone (MEK)	ND		10	2.5	ug/L			12/13/24 07:39	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			12/13/24 07:39	1
1,1-Dichloroethane	ND		0.20	0.064	ug/L			12/13/24 07:39	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			12/13/24 07:39	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			12/13/24 07:39	1
Chlorobromomethane	ND		0.20	0.050	ug/L			12/13/24 07:39	1
Chloroform	ND		0.20	0.030	ug/L			12/13/24 07:39	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			12/13/24 07:39	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			12/13/24 07:39	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			12/13/24 07:39	1
Benzene	0.034	J B	0.20	0.030	ug/L			12/13/24 07:39	1
1,2-Dichloroethane	0.36		0.25	0.12	ug/L			12/13/24 07:39	1
Trichloroethene	ND		0.20	0.066	ug/L			12/13/24 07:39	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			12/13/24 07:39	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.7	ug/L			12/13/24 07:39	1
Dibromomethane	ND		0.20	0.062	ug/L			12/13/24 07:39	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			12/13/24 07:39	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			12/13/24 07:39	1
Toluene	ND		0.20	0.050	ug/L			12/13/24 07:39	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			12/13/24 07:39	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			12/13/24 07:39	1
Tetrachloroethene	ND		0.24	0.084	ug/L			12/13/24 07:39	1
1,3-Dichloropropane	ND		0.20	0.056	ug/L			12/13/24 07:39	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			12/13/24 07:39	1
Ethylene Dibromide	ND		0.15	0.067	ug/L			12/13/24 07:39	1
Chlorobenzene	ND		0.20	0.060	ug/L			12/13/24 07:39	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.11	ug/L			12/13/24 07:39	1
Ethylbenzene	ND		0.20	0.082	ug/L			12/13/24 07:39	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			12/13/24 07:39	1
o-Xylene	ND		0.50	0.23	ug/L			12/13/24 07:39	1
Styrene	ND		1.0	0.33	ug/L			12/13/24 07:39	1
Bromoform	ND		0.50	0.16	ug/L			12/13/24 07:39	1
Isopropylbenzene	ND		1.0	0.27	ug/L			12/13/24 07:39	1
Bromobenzene	ND		0.20	0.038	ug/L			12/13/24 07:39	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			12/13/24 07:39	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			12/13/24 07:39	1
N-Propylbenzene	ND		0.30	0.091	ug/L			12/13/24 07:39	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			12/13/24 07:39	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-26d-121024

Lab Sample ID: 580-146493-6

Date Collected: 12/10/24 08:49

Matrix: Water

Date Received: 12/11/24 14:34

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			12/13/24 07:39	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			12/13/24 07:39	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			12/13/24 07:39	1
1,2,4-Trimethylbenzene	ND		0.55	0.23	ug/L			12/13/24 07:39	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			12/13/24 07:39	1
4-Isopropyltoluene	ND		0.50	0.25	ug/L			12/13/24 07:39	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 07:39	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 07:39	1
n-Butylbenzene	ND		1.0	0.35	ug/L			12/13/24 07:39	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			12/13/24 07:39	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.48	ug/L			12/13/24 07:39	1
1,2,4-Trichlorobenzene	ND		1.5	0.36	ug/L			12/13/24 07:39	1
Hexachlorobutadiene	ND		0.50	0.16	ug/L			12/13/24 07:39	1
Naphthalene	ND		1.5	0.52	ug/L			12/13/24 07:39	1
1,2,3-Trichlorobenzene	ND		1.5	0.47	ug/L			12/13/24 07:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120		12/13/24 07:39	1
Dibromofluoromethane (Surr)	97		80 - 120		12/13/24 07:39	1
4-Bromofluorobenzene (Surr)	91		80 - 120		12/13/24 07:39	1
1,2-Dichloroethane-d4 (Surr)	91		80 - 120		12/13/24 07:39	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			12/18/24 21:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	80		1.5	0.43	mg/L			01/01/25 22:28	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-09-121024

Lab Sample ID: 580-146493-7

Date Collected: 12/10/24 10:08

Matrix: Water

Date Received: 12/11/24 14:34

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			12/13/24 08:03	1
Vinyl chloride	ND		0.10	0.040	ug/L			12/13/24 08:03	1
Bromomethane	ND		0.50	0.13	ug/L			12/13/24 08:03	1
Chloroethane	ND		0.50	0.24	ug/L			12/13/24 08:03	1
Carbon disulfide	ND		0.40	0.20	ug/L			12/13/24 08:03	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			12/13/24 08:03	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			12/13/24 08:03	1
Acetone	ND		10	3.1	ug/L			12/13/24 08:03	1
Methylene Chloride	ND		5.0	1.2	ug/L			12/13/24 08:03	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			12/13/24 08:03	1
2-Butanone (MEK)	ND		10	2.5	ug/L			12/13/24 08:03	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			12/13/24 08:03	1
1,1-Dichloroethane	ND		0.20	0.064	ug/L			12/13/24 08:03	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			12/13/24 08:03	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			12/13/24 08:03	1
Chlorobromomethane	ND		0.20	0.050	ug/L			12/13/24 08:03	1
Chloroform	ND		0.20	0.030	ug/L			12/13/24 08:03	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			12/13/24 08:03	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			12/13/24 08:03	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			12/13/24 08:03	1
Benzene	0.038	J B	0.20	0.030	ug/L			12/13/24 08:03	1
1,2-Dichloroethane	ND		0.25	0.12	ug/L			12/13/24 08:03	1
Trichloroethene	ND		0.20	0.066	ug/L			12/13/24 08:03	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			12/13/24 08:03	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.7	ug/L			12/13/24 08:03	1
Dibromomethane	ND		0.20	0.062	ug/L			12/13/24 08:03	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			12/13/24 08:03	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			12/13/24 08:03	1
Toluene	ND		0.20	0.050	ug/L			12/13/24 08:03	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			12/13/24 08:03	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			12/13/24 08:03	1
Tetrachloroethene	ND		0.24	0.084	ug/L			12/13/24 08:03	1
1,3-Dichloropropane	ND		0.20	0.056	ug/L			12/13/24 08:03	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			12/13/24 08:03	1
Ethylene Dibromide	ND		0.15	0.067	ug/L			12/13/24 08:03	1
Chlorobenzene	ND		0.20	0.060	ug/L			12/13/24 08:03	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.11	ug/L			12/13/24 08:03	1
Ethylbenzene	ND		0.20	0.082	ug/L			12/13/24 08:03	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			12/13/24 08:03	1
o-Xylene	ND		0.50	0.23	ug/L			12/13/24 08:03	1
Styrene	ND		1.0	0.33	ug/L			12/13/24 08:03	1
Bromoform	ND		0.50	0.16	ug/L			12/13/24 08:03	1
Isopropylbenzene	ND		1.0	0.27	ug/L			12/13/24 08:03	1
Bromobenzene	ND		0.20	0.038	ug/L			12/13/24 08:03	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			12/13/24 08:03	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			12/13/24 08:03	1
N-Propylbenzene	ND		0.30	0.091	ug/L			12/13/24 08:03	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			12/13/24 08:03	1
4-Chlorotoluene	ND		0.30	0.12	ug/L			12/13/24 08:03	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-09-121024

Lab Sample ID: 580-146493-7

Date Collected: 12/10/24 10:08

Matrix: Water

Date Received: 12/11/24 14:34

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			12/13/24 08:03	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			12/13/24 08:03	1
1,2,4-Trimethylbenzene	ND		0.55	0.23	ug/L			12/13/24 08:03	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			12/13/24 08:03	1
4-Isopropyltoluene	ND		0.50	0.25	ug/L			12/13/24 08:03	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 08:03	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 08:03	1
n-Butylbenzene	ND		1.0	0.35	ug/L			12/13/24 08:03	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			12/13/24 08:03	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.48	ug/L			12/13/24 08:03	1
1,2,4-Trichlorobenzene	ND		1.5	0.36	ug/L			12/13/24 08:03	1
Hexachlorobutadiene	ND		0.50	0.16	ug/L			12/13/24 08:03	1
Naphthalene	ND		1.5	0.52	ug/L			12/13/24 08:03	1
1,2,3-Trichlorobenzene	ND		1.5	0.47	ug/L			12/13/24 08:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		12/13/24 08:03	1
Dibromofluoromethane (Surr)	102		80 - 120		12/13/24 08:03	1
4-Bromofluorobenzene (Surr)	89		80 - 120		12/13/24 08:03	1
1,2-Dichloroethane-d4 (Surr)	103		80 - 120		12/13/24 08:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	ND		0.50	0.14	ug/L			12/16/24 17:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		12/16/24 17:58	1
Dibromofluoromethane (Surr)	102		80 - 120		12/16/24 17:58	1
4-Bromofluorobenzene (Surr)	103		80 - 120		12/16/24 17:58	1
1,2-Dichloroethane-d4 (Surr)	104		80 - 120		12/16/24 17:58	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		10	4.5	ug/L			12/18/24 22:15	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	6.6		1.5	0.43	mg/L			01/01/25 23:16	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-16i-121024

Lab Sample ID: 580-146493-8

Date Collected: 12/10/24 11:43

Matrix: Water

Date Received: 12/11/24 14:34

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			12/13/24 08:26	1
Chloromethane	ND		0.50	0.14	ug/L			12/13/24 08:26	1
Vinyl chloride	ND		0.10	0.040	ug/L			12/13/24 08:26	1
Bromomethane	ND		0.50	0.13	ug/L			12/13/24 08:26	1
Chloroethane	ND		0.50	0.24	ug/L			12/13/24 08:26	1
Carbon disulfide	ND		0.40	0.20	ug/L			12/13/24 08:26	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			12/13/24 08:26	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			12/13/24 08:26	1
Acetone	ND		10	3.1	ug/L			12/13/24 08:26	1
Methylene Chloride	ND		5.0	1.2	ug/L			12/13/24 08:26	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			12/13/24 08:26	1
2-Butanone (MEK)	ND		10	2.5	ug/L			12/13/24 08:26	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			12/13/24 08:26	1
1,1-Dichloroethane	0.067	J	0.20	0.064	ug/L			12/13/24 08:26	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			12/13/24 08:26	1
cis-1,2-Dichloroethene	0.070	J	0.20	0.055	ug/L			12/13/24 08:26	1
Chlorobromomethane	ND		0.20	0.050	ug/L			12/13/24 08:26	1
Chloroform	ND		0.20	0.030	ug/L			12/13/24 08:26	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			12/13/24 08:26	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			12/13/24 08:26	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			12/13/24 08:26	1
Benzene	0.048	J B	0.20	0.030	ug/L			12/13/24 08:26	1
1,2-Dichloroethane	ND		0.25	0.12	ug/L			12/13/24 08:26	1
Trichloroethene	ND		0.20	0.066	ug/L			12/13/24 08:26	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			12/13/24 08:26	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.7	ug/L			12/13/24 08:26	1
Dibromomethane	ND		0.20	0.062	ug/L			12/13/24 08:26	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			12/13/24 08:26	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			12/13/24 08:26	1
Toluene	2.6		0.20	0.050	ug/L			12/13/24 08:26	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			12/13/24 08:26	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			12/13/24 08:26	1
Tetrachloroethene	ND		0.24	0.084	ug/L			12/13/24 08:26	1
1,3-Dichloropropane	ND		0.20	0.056	ug/L			12/13/24 08:26	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			12/13/24 08:26	1
Ethylene Dibromide	ND		0.15	0.067	ug/L			12/13/24 08:26	1
Chlorobenzene	0.15	J	0.20	0.060	ug/L			12/13/24 08:26	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.11	ug/L			12/13/24 08:26	1
Ethylbenzene	ND		0.20	0.082	ug/L			12/13/24 08:26	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			12/13/24 08:26	1
o-Xylene	ND		0.50	0.23	ug/L			12/13/24 08:26	1
Styrene	ND		1.0	0.33	ug/L			12/13/24 08:26	1
Bromoform	ND		0.50	0.16	ug/L			12/13/24 08:26	1
Isopropylbenzene	ND		1.0	0.27	ug/L			12/13/24 08:26	1
Bromobenzene	ND		0.20	0.038	ug/L			12/13/24 08:26	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			12/13/24 08:26	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			12/13/24 08:26	1
N-Propylbenzene	ND		0.30	0.091	ug/L			12/13/24 08:26	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			12/13/24 08:26	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-16i-121024

Lab Sample ID: 580-146493-8

Date Collected: 12/10/24 11:43

Matrix: Water

Date Received: 12/11/24 14:34

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			12/13/24 08:26	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			12/13/24 08:26	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			12/13/24 08:26	1
1,2,4-Trimethylbenzene	ND		0.55	0.23	ug/L			12/13/24 08:26	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			12/13/24 08:26	1
4-Isopropyltoluene	ND		0.50	0.25	ug/L			12/13/24 08:26	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 08:26	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 08:26	1
n-Butylbenzene	ND		1.0	0.35	ug/L			12/13/24 08:26	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			12/13/24 08:26	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.48	ug/L			12/13/24 08:26	1
1,2,4-Trichlorobenzene	ND		1.5	0.36	ug/L			12/13/24 08:26	1
Hexachlorobutadiene	ND		0.50	0.16	ug/L			12/13/24 08:26	1
Naphthalene	ND		1.5	0.52	ug/L			12/13/24 08:26	1
1,2,3-Trichlorobenzene	ND		1.5	0.47	ug/L			12/13/24 08:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		12/13/24 08:26	1
Dibromofluoromethane (Surr)	98		80 - 120		12/13/24 08:26	1
4-Bromofluorobenzene (Surr)	88		80 - 120		12/13/24 08:26	1
1,2-Dichloroethane-d4 (Surr)	99		80 - 120		12/13/24 08:26	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	9.1	ug/L			12/18/24 22:57	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	15		1.5	0.43	mg/L			01/01/25 23:40	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-04-121024

Lab Sample ID: 580-146493-9

Date Collected: 12/10/24 07:18

Matrix: Water

Date Received: 12/11/24 14:34

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			12/13/24 08:49	1
Chloromethane	ND		0.50	0.14	ug/L			12/13/24 08:49	1
Vinyl chloride	ND		0.10	0.040	ug/L			12/13/24 08:49	1
Bromomethane	ND		0.50	0.13	ug/L			12/13/24 08:49	1
Chloroethane	ND		0.50	0.24	ug/L			12/13/24 08:49	1
Carbon disulfide	ND		0.40	0.20	ug/L			12/13/24 08:49	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			12/13/24 08:49	1
1,1-Dichloroethene	0.35		0.20	0.035	ug/L			12/13/24 08:49	1
Acetone	ND		10	3.1	ug/L			12/13/24 08:49	1
Methylene Chloride	ND		5.0	1.2	ug/L			12/13/24 08:49	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			12/13/24 08:49	1
2-Butanone (MEK)	ND		10	2.5	ug/L			12/13/24 08:49	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			12/13/24 08:49	1
1,1-Dichloroethane	0.31		0.20	0.064	ug/L			12/13/24 08:49	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			12/13/24 08:49	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			12/13/24 08:49	1
Chlorobromomethane	ND		0.20	0.050	ug/L			12/13/24 08:49	1
Chloroform	0.038	J	0.20	0.030	ug/L			12/13/24 08:49	1
1,1,1-Trichloroethane	0.031	J	0.20	0.025	ug/L			12/13/24 08:49	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			12/13/24 08:49	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			12/13/24 08:49	1
Benzene	0.066	J B	0.20	0.030	ug/L			12/13/24 08:49	1
1,2-Dichloroethane	ND		0.25	0.12	ug/L			12/13/24 08:49	1
Trichloroethene	ND		0.20	0.066	ug/L			12/13/24 08:49	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			12/13/24 08:49	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.7	ug/L			12/13/24 08:49	1
Dibromomethane	ND		0.20	0.062	ug/L			12/13/24 08:49	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			12/13/24 08:49	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			12/13/24 08:49	1
Toluene	ND		0.20	0.050	ug/L			12/13/24 08:49	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			12/13/24 08:49	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			12/13/24 08:49	1
Tetrachloroethene	0.16	J	0.24	0.084	ug/L			12/13/24 08:49	1
1,3-Dichloropropane	ND		0.20	0.056	ug/L			12/13/24 08:49	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			12/13/24 08:49	1
Ethylene Dibromide	ND		0.15	0.067	ug/L			12/13/24 08:49	1
Chlorobenzene	ND		0.20	0.060	ug/L			12/13/24 08:49	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.11	ug/L			12/13/24 08:49	1
Ethylbenzene	ND		0.20	0.082	ug/L			12/13/24 08:49	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			12/13/24 08:49	1
o-Xylene	ND		0.50	0.23	ug/L			12/13/24 08:49	1
Styrene	ND		1.0	0.33	ug/L			12/13/24 08:49	1
Bromoform	ND		0.50	0.16	ug/L			12/13/24 08:49	1
Isopropylbenzene	ND		1.0	0.27	ug/L			12/13/24 08:49	1
Bromobenzene	ND		0.20	0.038	ug/L			12/13/24 08:49	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			12/13/24 08:49	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			12/13/24 08:49	1
N-Propylbenzene	ND		0.30	0.091	ug/L			12/13/24 08:49	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			12/13/24 08:49	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-04-121024

Lab Sample ID: 580-146493-9

Date Collected: 12/10/24 07:18

Matrix: Water

Date Received: 12/11/24 14:34

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			12/13/24 08:49	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			12/13/24 08:49	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			12/13/24 08:49	1
1,2,4-Trimethylbenzene	ND		0.55	0.23	ug/L			12/13/24 08:49	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			12/13/24 08:49	1
4-Isopropyltoluene	ND		0.50	0.25	ug/L			12/13/24 08:49	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 08:49	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 08:49	1
n-Butylbenzene	ND		1.0	0.35	ug/L			12/13/24 08:49	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			12/13/24 08:49	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.48	ug/L			12/13/24 08:49	1
1,2,4-Trichlorobenzene	ND		1.5	0.36	ug/L			12/13/24 08:49	1
Hexachlorobutadiene	ND		0.50	0.16	ug/L			12/13/24 08:49	1
Naphthalene	ND		1.5	0.52	ug/L			12/13/24 08:49	1
1,2,3-Trichlorobenzene	ND		1.5	0.47	ug/L			12/13/24 08:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		12/13/24 08:49	1
Dibromofluoromethane (Surr)	95		80 - 120		12/13/24 08:49	1
4-Bromofluorobenzene (Surr)	88		80 - 120		12/13/24 08:49	1
1,2-Dichloroethane-d4 (Surr)	99		80 - 120		12/13/24 08:49	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	9.1	ug/L			12/19/24 00:20	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	5.2		1.5	0.43	mg/L			01/02/25 00:04	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: Dup-01-121024

Lab Sample ID: 580-146493-10

Date Collected: 12/10/24 12:58

Matrix: Water

Date Received: 12/11/24 14:34

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			12/13/24 09:12	1
Chloromethane	0.21	J	0.50	0.14	ug/L			12/13/24 09:12	1
Vinyl chloride	ND		0.10	0.040	ug/L			12/13/24 09:12	1
Bromomethane	ND		0.50	0.13	ug/L			12/13/24 09:12	1
Chloroethane	0.26	J	0.50	0.24	ug/L			12/13/24 09:12	1
Carbon disulfide	ND		0.40	0.20	ug/L			12/13/24 09:12	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			12/13/24 09:12	1
1,1-Dichloroethene	0.071	J	0.20	0.035	ug/L			12/13/24 09:12	1
Acetone	ND		10	3.1	ug/L			12/13/24 09:12	1
Methylene Chloride	ND		5.0	1.2	ug/L			12/13/24 09:12	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			12/13/24 09:12	1
2-Butanone (MEK)	ND		10	2.5	ug/L			12/13/24 09:12	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			12/13/24 09:12	1
1,1-Dichloroethane	0.11	J	0.20	0.064	ug/L			12/13/24 09:12	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			12/13/24 09:12	1
cis-1,2-Dichloroethene	0.11	J	0.20	0.055	ug/L			12/13/24 09:12	1
Chlorobromomethane	ND		0.20	0.050	ug/L			12/13/24 09:12	1
Chloroform	ND		0.20	0.030	ug/L			12/13/24 09:12	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			12/13/24 09:12	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			12/13/24 09:12	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			12/13/24 09:12	1
Benzene	0.14	J B	0.20	0.030	ug/L			12/13/24 09:12	1
1,2-Dichloroethane	ND		0.25	0.12	ug/L			12/13/24 09:12	1
Trichloroethene	ND		0.20	0.066	ug/L			12/13/24 09:12	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			12/13/24 09:12	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.7	ug/L			12/13/24 09:12	1
Dibromomethane	ND		0.20	0.062	ug/L			12/13/24 09:12	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			12/13/24 09:12	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			12/13/24 09:12	1
Toluene	ND		0.20	0.050	ug/L			12/13/24 09:12	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			12/13/24 09:12	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			12/13/24 09:12	1
Tetrachloroethene	ND		0.24	0.084	ug/L			12/13/24 09:12	1
1,3-Dichloropropane	ND		0.20	0.056	ug/L			12/13/24 09:12	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			12/13/24 09:12	1
Ethylene Dibromide	ND		0.15	0.067	ug/L			12/13/24 09:12	1
Chlorobenzene	0.31		0.20	0.060	ug/L			12/13/24 09:12	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.11	ug/L			12/13/24 09:12	1
Ethylbenzene	ND		0.20	0.082	ug/L			12/13/24 09:12	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			12/13/24 09:12	1
o-Xylene	ND		0.50	0.23	ug/L			12/13/24 09:12	1
Styrene	ND		1.0	0.33	ug/L			12/13/24 09:12	1
Bromoform	ND		0.50	0.16	ug/L			12/13/24 09:12	1
Isopropylbenzene	ND		1.0	0.27	ug/L			12/13/24 09:12	1
Bromobenzene	ND		0.20	0.038	ug/L			12/13/24 09:12	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			12/13/24 09:12	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			12/13/24 09:12	1
N-Propylbenzene	ND		0.30	0.091	ug/L			12/13/24 09:12	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			12/13/24 09:12	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: Dup-01-121024

Lab Sample ID: 580-146493-10

Date Collected: 12/10/24 12:58

Matrix: Water

Date Received: 12/11/24 14:34

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			12/13/24 09:12	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			12/13/24 09:12	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			12/13/24 09:12	1
1,2,4-Trimethylbenzene	ND		0.55	0.23	ug/L			12/13/24 09:12	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			12/13/24 09:12	1
4-Isopropyltoluene	ND		0.50	0.25	ug/L			12/13/24 09:12	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 09:12	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 09:12	1
n-Butylbenzene	ND		1.0	0.35	ug/L			12/13/24 09:12	1
1,2-Dichlorobenzene	0.30		0.30	0.038	ug/L			12/13/24 09:12	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.48	ug/L			12/13/24 09:12	1
1,2,4-Trichlorobenzene	ND		1.5	0.36	ug/L			12/13/24 09:12	1
Hexachlorobutadiene	ND		0.50	0.16	ug/L			12/13/24 09:12	1
Naphthalene	ND		1.5	0.52	ug/L			12/13/24 09:12	1
1,2,3-Trichlorobenzene	ND		1.5	0.47	ug/L			12/13/24 09:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		12/13/24 09:12	1
Dibromofluoromethane (Surr)	93		80 - 120		12/13/24 09:12	1
4-Bromofluorobenzene (Surr)	90		80 - 120		12/13/24 09:12	1
1,2-Dichloroethane-d4 (Surr)	99		80 - 120		12/13/24 09:12	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		200	91	ug/L			12/19/24 01:02	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	78		1.5	0.43	mg/L			01/02/25 00:28	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-32i-121024

Lab Sample ID: 580-146493-11

Date Collected: 12/10/24 12:52

Matrix: Water

Date Received: 12/11/24 14:34

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			12/13/24 09:36	1
Chloromethane	ND		0.50	0.14	ug/L			12/13/24 09:36	1
Vinyl chloride	ND		0.10	0.040	ug/L			12/13/24 09:36	1
Bromomethane	ND		0.50	0.13	ug/L			12/13/24 09:36	1
Chloroethane	ND		0.50	0.24	ug/L			12/13/24 09:36	1
Carbon disulfide	ND		0.40	0.20	ug/L			12/13/24 09:36	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			12/13/24 09:36	1
1,1-Dichloroethene	0.069	J	0.20	0.035	ug/L			12/13/24 09:36	1
Acetone	ND		10	3.1	ug/L			12/13/24 09:36	1
Methylene Chloride	ND		5.0	1.2	ug/L			12/13/24 09:36	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			12/13/24 09:36	1
2-Butanone (MEK)	ND		10	2.5	ug/L			12/13/24 09:36	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			12/13/24 09:36	1
1,1-Dichloroethane	0.10	J	0.20	0.064	ug/L			12/13/24 09:36	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			12/13/24 09:36	1
cis-1,2-Dichloroethene	0.12	J	0.20	0.055	ug/L			12/13/24 09:36	1
Chlorobromomethane	ND		0.20	0.050	ug/L			12/13/24 09:36	1
Chloroform	ND		0.20	0.030	ug/L			12/13/24 09:36	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			12/13/24 09:36	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			12/13/24 09:36	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			12/13/24 09:36	1
Benzene	0.14	J B	0.20	0.030	ug/L			12/13/24 09:36	1
1,2-Dichloroethane	ND		0.25	0.12	ug/L			12/13/24 09:36	1
Trichloroethene	ND		0.20	0.066	ug/L			12/13/24 09:36	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			12/13/24 09:36	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.7	ug/L			12/13/24 09:36	1
Dibromomethane	ND		0.20	0.062	ug/L			12/13/24 09:36	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			12/13/24 09:36	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			12/13/24 09:36	1
Toluene	ND		0.20	0.050	ug/L			12/13/24 09:36	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			12/13/24 09:36	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			12/13/24 09:36	1
Tetrachloroethene	ND		0.24	0.084	ug/L			12/13/24 09:36	1
1,3-Dichloropropane	ND		0.20	0.056	ug/L			12/13/24 09:36	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			12/13/24 09:36	1
Ethylene Dibromide	ND		0.15	0.067	ug/L			12/13/24 09:36	1
Chlorobenzene	0.29		0.20	0.060	ug/L			12/13/24 09:36	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.11	ug/L			12/13/24 09:36	1
Ethylbenzene	ND		0.20	0.082	ug/L			12/13/24 09:36	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			12/13/24 09:36	1
o-Xylene	ND		0.50	0.23	ug/L			12/13/24 09:36	1
Styrene	ND		1.0	0.33	ug/L			12/13/24 09:36	1
Bromoform	ND		0.50	0.16	ug/L			12/13/24 09:36	1
Isopropylbenzene	ND		1.0	0.27	ug/L			12/13/24 09:36	1
Bromobenzene	ND		0.20	0.038	ug/L			12/13/24 09:36	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			12/13/24 09:36	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			12/13/24 09:36	1
N-Propylbenzene	ND		0.30	0.091	ug/L			12/13/24 09:36	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			12/13/24 09:36	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-32i-121024

Lab Sample ID: 580-146493-11

Date Collected: 12/10/24 12:52

Matrix: Water

Date Received: 12/11/24 14:34

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			12/13/24 09:36	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			12/13/24 09:36	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			12/13/24 09:36	1
1,2,4-Trimethylbenzene	ND		0.55	0.23	ug/L			12/13/24 09:36	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			12/13/24 09:36	1
4-Isopropyltoluene	ND		0.50	0.25	ug/L			12/13/24 09:36	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 09:36	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 09:36	1
n-Butylbenzene	ND		1.0	0.35	ug/L			12/13/24 09:36	1
1,2-Dichlorobenzene	0.30		0.30	0.038	ug/L			12/13/24 09:36	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.48	ug/L			12/13/24 09:36	1
1,2,4-Trichlorobenzene	ND		1.5	0.36	ug/L			12/13/24 09:36	1
Hexachlorobutadiene	ND		0.50	0.16	ug/L			12/13/24 09:36	1
Naphthalene	ND		1.5	0.52	ug/L			12/13/24 09:36	1
1,2,3-Trichlorobenzene	ND		1.5	0.47	ug/L			12/13/24 09:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		12/13/24 09:36	1
Dibromofluoromethane (Surr)	99		80 - 120		12/13/24 09:36	1
4-Bromofluorobenzene (Surr)	88		80 - 120		12/13/24 09:36	1
1,2-Dichloroethane-d4 (Surr)	99		80 - 120		12/13/24 09:36	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		200	91	ug/L			12/19/24 01:44	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	79		1.5	0.43	mg/L			01/02/25 00:51	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-31-121024

Lab Sample ID: 580-146493-12

Date Collected: 12/10/24 11:34

Matrix: Water

Date Received: 12/11/24 14:34

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			12/13/24 09:59	1
Chloromethane	0.23	J	0.50	0.14	ug/L			12/13/24 09:59	1
Vinyl chloride	ND		0.10	0.040	ug/L			12/13/24 09:59	1
Bromomethane	ND		0.50	0.13	ug/L			12/13/24 09:59	1
Chloroethane	ND		0.50	0.24	ug/L			12/13/24 09:59	1
Carbon disulfide	ND		0.40	0.20	ug/L			12/13/24 09:59	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			12/13/24 09:59	1
1,1-Dichloroethene	0.80		0.20	0.035	ug/L			12/13/24 09:59	1
Acetone	ND		10	3.1	ug/L			12/13/24 09:59	1
Methylene Chloride	ND		5.0	1.2	ug/L			12/13/24 09:59	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			12/13/24 09:59	1
2-Butanone (MEK)	ND		10	2.5	ug/L			12/13/24 09:59	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			12/13/24 09:59	1
1,1-Dichloroethane	0.23		0.20	0.064	ug/L			12/13/24 09:59	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			12/13/24 09:59	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			12/13/24 09:59	1
Chlorobromomethane	ND		0.20	0.050	ug/L			12/13/24 09:59	1
Chloroform	0.13	J	0.20	0.030	ug/L			12/13/24 09:59	1
1,1,1-Trichloroethane	0.23		0.20	0.025	ug/L			12/13/24 09:59	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			12/13/24 09:59	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			12/13/24 09:59	1
Benzene	0.13	J B	0.20	0.030	ug/L			12/13/24 09:59	1
1,2-Dichloroethane	ND		0.25	0.12	ug/L			12/13/24 09:59	1
Trichloroethene	0.091	J	0.20	0.066	ug/L			12/13/24 09:59	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			12/13/24 09:59	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.7	ug/L			12/13/24 09:59	1
Dibromomethane	ND		0.20	0.062	ug/L			12/13/24 09:59	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			12/13/24 09:59	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			12/13/24 09:59	1
Toluene	0.095	J	0.20	0.050	ug/L			12/13/24 09:59	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			12/13/24 09:59	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			12/13/24 09:59	1
Tetrachloroethene	0.25		0.24	0.084	ug/L			12/13/24 09:59	1
1,3-Dichloropropane	ND		0.20	0.056	ug/L			12/13/24 09:59	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			12/13/24 09:59	1
Ethylene Dibromide	ND		0.15	0.067	ug/L			12/13/24 09:59	1
Chlorobenzene	ND		0.20	0.060	ug/L			12/13/24 09:59	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.11	ug/L			12/13/24 09:59	1
Ethylbenzene	ND		0.20	0.082	ug/L			12/13/24 09:59	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			12/13/24 09:59	1
o-Xylene	ND		0.50	0.23	ug/L			12/13/24 09:59	1
Styrene	ND		1.0	0.33	ug/L			12/13/24 09:59	1
Bromoform	ND		0.50	0.16	ug/L			12/13/24 09:59	1
Isopropylbenzene	ND		1.0	0.27	ug/L			12/13/24 09:59	1
Bromobenzene	ND		0.20	0.038	ug/L			12/13/24 09:59	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			12/13/24 09:59	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			12/13/24 09:59	1
N-Propylbenzene	ND		0.30	0.091	ug/L			12/13/24 09:59	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			12/13/24 09:59	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-31-121024

Lab Sample ID: 580-146493-12

Date Collected: 12/10/24 11:34

Matrix: Water

Date Received: 12/11/24 14:34

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			12/13/24 09:59	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			12/13/24 09:59	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			12/13/24 09:59	1
1,2,4-Trimethylbenzene	ND		0.55	0.23	ug/L			12/13/24 09:59	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			12/13/24 09:59	1
4-Isopropyltoluene	ND		0.50	0.25	ug/L			12/13/24 09:59	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 09:59	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 09:59	1
n-Butylbenzene	ND		1.0	0.35	ug/L			12/13/24 09:59	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			12/13/24 09:59	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.48	ug/L			12/13/24 09:59	1
1,2,4-Trichlorobenzene	ND		1.5	0.36	ug/L			12/13/24 09:59	1
Hexachlorobutadiene	ND		0.50	0.16	ug/L			12/13/24 09:59	1
Naphthalene	ND		1.5	0.52	ug/L			12/13/24 09:59	1
1,2,3-Trichlorobenzene	ND		1.5	0.47	ug/L			12/13/24 09:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120		12/13/24 09:59	1
Dibromofluoromethane (Surr)	104		80 - 120		12/13/24 09:59	1
4-Bromofluorobenzene (Surr)	90		80 - 120		12/13/24 09:59	1
1,2-Dichloroethane-d4 (Surr)	97		80 - 120		12/13/24 09:59	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		10	4.5	ug/L			12/19/24 02:26	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	4.2		1.5	0.43	mg/L			01/02/25 01:39	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: MWA-63-121024

Lab Sample ID: 580-146493-13

Date Collected: 12/10/24 10:37

Matrix: Water

Date Received: 12/11/24 14:34

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			12/13/24 10:33	1
Chloromethane	ND		1.0	0.28	ug/L			12/13/24 10:33	1
Vinyl chloride	ND		1.0	0.22	ug/L			12/13/24 10:33	1
Bromomethane	ND		1.0	0.21	ug/L			12/13/24 10:33	1
Chloroethane	ND		1.0	0.35	ug/L			12/13/24 10:33	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			12/13/24 10:33	1
Carbon disulfide	ND		1.0	0.53	ug/L			12/13/24 10:33	1
1,1-Dichloroethene	0.64	J	1.0	0.28	ug/L			12/13/24 10:33	1
Acetone	ND		15	3.2	ug/L			12/13/24 10:33	1
Methylene Chloride	ND		5.0	1.4	ug/L			12/13/24 10:33	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			12/13/24 10:33	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			12/13/24 10:33	1
1,1-Dichloroethane	1.2		1.0	0.22	ug/L			12/13/24 10:33	1
2-Butanone (MEK)	ND		15	4.7	ug/L			12/13/24 10:33	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			12/13/24 10:33	1
cis-1,2-Dichloroethene	12		1.0	0.35	ug/L			12/13/24 10:33	1
Chlorobromomethane	ND		1.0	0.29	ug/L			12/13/24 10:33	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			12/13/24 10:33	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			12/13/24 10:33	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			12/13/24 10:33	1
Benzene	ND		1.0	0.24	ug/L			12/13/24 10:33	1
1,2-Dichloroethane	1.2		1.0	0.42	ug/L			12/13/24 10:33	1
Trichloroethene	6.9		1.0	0.26	ug/L			12/13/24 10:33	1
1,2-Dichloropropane	0.18	J	1.0	0.18	ug/L			12/13/24 10:33	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/13/24 10:33	1
Dibromomethane	ND		1.0	0.34	ug/L			12/13/24 10:33	1
Dichlorobromomethane	3.0		1.0	0.29	ug/L			12/13/24 10:33	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/13/24 10:33	1
Toluene	ND		1.0	0.39	ug/L			12/13/24 10:33	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			12/13/24 10:33	1
1,1,2-Trichloroethane	1.1		1.0	0.24	ug/L			12/13/24 10:33	1
Tetrachloroethene	35		1.0	0.41	ug/L			12/13/24 10:33	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			12/13/24 10:33	1
Chlorodibromomethane	ND		1.0	0.43	ug/L			12/13/24 10:33	1
Ethylene Dibromide	ND		1.0	0.40	ug/L			12/13/24 10:33	1
Chlorobenzene	ND		1.0	0.44	ug/L			12/13/24 10:33	1
1,1,1,2-Tetrachloroethane	0.41	J	1.0	0.18	ug/L			12/13/24 10:33	1
Ethylbenzene	ND		1.0	0.50	ug/L			12/13/24 10:33	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			12/13/24 10:33	1
o-Xylene	ND		1.0	0.39	ug/L			12/13/24 10:33	1
Styrene	ND		1.0	0.53	ug/L			12/13/24 10:33	1
Bromoform	ND		1.0	0.51	ug/L			12/13/24 10:33	1
Isopropylbenzene	ND		1.0	0.44	ug/L			12/13/24 10:33	1
Bromobenzene	ND		1.0	0.43	ug/L			12/13/24 10:33	1
1,1,2,2-Tetrachloroethane	0.69	J	1.0	0.52	ug/L			12/13/24 10:33	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			12/13/24 10:33	1
N-Propylbenzene	ND		1.0	0.50	ug/L			12/13/24 10:33	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			12/13/24 10:33	1
4-Chlorotoluene	ND		1.0	0.38	ug/L			12/13/24 10:33	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: MWA-63-121024

Lab Sample ID: 580-146493-13

Date Collected: 12/10/24 10:37

Matrix: Water

Date Received: 12/11/24 14:34

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
tert-Butylbenzene	ND		2.0	0.58	ug/L			12/13/24 10:33	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			12/13/24 10:33	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			12/13/24 10:33	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			12/13/24 10:33	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			12/13/24 10:33	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/13/24 10:33	1
n-Butylbenzene	ND		1.0	0.44	ug/L			12/13/24 10:33	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			12/13/24 10:33	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			12/13/24 10:33	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			12/13/24 10:33	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			12/13/24 10:33	1
Naphthalene	ND		3.0	0.93	ug/L			12/13/24 10:33	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			12/13/24 10:33	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			12/13/24 10:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 120		12/13/24 10:33	1
1,2-Dichloroethane-d4 (Surr)	92		80 - 120		12/13/24 10:33	1
4-Bromofluorobenzene (Surr)	92		80 - 120		12/13/24 10:33	1
Dibromofluoromethane (Surr)	89		80 - 120		12/13/24 10:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	3900		100	26	ug/L			12/16/24 21:49	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 120		12/16/24 21:49	100
1,2-Dichloroethane-d4 (Surr)	103		80 - 120		12/16/24 21:49	100
4-Bromofluorobenzene (Surr)	104		80 - 120		12/16/24 21:49	100
Dibromofluoromethane (Surr)	105		80 - 120		12/16/24 21:49	100

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		10	4.5	ug/L			12/19/24 03:07	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	15		1.5	0.43	mg/L			01/02/25 02:03	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-18d-121024

Lab Sample ID: 580-146493-14

Date Collected: 12/10/24 08:57

Matrix: Water

Date Received: 12/11/24 14:34

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			12/13/24 10:56	1
Chloromethane	ND		1.0	0.28	ug/L			12/13/24 10:56	1
Vinyl chloride	0.26	J	1.0	0.22	ug/L			12/13/24 10:56	1
Bromomethane	ND		1.0	0.21	ug/L			12/13/24 10:56	1
Chloroethane	ND		1.0	0.35	ug/L			12/13/24 10:56	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			12/13/24 10:56	1
Carbon disulfide	ND		1.0	0.53	ug/L			12/13/24 10:56	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			12/13/24 10:56	1
Acetone	ND		15	3.2	ug/L			12/13/24 10:56	1
Methylene Chloride	ND		5.0	1.4	ug/L			12/13/24 10:56	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			12/13/24 10:56	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			12/13/24 10:56	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			12/13/24 10:56	1
2-Butanone (MEK)	ND		15	4.7	ug/L			12/13/24 10:56	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			12/13/24 10:56	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			12/13/24 10:56	1
Chlorobromomethane	ND		1.0	0.29	ug/L			12/13/24 10:56	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			12/13/24 10:56	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			12/13/24 10:56	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			12/13/24 10:56	1
Benzene	ND		1.0	0.24	ug/L			12/13/24 10:56	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			12/13/24 10:56	1
Trichloroethene	ND		1.0	0.26	ug/L			12/13/24 10:56	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			12/13/24 10:56	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/13/24 10:56	1
Dibromomethane	ND		1.0	0.34	ug/L			12/13/24 10:56	1
Dichlorobromomethane	ND		1.0	0.29	ug/L			12/13/24 10:56	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/13/24 10:56	1
Toluene	ND		1.0	0.39	ug/L			12/13/24 10:56	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			12/13/24 10:56	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			12/13/24 10:56	1
Tetrachloroethene	ND		1.0	0.41	ug/L			12/13/24 10:56	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			12/13/24 10:56	1
Chlorodibromomethane	ND		1.0	0.43	ug/L			12/13/24 10:56	1
Ethylene Dibromide	ND		1.0	0.40	ug/L			12/13/24 10:56	1
Chlorobenzene	ND		1.0	0.44	ug/L			12/13/24 10:56	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			12/13/24 10:56	1
Ethylbenzene	ND		1.0	0.50	ug/L			12/13/24 10:56	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			12/13/24 10:56	1
o-Xylene	ND		1.0	0.39	ug/L			12/13/24 10:56	1
Styrene	ND		1.0	0.53	ug/L			12/13/24 10:56	1
Bromoform	ND		1.0	0.51	ug/L			12/13/24 10:56	1
Isopropylbenzene	ND		1.0	0.44	ug/L			12/13/24 10:56	1
Bromobenzene	ND		1.0	0.43	ug/L			12/13/24 10:56	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			12/13/24 10:56	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			12/13/24 10:56	1
N-Propylbenzene	ND		1.0	0.50	ug/L			12/13/24 10:56	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			12/13/24 10:56	1
4-Chlorotoluene	ND		1.0	0.38	ug/L			12/13/24 10:56	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-18d-121024

Lab Sample ID: 580-146493-14

Date Collected: 12/10/24 08:57

Matrix: Water

Date Received: 12/11/24 14:34

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
tert-Butylbenzene	ND		2.0	0.58	ug/L			12/13/24 10:56	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			12/13/24 10:56	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			12/13/24 10:56	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			12/13/24 10:56	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			12/13/24 10:56	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/13/24 10:56	1
n-Butylbenzene	ND		1.0	0.44	ug/L			12/13/24 10:56	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			12/13/24 10:56	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			12/13/24 10:56	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			12/13/24 10:56	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			12/13/24 10:56	1
Naphthalene	ND		3.0	0.93	ug/L			12/13/24 10:56	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			12/13/24 10:56	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			12/13/24 10:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		12/13/24 10:56	1
1,2-Dichloroethane-d4 (Surr)	104		80 - 120		12/13/24 10:56	1
4-Bromofluorobenzene (Surr)	88		80 - 120		12/13/24 10:56	1
Dibromofluoromethane (Surr)	101		80 - 120		12/13/24 10:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	ND		1.0	0.26	ug/L			12/16/24 18:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		12/16/24 18:21	1
1,2-Dichloroethane-d4 (Surr)	103		80 - 120		12/16/24 18:21	1
4-Bromofluorobenzene (Surr)	102		80 - 120		12/16/24 18:21	1
Dibromofluoromethane (Surr)	102		80 - 120		12/16/24 18:21	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		200	91	ug/L			12/19/24 03:49	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	65		1.5	0.43	mg/L			01/02/25 02:27	1

Client Sample Results

Client: ERM-West

Job ID: 580-146493-1

Project/Site: Arkema - Q4 2024 Groundwater Event

Client Sample ID: PA-10i-121024

Lab Sample ID: 580-146493-15

Date Collected: 12/10/24 15:16

Matrix: Water

Date Received: 12/11/24 14:34

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			12/13/24 11:19	1
Chloromethane	ND		0.50	0.14	ug/L			12/13/24 11:19	1
Vinyl chloride	0.37		0.10	0.040	ug/L			12/13/24 11:19	1
Bromomethane	ND		0.50	0.13	ug/L			12/13/24 11:19	1
Chloroethane	ND		0.50	0.24	ug/L			12/13/24 11:19	1
Carbon disulfide	ND		0.40	0.20	ug/L			12/13/24 11:19	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			12/13/24 11:19	1
1,1-Dichloroethene	0.068	J	0.20	0.035	ug/L			12/13/24 11:19	1
Acetone	ND		10	3.1	ug/L			12/13/24 11:19	1
Methylene Chloride	ND		5.0	1.2	ug/L			12/13/24 11:19	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			12/13/24 11:19	1
2-Butanone (MEK)	ND		10	2.5	ug/L			12/13/24 11:19	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			12/13/24 11:19	1
1,1-Dichloroethane	ND		0.20	0.064	ug/L			12/13/24 11:19	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			12/13/24 11:19	1
cis-1,2-Dichloroethene	0.20		0.20	0.055	ug/L			12/13/24 11:19	1
Chlorobromomethane	ND		0.20	0.050	ug/L			12/13/24 11:19	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			12/13/24 11:19	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			12/13/24 11:19	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			12/13/24 11:19	1
Benzene	0.074	J B	0.20	0.030	ug/L			12/13/24 11:19	1
1,2-Dichloroethane	ND		0.25	0.12	ug/L			12/13/24 11:19	1
Trichloroethene	ND		0.20	0.066	ug/L			12/13/24 11:19	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			12/13/24 11:19	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.7	ug/L			12/13/24 11:19	1
Dibromomethane	ND		0.20	0.062	ug/L			12/13/24 11:19	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			12/13/24 11:19	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			12/13/24 11:19	1
Toluene	ND		0.20	0.050	ug/L			12/13/24 11:19	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			12/13/24 11:19	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			12/13/24 11:19	1
Tetrachloroethene	ND		0.24	0.084	ug/L			12/13/24 11:19	1
1,3-Dichloropropane	ND		0.20	0.056	ug/L			12/13/24 11:19	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			12/13/24 11:19	1
Ethylene Dibromide	ND		0.15	0.067	ug/L			12/13/24 11:19	1
Chlorobenzene	0.64		0.20	0.060	ug/L			12/13/24 11:19	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.11	ug/L			12/13/24 11:19	1
Ethylbenzene	ND		0.20	0.082	ug/L			12/13/24 11:19	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			12/13/24 11:19	1
o-Xylene	ND		0.50	0.23	ug/L			12/13/24 11:19	1
Styrene	ND		1.0	0.33	ug/L			12/13/24 11:19	1
Bromoform	ND		0.50	0.16	ug/L			12/13/24 11:19	1
Isopropylbenzene	ND		1.0	0.27	ug/L			12/13/24 11:19	1
Bromobenzene	ND		0.20	0.038	ug/L			12/13/24 11:19	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			12/13/24 11:19	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			12/13/24 11:19	1
N-Propylbenzene	ND		0.30	0.091	ug/L			12/13/24 11:19	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			12/13/24 11:19	1
4-Chlorotoluene	ND		0.30	0.12	ug/L			12/13/24 11:19	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-10i-121024

Lab Sample ID: 580-146493-15

Date Collected: 12/10/24 15:16

Matrix: Water

Date Received: 12/11/24 14:34

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			12/13/24 11:19	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			12/13/24 11:19	1
1,2,4-Trimethylbenzene	ND		0.55	0.23	ug/L			12/13/24 11:19	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			12/13/24 11:19	1
4-Isopropyltoluene	ND		0.50	0.25	ug/L			12/13/24 11:19	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 11:19	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 11:19	1
n-Butylbenzene	ND		1.0	0.35	ug/L			12/13/24 11:19	1
1,2-Dichlorobenzene	0.22	J	0.30	0.038	ug/L			12/13/24 11:19	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.48	ug/L			12/13/24 11:19	1
1,2,4-Trichlorobenzene	ND		1.5	0.36	ug/L			12/13/24 11:19	1
Hexachlorobutadiene	ND		0.50	0.16	ug/L			12/13/24 11:19	1
Naphthalene	ND		1.5	0.52	ug/L			12/13/24 11:19	1
1,2,3-Trichlorobenzene	ND		1.5	0.47	ug/L			12/13/24 11:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 120		12/13/24 11:19	1
Dibromofluoromethane (Surr)	98		80 - 120		12/13/24 11:19	1
4-Bromofluorobenzene (Surr)	88		80 - 120		12/13/24 11:19	1
1,2-Dichloroethane-d4 (Surr)	100		80 - 120		12/13/24 11:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	ND		0.20	0.030	ug/L			12/16/24 18:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 120		12/16/24 18:44	1
Dibromofluoromethane (Surr)	103		80 - 120		12/16/24 18:44	1
4-Bromofluorobenzene (Surr)	103		80 - 120		12/16/24 18:44	1
1,2-Dichloroethane-d4 (Surr)	104		80 - 120		12/16/24 18:44	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		200	91	ug/L			12/19/24 04:31	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	25		1.5	0.43	mg/L			01/02/25 02:51	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-25d-121024

Lab Sample ID: 580-146493-16

Date Collected: 12/10/24 16:16

Matrix: Water

Date Received: 12/11/24 14:34

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			12/13/24 11:42	1
Chloromethane	ND		0.50	0.14	ug/L			12/13/24 11:42	1
Vinyl chloride	ND		0.10	0.040	ug/L			12/13/24 11:42	1
Bromomethane	ND		0.50	0.13	ug/L			12/13/24 11:42	1
Chloroethane	ND		0.50	0.24	ug/L			12/13/24 11:42	1
Carbon disulfide	ND		0.40	0.20	ug/L			12/13/24 11:42	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			12/13/24 11:42	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			12/13/24 11:42	1
Acetone	ND		10	3.1	ug/L			12/13/24 11:42	1
Methylene Chloride	ND		5.0	1.2	ug/L			12/13/24 11:42	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			12/13/24 11:42	1
2-Butanone (MEK)	ND		10	2.5	ug/L			12/13/24 11:42	1
trans-1,2-Dichloroethene	ND	F1	0.20	0.033	ug/L			12/13/24 11:42	1
1,1-Dichloroethane	ND	F1	0.20	0.064	ug/L			12/13/24 11:42	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			12/13/24 11:42	1
cis-1,2-Dichloroethene	ND	F1	0.20	0.055	ug/L			12/13/24 11:42	1
Chlorobromomethane	ND		0.20	0.050	ug/L			12/13/24 11:42	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			12/13/24 11:42	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			12/13/24 11:42	1
1,1-Dichloropropene	ND	F1	0.20	0.084	ug/L			12/13/24 11:42	1
Benzene	0.049	J B F1	0.20	0.030	ug/L			12/13/24 11:42	1
1,2-Dichloroethane	ND		0.25	0.12	ug/L			12/13/24 11:42	1
Trichloroethene	ND		0.20	0.066	ug/L			12/13/24 11:42	1
1,2-Dichloropropane	ND	F1	0.20	0.060	ug/L			12/13/24 11:42	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.7	ug/L			12/13/24 11:42	1
Dibromomethane	ND		0.20	0.062	ug/L			12/13/24 11:42	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			12/13/24 11:42	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			12/13/24 11:42	1
Toluene	ND	F1	0.20	0.050	ug/L			12/13/24 11:42	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			12/13/24 11:42	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			12/13/24 11:42	1
Tetrachloroethene	ND		0.24	0.084	ug/L			12/13/24 11:42	1
1,3-Dichloropropane	ND		0.20	0.056	ug/L			12/13/24 11:42	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			12/13/24 11:42	1
Ethylene Dibromide	ND		0.15	0.067	ug/L			12/13/24 11:42	1
Chlorobenzene	ND		0.20	0.060	ug/L			12/13/24 11:42	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.11	ug/L			12/13/24 11:42	1
Ethylbenzene	ND		0.20	0.082	ug/L			12/13/24 11:42	1
m-Xylene & p-Xylene	ND	F1	0.50	0.12	ug/L			12/13/24 11:42	1
o-Xylene	ND	F1	0.50	0.23	ug/L			12/13/24 11:42	1
Styrene	ND		1.0	0.33	ug/L			12/13/24 11:42	1
Bromoform	ND		0.50	0.16	ug/L			12/13/24 11:42	1
Isopropylbenzene	ND		1.0	0.27	ug/L			12/13/24 11:42	1
Bromobenzene	ND		0.20	0.038	ug/L			12/13/24 11:42	1
1,1,2,2-Tetrachloroethane	ND	F1	0.20	0.056	ug/L			12/13/24 11:42	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			12/13/24 11:42	1
N-Propylbenzene	ND	F1	0.30	0.091	ug/L			12/13/24 11:42	1
2-Chlorotoluene	ND	F1	0.50	0.12	ug/L			12/13/24 11:42	1
4-Chlorotoluene	ND	F1	0.30	0.12	ug/L			12/13/24 11:42	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-25d-121024

Lab Sample ID: 580-146493-16

Date Collected: 12/10/24 16:16

Matrix: Water

Date Received: 12/11/24 14:34

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			12/13/24 11:42	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			12/13/24 11:42	1
1,2,4-Trimethylbenzene	ND		0.55	0.23	ug/L			12/13/24 11:42	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			12/13/24 11:42	1
4-Isopropyltoluene	ND		0.50	0.25	ug/L			12/13/24 11:42	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 11:42	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 11:42	1
n-Butylbenzene	ND		1.0	0.35	ug/L			12/13/24 11:42	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			12/13/24 11:42	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.48	ug/L			12/13/24 11:42	1
1,2,4-Trichlorobenzene	ND		1.5	0.36	ug/L			12/13/24 11:42	1
Hexachlorobutadiene	ND		0.50	0.16	ug/L			12/13/24 11:42	1
Naphthalene	ND		1.5	0.52	ug/L			12/13/24 11:42	1
1,2,3-Trichlorobenzene	ND		1.5	0.47	ug/L			12/13/24 11:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		12/13/24 11:42	1
Dibromofluoromethane (Surr)	100		80 - 120		12/13/24 11:42	1
4-Bromofluorobenzene (Surr)	88		80 - 120		12/13/24 11:42	1
1,2-Dichloroethane-d4 (Surr)	100		80 - 120		12/13/24 11:42	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	ND		0.20	0.030	ug/L			12/16/24 15:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		12/16/24 15:24	1
Dibromofluoromethane (Surr)	101		80 - 120		12/16/24 15:24	1
4-Bromofluorobenzene (Surr)	102		80 - 120		12/16/24 15:24	1
1,2-Dichloroethane-d4 (Surr)	102		80 - 120		12/16/24 15:24	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			12/19/24 05:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	30		1.5	0.43	mg/L			01/02/25 22:37	1

QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

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

Lab Sample ID: MB 580-480341/7

Matrix: Water

Analysis Batch: 480341

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			12/13/24 04:57	1
Chloromethane	ND		0.50	0.14	ug/L			12/13/24 04:57	1
Vinyl chloride	ND		0.10	0.040	ug/L			12/13/24 04:57	1
Bromomethane	ND		0.50	0.13	ug/L			12/13/24 04:57	1
Chloroethane	ND		0.50	0.24	ug/L			12/13/24 04:57	1
Carbon disulfide	ND		0.40	0.20	ug/L			12/13/24 04:57	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			12/13/24 04:57	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			12/13/24 04:57	1
Acetone	ND		10	3.1	ug/L			12/13/24 04:57	1
Methylene Chloride	ND		5.0	1.2	ug/L			12/13/24 04:57	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			12/13/24 04:57	1
2-Butanone (MEK)	ND		10	2.5	ug/L			12/13/24 04:57	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			12/13/24 04:57	1
1,1-Dichloroethane	ND		0.20	0.064	ug/L			12/13/24 04:57	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			12/13/24 04:57	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			12/13/24 04:57	1
Chlorobromomethane	ND		0.20	0.050	ug/L			12/13/24 04:57	1
Chloroform	ND		0.20	0.030	ug/L			12/13/24 04:57	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			12/13/24 04:57	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			12/13/24 04:57	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			12/13/24 04:57	1
Benzene	0.0438	J	0.20	0.030	ug/L			12/13/24 04:57	1
1,2-Dichloroethane	ND		0.25	0.12	ug/L			12/13/24 04:57	1
Trichloroethene	ND		0.20	0.066	ug/L			12/13/24 04:57	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			12/13/24 04:57	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.7	ug/L			12/13/24 04:57	1
Dibromomethane	ND		0.20	0.062	ug/L			12/13/24 04:57	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			12/13/24 04:57	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			12/13/24 04:57	1
Toluene	ND		0.20	0.050	ug/L			12/13/24 04:57	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			12/13/24 04:57	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			12/13/24 04:57	1
Tetrachloroethene	ND		0.24	0.084	ug/L			12/13/24 04:57	1
1,3-Dichloropropane	ND		0.20	0.056	ug/L			12/13/24 04:57	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			12/13/24 04:57	1
Ethylene Dibromide	ND		0.15	0.067	ug/L			12/13/24 04:57	1
Chlorobenzene	ND		0.20	0.060	ug/L			12/13/24 04:57	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.11	ug/L			12/13/24 04:57	1
Ethylbenzene	ND		0.20	0.082	ug/L			12/13/24 04:57	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			12/13/24 04:57	1
o-Xylene	ND		0.50	0.23	ug/L			12/13/24 04:57	1
Styrene	ND		1.0	0.33	ug/L			12/13/24 04:57	1
Bromoform	ND		0.50	0.16	ug/L			12/13/24 04:57	1
Isopropylbenzene	ND		1.0	0.27	ug/L			12/13/24 04:57	1
Bromobenzene	ND		0.20	0.038	ug/L			12/13/24 04:57	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			12/13/24 04:57	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			12/13/24 04:57	1
N-Propylbenzene	ND		0.30	0.091	ug/L			12/13/24 04:57	1

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

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

Lab Sample ID: MB 580-480341/7

Matrix: Water

Analysis Batch: 480341

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			12/13/24 04:57	1
4-Chlorotoluene	ND		0.30	0.12	ug/L			12/13/24 04:57	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			12/13/24 04:57	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			12/13/24 04:57	1
1,2,4-Trimethylbenzene	ND		0.55	0.23	ug/L			12/13/24 04:57	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			12/13/24 04:57	1
4-Isopropyltoluene	ND		0.50	0.25	ug/L			12/13/24 04:57	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 04:57	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			12/13/24 04:57	1
n-Butylbenzene	ND		1.0	0.35	ug/L			12/13/24 04:57	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			12/13/24 04:57	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.48	ug/L			12/13/24 04:57	1
1,2,4-Trichlorobenzene	ND		1.5	0.36	ug/L			12/13/24 04:57	1
Hexachlorobutadiene	ND		0.50	0.16	ug/L			12/13/24 04:57	1
Naphthalene	ND		1.5	0.52	ug/L			12/13/24 04:57	1
1,2,3-Trichlorobenzene	ND		1.5	0.47	ug/L			12/13/24 04:57	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		12/13/24 04:57	1
Dibromofluoromethane (Surr)	95		80 - 120		12/13/24 04:57	1
4-Bromofluorobenzene (Surr)	90		80 - 120		12/13/24 04:57	1
1,2-Dichloroethane-d4 (Surr)	95		80 - 120		12/13/24 04:57	1

Lab Sample ID: LCS 580-480341/4

Matrix: Water

Analysis Batch: 480341

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	6.02		ug/L		120	20 - 150
Chloromethane	5.00	6.55		ug/L		131	32 - 150
Vinyl chloride	5.00	6.65		ug/L		133	41 - 150
Bromomethane	5.00	5.24		ug/L		105	51 - 148
Chloroethane	5.00	5.71		ug/L		114	54 - 140
Carbon disulfide	5.00	5.09		ug/L		102	54 - 142
Trichlorofluoromethane	5.00	5.08		ug/L		102	60 - 132
1,1-Dichloroethene	5.00	5.28		ug/L		106	60 - 129
Acetone	25.0	30.3		ug/L		121	49 - 150
Methylene Chloride	5.00	6.12		ug/L		122	40 - 142
Methyl tert-butyl ether	5.00	5.29		ug/L		106	61 - 131
2-Butanone (MEK)	25.0	30.7		ug/L		123	37 - 150
trans-1,2-Dichloroethene	5.00	5.43		ug/L		109	69 - 121
1,1-Dichloroethane	5.00	5.82		ug/L		116	74 - 120
2,2-Dichloropropane	5.00	4.29		ug/L		86	55 - 140
cis-1,2-Dichloroethene	5.00	5.69		ug/L		114	72 - 120
Chlorobromomethane	5.00	5.31		ug/L		106	79 - 121
Chloroform	5.00	5.11		ug/L		102	75 - 120
1,1,1-Trichloroethane	5.00	4.66		ug/L		93	70 - 121
Carbon tetrachloride	5.00	4.50		ug/L		90	66 - 130

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

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

Lab Sample ID: LCS 580-480341/4

Matrix: Water

Analysis Batch: 480341

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	5.58		ug/L		112	72 - 125
Benzene	5.00	5.87		ug/L		117	80 - 120
1,2-Dichloroethane	5.00	4.82		ug/L		96	74 - 127
Trichloroethene	5.00	4.99		ug/L		100	72 - 120
1,2-Dichloropropane	5.00	6.11		ug/L		122	69 - 130
4-Methyl-2-pentanone (MIBK)	25.0	29.3		ug/L		117	63 - 137
Dibromomethane	5.00	5.05		ug/L		101	65 - 141
Dichlorobromomethane	5.00	5.23		ug/L		105	74 - 131
cis-1,3-Dichloropropene	5.00	5.22		ug/L		104	77 - 131
Toluene	5.00	5.46		ug/L		109	80 - 126
trans-1,3-Dichloropropene	5.00	5.24		ug/L		105	71 - 138
1,1,2-Trichloroethane	5.00	5.63		ug/L		113	73 - 127
Tetrachloroethene	5.00	5.20		ug/L		104	75 - 124
1,3-Dichloropropane	5.00	5.86		ug/L		117	69 - 138
Chlorodibromomethane	5.00	4.68		ug/L		94	62 - 141
Ethylene Dibromide	5.00	5.29		ug/L		106	61 - 143
Chlorobenzene	5.00	5.51		ug/L		110	74 - 123
1,1,1,2-Tetrachloroethane	5.00	5.08		ug/L		102	69 - 127
Ethylbenzene	5.00	5.76		ug/L		115	80 - 124
m-Xylene & p-Xylene	5.00	5.65		ug/L		113	75 - 124
o-Xylene	5.00	5.62		ug/L		112	71 - 124
Styrene	5.00	5.48		ug/L		110	74 - 127
Bromoform	5.00	4.52		ug/L		90	48 - 127
Isopropylbenzene	5.00	5.83		ug/L		117	71 - 123
Bromobenzene	5.00	5.46		ug/L		109	74 - 130
1,1,2,2-Tetrachloroethane	5.00	6.47		ug/L		129	67 - 136
1,2,3-Trichloropropane	5.00	5.69		ug/L		114	67 - 135
N-Propylbenzene	5.00	6.02		ug/L		120	72 - 126
2-Chlorotoluene	5.00	5.83		ug/L		117	73 - 120
4-Chlorotoluene	5.00	6.09		ug/L		122	75 - 124
1,3,5-Trimethylbenzene	5.00	5.91		ug/L		118	75 - 123
tert-Butylbenzene	5.00	5.64		ug/L		113	70 - 129
1,2,4-Trimethylbenzene	5.00	5.81		ug/L		116	71 - 127
sec-Butylbenzene	5.00	5.79		ug/L		116	75 - 126
4-Isopropyltoluene	5.00	5.57		ug/L		111	78 - 125
1,3-Dichlorobenzene	5.00	5.68		ug/L		114	72 - 125
1,4-Dichlorobenzene	5.00	5.62		ug/L		112	71 - 129
n-Butylbenzene	5.00	5.34		ug/L		107	69 - 127
1,2-Dichlorobenzene	5.00	5.73		ug/L		115	72 - 129
1,2-Dibromo-3-Chloropropane	5.00	4.65		ug/L		93	55 - 135
1,2,4-Trichlorobenzene	5.00	5.60		ug/L		112	60 - 130
Hexachlorobutadiene	5.00	5.13		ug/L		103	63 - 130
Naphthalene	5.00	5.68		ug/L		114	54 - 137
1,2,3-Trichlorobenzene	5.00	5.53		ug/L		111	60 - 136

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	91		80 - 120

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

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

Lab Sample ID: LCS 580-480341/4

Matrix: Water

Analysis Batch: 480341

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		80 - 120
1,2-Dichloroethane-d4 (Surr)	90		80 - 120

Lab Sample ID: LCSD 580-480341/5

Matrix: Water

Analysis Batch: 480341

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Dichlorodifluoromethane	5.00	5.86		ug/L		117	20 - 150	3	30
Chloromethane	5.00	6.28		ug/L		126	32 - 150	4	33
Vinyl chloride	5.00	6.28		ug/L		126	41 - 150	6	32
Bromomethane	5.00	4.90		ug/L		98	51 - 148	7	35
Chloroethane	5.00	5.53		ug/L		111	54 - 140	3	33
Carbon disulfide	5.00	4.95		ug/L		99	54 - 142	3	34
Trichlorofluoromethane	5.00	4.93		ug/L		99	60 - 132	3	32
1,1-Dichloroethene	5.00	5.14		ug/L		103	60 - 129	3	29
Acetone	25.0	28.7		ug/L		115	49 - 150	5	24
Methylene Chloride	5.00	5.88		ug/L		118	40 - 142	4	25
Methyl tert-butyl ether	5.00	5.17		ug/L		103	61 - 131	2	27
2-Butanone (MEK)	25.0	30.7		ug/L		123	37 - 150	0	35
trans-1,2-Dichloroethene	5.00	5.27		ug/L		105	69 - 121	3	27
1,1-Dichloroethane	5.00	5.58		ug/L		112	74 - 120	4	26
2,2-Dichloropropane	5.00	4.01		ug/L		80	55 - 140	7	31
cis-1,2-Dichloroethene	5.00	5.42		ug/L		108	72 - 120	5	22
Chlorobromomethane	5.00	5.28		ug/L		106	79 - 121	0	20
Chloroform	5.00	4.99		ug/L		100	75 - 120	2	21
1,1,1-Trichloroethane	5.00	4.48		ug/L		90	70 - 121	4	24
Carbon tetrachloride	5.00	4.49		ug/L		90	66 - 130	0	24
1,1-Dichloropropene	5.00	5.39		ug/L		108	72 - 125	4	23
Benzene	5.00	5.64		ug/L		113	80 - 120	4	22
1,2-Dichloroethane	5.00	4.69		ug/L		94	74 - 127	3	21
Trichloroethene	5.00	4.91		ug/L		98	72 - 120	2	22
1,2-Dichloropropane	5.00	5.95		ug/L		119	69 - 130	3	22
4-Methyl-2-pentanone (MIBK)	25.0	27.6		ug/L		111	63 - 137	6	26
Dibromomethane	5.00	4.92		ug/L		98	65 - 141	3	22
Dichlorobromomethane	5.00	5.02		ug/L		100	74 - 131	4	21
cis-1,3-Dichloropropene	5.00	4.93		ug/L		99	77 - 131	6	24
Toluene	5.00	5.22		ug/L		104	80 - 126	4	20
trans-1,3-Dichloropropene	5.00	5.01		ug/L		100	71 - 138	4	26
1,1,2-Trichloroethane	5.00	5.32		ug/L		106	73 - 127	6	22
Tetrachloroethene	5.00	5.06		ug/L		101	75 - 124	3	20
1,3-Dichloropropane	5.00	5.58		ug/L		112	69 - 138	5	19
Chlorodibromomethane	5.00	4.57		ug/L		91	62 - 141	2	22
Ethylene Dibromide	5.00	5.03		ug/L		101	61 - 143	5	22
Chlorobenzene	5.00	5.24		ug/L		105	74 - 123	5	21
1,1,1,2-Tetrachloroethane	5.00	4.87		ug/L		97	69 - 127	4	22
Ethylbenzene	5.00	5.39		ug/L		108	80 - 124	7	22
m-Xylene & p-Xylene	5.00	5.32		ug/L		106	75 - 124	6	22

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

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

Lab Sample ID: LCSD 580-480341/5

Matrix: Water

Analysis Batch: 480341

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	5.32		ug/L		106	71 - 124	5	23
Styrene	5.00	5.04		ug/L		101	74 - 127	8	22
Bromoform	5.00	4.23		ug/L		85	48 - 127	7	23
Isopropylbenzene	5.00	5.45		ug/L		109	71 - 123	7	23
Bromobenzene	5.00	5.14		ug/L		103	74 - 130	6	23
1,1,2,2-Tetrachloroethane	5.00	6.17		ug/L		123	67 - 136	5	24
1,2,3-Trichloropropane	5.00	5.36		ug/L		107	67 - 135	6	25
N-Propylbenzene	5.00	5.60		ug/L		112	72 - 126	7	20
2-Chlorotoluene	5.00	5.56		ug/L		111	73 - 120	5	22
4-Chlorotoluene	5.00	5.79		ug/L		116	75 - 124	5	23
1,3,5-Trimethylbenzene	5.00	5.55		ug/L		111	75 - 123	6	23
tert-Butylbenzene	5.00	5.32		ug/L		106	70 - 129	6	24
1,2,4-Trimethylbenzene	5.00	5.48		ug/L		110	71 - 127	6	23
sec-Butylbenzene	5.00	5.44		ug/L		109	75 - 126	6	23
4-Isopropyltoluene	5.00	5.26		ug/L		105	78 - 125	6	24
1,3-Dichlorobenzene	5.00	5.37		ug/L		107	72 - 125	6	22
1,4-Dichlorobenzene	5.00	5.30		ug/L		106	71 - 129	6	22
n-Butylbenzene	5.00	4.92		ug/L		98	69 - 127	8	24
1,2-Dichlorobenzene	5.00	5.35		ug/L		107	72 - 129	7	22
1,2-Dibromo-3-Chloropropane	5.00	4.37		ug/L		87	55 - 135	6	29
1,2,4-Trichlorobenzene	5.00	5.35		ug/L		107	60 - 130	5	26
Hexachlorobutadiene	5.00	5.03		ug/L		101	63 - 130	2	26
Naphthalene	5.00	5.33		ug/L		107	54 - 137	6	28
1,2,3-Trichlorobenzene	5.00	5.23		ug/L		105	60 - 136	6	28

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	92		80 - 120
4-Bromofluorobenzene (Surr)	96		80 - 120
1,2-Dichloroethane-d4 (Surr)	92		80 - 120

Lab Sample ID: 580-146493-16 MS

Matrix: Water

Analysis Batch: 480341

Client Sample ID: PA-25d-121024

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Dichlorodifluoromethane	ND		5.00	6.98		ug/L		140	20 - 150
Chloromethane	ND		5.00	6.93		ug/L		139	32 - 150
Vinyl chloride	ND		5.00	6.55		ug/L		131	41 - 150
Bromomethane	ND		5.00	4.13		ug/L		83	51 - 148
Chloroethane	ND		5.00	6.08		ug/L		122	54 - 140
Carbon disulfide	ND		5.00	6.25		ug/L		125	54 - 142
Trichlorofluoromethane	ND		5.00	5.79		ug/L		116	60 - 132
1,1-Dichloroethene	ND		5.00	6.35		ug/L		127	60 - 129
Acetone	ND		25.0	32.9		ug/L		132	49 - 150
Methylene Chloride	ND		5.00	6.46		ug/L		129	40 - 142
Methyl tert-butyl ether	ND		5.00	5.61		ug/L		112	61 - 131
2-Butanone (MEK)	ND		25.0	33.5		ug/L		134	37 - 150

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QC Sample Results

Client: ERM-West

Job ID: 580-146493-1

Project/Site: Arkema - Q4 2024 Groundwater Event

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

Lab Sample ID: 580-146493-16 MS

Client Sample ID: PA-25d-121024

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 480341

Analyte	Sample		Spike	MS		Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
trans-1,2-Dichloroethene	ND	F1	5.00	6.19	F1	ug/L		124	69 - 121
1,1-Dichloroethane	ND	F1	5.00	6.65	F1	ug/L		133	74 - 120
2,2-Dichloropropane	ND		5.00	4.01		ug/L		80	55 - 140
cis-1,2-Dichloroethene	ND	F1	5.00	6.32	F1	ug/L		126	72 - 120
Chlorobromomethane	ND		5.00	6.04		ug/L		121	79 - 121
1,1,1-Trichloroethane	ND		5.00	5.53		ug/L		111	70 - 121
Carbon tetrachloride	ND		5.00	5.82		ug/L		116	66 - 130
1,1-Dichloropropene	ND	F1	5.00	6.89	F1	ug/L		138	72 - 125
Benzene	0.049	J B F1	5.00	6.46	F1	ug/L		128	80 - 120
1,2-Dichloroethane	ND		5.00	5.40		ug/L		108	74 - 127
Trichloroethene	ND		5.00	5.70		ug/L		114	72 - 120
1,2-Dichloropropane	ND	F1	5.00	7.02	F1	ug/L		140	69 - 130
4-Methyl-2-pentanone (MIBK)	ND		25.0	29.5		ug/L		118	63 - 137
Dibromomethane	ND		5.00	5.43		ug/L		109	65 - 141
Dichlorobromomethane	ND		5.00	5.96		ug/L		119	74 - 131
cis-1,3-Dichloropropene	ND		5.00	5.56		ug/L		111	77 - 131
Toluene	ND	F1	5.00	6.05		ug/L		121	80 - 126
trans-1,3-Dichloropropene	ND		5.00	5.25		ug/L		105	71 - 138
1,1,2-Trichloroethane	ND		5.00	5.98		ug/L		120	73 - 127
Tetrachloroethene	ND		5.00	5.67		ug/L		113	75 - 124
1,3-Dichloropropane	ND		5.00	6.33		ug/L		127	69 - 138
Chlorodibromomethane	ND		5.00	5.17		ug/L		103	62 - 141
Ethylene Dibromide	ND		5.00	5.63		ug/L		113	61 - 143
Chlorobenzene	ND		5.00	5.90		ug/L		118	74 - 123
1,1,1,2-Tetrachloroethane	ND		5.00	5.36		ug/L		107	69 - 127
Ethylbenzene	ND		5.00	6.12		ug/L		122	80 - 124
m-Xylene & p-Xylene	ND	F1	5.00	5.95		ug/L		119	75 - 124
o-Xylene	ND	F1	5.00	5.79		ug/L		116	71 - 124
Styrene	ND		5.00	5.55		ug/L		111	74 - 127
Bromoform	ND		5.00	4.65		ug/L		93	48 - 127
Isopropylbenzene	ND		5.00	5.37		ug/L		107	71 - 123
Bromobenzene	ND		5.00	5.63		ug/L		113	74 - 130
1,1,2,2-Tetrachloroethane	ND	F1	5.00	6.51		ug/L		130	67 - 136
1,2,3-Trichloropropane	ND		5.00	5.94		ug/L		119	67 - 135
N-Propylbenzene	ND	F1	5.00	6.11		ug/L		122	72 - 126
2-Chlorotoluene	ND	F1	5.00	6.10	F1	ug/L		122	73 - 120
4-Chlorotoluene	ND	F1	5.00	5.96		ug/L		119	75 - 124
1,3,5-Trimethylbenzene	ND		5.00	5.88		ug/L		118	75 - 123
tert-Butylbenzene	ND		5.00	5.72		ug/L		114	70 - 129
1,2,4-Trimethylbenzene	ND		5.00	5.69		ug/L		114	71 - 127
sec-Butylbenzene	ND		5.00	5.69		ug/L		114	75 - 126
4-Isopropyltoluene	ND		5.00	5.69		ug/L		114	78 - 125
1,3-Dichlorobenzene	ND		5.00	5.75		ug/L		115	72 - 125
1,4-Dichlorobenzene	ND		5.00	5.78		ug/L		116	71 - 129
n-Butylbenzene	ND		5.00	5.49		ug/L		110	69 - 127
1,2-Dichlorobenzene	ND		5.00	5.91		ug/L		118	72 - 129
1,2-Dibromo-3-Chloropropane	ND		5.00	4.96		ug/L		99	55 - 135
1,2,4-Trichlorobenzene	ND		5.00	5.28		ug/L		106	60 - 130
Hexachlorobutadiene	ND		5.00	5.28		ug/L		106	63 - 130

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

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

Lab Sample ID: 580-146493-16 MS

Client Sample ID: PA-25d-121024

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 480341

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Naphthalene	ND		5.00	5.14		ug/L		103	54 - 137
1,2,3-Trichlorobenzene	ND		5.00	5.34		ug/L		107	60 - 136
Surrogate	MS %Recovery	MS Qualifier	Limits						
Toluene-d8 (Surr)	102		80 - 120						
Dibromofluoromethane (Surr)	97		80 - 120						
4-Bromofluorobenzene (Surr)	94		80 - 120						
1,2-Dichloroethane-d4 (Surr)	92		80 - 120						

Lab Sample ID: 580-146493-16 MSD

Client Sample ID: PA-25d-121024

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 480341

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Dichlorodifluoromethane	ND		5.00	6.77		ug/L		135	20 - 150	3	30
Chloromethane	ND		5.00	7.39		ug/L		148	32 - 150	6	33
Vinyl chloride	ND		5.00	6.34		ug/L		127	41 - 150	3	32
Bromomethane	ND		5.00	4.21		ug/L		84	51 - 148	2	35
Chloroethane	ND		5.00	5.51		ug/L		110	54 - 140	10	33
Carbon disulfide	ND		5.00	6.11		ug/L		122	54 - 142	2	34
Trichlorofluoromethane	ND		5.00	5.82		ug/L		116	60 - 132	0	32
1,1-Dichloroethene	ND		5.00	6.21		ug/L		124	60 - 129	2	29
Acetone	ND		25.0	31.5		ug/L		126	49 - 150	4	24
Methylene Chloride	ND		5.00	6.38		ug/L		128	40 - 142	1	25
Methyl tert-butyl ether	ND		5.00	5.53		ug/L		111	61 - 131	1	27
2-Butanone (MEK)	ND		25.0	30.5		ug/L		122	37 - 150	9	35
trans-1,2-Dichloroethene	ND	F1	5.00	6.28	F1	ug/L		126	69 - 121	1	27
1,1-Dichloroethane	ND	F1	5.00	6.64	F1	ug/L		133	74 - 120	0	26
2,2-Dichloropropane	ND		5.00	3.68		ug/L		74	55 - 140	9	31
cis-1,2-Dichloroethene	ND	F1	5.00	6.07	F1	ug/L		121	72 - 120	4	22
Chlorobromomethane	ND		5.00	5.95		ug/L		119	79 - 121	1	20
1,1,1-Trichloroethane	ND		5.00	5.50		ug/L		110	70 - 121	0	24
Carbon tetrachloride	ND		5.00	5.61		ug/L		112	66 - 130	4	24
1,1-Dichloropropene	ND	F1	5.00	6.80	F1	ug/L		136	72 - 125	1	23
Benzene	0.049	J B F1	5.00	6.66	F1	ug/L		132	80 - 120	3	22
1,2-Dichloroethane	ND		5.00	5.58		ug/L		112	74 - 127	3	21
Trichloroethene	ND		5.00	5.68		ug/L		114	72 - 120	0	22
1,2-Dichloropropane	ND	F1	5.00	7.01	F1	ug/L		140	69 - 130	0	22
4-Methyl-2-pentanone (MIBK)	ND		25.0	31.2		ug/L		125	63 - 137	6	26
Dibromomethane	ND		5.00	5.40		ug/L		108	65 - 141	1	22
Dichlorobromomethane	ND		5.00	5.73		ug/L		115	74 - 131	4	21
cis-1,3-Dichloropropene	ND		5.00	5.91		ug/L		118	77 - 131	6	24
Toluene	ND	F1	5.00	6.57	F1	ug/L		131	80 - 126	8	20
trans-1,3-Dichloropropene	ND		5.00	4.72		ug/L		94	71 - 138	11	26
1,1,2-Trichloroethane	ND		5.00	5.59		ug/L		112	73 - 127	7	22
Tetrachloroethene	ND		5.00	5.20		ug/L		104	75 - 124	9	20
1,3-Dichloropropane	ND		5.00	5.67		ug/L		113	69 - 138	11	19
Chlorodibromomethane	ND		5.00	5.25		ug/L		105	62 - 141	1	22

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

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

Lab Sample ID: 580-146493-16 MSD

Matrix: Water

Analysis Batch: 480341

Client Sample ID: PA-25d-121024

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ethylene Dibromide	ND		5.00	5.76		ug/L		115	61 - 143	2	22
Chlorobenzene	ND		5.00	6.10		ug/L		122	74 - 123	3	21
1,1,1,2-Tetrachloroethane	ND		5.00	5.55		ug/L		111	69 - 127	3	22
Ethylbenzene	ND		5.00	6.06		ug/L		121	80 - 124	1	22
m-Xylene & p-Xylene	ND	F1	5.00	6.39	F1	ug/L		128	75 - 124	7	22
o-Xylene	ND	F1	5.00	6.27	F1	ug/L		125	71 - 124	8	23
Styrene	ND		5.00	6.13		ug/L		123	74 - 127	10	22
Bromoform	ND		5.00	5.16		ug/L		103	48 - 127	10	23
Isopropylbenzene	ND		5.00	5.91		ug/L		118	71 - 123	10	23
Bromobenzene	ND		5.00	5.61		ug/L		112	74 - 130	0	23
1,1,2,2-Tetrachloroethane	ND	F1	5.00	6.97	F1	ug/L		139	67 - 136	7	24
1,2,3-Trichloropropane	ND		5.00	5.92		ug/L		118	67 - 135	0	25
N-Propylbenzene	ND	F1	5.00	6.35	F1	ug/L		127	72 - 126	4	20
2-Chlorotoluene	ND	F1	5.00	6.13	F1	ug/L		123	73 - 120	0	22
4-Chlorotoluene	ND	F1	5.00	6.52	F1	ug/L		130	75 - 124	9	23
1,3,5-Trimethylbenzene	ND		5.00	6.04		ug/L		121	75 - 123	3	23
tert-Butylbenzene	ND		5.00	5.93		ug/L		119	70 - 129	4	24
1,2,4-Trimethylbenzene	ND		5.00	6.03		ug/L		121	71 - 127	6	23
sec-Butylbenzene	ND		5.00	6.10		ug/L		122	75 - 126	7	23
4-Isopropyltoluene	ND		5.00	5.85		ug/L		117	78 - 125	3	24
1,3-Dichlorobenzene	ND		5.00	5.95		ug/L		119	72 - 125	3	22
1,4-Dichlorobenzene	ND		5.00	5.80		ug/L		116	71 - 129	0	22
n-Butylbenzene	ND		5.00	5.43		ug/L		109	69 - 127	1	24
1,2-Dichlorobenzene	ND		5.00	5.77		ug/L		115	72 - 129	2	22
1,2-Dibromo-3-Chloropropane	ND		5.00	4.92		ug/L		98	55 - 135	1	29
1,2,4-Trichlorobenzene	ND		5.00	5.46		ug/L		109	60 - 130	3	26
Hexachlorobutadiene	ND		5.00	5.34		ug/L		107	63 - 130	1	26
Naphthalene	ND		5.00	5.29		ug/L		106	54 - 137	3	28
1,2,3-Trichlorobenzene	ND		5.00	5.33		ug/L		107	60 - 136	0	28

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	108		80 - 120
Dibromofluoromethane (Surr)	93		80 - 120
4-Bromofluorobenzene (Surr)	101		80 - 120
1,2-Dichloroethane-d4 (Surr)	95		80 - 120

Lab Sample ID: MB 580-480564/7

Matrix: Water

Analysis Batch: 480564

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	ND		0.50	0.14	ug/L			12/16/24 14:28	1
Chloroform	ND		0.20	0.030	ug/L			12/16/24 14:28	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120					12/16/24 14:28	1
Dibromofluoromethane (Surr)	101		80 - 120					12/16/24 14:28	1
4-Bromofluorobenzene (Surr)	101		80 - 120					12/16/24 14:28	1

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

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

Lab Sample ID: MB 580-480564/7

Matrix: Water

Analysis Batch: 480564

Client Sample ID: Method Blank

Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		80 - 120		12/16/24 14:28	1

Lab Sample ID: LCS 580-480564/4

Matrix: Water

Analysis Batch: 480564

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloromethane	5.00	3.85		ug/L		77	32 - 150
Chloroform	5.00	4.51		ug/L		90	75 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	99		80 - 120
4-Bromofluorobenzene (Surr)	102		80 - 120
1,2-Dichloroethane-d4 (Surr)	101		80 - 120

Lab Sample ID: LCSD 580-480564/5

Matrix: Water

Analysis Batch: 480564

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	5.00	4.10		ug/L		82	32 - 150	6	33
Chloroform	5.00	4.81		ug/L		96	75 - 120	6	21

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

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

Lab Sample ID: 580-146493-16 MS

Matrix: Water

Analysis Batch: 480564

Client Sample ID: PA-25d-121024

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloroform - RA	ND		5.00	5.25		ug/L		105	75 - 120

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr) - RA	97		80 - 120
Dibromofluoromethane (Surr) - RA	102		80 - 120
4-Bromofluorobenzene (Surr) - RA	104		80 - 120
1,2-Dichloroethane-d4 (Surr) - RA	102		80 - 120

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

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

Lab Sample ID: 580-146493-16 MSD

Matrix: Water

Analysis Batch: 480564

Client Sample ID: PA-25d-121024

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloroform - RA	ND		5.00	5.13		ug/L		103	75 - 120	2	21
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
Toluene-d8 (Surr) - RA	98		80 - 120								
Dibromofluoromethane (Surr) - RA	102		80 - 120								
4-Bromofluorobenzene (Surr) - RA	102		80 - 120								
1,2-Dichloroethane-d4 (Surr) - RA	102		80 - 120								

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-515387/7

Matrix: Water

Analysis Batch: 515387

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			12/18/24 16:00	1

Lab Sample ID: LCS 570-515387/8

Matrix: Water

Analysis Batch: 515387

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	25.4		ug/L		102	85 - 115

Lab Sample ID: LCSD 570-515387/9

Matrix: Water

Analysis Batch: 515387

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
Perchlorate	25.0	24.1		ug/L		96	85 - 115	5	15

Lab Sample ID: 580-146493-16 MS

Matrix: Water

Analysis Batch: 515387

Client Sample ID: PA-25d-121024

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	ND		25.0	21.6		ug/L		86	80 - 120

Lab Sample ID: 580-146493-16 MSD

Matrix: Water

Analysis Batch: 515387

Client Sample ID: PA-25d-121024

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		25.0	21.7		ug/L		87	80 - 120	1	15

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 580-481887/3

Matrix: Water

Analysis Batch: 481887

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			01/01/25 15:43	1

Lab Sample ID: LCS 580-481887/4

Matrix: Water

Analysis Batch: 481887

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	52.5		mg/L		105	90 - 110

Lab Sample ID: LCSD 580-481887/5

Matrix: Water

Analysis Batch: 481887

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	52.4		mg/L		105	90 - 110	0	15

Lab Sample ID: MB 580-481952/3

Matrix: Water

Analysis Batch: 481952

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			01/02/25 20:02	1

Lab Sample ID: LCS 580-481952/4

Matrix: Water

Analysis Batch: 481952

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	50.9		mg/L		102	90 - 110

Lab Sample ID: LCSD 580-481952/5

Matrix: Water

Analysis Batch: 481952

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	50.9		mg/L		102	90 - 110	0	15

Lab Sample ID: 580-146493-16 MS

Matrix: Water

Analysis Batch: 481952

Client Sample ID: PA-25d-121024

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	30		50.0	80.9		mg/L		102	90 - 110

Lab Sample ID: 580-146493-16 MSD

Matrix: Water

Analysis Batch: 481952

Client Sample ID: PA-25d-121024

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	30		50.0	79.9		mg/L		100	90 - 110	1	15

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Lab Chronicle

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-27d-120924

Lab Sample ID: 580-146493-1

Date Collected: 12/09/24 14:01

Matrix: Water

Date Received: 12/11/24 14:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	480341	JBT	EET SEA	12/13/24 06:07
Total/NA	Analysis	314.0		10	515387	M5Z3	EET CAL 4	12/18/24 18:47
Total/NA	Analysis	300.0		100	481887	MLT	EET SEA	01/01/25 21:05

Client Sample ID: PA-17iR-120924

Lab Sample ID: 580-146493-2

Date Collected: 12/09/24 12:25

Matrix: Water

Date Received: 12/11/24 14:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	480341	JBT	EET SEA	12/13/24 06:30
Total/NA	Analysis	314.0		100	515387	M5Z3	EET CAL 4	12/18/24 19:28
Total/NA	Analysis	300.0		1	481887	MLT	EET SEA	01/01/25 21:17

Client Sample ID: PA-03-120924

Lab Sample ID: 580-146493-3

Date Collected: 12/09/24 10:37

Matrix: Water

Date Received: 12/11/24 14:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D	RA	1	480564	AA	EET SEA	12/16/24 17:12
Total/NA	Analysis	8260D		1	480341	JBT	EET SEA	12/13/24 06:53
Total/NA	Analysis	314.0		10	515387	M5Z3	EET CAL 4	12/18/24 20:10
Total/NA	Analysis	300.0		1	481887	MLT	EET SEA	01/01/25 21:41

Client Sample ID: PA-08-120924

Lab Sample ID: 580-146493-4

Date Collected: 12/09/24 08:29

Matrix: Water

Date Received: 12/11/24 14:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D	RA	1	480564	AA	EET SEA	12/16/24 17:35
Total/NA	Analysis	8260D		1	480341	JBT	EET SEA	12/13/24 07:16
Total/NA	Analysis	314.0		10	515387	M5Z3	EET CAL 4	12/18/24 20:52
Total/NA	Analysis	300.0		10	481887	MLT	EET SEA	01/01/25 22:16

Client Sample ID: TB-01-121024

Lab Sample ID: 580-146493-5

Date Collected: 12/10/24 00:01

Matrix: Water

Date Received: 12/11/24 14:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	480341	JBT	EET SEA	12/13/24 05:20

Lab Chronicle

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-26d-121024

Lab Sample ID: 580-146493-6

Date Collected: 12/10/24 08:49

Matrix: Water

Date Received: 12/11/24 14:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	480341	JBT	EET SEA	12/13/24 07:39
Total/NA	Analysis	314.0		1	515387	M5Z3	EET CAL 4	12/18/24 21:33
Total/NA	Analysis	300.0		1	481887	MLT	EET SEA	01/01/25 22:28

Client Sample ID: PA-09-121024

Lab Sample ID: 580-146493-7

Date Collected: 12/10/24 10:08

Matrix: Water

Date Received: 12/11/24 14:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D	RA	1	480564	AA	EET SEA	12/16/24 17:58
Total/NA	Analysis	8260D		1	480341	JBT	EET SEA	12/13/24 08:03
Total/NA	Analysis	314.0		5	515387	M5Z3	EET CAL 4	12/18/24 22:15
Total/NA	Analysis	300.0		1	481887	MLT	EET SEA	01/01/25 23:16

Client Sample ID: PA-16i-121024

Lab Sample ID: 580-146493-8

Date Collected: 12/10/24 11:43

Matrix: Water

Date Received: 12/11/24 14:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	480341	JBT	EET SEA	12/13/24 08:26
Total/NA	Analysis	314.0		10	515387	M5Z3	EET CAL 4	12/18/24 22:57
Total/NA	Analysis	300.0		1	481887	MLT	EET SEA	01/01/25 23:40

Client Sample ID: PA-04-121024

Lab Sample ID: 580-146493-9

Date Collected: 12/10/24 07:18

Matrix: Water

Date Received: 12/11/24 14:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	480341	JBT	EET SEA	12/13/24 08:49
Total/NA	Analysis	314.0		10	515387	M5Z3	EET CAL 4	12/19/24 00:20
Total/NA	Analysis	300.0		1	481887	MLT	EET SEA	01/02/25 00:04

Client Sample ID: Dup-01-121024

Lab Sample ID: 580-146493-10

Date Collected: 12/10/24 12:58

Matrix: Water

Date Received: 12/11/24 14:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	480341	JBT	EET SEA	12/13/24 09:12
Total/NA	Analysis	314.0		100	515387	M5Z3	EET CAL 4	12/19/24 01:02
Total/NA	Analysis	300.0		1	481887	MLT	EET SEA	01/02/25 00:28

Lab Chronicle

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-32i-121024

Lab Sample ID: 580-146493-11

Date Collected: 12/10/24 12:52

Matrix: Water

Date Received: 12/11/24 14:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	480341	JBT	EET SEA	12/13/24 09:36
Total/NA	Analysis	314.0		100	515387	M5Z3	EET CAL 4	12/19/24 01:44
Total/NA	Analysis	300.0		1	481887	MLT	EET SEA	01/02/25 00:51

Client Sample ID: PA-31-121024

Lab Sample ID: 580-146493-12

Date Collected: 12/10/24 11:34

Matrix: Water

Date Received: 12/11/24 14:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	480341	JBT	EET SEA	12/13/24 09:59
Total/NA	Analysis	314.0		5	515387	M5Z3	EET CAL 4	12/19/24 02:26
Total/NA	Analysis	300.0		1	481887	MLT	EET SEA	01/02/25 01:39

Client Sample ID: MWA-63-121024

Lab Sample ID: 580-146493-13

Date Collected: 12/10/24 10:37

Matrix: Water

Date Received: 12/11/24 14:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D	DL	100	480564	AA	EET SEA	12/16/24 21:49
Total/NA	Analysis	8260D		1	480341	JBT	EET SEA	12/13/24 10:33
Total/NA	Analysis	314.0		5	515387	M5Z3	EET CAL 4	12/19/24 03:07
Total/NA	Analysis	300.0		1	481887	MLT	EET SEA	01/02/25 02:03

Client Sample ID: PA-18d-121024

Lab Sample ID: 580-146493-14

Date Collected: 12/10/24 08:57

Matrix: Water

Date Received: 12/11/24 14:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D	RA	1	480564	AA	EET SEA	12/16/24 18:21
Total/NA	Analysis	8260D		1	480341	JBT	EET SEA	12/13/24 10:56
Total/NA	Analysis	314.0		100	515387	M5Z3	EET CAL 4	12/19/24 03:49
Total/NA	Analysis	300.0		1	481887	MLT	EET SEA	01/02/25 02:27

Client Sample ID: PA-10i-121024

Lab Sample ID: 580-146493-15

Date Collected: 12/10/24 15:16

Matrix: Water

Date Received: 12/11/24 14:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D	RA	1	480564	AA	EET SEA	12/16/24 18:44
Total/NA	Analysis	8260D		1	480341	JBT	EET SEA	12/13/24 11:19
Total/NA	Analysis	314.0		100	515387	M5Z3	EET CAL 4	12/19/24 04:31
Total/NA	Analysis	300.0		1	481887	MLT	EET SEA	01/02/25 02:51

Lab Chronicle

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146493-1

Client Sample ID: PA-25d-121024

Lab Sample ID: 580-146493-16

Date Collected: 12/10/24 16:16

Matrix: Water

Date Received: 12/11/24 14:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D	RA	1	480564	AA	EET SEA	12/16/24 15:24
Total/NA	Analysis	8260D		1	480341	JBT	EET SEA	12/13/24 11:42
Total/NA	Analysis	314.0		1	515387	M5Z3	EET CAL 4	12/19/24 05:12
Total/NA	Analysis	300.0		1	481952	MLT	EET SEA	01/02/25 22:37

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: ERM-West

Job ID: 580-146493-1

Project/Site: Arkema - Q4 2024 Groundwater Event

Laboratory: Eurofins Seattle

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

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4167	07-07-25

Laboratory: Eurofins Calscience

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

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	12-22-24
Arkansas DEQ	State	88-01672	07-02-25
California	Los Angeles County Sanitation Districts	9257304	07-31-26
California	State	3082	07-31-25
Kansas	NELAP	E-10420	07-31-25
Nevada	State	CA00111	07-31-25
Oregon	NELAP	4175	02-02-25
USDA	US Federal Programs	525-23-159-97150	06-08-26
Washington	State	C916	10-11-25

Sample Summary

Client: ERM-West

Job ID: 580-146493-1

Project/Site: Arkema - Q4 2024 Groundwater Event

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-146493-1	PA-27d-120924	Water	12/09/24 14:01	12/11/24 14:34
580-146493-2	PA-17iR-120924	Water	12/09/24 12:25	12/11/24 14:34
580-146493-3	PA-03-120924	Water	12/09/24 10:37	12/11/24 14:34
580-146493-4	PA-08-120924	Water	12/09/24 08:29	12/11/24 14:34
580-146493-5	TB-01-121024	Water	12/10/24 00:01	12/11/24 14:34
580-146493-6	PA-26d-121024	Water	12/10/24 08:49	12/11/24 14:34
580-146493-7	PA-09-121024	Water	12/10/24 10:08	12/11/24 14:34
580-146493-8	PA-16i-121024	Water	12/10/24 11:43	12/11/24 14:34
580-146493-9	PA-04-121024	Water	12/10/24 07:18	12/11/24 14:34
580-146493-10	Dup-01-121024	Water	12/10/24 12:58	12/11/24 14:34
580-146493-11	PA-32i-121024	Water	12/10/24 12:52	12/11/24 14:34
580-146493-12	PA-31-121024	Water	12/10/24 11:34	12/11/24 14:34
580-146493-13	MWA-63-121024	Water	12/10/24 10:37	12/11/24 14:34
580-146493-14	PA-18d-121024	Water	12/10/24 08:57	12/11/24 14:34
580-146493-15	PA-10i-121024	Water	12/10/24 15:16	12/11/24 14:34
580-146493-16	PA-25d-121024	Water	12/10/24 16:16	12/11/24 14:34

Eurofins TestAmerica, Seattle

5755 8th Street East

Tacoma, WA 98424

Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record



580-146493 Chain of Custody

Environment Testing
TestAmerica

Client Information		Sampler:	Lab PM:
Client Contact: Avery Soplat and Andrew Gardner		Paul Van Newel	Cruz, Sheri L
Company: ERM-West		Phone: 240-755-1398	E-Mail: sheri.cruz@testamericainc.com
Address: 1050 SW 6th Avenue Suite 1650		Analysis Requested	
City: Portland		Due Date Requested:	
State, Zip: OR, 97204		TAT Requested (days): 15BD	
Phone:		PO #: PN 0732445.207	
Email: avery.soplat@erm.com andrew.gardner@erm.com		WO #:	
Project Name: Arkema - Q4 2024 Groundwater event		Project #: 0732445	
Site:		SSOW#:	
Sample Identification		Field Filtered Sample (Yes or No)	
Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)
PA-27d-120924	12/09/2024 1401	G	Water
PA-17.R-120924	12/09/2024 1825	G	Water
PA-03-120924	12/09/2024 1037	G	Water
PA-08-120924	12/09/2024 0829	G	Water
TB-01-121024	12/10/24		Water
PA-26d-121024	12/10/2024 0849	G	Water
PA-09-121024	12/10/2024 1008	G	Water
PA-16i-121024	12/10/2024 1143	G	Water
PA-04-121024	12/10/24 0718	G	Water
DUP-01-121024	12/10/24 1258	G	Water
PA-32i-121024	12/10/24 1252	G	Water
Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological		☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months	
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements: please run at lowest dilution possible for ND.	
Empty Kit Relinquished by:		Date:	
Relinquished by: Lake Whitney		Date/Time: 12/11/24 1434	
Relinquished by:		Date/Time:	
Relinquished by:		Date/Time:	
Custody Seals Intact: ☐ Yes ☐ No		Custody Seal No.:	
Cooler Temperature(s) °C and Other Remarks:		2-8/51 PDX SLIR	

Environment Testing
TestAmerica

Ver: 01/16/2019 **1/6/2025**

Chain of Custody Record



Client Information	Sampler: Paul Van Nieuw	Lab PM: Cruz, Sheri L	COC No: 1052
Client Contact: Avery Soplat and Andrew Gardner	Phone: 840-755-1398	E-Mail: sherl.cruz@testamericainc.com	Page: 1 of 2
Company: ERM-West			Job #:

Address: 1050 SW 6th Avenue Suite 1650	Date Date Requested:	Analysis Requested
City: Portland	TAT Requested (days): 15BD	
State Zip: OR, 97204		
Phone: PO #:	PN 0732445, 207	

Email: avery.soplat@erm.com andrew.gardner@erm.com	Project #:	Field Filtered Sample (Yes or No)
Project Name: Arkema - Q4 2024 Groundwater event	0732445	
Site: SSOW#:		

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastefill, Br=brine, A=air)	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:
PA-27d-120924	12/09/2024	1401	G	Water	X	X	X	X	X	5	
PA-17R-120924	12/09/2024	1825	G	Water	X	X	X	X	X	5	
PA-03-120924	12/09/2024	1637	G	Water	X	X	X	X	X	5	
PA-08-120924	12/09/2024	0824	G	Water	X	X	X	X	X	5	
TS-01-121024	12/10/24			Water	X	X	X	X	X	1	
PA-26d-121024	12/10/2024	0849	G	Water	X	X	X	X	X	5	
PA-09-121024	12/10/2024	1608	G	Water	X	X	X	X	X	5	
PA-16i-121024	12/10/2024	1143	G	Water	X	X	X	X	X	5	
PA-04-121024	12/10/24	0718	G	Water	X	X	X	X	X	5	
PA-01-121024	12/10/24	1258	G	Water	X	X	X	X	X	5	
PA-33i-121024	12/10/24	1252	G	Water	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)

Empty Kit Relinquished by: **Date:** **Time:** **Method of Shipment:**

Relinquished by: **Date/Time:** **Company:** **Received by:** **Date/Time:** **Company:**

Relinquished by: **Date/Time:** **Company:** **Received by:** **Date/Time:** **Company:**

Custody Seals Intact: **Custody Seal No.:** **Cooler Temperature(s) °C and Other Remarks:** **28/31 PDX SLR**

12/14 3.5/3.1

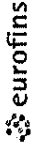
Chain of Custody Record

eurofins
Environment Testing
TestAmerica

Ver: 01/16/2019

Eurofins Seattle
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310

Chain of Custody Record



Loc. 580

146493

Client Information (Sub Contract Lab)		Sampler: N/A	Lab P/N: Cruz, Sheri L	Carrier Tracking No(s): N/A	COC No: 580-140028.1
Client Contact:		Phone: N/A	E-Mail: Sheri.Cruz@eurofins.com	State of Origin: Oregon	Page: Page 1 of 2
Shipping/Receiving		Accreditations Required (See note): NELAP Oregon			Job #: 580-146493-1
Company: Eurofins Environment Testing Southwest,		Preservation Codes:			
Address: 2841 Dow Avenue, Suite 100,		Analysis Requested:			
City: Tustin		Due Date Requested: 1/6/2025			
State, Zip: CA, 92780		TAT Requested (days): N/A			
Phone: 714-895-5494(Tel)		PO #: N/A			
Email: N/A		WO #: N/A			
Project Name: Arkema Q4 2024 Groundwater Event		Project #: 58016290			
Site: N/A		SSOW#: N/A			
		Matrix (Water, Solid, On-water, ST-Tissue, AML)			
		Sample Type (C-Comp, G-grab)			
		Sample Time			
		Sample Date			
Sample Identification - Client ID (Lab ID)		Preservation Code			
PA-27d-120924 (580-146493-1)		14:01 Pacific			
PA-17-120924 (580-146493-2)		12:25 Pacific			
PA-03-120924 (580-146493-3)		10:37 Pacific			
PA-08-120924 (580-146493-4)		08:29 Pacific			
PA-26d-121024 (580-146493-6)		08:49 Pacific			
PA-09-121024 (580-146493-7)		10:08 Pacific			
PA-16i-121024 (580-146493-8)		11:43 Pacific			
PA-04-121024 (580-146493-9)		07:18 Pacific			
Dup-01-121024 (580-146493-10)		12:58 Pacific			
		Field Filled Sample (Yes or No)			
		Perform MS/MSD (Yes or No)			
		314.0/ Perchlorate			
		Total Number of Containers			
		Special Instr			
		Other: N/A			
		580-146493 Chain of Custody			

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification

Unconfirmed

Deliverable Requested: I, II, III, IV Other (specify) Primary Deliverable Rank: 2

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:

Empty Kit Relinquished by: Date: Time: Method of Shipment:

Relinquished by: Date/Time: Company: Received by: Date/Time: Company:

Relinquished by: Date/Time: Company: Received by: Date/Time: Company:

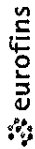
Relinquished by: Date/Time: Company: Received by: Date/Time: Company:

Custody Seal No. Δ Yes Δ No Cooler Temperature(s) °C and Other Remarks: 18/25 5C/2

Ver 10/10/2024

Eurofins Seattle
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310

Chain of Custody Record



Environment Testing

Client Information (Sub Contract Lab)		Sampler N/A	Lab PM: Cruz, Sheri L	Carrier Tracking No(s): N/A	GOC No: 580-140028.2
Client Contact		Phone: N/A	E-Mail: Sheri.Cruz@eurofinsus.com	State of Origin: Oregon	Page: Page 2 of 2
Shipping/Receiving		Accreditations Required (See note): NELAP Oregon			
Company: Eurofins Environment Testing Southwest,		Job #: 580-146493-1			
Address: 2841 Dow Avenue, Suite 100,		Preservation Codes:			
City: Tustin	State, Zip: CA, 92780	Analysis Requested			
Phone: 714-895-5494(Tel)	PO #: N/A	Due Date Requested: 1/6/2025			
Email: N/A	WO #: N/A	TAT Requested (days): N/A			
Project Name: Arkema Q4 2024 Groundwater Event	Project #: 58016290	Field Filtered Sample (Yes or No)			
Site: N/A	SSOW#: N/A	Perform MS/MSD (Yes or No)			
		314.0 Perchlorate			
		Total Number of Containers			
		Special Instructions/Note:			
		Other: N/A			

Sample Identification	Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Solid, On-site, BT-Tissue, AAU)	Preservation Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	314.0 Perchlorate	Total Number of Containers	Special Instructions/Note:
PA-32i-121024 (580-146493-11)		12/10/24	12:52 Pacific	G	Water		X	X		1	
PA-31-121024 (580-146493-12)		12/10/24	11:34 Pacific	G	Water		X	X		1	
MWA-63-121024 (580-146493-13)		12/10/24	10:37 Pacific	G	Water		X	X		1	
PA-18d-121024 (580-146493-14)		12/10/24	08:57 Pacific	G	Water		X	X		1	
PA-10i-121024 (580-146493-15)		12/10/24	15:16 Pacific	G	Water		X	X		1	
PA-25d-121024 (580-146493-16)		12/10/24	16:16 Pacific	G	Water		X	X		1	
PA-25d-121024 (580-146493-16MS)		12/10/24	16:16 Pacific	G	Water		X	X		1	
PA-25d-121024 (580-146493-16MSD)		12/10/24	16:16 Pacific	G	Water		X	X		1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.

Possible Hazard Identification
Unconfirmed

Deliverable Requested: I, II, III, IV Other (specify) Primary Deliverable Rank: 2

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:

Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 12/11/24 17:00	Company: Eurofins	Received by: Felter	Date/Time:
Relinquished by:	Date/Time:	Company:	Received by: JZ	Date/Time: 12/12/24 09:50
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:
Custody Seals Intact: ☐ Yes ☐ No		Custody Seal No.		
Cooler Temperature(s) °C and Other Remarks:		18/25 JZ		

Ver 10/10/2024

Login Sample Receipt Checklist

Client: ERM-West

Job Number: 580-146493-1

Login Number: 146493

List Source: Eurofins Seattle

List Number: 1

Creator: O'Connell, Jason I

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 $<6\text{mm}$ (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: 580-146493-1

Login Number: 146493

List Number: 2

Creator: Khana, Piyush

List Source: Eurofins Calscience

List Creation: 12/12/24 03:41 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	2461414
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	2.5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	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 $<6\text{mm}$ (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: Avery Soplata
ERM-West
1050 SW 6th Avenue
Suite 1650
Portland, Oregon 97204
Generated 1/9/2025 5:35:12 PM

JOB DESCRIPTION

Arkema - Q4 2024 Groundwater Event

JOB NUMBER

580-146567-1

Eurofins Seattle

Job Notes

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

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

Authorization



Generated
1/9/2025 5:35:12 PM

Authorized for release by
Marie Walker, Senior Project Manager
M.Elaine.Walker@et.eurofinsus.com
Designee for
Sheri Cruz, Project Manager I
Sheri.Cruz@et.eurofinsus.com
(253)922-2310



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Case Narrative

Client: ERM-West
Project: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Job ID: 580-146567-1

Eurofins Seattle

Job Narrative 580-146567-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 12/13/2024 9:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.9°C.

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-480564 recovered above the upper control limit for 2-Butanone (MEK). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: MWA-81i-121124 (580-146567-1), MWA-41-121124 (580-146567-2), PA-15i-121124 (580-146567-3), PA-24d-121124 (580-146567-4) and (CCVIS 580-480564/3).

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-480648 recovered outside acceptance criteria, low biased, for Dichlorodifluoromethane, Bromomethane and Chloroethane. A reporting limit (RL) standard was analyzed, and the target analytes are detected. Since the associated samples were non-detect for the analyte(s), the data are reported.

Method 8260D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 580-480648 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 8260D: The following samples were diluted to bring the concentration of target analytes within the calibration range: MWA-58d-121224 (580-146567-12), PA-19d-121224 (580-146567-15), MWA-56d-121224 (580-146567-16), MWA-56d-121224 (580-146567-16[MS]) and MWA-56d-121224 (580-146567-16[MSD]). Elevated reporting limits (RLs) are provided.

Method 8260D: The following sample was diluted to bring the concentration of target analytes within the calibration range: PA-30d-121224 (580-146567-17). Elevated reporting limits (RLs) are provided.

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-480717 recovered outside acceptance criteria, low biased, for Chloromethane. A reporting limit (RL) standard was analyzed, and the target analytes are detected. Since the associated samples were non-detect for the analyte(s), the data are reported.

Method 8260D: The continuing calibration verification (CCV) associated with batch 580-480750 recovered above the upper control limit for Dichlorodifluoromethane, 1,1-Dichloroethene, Acetone, Methylene Chloride, Methyl tert-butyl ether, 2-Butanone (MEK), trans-1,2-Dichloroethene, 1,1-Dichloroethane, 2,2-Dichloropropane, cis-1,2-Dichloroethene, Chlorobromomethane, 1,1-Dichloropropene, Benzene and 1,2-Dichloropropane. The samples associated with this CCV were non-detects or below the reporting limit for the affected analytes; therefore, the data have been reported. The associated samples are impacted: Dup-02-121224 (580-146567-14), MWA-11i(d)-121224 (580-146567-18) and (CCVIS 580-480750/4).

Method 8260D: The method blank for analytical batch 580-480750 contained Acetone and Benzene above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8260D_LL: The continuing calibration verification (CCV) associated with batch 580-480564 recovered above the upper control limit for 2-Butanone (MEK). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: MWA-81i-121124 (580-146567-1), MWA-41-121124 (580-146567-2), PA-15i-121124 (580-146567-3), PA-24d-121124 (580-146567-4) and (CCVIS 580-480564/3).

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Case Narrative

Client: ERM-West
Project: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Job ID: 580-146567-1 (Continued)

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Method 8260D_LL: The continuing calibration verification (CCV) associated with batch 580-480648 recovered outside acceptance criteria, low biased, for Dichlorodifluoromethane, Bromomethane and Chloroethane. A reporting limit (RL) standard was analyzed, and the target analytes are detected. Since the associated samples were non-detect for the analyte(s), the data are reported.

Method 8260D_LL: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 580-480648 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 8260D_LL: The continuing calibration verification (CCV) associated with batch 580-480750 recovered above the upper control limit for Dichlorodifluoromethane, 1,1-Dichloroethene, Acetone, Methylene Chloride, Methyl tert-butyl ether, 2-Butanone (MEK), trans-1,2-Dichloroethene, 1,1-Dichloroethane, 2,2-Dichloropropane, cis-1,2-Dichloroethene, Chlorobromomethane, 1,1-Dichloropropene, Benzene and 1,2-Dichloropropane. The samples associated with this CCV were non-detects or below the reporting limit for the affected analytes; therefore, the data have been reported. The associated samples are impacted: Dup-02-121224 (580-146567-14), MWA-11i(d)-121224 (580-146567-18) and (CCVIS 580-480750/4).

Method 8260D_LL: The method blank for analytical batch 580-480750 contained Acetone and Benzene above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

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

HPLC/IC

Method 314.0: The following samples were diluted due to the nature of the sample matrix: PA-15i-121124 (580-146567-3), PA-44i-121124 (580-146567-7) and PA-30d-121224 (580-146567-17). Elevated reporting limits (RLs) are provided.

Method 314.0: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with analytical batch 570-515388 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Perchlorate in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

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

General Chemistry

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

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Definitions/Glossary

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
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
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

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 - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: MWA-81i-121124

Lab Sample ID: 580-146567-1

Date Collected: 12/11/24 08:00

Matrix: Water

Date Received: 12/13/24 09:00

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			12/16/24 16:25	1
Chloromethane	ND		0.50	0.14	ug/L			12/16/24 16:25	1
Vinyl chloride	ND		0.10	0.040	ug/L			12/16/24 16:25	1
Bromomethane	ND		0.50	0.13	ug/L			12/16/24 16:25	1
Chloroethane	ND		0.50	0.24	ug/L			12/16/24 16:25	1
Carbon disulfide	ND		0.40	0.20	ug/L			12/16/24 16:25	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			12/16/24 16:25	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			12/16/24 16:25	1
Acetone	ND		10	3.1	ug/L			12/16/24 16:25	1
Methylene Chloride	ND		5.0	1.2	ug/L			12/16/24 16:25	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			12/16/24 16:25	1
2-Butanone (MEK)	ND		10	2.5	ug/L			12/16/24 16:25	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			12/16/24 16:25	1
1,1-Dichloroethane	ND		0.20	0.064	ug/L			12/16/24 16:25	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			12/16/24 16:25	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			12/16/24 16:25	1
Chlorobromomethane	ND		0.20	0.050	ug/L			12/16/24 16:25	1
Chloroform	ND		0.20	0.030	ug/L			12/16/24 16:25	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			12/16/24 16:25	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			12/16/24 16:25	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			12/16/24 16:25	1
Benzene	ND		0.20	0.030	ug/L			12/16/24 16:25	1
1,2-Dichloroethane	ND		0.25	0.12	ug/L			12/16/24 16:25	1
Trichloroethene	ND		0.20	0.066	ug/L			12/16/24 16:25	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			12/16/24 16:25	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.7	ug/L			12/16/24 16:25	1
Dibromomethane	ND		0.20	0.062	ug/L			12/16/24 16:25	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			12/16/24 16:25	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			12/16/24 16:25	1
Toluene	ND		0.20	0.050	ug/L			12/16/24 16:25	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			12/16/24 16:25	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			12/16/24 16:25	1
Tetrachloroethene	ND		0.24	0.084	ug/L			12/16/24 16:25	1
1,3-Dichloropropane	ND		0.20	0.056	ug/L			12/16/24 16:25	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			12/16/24 16:25	1
Ethylene Dibromide	ND		0.15	0.067	ug/L			12/16/24 16:25	1
Chlorobenzene	ND		0.20	0.060	ug/L			12/16/24 16:25	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.11	ug/L			12/16/24 16:25	1
Ethylbenzene	ND		0.20	0.082	ug/L			12/16/24 16:25	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			12/16/24 16:25	1
o-Xylene	ND		0.50	0.23	ug/L			12/16/24 16:25	1
Styrene	ND		1.0	0.33	ug/L			12/16/24 16:25	1
Bromoform	ND		0.50	0.16	ug/L			12/16/24 16:25	1
Isopropylbenzene	ND		1.0	0.27	ug/L			12/16/24 16:25	1
Bromobenzene	ND		0.20	0.038	ug/L			12/16/24 16:25	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			12/16/24 16:25	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			12/16/24 16:25	1
N-Propylbenzene	ND		0.30	0.091	ug/L			12/16/24 16:25	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			12/16/24 16:25	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: MWA-81i-121124

Lab Sample ID: 580-146567-1

Date Collected: 12/11/24 08:00

Matrix: Water

Date Received: 12/13/24 09:00

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			12/16/24 16:25	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			12/16/24 16:25	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			12/16/24 16:25	1
1,2,4-Trimethylbenzene	ND		0.55	0.23	ug/L			12/16/24 16:25	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			12/16/24 16:25	1
4-Isopropyltoluene	ND		0.50	0.25	ug/L			12/16/24 16:25	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			12/16/24 16:25	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			12/16/24 16:25	1
n-Butylbenzene	ND		1.0	0.35	ug/L			12/16/24 16:25	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			12/16/24 16:25	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.48	ug/L			12/16/24 16:25	1
1,2,4-Trichlorobenzene	ND		1.5	0.36	ug/L			12/16/24 16:25	1
Hexachlorobutadiene	ND		0.50	0.16	ug/L			12/16/24 16:25	1
Naphthalene	ND		1.5	0.52	ug/L			12/16/24 16:25	1
1,2,3-Trichlorobenzene	ND		1.5	0.47	ug/L			12/16/24 16:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		12/16/24 16:25	1
Dibromofluoromethane (Surr)	100		80 - 120		12/16/24 16:25	1
4-Bromofluorobenzene (Surr)	102		80 - 120		12/16/24 16:25	1
1,2-Dichloroethane-d4 (Surr)	103		80 - 120		12/16/24 16:25	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			12/18/24 17:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	33		1.5	0.43	mg/L			01/08/25 15:21	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: MWA-41-121124

Lab Sample ID: 580-146567-2

Date Collected: 12/11/24 09:49

Matrix: Water

Date Received: 12/13/24 09:00

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			12/16/24 16:02	1
Chloromethane	ND		0.50	0.14	ug/L			12/16/24 16:02	1
Vinyl chloride	ND		0.10	0.040	ug/L			12/16/24 16:02	1
Bromomethane	ND		0.50	0.13	ug/L			12/16/24 16:02	1
Chloroethane	ND		0.50	0.24	ug/L			12/16/24 16:02	1
Carbon disulfide	ND		0.40	0.20	ug/L			12/16/24 16:02	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			12/16/24 16:02	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			12/16/24 16:02	1
Acetone	ND		10	3.1	ug/L			12/16/24 16:02	1
Methylene Chloride	ND		5.0	1.2	ug/L			12/16/24 16:02	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			12/16/24 16:02	1
2-Butanone (MEK)	ND		10	2.5	ug/L			12/16/24 16:02	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			12/16/24 16:02	1
1,1-Dichloroethane	ND		0.20	0.064	ug/L			12/16/24 16:02	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			12/16/24 16:02	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			12/16/24 16:02	1
Chlorobromomethane	ND		0.20	0.050	ug/L			12/16/24 16:02	1
Chloroform	ND		0.20	0.030	ug/L			12/16/24 16:02	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			12/16/24 16:02	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			12/16/24 16:02	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			12/16/24 16:02	1
Benzene	ND		0.20	0.030	ug/L			12/16/24 16:02	1
1,2-Dichloroethane	ND		0.25	0.12	ug/L			12/16/24 16:02	1
Trichloroethene	ND		0.20	0.066	ug/L			12/16/24 16:02	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			12/16/24 16:02	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.7	ug/L			12/16/24 16:02	1
Dibromomethane	ND		0.20	0.062	ug/L			12/16/24 16:02	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			12/16/24 16:02	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			12/16/24 16:02	1
Toluene	ND		0.20	0.050	ug/L			12/16/24 16:02	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			12/16/24 16:02	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			12/16/24 16:02	1
Tetrachloroethene	ND		0.24	0.084	ug/L			12/16/24 16:02	1
1,3-Dichloropropane	ND		0.20	0.056	ug/L			12/16/24 16:02	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			12/16/24 16:02	1
Ethylene Dibromide	ND		0.15	0.067	ug/L			12/16/24 16:02	1
Chlorobenzene	ND		0.20	0.060	ug/L			12/16/24 16:02	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.11	ug/L			12/16/24 16:02	1
Ethylbenzene	ND		0.20	0.082	ug/L			12/16/24 16:02	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			12/16/24 16:02	1
o-Xylene	ND		0.50	0.23	ug/L			12/16/24 16:02	1
Styrene	ND		1.0	0.33	ug/L			12/16/24 16:02	1
Bromoform	ND		0.50	0.16	ug/L			12/16/24 16:02	1
Isopropylbenzene	ND		1.0	0.27	ug/L			12/16/24 16:02	1
Bromobenzene	ND		0.20	0.038	ug/L			12/16/24 16:02	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			12/16/24 16:02	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			12/16/24 16:02	1
N-Propylbenzene	ND		0.30	0.091	ug/L			12/16/24 16:02	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			12/16/24 16:02	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: MWA-41-121124

Lab Sample ID: 580-146567-2

Date Collected: 12/11/24 09:49

Matrix: Water

Date Received: 12/13/24 09:00

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			12/16/24 16:02	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			12/16/24 16:02	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			12/16/24 16:02	1
1,2,4-Trimethylbenzene	ND		0.55	0.23	ug/L			12/16/24 16:02	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			12/16/24 16:02	1
4-Isopropyltoluene	ND		0.50	0.25	ug/L			12/16/24 16:02	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			12/16/24 16:02	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			12/16/24 16:02	1
n-Butylbenzene	ND		1.0	0.35	ug/L			12/16/24 16:02	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			12/16/24 16:02	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.48	ug/L			12/16/24 16:02	1
1,2,4-Trichlorobenzene	ND		1.5	0.36	ug/L			12/16/24 16:02	1
Hexachlorobutadiene	ND		0.50	0.16	ug/L			12/16/24 16:02	1
Naphthalene	ND		1.5	0.52	ug/L			12/16/24 16:02	1
1,2,3-Trichlorobenzene	ND		1.5	0.47	ug/L			12/16/24 16:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		12/16/24 16:02	1
Dibromofluoromethane (Surr)	101		80 - 120		12/16/24 16:02	1
4-Bromofluorobenzene (Surr)	103		80 - 120		12/16/24 16:02	1
1,2-Dichloroethane-d4 (Surr)	102		80 - 120		12/16/24 16:02	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			12/18/24 17:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	4.9		1.5	0.43	mg/L			01/08/25 15:45	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: PA-15i-121124

Lab Sample ID: 580-146567-3

Date Collected: 12/11/24 07:49

Matrix: Water

Date Received: 12/13/24 09:00

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			12/16/24 19:07	1
Chloromethane	ND		0.50	0.14	ug/L			12/16/24 19:07	1
Vinyl chloride	ND		0.10	0.040	ug/L			12/16/24 19:07	1
Bromomethane	ND		0.50	0.13	ug/L			12/16/24 19:07	1
Chloroethane	ND		0.50	0.24	ug/L			12/16/24 19:07	1
Carbon disulfide	ND		0.40	0.20	ug/L			12/16/24 19:07	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			12/16/24 19:07	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			12/16/24 19:07	1
Acetone	ND		10	3.1	ug/L			12/16/24 19:07	1
Methylene Chloride	ND		5.0	1.2	ug/L			12/16/24 19:07	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			12/16/24 19:07	1
2-Butanone (MEK)	ND		10	2.5	ug/L			12/16/24 19:07	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			12/16/24 19:07	1
1,1-Dichloroethane	0.20		0.20	0.064	ug/L			12/16/24 19:07	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			12/16/24 19:07	1
cis-1,2-Dichloroethene	0.064	J	0.20	0.055	ug/L			12/16/24 19:07	1
Chlorobromomethane	ND		0.20	0.050	ug/L			12/16/24 19:07	1
Chloroform	ND		0.20	0.030	ug/L			12/16/24 19:07	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			12/16/24 19:07	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			12/16/24 19:07	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			12/16/24 19:07	1
Benzene	ND		0.20	0.030	ug/L			12/16/24 19:07	1
1,2-Dichloroethane	ND		0.25	0.12	ug/L			12/16/24 19:07	1
Trichloroethene	ND		0.20	0.066	ug/L			12/16/24 19:07	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			12/16/24 19:07	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.7	ug/L			12/16/24 19:07	1
Dibromomethane	ND		0.20	0.062	ug/L			12/16/24 19:07	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			12/16/24 19:07	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			12/16/24 19:07	1
Toluene	ND		0.20	0.050	ug/L			12/16/24 19:07	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			12/16/24 19:07	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			12/16/24 19:07	1
Tetrachloroethene	ND		0.24	0.084	ug/L			12/16/24 19:07	1
1,3-Dichloropropane	ND		0.20	0.056	ug/L			12/16/24 19:07	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			12/16/24 19:07	1
Ethylene Dibromide	ND		0.15	0.067	ug/L			12/16/24 19:07	1
Chlorobenzene	ND		0.20	0.060	ug/L			12/16/24 19:07	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.11	ug/L			12/16/24 19:07	1
Ethylbenzene	ND		0.20	0.082	ug/L			12/16/24 19:07	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			12/16/24 19:07	1
o-Xylene	ND		0.50	0.23	ug/L			12/16/24 19:07	1
Styrene	ND		1.0	0.33	ug/L			12/16/24 19:07	1
Bromoform	ND		0.50	0.16	ug/L			12/16/24 19:07	1
Isopropylbenzene	ND		1.0	0.27	ug/L			12/16/24 19:07	1
Bromobenzene	ND		0.20	0.038	ug/L			12/16/24 19:07	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			12/16/24 19:07	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			12/16/24 19:07	1
N-Propylbenzene	ND		0.30	0.091	ug/L			12/16/24 19:07	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			12/16/24 19:07	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: PA-15i-121124

Lab Sample ID: 580-146567-3

Date Collected: 12/11/24 07:49

Matrix: Water

Date Received: 12/13/24 09:00

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			12/16/24 19:07	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			12/16/24 19:07	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			12/16/24 19:07	1
1,2,4-Trimethylbenzene	ND		0.55	0.23	ug/L			12/16/24 19:07	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			12/16/24 19:07	1
4-Isopropyltoluene	ND		0.50	0.25	ug/L			12/16/24 19:07	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			12/16/24 19:07	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			12/16/24 19:07	1
n-Butylbenzene	ND		1.0	0.35	ug/L			12/16/24 19:07	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			12/16/24 19:07	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.48	ug/L			12/16/24 19:07	1
1,2,4-Trichlorobenzene	ND		1.5	0.36	ug/L			12/16/24 19:07	1
Hexachlorobutadiene	ND		0.50	0.16	ug/L			12/16/24 19:07	1
Naphthalene	ND		1.5	0.52	ug/L			12/16/24 19:07	1
1,2,3-Trichlorobenzene	ND		1.5	0.47	ug/L			12/16/24 19:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 120		12/16/24 19:07	1
Dibromofluoromethane (Surr)	102		80 - 120		12/16/24 19:07	1
4-Bromofluorobenzene (Surr)	102		80 - 120		12/16/24 19:07	1
1,2-Dichloroethane-d4 (Surr)	104		80 - 120		12/16/24 19:07	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	9.1	ug/L			12/18/24 18:25	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	64		1.5	0.43	mg/L			01/08/25 16:09	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: PA-24d-121124

Lab Sample ID: 580-146567-4

Date Collected: 12/11/24 09:27

Matrix: Water

Date Received: 12/13/24 09:00

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			12/16/24 16:49	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/24 16:49	1
Vinyl chloride	ND		1.0	0.22	ug/L			12/16/24 16:49	1
Bromomethane	ND		1.0	0.21	ug/L			12/16/24 16:49	1
Chloroethane	ND		1.0	0.35	ug/L			12/16/24 16:49	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			12/16/24 16:49	1
Carbon disulfide	ND		1.0	0.53	ug/L			12/16/24 16:49	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			12/16/24 16:49	1
Acetone	ND		15	3.2	ug/L			12/16/24 16:49	1
Methylene Chloride	ND		5.0	1.4	ug/L			12/16/24 16:49	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			12/16/24 16:49	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			12/16/24 16:49	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			12/16/24 16:49	1
2-Butanone (MEK)	ND		15	4.7	ug/L			12/16/24 16:49	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			12/16/24 16:49	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			12/16/24 16:49	1
Chlorobromomethane	ND		1.0	0.29	ug/L			12/16/24 16:49	1
Chloroform	ND		1.0	0.26	ug/L			12/16/24 16:49	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			12/16/24 16:49	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			12/16/24 16:49	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			12/16/24 16:49	1
Benzene	ND		1.0	0.24	ug/L			12/16/24 16:49	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			12/16/24 16:49	1
Trichloroethene	ND		1.0	0.26	ug/L			12/16/24 16:49	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			12/16/24 16:49	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/16/24 16:49	1
Dibromomethane	ND		1.0	0.34	ug/L			12/16/24 16:49	1
Dichlorobromomethane	ND		1.0	0.29	ug/L			12/16/24 16:49	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/16/24 16:49	1
Toluene	ND		1.0	0.39	ug/L			12/16/24 16:49	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			12/16/24 16:49	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			12/16/24 16:49	1
Tetrachloroethene	ND		1.0	0.41	ug/L			12/16/24 16:49	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			12/16/24 16:49	1
Chlorodibromomethane	ND		1.0	0.43	ug/L			12/16/24 16:49	1
Ethylene Dibromide	ND		1.0	0.40	ug/L			12/16/24 16:49	1
Chlorobenzene	ND		1.0	0.44	ug/L			12/16/24 16:49	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			12/16/24 16:49	1
Ethylbenzene	ND		1.0	0.50	ug/L			12/16/24 16:49	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			12/16/24 16:49	1
o-Xylene	ND		1.0	0.39	ug/L			12/16/24 16:49	1
Styrene	ND		1.0	0.53	ug/L			12/16/24 16:49	1
Bromoform	ND		1.0	0.51	ug/L			12/16/24 16:49	1
Isopropylbenzene	ND		1.0	0.44	ug/L			12/16/24 16:49	1
Bromobenzene	ND		1.0	0.43	ug/L			12/16/24 16:49	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			12/16/24 16:49	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			12/16/24 16:49	1
N-Propylbenzene	ND		1.0	0.50	ug/L			12/16/24 16:49	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			12/16/24 16:49	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: PA-24d-121124

Lab Sample ID: 580-146567-4

Date Collected: 12/11/24 09:27

Matrix: Water

Date Received: 12/13/24 09:00

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			12/16/24 16:49	1
tert-Butylbenzene	ND		2.0	0.58	ug/L			12/16/24 16:49	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			12/16/24 16:49	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			12/16/24 16:49	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			12/16/24 16:49	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			12/16/24 16:49	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/16/24 16:49	1
n-Butylbenzene	ND		1.0	0.44	ug/L			12/16/24 16:49	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			12/16/24 16:49	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			12/16/24 16:49	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			12/16/24 16:49	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			12/16/24 16:49	1
Naphthalene	ND		3.0	0.93	ug/L			12/16/24 16:49	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			12/16/24 16:49	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			12/16/24 16:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 120		12/16/24 16:49	1
1,2-Dichloroethane-d4 (Surr)	109		80 - 120		12/16/24 16:49	1
4-Bromofluorobenzene (Surr)	104		80 - 120		12/16/24 16:49	1
Dibromofluoromethane (Surr)	101		80 - 120		12/16/24 16:49	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			12/18/24 19:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	30000		1500	430	mg/L			01/08/25 16:33	1000

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: MWA-82-121124

Lab Sample ID: 580-146567-5

Date Collected: 12/11/24 11:31

Matrix: Water

Date Received: 12/13/24 09:00

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			12/17/24 05:32	1
Chloromethane	ND		0.50	0.14	ug/L			12/17/24 05:32	1
Vinyl chloride	ND		0.10	0.040	ug/L			12/17/24 05:32	1
Bromomethane	ND		0.50	0.13	ug/L			12/17/24 05:32	1
Chloroethane	ND		0.50	0.24	ug/L			12/17/24 05:32	1
Carbon disulfide	ND		0.40	0.20	ug/L			12/17/24 05:32	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			12/17/24 05:32	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			12/17/24 05:32	1
Acetone	ND		10	3.1	ug/L			12/17/24 05:32	1
Methylene Chloride	ND		5.0	1.2	ug/L			12/17/24 05:32	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			12/17/24 05:32	1
2-Butanone (MEK)	ND		10	2.5	ug/L			12/17/24 05:32	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			12/17/24 05:32	1
1,1-Dichloroethane	ND		0.20	0.064	ug/L			12/17/24 05:32	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			12/17/24 05:32	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			12/17/24 05:32	1
Chlorobromomethane	ND		0.20	0.050	ug/L			12/17/24 05:32	1
Chloroform	0.76		0.20	0.030	ug/L			12/17/24 05:32	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			12/17/24 05:32	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			12/17/24 05:32	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			12/17/24 05:32	1
Benzene	ND		0.20	0.030	ug/L			12/17/24 05:32	1
1,2-Dichloroethane	ND		0.25	0.12	ug/L			12/17/24 05:32	1
Trichloroethene	0.15	J	0.20	0.066	ug/L			12/17/24 05:32	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			12/17/24 05:32	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.7	ug/L			12/17/24 05:32	1
Dibromomethane	ND		0.20	0.062	ug/L			12/17/24 05:32	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			12/17/24 05:32	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			12/17/24 05:32	1
Toluene	ND		0.20	0.050	ug/L			12/17/24 05:32	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			12/17/24 05:32	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			12/17/24 05:32	1
Tetrachloroethene	0.42		0.24	0.084	ug/L			12/17/24 05:32	1
1,3-Dichloropropane	ND		0.20	0.056	ug/L			12/17/24 05:32	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			12/17/24 05:32	1
Ethylene Dibromide	ND		0.15	0.067	ug/L			12/17/24 05:32	1
Chlorobenzene	ND		0.20	0.060	ug/L			12/17/24 05:32	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.11	ug/L			12/17/24 05:32	1
Ethylbenzene	ND		0.20	0.082	ug/L			12/17/24 05:32	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			12/17/24 05:32	1
o-Xylene	ND		0.50	0.23	ug/L			12/17/24 05:32	1
Styrene	ND		1.0	0.33	ug/L			12/17/24 05:32	1
Bromoform	ND		0.50	0.16	ug/L			12/17/24 05:32	1
Isopropylbenzene	ND		1.0	0.27	ug/L			12/17/24 05:32	1
Bromobenzene	ND		0.20	0.038	ug/L			12/17/24 05:32	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			12/17/24 05:32	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			12/17/24 05:32	1
N-Propylbenzene	ND		0.30	0.091	ug/L			12/17/24 05:32	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			12/17/24 05:32	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: MWA-82-121124

Lab Sample ID: 580-146567-5

Date Collected: 12/11/24 11:31

Matrix: Water

Date Received: 12/13/24 09:00

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			12/17/24 05:32	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			12/17/24 05:32	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			12/17/24 05:32	1
1,2,4-Trimethylbenzene	ND		0.55	0.23	ug/L			12/17/24 05:32	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			12/17/24 05:32	1
4-Isopropyltoluene	ND		0.50	0.25	ug/L			12/17/24 05:32	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			12/17/24 05:32	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			12/17/24 05:32	1
n-Butylbenzene	ND		1.0	0.35	ug/L			12/17/24 05:32	1
1,2-Dichlorobenzene	0.041	J	0.30	0.038	ug/L			12/17/24 05:32	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.48	ug/L			12/17/24 05:32	1
1,2,4-Trichlorobenzene	ND		1.5	0.36	ug/L			12/17/24 05:32	1
Hexachlorobutadiene	ND		0.50	0.16	ug/L			12/17/24 05:32	1
Naphthalene	ND		1.5	0.52	ug/L			12/17/24 05:32	1
1,2,3-Trichlorobenzene	ND		1.5	0.47	ug/L			12/17/24 05:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 120		12/17/24 05:32	1
Dibromofluoromethane (Surr)	105		80 - 120		12/17/24 05:32	1
4-Bromofluorobenzene (Surr)	102		80 - 120		12/17/24 05:32	1
1,2-Dichloroethane-d4 (Surr)	105		80 - 120		12/17/24 05:32	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	56		20	9.1	ug/L			12/18/24 19:47	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	9.2		1.5	0.43	mg/L			01/08/25 17:44	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: PA-23d-121124

Lab Sample ID: 580-146567-6

Date Collected: 12/11/24 12:46

Matrix: Water

Date Received: 12/13/24 09:00

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			12/17/24 05:55	1
Chloromethane	ND		1.0	0.28	ug/L			12/17/24 05:55	1
Vinyl chloride	ND		1.0	0.22	ug/L			12/17/24 05:55	1
Bromomethane	ND		1.0	0.21	ug/L			12/17/24 05:55	1
Chloroethane	ND		1.0	0.35	ug/L			12/17/24 05:55	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			12/17/24 05:55	1
Carbon disulfide	ND		1.0	0.53	ug/L			12/17/24 05:55	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			12/17/24 05:55	1
Acetone	ND		15	3.2	ug/L			12/17/24 05:55	1
Methylene Chloride	ND		5.0	1.4	ug/L			12/17/24 05:55	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			12/17/24 05:55	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			12/17/24 05:55	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			12/17/24 05:55	1
2-Butanone (MEK)	ND		15	4.7	ug/L			12/17/24 05:55	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			12/17/24 05:55	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			12/17/24 05:55	1
Chlorobromomethane	ND		1.0	0.29	ug/L			12/17/24 05:55	1
Chloroform	ND		1.0	0.26	ug/L			12/17/24 05:55	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			12/17/24 05:55	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			12/17/24 05:55	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			12/17/24 05:55	1
Benzene	ND		1.0	0.24	ug/L			12/17/24 05:55	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			12/17/24 05:55	1
Trichloroethene	ND		1.0	0.26	ug/L			12/17/24 05:55	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			12/17/24 05:55	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/17/24 05:55	1
Dibromomethane	ND		1.0	0.34	ug/L			12/17/24 05:55	1
Dichlorobromomethane	ND		1.0	0.29	ug/L			12/17/24 05:55	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/17/24 05:55	1
Toluene	ND		1.0	0.39	ug/L			12/17/24 05:55	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			12/17/24 05:55	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			12/17/24 05:55	1
Tetrachloroethene	ND		1.0	0.41	ug/L			12/17/24 05:55	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			12/17/24 05:55	1
Chlorodibromomethane	ND		1.0	0.43	ug/L			12/17/24 05:55	1
Ethylene Dibromide	ND		1.0	0.40	ug/L			12/17/24 05:55	1
Chlorobenzene	ND		1.0	0.44	ug/L			12/17/24 05:55	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			12/17/24 05:55	1
Ethylbenzene	ND		1.0	0.50	ug/L			12/17/24 05:55	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			12/17/24 05:55	1
o-Xylene	ND		1.0	0.39	ug/L			12/17/24 05:55	1
Styrene	ND		1.0	0.53	ug/L			12/17/24 05:55	1
Bromoform	ND		1.0	0.51	ug/L			12/17/24 05:55	1
Isopropylbenzene	ND		1.0	0.44	ug/L			12/17/24 05:55	1
Bromobenzene	ND		1.0	0.43	ug/L			12/17/24 05:55	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			12/17/24 05:55	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			12/17/24 05:55	1
N-Propylbenzene	ND		1.0	0.50	ug/L			12/17/24 05:55	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			12/17/24 05:55	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: PA-23d-121124

Lab Sample ID: 580-146567-6

Date Collected: 12/11/24 12:46

Matrix: Water

Date Received: 12/13/24 09:00

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			12/17/24 05:55	1
tert-Butylbenzene	ND		2.0	0.58	ug/L			12/17/24 05:55	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			12/17/24 05:55	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			12/17/24 05:55	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			12/17/24 05:55	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			12/17/24 05:55	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/17/24 05:55	1
n-Butylbenzene	ND		1.0	0.44	ug/L			12/17/24 05:55	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			12/17/24 05:55	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			12/17/24 05:55	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			12/17/24 05:55	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			12/17/24 05:55	1
Naphthalene	ND		3.0	0.93	ug/L			12/17/24 05:55	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			12/17/24 05:55	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			12/17/24 05:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		12/17/24 05:55	1
1,2-Dichloroethane-d4 (Surr)	110		80 - 120		12/17/24 05:55	1
4-Bromofluorobenzene (Surr)	102		80 - 120		12/17/24 05:55	1
Dibromofluoromethane (Surr)	105		80 - 120		12/17/24 05:55	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			12/18/24 20:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	31000		1500	430	mg/L			01/08/25 18:44	1000

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: PA-44i-121124

Lab Sample ID: 580-146567-7

Date Collected: 12/11/24 13:26

Matrix: Water

Date Received: 12/13/24 09:00

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			12/17/24 06:18	1
Chloromethane	ND		0.50	0.14	ug/L			12/17/24 06:18	1
Vinyl chloride	ND		0.10	0.040	ug/L			12/17/24 06:18	1
Bromomethane	ND		0.50	0.13	ug/L			12/17/24 06:18	1
Chloroethane	ND		0.50	0.24	ug/L			12/17/24 06:18	1
Carbon disulfide	ND		0.40	0.20	ug/L			12/17/24 06:18	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			12/17/24 06:18	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			12/17/24 06:18	1
Acetone	ND		10	3.1	ug/L			12/17/24 06:18	1
Methylene Chloride	ND		5.0	1.2	ug/L			12/17/24 06:18	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			12/17/24 06:18	1
2-Butanone (MEK)	ND		10	2.5	ug/L			12/17/24 06:18	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			12/17/24 06:18	1
1,1-Dichloroethane	0.19	J	0.20	0.064	ug/L			12/17/24 06:18	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			12/17/24 06:18	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			12/17/24 06:18	1
Chlorobromomethane	ND		0.20	0.050	ug/L			12/17/24 06:18	1
Chloroform	ND		0.20	0.030	ug/L			12/17/24 06:18	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			12/17/24 06:18	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			12/17/24 06:18	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			12/17/24 06:18	1
Benzene	ND		0.20	0.030	ug/L			12/17/24 06:18	1
1,2-Dichloroethane	ND		0.25	0.12	ug/L			12/17/24 06:18	1
Trichloroethene	ND		0.20	0.066	ug/L			12/17/24 06:18	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			12/17/24 06:18	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.7	ug/L			12/17/24 06:18	1
Dibromomethane	ND		0.20	0.062	ug/L			12/17/24 06:18	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			12/17/24 06:18	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			12/17/24 06:18	1
Toluene	ND		0.20	0.050	ug/L			12/17/24 06:18	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			12/17/24 06:18	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			12/17/24 06:18	1
Tetrachloroethene	ND		0.24	0.084	ug/L			12/17/24 06:18	1
1,3-Dichloropropane	ND		0.20	0.056	ug/L			12/17/24 06:18	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			12/17/24 06:18	1
Ethylene Dibromide	ND		0.15	0.067	ug/L			12/17/24 06:18	1
Chlorobenzene	ND		0.20	0.060	ug/L			12/17/24 06:18	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.11	ug/L			12/17/24 06:18	1
Ethylbenzene	ND		0.20	0.082	ug/L			12/17/24 06:18	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			12/17/24 06:18	1
o-Xylene	ND		0.50	0.23	ug/L			12/17/24 06:18	1
Styrene	ND		1.0	0.33	ug/L			12/17/24 06:18	1
Bromoform	ND		0.50	0.16	ug/L			12/17/24 06:18	1
Isopropylbenzene	ND		1.0	0.27	ug/L			12/17/24 06:18	1
Bromobenzene	ND		0.20	0.038	ug/L			12/17/24 06:18	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			12/17/24 06:18	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			12/17/24 06:18	1
N-Propylbenzene	ND		0.30	0.091	ug/L			12/17/24 06:18	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			12/17/24 06:18	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: PA-44i-121124

Lab Sample ID: 580-146567-7

Date Collected: 12/11/24 13:26

Matrix: Water

Date Received: 12/13/24 09:00

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			12/17/24 06:18	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			12/17/24 06:18	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			12/17/24 06:18	1
1,2,4-Trimethylbenzene	ND		0.55	0.23	ug/L			12/17/24 06:18	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			12/17/24 06:18	1
4-Isopropyltoluene	ND		0.50	0.25	ug/L			12/17/24 06:18	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			12/17/24 06:18	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			12/17/24 06:18	1
n-Butylbenzene	ND		1.0	0.35	ug/L			12/17/24 06:18	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			12/17/24 06:18	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.48	ug/L			12/17/24 06:18	1
1,2,4-Trichlorobenzene	ND		1.5	0.36	ug/L			12/17/24 06:18	1
Hexachlorobutadiene	ND		0.50	0.16	ug/L			12/17/24 06:18	1
Naphthalene	ND		1.5	0.52	ug/L			12/17/24 06:18	1
1,2,3-Trichlorobenzene	ND		1.5	0.47	ug/L			12/17/24 06:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 120		12/17/24 06:18	1
Dibromofluoromethane (Surr)	105		80 - 120		12/17/24 06:18	1
4-Bromofluorobenzene (Surr)	103		80 - 120		12/17/24 06:18	1
1,2-Dichloroethane-d4 (Surr)	103		80 - 120		12/17/24 06:18	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		20	9.1	ug/L			12/18/24 21:10	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	55		1.5	0.43	mg/L			01/08/25 18:56	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: RB-01-121124

Lab Sample ID: 580-146567-8

Date Collected: 12/11/24 13:30

Matrix: Water

Date Received: 12/13/24 09:00

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			12/17/24 02:27	1
Chloromethane	ND		0.50	0.14	ug/L			12/17/24 02:27	1
Vinyl chloride	ND		0.10	0.040	ug/L			12/17/24 02:27	1
Bromomethane	ND		0.50	0.13	ug/L			12/17/24 02:27	1
Chloroethane	ND		0.50	0.24	ug/L			12/17/24 02:27	1
Carbon disulfide	ND		0.40	0.20	ug/L			12/17/24 02:27	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			12/17/24 02:27	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			12/17/24 02:27	1
Acetone	ND		10	3.1	ug/L			12/17/24 02:27	1
Methylene Chloride	ND		5.0	1.2	ug/L			12/17/24 02:27	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			12/17/24 02:27	1
2-Butanone (MEK)	ND		10	2.5	ug/L			12/17/24 02:27	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			12/17/24 02:27	1
1,1-Dichloroethane	ND		0.20	0.064	ug/L			12/17/24 02:27	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			12/17/24 02:27	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			12/17/24 02:27	1
Chlorobromomethane	ND		0.20	0.050	ug/L			12/17/24 02:27	1
Chloroform	ND		0.20	0.030	ug/L			12/17/24 02:27	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			12/17/24 02:27	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			12/17/24 02:27	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			12/17/24 02:27	1
Benzene	ND		0.20	0.030	ug/L			12/17/24 02:27	1
1,2-Dichloroethane	ND		0.25	0.12	ug/L			12/17/24 02:27	1
Trichloroethene	ND		0.20	0.066	ug/L			12/17/24 02:27	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			12/17/24 02:27	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.7	ug/L			12/17/24 02:27	1
Dibromomethane	ND		0.20	0.062	ug/L			12/17/24 02:27	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			12/17/24 02:27	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			12/17/24 02:27	1
Toluene	ND		0.20	0.050	ug/L			12/17/24 02:27	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			12/17/24 02:27	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			12/17/24 02:27	1
Tetrachloroethene	ND		0.24	0.084	ug/L			12/17/24 02:27	1
1,3-Dichloropropane	ND		0.20	0.056	ug/L			12/17/24 02:27	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			12/17/24 02:27	1
Ethylene Dibromide	ND		0.15	0.067	ug/L			12/17/24 02:27	1
Chlorobenzene	ND		0.20	0.060	ug/L			12/17/24 02:27	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.11	ug/L			12/17/24 02:27	1
Ethylbenzene	ND		0.20	0.082	ug/L			12/17/24 02:27	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			12/17/24 02:27	1
o-Xylene	ND		0.50	0.23	ug/L			12/17/24 02:27	1
Styrene	ND		1.0	0.33	ug/L			12/17/24 02:27	1
Bromoform	ND		0.50	0.16	ug/L			12/17/24 02:27	1
Isopropylbenzene	ND		1.0	0.27	ug/L			12/17/24 02:27	1
Bromobenzene	ND		0.20	0.038	ug/L			12/17/24 02:27	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			12/17/24 02:27	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			12/17/24 02:27	1
N-Propylbenzene	ND		0.30	0.091	ug/L			12/17/24 02:27	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			12/17/24 02:27	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: RB-01-121124

Lab Sample ID: 580-146567-8

Date Collected: 12/11/24 13:30

Matrix: Water

Date Received: 12/13/24 09:00

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			12/17/24 02:27	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			12/17/24 02:27	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			12/17/24 02:27	1
1,2,4-Trimethylbenzene	ND		0.55	0.23	ug/L			12/17/24 02:27	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			12/17/24 02:27	1
4-Isopropyltoluene	ND		0.50	0.25	ug/L			12/17/24 02:27	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			12/17/24 02:27	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			12/17/24 02:27	1
n-Butylbenzene	ND		1.0	0.35	ug/L			12/17/24 02:27	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			12/17/24 02:27	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.48	ug/L			12/17/24 02:27	1
1,2,4-Trichlorobenzene	ND		1.5	0.36	ug/L			12/17/24 02:27	1
Hexachlorobutadiene	ND		0.50	0.16	ug/L			12/17/24 02:27	1
Naphthalene	ND		1.5	0.52	ug/L			12/17/24 02:27	1
1,2,3-Trichlorobenzene	ND		1.5	0.47	ug/L			12/17/24 02:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		12/17/24 02:27	1
Dibromofluoromethane (Surr)	104		80 - 120		12/17/24 02:27	1
4-Bromofluorobenzene (Surr)	102		80 - 120		12/17/24 02:27	1
1,2-Dichloroethane-d4 (Surr)	101		80 - 120		12/17/24 02:27	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			12/18/24 21:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	4.2		1.5	0.43	mg/L			01/08/25 19:43	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: TB-01-121224

Lab Sample ID: 580-146567-9

Date Collected: 12/12/24 00:01

Matrix: Water

Date Received: 12/13/24 09:00

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			12/17/24 02:04	1
Chloromethane	ND		0.50	0.14	ug/L			12/17/24 02:04	1
Vinyl chloride	ND		0.10	0.040	ug/L			12/17/24 02:04	1
Bromomethane	ND		0.50	0.13	ug/L			12/17/24 02:04	1
Chloroethane	ND		0.50	0.24	ug/L			12/17/24 02:04	1
Carbon disulfide	ND		0.40	0.20	ug/L			12/17/24 02:04	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			12/17/24 02:04	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			12/17/24 02:04	1
Acetone	ND		10	3.1	ug/L			12/17/24 02:04	1
Methylene Chloride	ND		5.0	1.2	ug/L			12/17/24 02:04	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			12/17/24 02:04	1
2-Butanone (MEK)	ND		10	2.5	ug/L			12/17/24 02:04	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			12/17/24 02:04	1
1,1-Dichloroethane	ND		0.20	0.064	ug/L			12/17/24 02:04	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			12/17/24 02:04	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			12/17/24 02:04	1
Chlorobromomethane	ND		0.20	0.050	ug/L			12/17/24 02:04	1
Chloroform	ND		0.20	0.030	ug/L			12/17/24 02:04	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			12/17/24 02:04	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			12/17/24 02:04	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			12/17/24 02:04	1
Benzene	ND		0.20	0.030	ug/L			12/17/24 02:04	1
1,2-Dichloroethane	ND		0.25	0.12	ug/L			12/17/24 02:04	1
Trichloroethene	ND		0.20	0.066	ug/L			12/17/24 02:04	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			12/17/24 02:04	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.7	ug/L			12/17/24 02:04	1
Dibromomethane	ND		0.20	0.062	ug/L			12/17/24 02:04	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			12/17/24 02:04	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			12/17/24 02:04	1
Toluene	ND		0.20	0.050	ug/L			12/17/24 02:04	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			12/17/24 02:04	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			12/17/24 02:04	1
Tetrachloroethene	ND		0.24	0.084	ug/L			12/17/24 02:04	1
1,3-Dichloropropane	ND		0.20	0.056	ug/L			12/17/24 02:04	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			12/17/24 02:04	1
Ethylene Dibromide	ND		0.15	0.067	ug/L			12/17/24 02:04	1
Chlorobenzene	ND		0.20	0.060	ug/L			12/17/24 02:04	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.11	ug/L			12/17/24 02:04	1
Ethylbenzene	ND		0.20	0.082	ug/L			12/17/24 02:04	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			12/17/24 02:04	1
o-Xylene	ND		0.50	0.23	ug/L			12/17/24 02:04	1
Styrene	ND		1.0	0.33	ug/L			12/17/24 02:04	1
Bromoform	ND		0.50	0.16	ug/L			12/17/24 02:04	1
Isopropylbenzene	ND		1.0	0.27	ug/L			12/17/24 02:04	1
Bromobenzene	ND		0.20	0.038	ug/L			12/17/24 02:04	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			12/17/24 02:04	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			12/17/24 02:04	1
N-Propylbenzene	ND		0.30	0.091	ug/L			12/17/24 02:04	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			12/17/24 02:04	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: TB-01-121224

Lab Sample ID: 580-146567-9

Date Collected: 12/12/24 00:01

Matrix: Water

Date Received: 12/13/24 09:00

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			12/17/24 02:04	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			12/17/24 02:04	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			12/17/24 02:04	1
1,2,4-Trimethylbenzene	ND		0.55	0.23	ug/L			12/17/24 02:04	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			12/17/24 02:04	1
4-Isopropyltoluene	ND		0.50	0.25	ug/L			12/17/24 02:04	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			12/17/24 02:04	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			12/17/24 02:04	1
n-Butylbenzene	ND		1.0	0.35	ug/L			12/17/24 02:04	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			12/17/24 02:04	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.48	ug/L			12/17/24 02:04	1
1,2,4-Trichlorobenzene	ND		1.5	0.36	ug/L			12/17/24 02:04	1
Hexachlorobutadiene	ND		0.50	0.16	ug/L			12/17/24 02:04	1
Naphthalene	ND		1.5	0.52	ug/L			12/17/24 02:04	1
1,2,3-Trichlorobenzene	ND		1.5	0.47	ug/L			12/17/24 02:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 120		12/17/24 02:04	1
Dibromofluoromethane (Surr)	115		80 - 120		12/17/24 02:04	1
4-Bromofluorobenzene (Surr)	105		80 - 120		12/17/24 02:04	1
1,2-Dichloroethane-d4 (Surr)	114		80 - 120		12/17/24 02:04	1

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: PA-22d-121224

Lab Sample ID: 580-146567-10

Date Collected: 12/12/24 07:21

Matrix: Water

Date Received: 12/13/24 09:00

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			12/17/24 06:41	1
Chloromethane	ND		1.0	0.28	ug/L			12/17/24 06:41	1
Vinyl chloride	ND		1.0	0.22	ug/L			12/17/24 06:41	1
Bromomethane	ND		1.0	0.21	ug/L			12/17/24 06:41	1
Chloroethane	ND		1.0	0.35	ug/L			12/17/24 06:41	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			12/17/24 06:41	1
Carbon disulfide	ND		1.0	0.53	ug/L			12/17/24 06:41	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			12/17/24 06:41	1
Acetone	ND		15	3.2	ug/L			12/17/24 06:41	1
Methylene Chloride	ND		5.0	1.4	ug/L			12/17/24 06:41	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			12/17/24 06:41	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			12/17/24 06:41	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			12/17/24 06:41	1
2-Butanone (MEK)	ND		15	4.7	ug/L			12/17/24 06:41	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			12/17/24 06:41	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			12/17/24 06:41	1
Chlorobromomethane	ND		1.0	0.29	ug/L			12/17/24 06:41	1
Chloroform	15		1.0	0.26	ug/L			12/17/24 06:41	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			12/17/24 06:41	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			12/17/24 06:41	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			12/17/24 06:41	1
Benzene	ND		1.0	0.24	ug/L			12/17/24 06:41	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			12/17/24 06:41	1
Trichloroethene	ND		1.0	0.26	ug/L			12/17/24 06:41	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			12/17/24 06:41	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/17/24 06:41	1
Dibromomethane	ND		1.0	0.34	ug/L			12/17/24 06:41	1
Dichlorobromomethane	ND		1.0	0.29	ug/L			12/17/24 06:41	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/17/24 06:41	1
Toluene	ND		1.0	0.39	ug/L			12/17/24 06:41	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			12/17/24 06:41	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			12/17/24 06:41	1
Tetrachloroethene	ND		1.0	0.41	ug/L			12/17/24 06:41	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			12/17/24 06:41	1
Chlorodibromomethane	ND		1.0	0.43	ug/L			12/17/24 06:41	1
Ethylene Dibromide	ND		1.0	0.40	ug/L			12/17/24 06:41	1
Chlorobenzene	ND		1.0	0.44	ug/L			12/17/24 06:41	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			12/17/24 06:41	1
Ethylbenzene	ND		1.0	0.50	ug/L			12/17/24 06:41	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			12/17/24 06:41	1
o-Xylene	ND		1.0	0.39	ug/L			12/17/24 06:41	1
Styrene	ND		1.0	0.53	ug/L			12/17/24 06:41	1
Bromoform	ND		1.0	0.51	ug/L			12/17/24 06:41	1
Isopropylbenzene	ND		1.0	0.44	ug/L			12/17/24 06:41	1
Bromobenzene	ND		1.0	0.43	ug/L			12/17/24 06:41	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			12/17/24 06:41	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			12/17/24 06:41	1
N-Propylbenzene	ND		1.0	0.50	ug/L			12/17/24 06:41	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			12/17/24 06:41	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: PA-22d-121224

Lab Sample ID: 580-146567-10

Date Collected: 12/12/24 07:21

Matrix: Water

Date Received: 12/13/24 09:00

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			12/17/24 06:41	1
tert-Butylbenzene	ND		2.0	0.58	ug/L			12/17/24 06:41	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			12/17/24 06:41	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			12/17/24 06:41	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			12/17/24 06:41	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			12/17/24 06:41	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/17/24 06:41	1
n-Butylbenzene	ND		1.0	0.44	ug/L			12/17/24 06:41	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			12/17/24 06:41	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			12/17/24 06:41	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			12/17/24 06:41	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			12/17/24 06:41	1
Naphthalene	ND		3.0	0.93	ug/L			12/17/24 06:41	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			12/17/24 06:41	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			12/17/24 06:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 120		12/17/24 06:41	1
1,2-Dichloroethane-d4 (Surr)	106		80 - 120		12/17/24 06:41	1
4-Bromofluorobenzene (Surr)	103		80 - 120		12/17/24 06:41	1
Dibromofluoromethane (Surr)	106		80 - 120		12/17/24 06:41	1

Method: EPA 314.0 - Perchlorate (IC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	14000		2000	910	ug/L			12/19/24 15:45	1000

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	5000		150	43	mg/L			01/08/25 20:31	100

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: MWA-31i(d)-121224

Lab Sample ID: 580-146567-11

Date Collected: 12/12/24 07:24

Matrix: Water

Date Received: 12/13/24 09:00

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			12/17/24 07:04	1
Chloromethane	ND		1.0	0.28	ug/L			12/17/24 07:04	1
Vinyl chloride	ND		1.0	0.22	ug/L			12/17/24 07:04	1
Bromomethane	ND		1.0	0.21	ug/L			12/17/24 07:04	1
Chloroethane	ND		1.0	0.35	ug/L			12/17/24 07:04	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			12/17/24 07:04	1
Carbon disulfide	ND		1.0	0.53	ug/L			12/17/24 07:04	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			12/17/24 07:04	1
Acetone	ND		15	3.2	ug/L			12/17/24 07:04	1
Methylene Chloride	ND		5.0	1.4	ug/L			12/17/24 07:04	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			12/17/24 07:04	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			12/17/24 07:04	1
1,1-Dichloroethane	0.35	J	1.0	0.22	ug/L			12/17/24 07:04	1
2-Butanone (MEK)	ND		15	4.7	ug/L			12/17/24 07:04	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			12/17/24 07:04	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			12/17/24 07:04	1
Chlorobromomethane	ND		1.0	0.29	ug/L			12/17/24 07:04	1
Chloroform	37		1.0	0.26	ug/L			12/17/24 07:04	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			12/17/24 07:04	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			12/17/24 07:04	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			12/17/24 07:04	1
Benzene	ND		1.0	0.24	ug/L			12/17/24 07:04	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			12/17/24 07:04	1
Trichloroethene	ND		1.0	0.26	ug/L			12/17/24 07:04	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			12/17/24 07:04	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/17/24 07:04	1
Dibromomethane	ND		1.0	0.34	ug/L			12/17/24 07:04	1
Dichlorobromomethane	ND		1.0	0.29	ug/L			12/17/24 07:04	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/17/24 07:04	1
Toluene	ND		1.0	0.39	ug/L			12/17/24 07:04	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			12/17/24 07:04	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			12/17/24 07:04	1
Tetrachloroethene	0.45	J	1.0	0.41	ug/L			12/17/24 07:04	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			12/17/24 07:04	1
Chlorodibromomethane	ND		1.0	0.43	ug/L			12/17/24 07:04	1
Ethylene Dibromide	ND		1.0	0.40	ug/L			12/17/24 07:04	1
Chlorobenzene	ND		1.0	0.44	ug/L			12/17/24 07:04	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			12/17/24 07:04	1
Ethylbenzene	ND		1.0	0.50	ug/L			12/17/24 07:04	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			12/17/24 07:04	1
o-Xylene	ND		1.0	0.39	ug/L			12/17/24 07:04	1
Styrene	ND		1.0	0.53	ug/L			12/17/24 07:04	1
Bromoform	2.1		1.0	0.51	ug/L			12/17/24 07:04	1
Isopropylbenzene	ND		1.0	0.44	ug/L			12/17/24 07:04	1
Bromobenzene	ND		1.0	0.43	ug/L			12/17/24 07:04	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			12/17/24 07:04	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			12/17/24 07:04	1
N-Propylbenzene	ND		1.0	0.50	ug/L			12/17/24 07:04	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			12/17/24 07:04	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: MWA-31i(d)-121224

Lab Sample ID: 580-146567-11

Date Collected: 12/12/24 07:24

Matrix: Water

Date Received: 12/13/24 09:00

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			12/17/24 07:04	1
tert-Butylbenzene	ND		2.0	0.58	ug/L			12/17/24 07:04	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			12/17/24 07:04	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			12/17/24 07:04	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			12/17/24 07:04	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			12/17/24 07:04	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/17/24 07:04	1
n-Butylbenzene	ND		1.0	0.44	ug/L			12/17/24 07:04	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			12/17/24 07:04	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			12/17/24 07:04	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			12/17/24 07:04	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			12/17/24 07:04	1
Naphthalene	ND		3.0	0.93	ug/L			12/17/24 07:04	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			12/17/24 07:04	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			12/17/24 07:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 120		12/17/24 07:04	1
1,2-Dichloroethane-d4 (Surr)	106		80 - 120		12/17/24 07:04	1
4-Bromofluorobenzene (Surr)	102		80 - 120		12/17/24 07:04	1
Dibromofluoromethane (Surr)	103		80 - 120		12/17/24 07:04	1

Method: EPA 314.0 - Perchlorate (IC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	74000		2000	910	ug/L			12/19/24 16:05	1000

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	13000		1500	430	mg/L			01/08/25 21:55	1000

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: MWA-58d-121224

Lab Sample ID: 580-146567-12

Date Collected: 12/12/24 08:56

Matrix: Water

Date Received: 12/13/24 09:00

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			12/17/24 07:51	10
Chloromethane	ND		10	2.8	ug/L			12/17/24 07:51	10
Vinyl chloride	ND		10	2.2	ug/L			12/17/24 07:51	10
Bromomethane	ND		10	2.1	ug/L			12/17/24 07:51	10
Chloroethane	ND		10	3.5	ug/L			12/17/24 07:51	10
Trichlorofluoromethane	ND		10	3.6	ug/L			12/17/24 07:51	10
Carbon disulfide	ND		10	5.3	ug/L			12/17/24 07:51	10
1,1-Dichloroethene	ND		10	2.8	ug/L			12/17/24 07:51	10
Acetone	ND		150	32	ug/L			12/17/24 07:51	10
Methylene Chloride	ND		50	14	ug/L			12/17/24 07:51	10
Methyl tert-butyl ether	ND		10	4.4	ug/L			12/17/24 07:51	10
trans-1,2-Dichloroethene	ND		10	3.9	ug/L			12/17/24 07:51	10
1,1-Dichloroethane	ND		10	2.2	ug/L			12/17/24 07:51	10
2-Butanone (MEK)	ND		150	47	ug/L			12/17/24 07:51	10
2,2-Dichloropropane	ND		10	3.2	ug/L			12/17/24 07:51	10
cis-1,2-Dichloroethene	ND		10	3.5	ug/L			12/17/24 07:51	10
Chlorobromomethane	ND		10	2.9	ug/L			12/17/24 07:51	10
Chloroform	190		10	2.6	ug/L			12/17/24 07:51	10
1,1,1-Trichloroethane	ND		10	3.9	ug/L			12/17/24 07:51	10
Carbon tetrachloride	ND		10	3.0	ug/L			12/17/24 07:51	10
1,1-Dichloropropene	ND		10	2.9	ug/L			12/17/24 07:51	10
Benzene	ND		10	2.4	ug/L			12/17/24 07:51	10
1,2-Dichloroethane	ND		10	4.2	ug/L			12/17/24 07:51	10
Trichloroethene	ND		10	2.6	ug/L			12/17/24 07:51	10
1,2-Dichloropropane	ND		10	1.8	ug/L			12/17/24 07:51	10
4-Methyl-2-pentanone (MIBK)	ND		50	25	ug/L			12/17/24 07:51	10
Dibromomethane	ND		10	3.4	ug/L			12/17/24 07:51	10
Dichlorobromomethane	ND		10	2.9	ug/L			12/17/24 07:51	10
cis-1,3-Dichloropropene	ND		10	4.2	ug/L			12/17/24 07:51	10
Toluene	ND		10	3.9	ug/L			12/17/24 07:51	10
trans-1,3-Dichloropropene	ND		10	4.1	ug/L			12/17/24 07:51	10
1,1,2-Trichloroethane	ND		10	2.4	ug/L			12/17/24 07:51	10
Tetrachloroethene	ND		10	4.1	ug/L			12/17/24 07:51	10
1,3-Dichloropropane	ND		10	3.5	ug/L			12/17/24 07:51	10
Chlorodibromomethane	ND		10	4.3	ug/L			12/17/24 07:51	10
Ethylene Dibromide	ND		10	4.0	ug/L			12/17/24 07:51	10
Chlorobenzene	ND		10	4.4	ug/L			12/17/24 07:51	10
1,1,1,2-Tetrachloroethane	ND		10	1.8	ug/L			12/17/24 07:51	10
Ethylbenzene	ND		10	5.0	ug/L			12/17/24 07:51	10
m-Xylene & p-Xylene	ND		20	5.3	ug/L			12/17/24 07:51	10
o-Xylene	ND		10	3.9	ug/L			12/17/24 07:51	10
Styrene	ND		10	5.3	ug/L			12/17/24 07:51	10
Bromoform	ND		10	5.1	ug/L			12/17/24 07:51	10
Isopropylbenzene	ND		10	4.4	ug/L			12/17/24 07:51	10
Bromobenzene	ND		10	4.3	ug/L			12/17/24 07:51	10
1,1,2,2-Tetrachloroethane	ND		10	5.2	ug/L			12/17/24 07:51	10
1,2,3-Trichloropropane	ND		10	4.1	ug/L			12/17/24 07:51	10
N-Propylbenzene	ND		10	5.0	ug/L			12/17/24 07:51	10
2-Chlorotoluene	ND		10	5.1	ug/L			12/17/24 07:51	10

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: MWA-58d-121224

Lab Sample ID: 580-146567-12

Date Collected: 12/12/24 08:56

Matrix: Water

Date Received: 12/13/24 09:00

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			12/17/24 07:51	10
tert-Butylbenzene	ND		20	5.8	ug/L			12/17/24 07:51	10
1,2,4-Trimethylbenzene	ND		30	6.1	ug/L			12/17/24 07:51	10
sec-Butylbenzene	ND		10	4.9	ug/L			12/17/24 07:51	10
4-Isopropyltoluene	ND		10	2.8	ug/L			12/17/24 07:51	10
1,3-Dichlorobenzene	ND		10	4.8	ug/L			12/17/24 07:51	10
1,4-Dichlorobenzene	ND		10	4.6	ug/L			12/17/24 07:51	10
n-Butylbenzene	ND		10	4.4	ug/L			12/17/24 07:51	10
1,2-Dichlorobenzene	ND		10	4.6	ug/L			12/17/24 07:51	10
1,2-Dibromo-3-Chloropropane	ND		30	5.7	ug/L			12/17/24 07:51	10
1,2,4-Trichlorobenzene	ND		10	3.3	ug/L			12/17/24 07:51	10
Hexachlorobutadiene	ND		30	7.9	ug/L			12/17/24 07:51	10
Naphthalene	ND		30	9.3	ug/L			12/17/24 07:51	10
1,2,3-Trichlorobenzene	ND		20	4.3	ug/L			12/17/24 07:51	10
1,3,5-Trimethylbenzene	ND		10	5.5	ug/L			12/17/24 07:51	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 120		12/17/24 07:51	10
1,2-Dichloroethane-d4 (Surr)	104		80 - 120		12/17/24 07:51	10
4-Bromofluorobenzene (Surr)	103		80 - 120		12/17/24 07:51	10
Dibromofluoromethane (Surr)	106		80 - 120		12/17/24 07:51	10

Method: EPA 314.0 - Perchlorate (IC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	51000		2000	910	ug/L			12/19/24 16:26	1000

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	17000		1500	430	mg/L			01/08/25 22:42	1000

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: PA-20d-121224

Lab Sample ID: 580-146567-13

Date Collected: 12/12/24 09:56

Matrix: Water

Date Received: 12/13/24 09:00

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			12/17/24 07:27	1
Chloromethane	ND		1.0	0.28	ug/L			12/17/24 07:27	1
Vinyl chloride	ND		1.0	0.22	ug/L			12/17/24 07:27	1
Bromomethane	ND		1.0	0.21	ug/L			12/17/24 07:27	1
Chloroethane	ND		1.0	0.35	ug/L			12/17/24 07:27	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			12/17/24 07:27	1
Carbon disulfide	ND		1.0	0.53	ug/L			12/17/24 07:27	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			12/17/24 07:27	1
Acetone	ND		15	3.2	ug/L			12/17/24 07:27	1
Methylene Chloride	ND		5.0	1.4	ug/L			12/17/24 07:27	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			12/17/24 07:27	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			12/17/24 07:27	1
1,1-Dichloroethane	0.28	J	1.0	0.22	ug/L			12/17/24 07:27	1
2-Butanone (MEK)	ND		15	4.7	ug/L			12/17/24 07:27	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			12/17/24 07:27	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			12/17/24 07:27	1
Chlorobromomethane	ND		1.0	0.29	ug/L			12/17/24 07:27	1
Chloroform	ND		1.0	0.26	ug/L			12/17/24 07:27	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			12/17/24 07:27	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			12/17/24 07:27	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			12/17/24 07:27	1
Benzene	ND		1.0	0.24	ug/L			12/17/24 07:27	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			12/17/24 07:27	1
Trichloroethene	ND		1.0	0.26	ug/L			12/17/24 07:27	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			12/17/24 07:27	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/17/24 07:27	1
Dibromomethane	ND		1.0	0.34	ug/L			12/17/24 07:27	1
Dichlorobromomethane	ND		1.0	0.29	ug/L			12/17/24 07:27	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/17/24 07:27	1
Toluene	ND		1.0	0.39	ug/L			12/17/24 07:27	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			12/17/24 07:27	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			12/17/24 07:27	1
Tetrachloroethene	ND		1.0	0.41	ug/L			12/17/24 07:27	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			12/17/24 07:27	1
Chlorodibromomethane	ND		1.0	0.43	ug/L			12/17/24 07:27	1
Ethylene Dibromide	ND		1.0	0.40	ug/L			12/17/24 07:27	1
Chlorobenzene	1.7		1.0	0.44	ug/L			12/17/24 07:27	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			12/17/24 07:27	1
Ethylbenzene	ND		1.0	0.50	ug/L			12/17/24 07:27	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			12/17/24 07:27	1
o-Xylene	ND		1.0	0.39	ug/L			12/17/24 07:27	1
Styrene	ND		1.0	0.53	ug/L			12/17/24 07:27	1
Bromoform	ND		1.0	0.51	ug/L			12/17/24 07:27	1
Isopropylbenzene	ND		1.0	0.44	ug/L			12/17/24 07:27	1
Bromobenzene	ND		1.0	0.43	ug/L			12/17/24 07:27	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			12/17/24 07:27	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			12/17/24 07:27	1
N-Propylbenzene	ND		1.0	0.50	ug/L			12/17/24 07:27	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			12/17/24 07:27	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: PA-20d-121224

Lab Sample ID: 580-146567-13

Date Collected: 12/12/24 09:56

Matrix: Water

Date Received: 12/13/24 09:00

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			12/17/24 07:27	1
tert-Butylbenzene	ND		2.0	0.58	ug/L			12/17/24 07:27	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			12/17/24 07:27	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			12/17/24 07:27	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			12/17/24 07:27	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			12/17/24 07:27	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/17/24 07:27	1
n-Butylbenzene	ND		1.0	0.44	ug/L			12/17/24 07:27	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			12/17/24 07:27	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			12/17/24 07:27	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			12/17/24 07:27	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			12/17/24 07:27	1
Naphthalene	ND		3.0	0.93	ug/L			12/17/24 07:27	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			12/17/24 07:27	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			12/17/24 07:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 120		12/17/24 07:27	1
1,2-Dichloroethane-d4 (Surr)	105		80 - 120		12/17/24 07:27	1
4-Bromofluorobenzene (Surr)	103		80 - 120		12/17/24 07:27	1
Dibromofluoromethane (Surr)	104		80 - 120		12/17/24 07:27	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	48		2.0	0.91	ug/L			12/19/24 01:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	580		15	4.3	mg/L			01/08/25 23:06	10

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: Dup-02-121224

Lab Sample ID: 580-146567-14

Date Collected: 12/12/24 12:00

Matrix: Water

Date Received: 12/13/24 09:00

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			12/18/24 04:27	1
Chloromethane	ND		1.0	0.28	ug/L			12/18/24 04:27	1
Vinyl chloride	ND		1.0	0.22	ug/L			12/18/24 04:27	1
Bromomethane	ND		1.0	0.21	ug/L			12/18/24 04:27	1
Chloroethane	ND		1.0	0.35	ug/L			12/18/24 04:27	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			12/18/24 04:27	1
Carbon disulfide	ND		1.0	0.53	ug/L			12/18/24 04:27	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			12/18/24 04:27	1
Acetone	ND		15	3.2	ug/L			12/18/24 04:27	1
Methylene Chloride	ND		5.0	1.4	ug/L			12/18/24 04:27	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			12/18/24 04:27	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			12/18/24 04:27	1
1,1-Dichloroethane	0.32	J	1.0	0.22	ug/L			12/18/24 04:27	1
2-Butanone (MEK)	ND		15	4.7	ug/L			12/18/24 04:27	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			12/18/24 04:27	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			12/18/24 04:27	1
Chlorobromomethane	ND		1.0	0.29	ug/L			12/18/24 04:27	1
Chloroform	ND		1.0	0.26	ug/L			12/18/24 04:27	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			12/18/24 04:27	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			12/18/24 04:27	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			12/18/24 04:27	1
Benzene	ND		1.0	0.24	ug/L			12/18/24 04:27	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			12/18/24 04:27	1
Trichloroethene	ND		1.0	0.26	ug/L			12/18/24 04:27	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			12/18/24 04:27	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/18/24 04:27	1
Dibromomethane	ND		1.0	0.34	ug/L			12/18/24 04:27	1
Dichlorobromomethane	ND		1.0	0.29	ug/L			12/18/24 04:27	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/18/24 04:27	1
Toluene	ND		1.0	0.39	ug/L			12/18/24 04:27	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			12/18/24 04:27	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			12/18/24 04:27	1
Tetrachloroethene	ND		1.0	0.41	ug/L			12/18/24 04:27	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			12/18/24 04:27	1
Chlorodibromomethane	ND		1.0	0.43	ug/L			12/18/24 04:27	1
Ethylene Dibromide	ND		1.0	0.40	ug/L			12/18/24 04:27	1
Chlorobenzene	1.8		1.0	0.44	ug/L			12/18/24 04:27	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			12/18/24 04:27	1
Ethylbenzene	ND		1.0	0.50	ug/L			12/18/24 04:27	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			12/18/24 04:27	1
o-Xylene	ND		1.0	0.39	ug/L			12/18/24 04:27	1
Styrene	ND		1.0	0.53	ug/L			12/18/24 04:27	1
Bromoform	ND		1.0	0.51	ug/L			12/18/24 04:27	1
Isopropylbenzene	ND		1.0	0.44	ug/L			12/18/24 04:27	1
Bromobenzene	ND		1.0	0.43	ug/L			12/18/24 04:27	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			12/18/24 04:27	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			12/18/24 04:27	1
N-Propylbenzene	ND		1.0	0.50	ug/L			12/18/24 04:27	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			12/18/24 04:27	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: Dup-02-121224

Lab Sample ID: 580-146567-14

Date Collected: 12/12/24 12:00

Matrix: Water

Date Received: 12/13/24 09:00

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			12/18/24 04:27	1
tert-Butylbenzene	ND		2.0	0.58	ug/L			12/18/24 04:27	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			12/18/24 04:27	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			12/18/24 04:27	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			12/18/24 04:27	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			12/18/24 04:27	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/18/24 04:27	1
n-Butylbenzene	ND		1.0	0.44	ug/L			12/18/24 04:27	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			12/18/24 04:27	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			12/18/24 04:27	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			12/18/24 04:27	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			12/18/24 04:27	1
Naphthalene	ND		3.0	0.93	ug/L			12/18/24 04:27	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			12/18/24 04:27	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			12/18/24 04:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	91		80 - 120		12/18/24 04:27	1
1,2-Dichloroethane-d4 (Surr)	102		80 - 120		12/18/24 04:27	1
4-Bromofluorobenzene (Surr)	95		80 - 120		12/18/24 04:27	1
Dibromofluoromethane (Surr)	103		80 - 120		12/18/24 04:27	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	46		2.0	0.91	ug/L			12/19/24 02:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	590		15	4.3	mg/L			01/08/25 23:42	10

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: PA-19d-121224

Lab Sample ID: 580-146567-15

Date Collected: 12/12/24 12:47

Matrix: Water

Date Received: 12/13/24 09:00

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			12/17/24 09:23	100
Chloromethane	ND		100	28	ug/L			12/17/24 09:23	100
Vinyl chloride	ND		100	22	ug/L			12/17/24 09:23	100
Bromomethane	ND		100	21	ug/L			12/17/24 09:23	100
Chloroethane	ND		100	35	ug/L			12/17/24 09:23	100
Trichlorofluoromethane	ND		100	36	ug/L			12/17/24 09:23	100
Carbon disulfide	ND		100	53	ug/L			12/17/24 09:23	100
1,1-Dichloroethene	ND		100	28	ug/L			12/17/24 09:23	100
Acetone	ND		1500	320	ug/L			12/17/24 09:23	100
Methylene Chloride	ND		500	140	ug/L			12/17/24 09:23	100
Methyl tert-butyl ether	ND		100	44	ug/L			12/17/24 09:23	100
trans-1,2-Dichloroethene	ND		100	39	ug/L			12/17/24 09:23	100
1,1-Dichloroethane	ND		100	22	ug/L			12/17/24 09:23	100
2-Butanone (MEK)	ND		1500	470	ug/L			12/17/24 09:23	100
2,2-Dichloropropane	ND		100	32	ug/L			12/17/24 09:23	100
cis-1,2-Dichloroethene	ND		100	35	ug/L			12/17/24 09:23	100
Chlorobromomethane	ND		100	29	ug/L			12/17/24 09:23	100
Chloroform	ND		100	26	ug/L			12/17/24 09:23	100
1,1,1-Trichloroethane	ND		100	39	ug/L			12/17/24 09:23	100
Carbon tetrachloride	ND		100	30	ug/L			12/17/24 09:23	100
1,1-Dichloropropene	ND		100	29	ug/L			12/17/24 09:23	100
Benzene	39 J		100	24	ug/L			12/17/24 09:23	100
1,2-Dichloroethane	ND		100	42	ug/L			12/17/24 09:23	100
Trichloroethene	ND		100	26	ug/L			12/17/24 09:23	100
1,2-Dichloropropane	ND		100	18	ug/L			12/17/24 09:23	100
4-Methyl-2-pentanone (MIBK)	ND		500	250	ug/L			12/17/24 09:23	100
Dibromomethane	ND		100	34	ug/L			12/17/24 09:23	100
Dichlorobromomethane	ND		100	29	ug/L			12/17/24 09:23	100
cis-1,3-Dichloropropene	ND		100	42	ug/L			12/17/24 09:23	100
Toluene	ND		100	39	ug/L			12/17/24 09:23	100
trans-1,3-Dichloropropene	ND		100	41	ug/L			12/17/24 09:23	100
1,1,2-Trichloroethane	ND		100	24	ug/L			12/17/24 09:23	100
Tetrachloroethene	ND		100	41	ug/L			12/17/24 09:23	100
1,3-Dichloropropane	ND		100	35	ug/L			12/17/24 09:23	100
Chlorodibromomethane	ND		100	43	ug/L			12/17/24 09:23	100
Ethylene Dibromide	ND		100	40	ug/L			12/17/24 09:23	100
1,1,1,2-Tetrachloroethane	ND		100	18	ug/L			12/17/24 09:23	100
Ethylbenzene	ND		100	50	ug/L			12/17/24 09:23	100
m-Xylene & p-Xylene	ND		200	53	ug/L			12/17/24 09:23	100
o-Xylene	ND		100	39	ug/L			12/17/24 09:23	100
Styrene	ND		100	53	ug/L			12/17/24 09:23	100
Bromoform	ND		100	51	ug/L			12/17/24 09:23	100
Isopropylbenzene	ND		100	44	ug/L			12/17/24 09:23	100
Bromobenzene	ND		100	43	ug/L			12/17/24 09:23	100
1,1,2,2-Tetrachloroethane	ND		100	52	ug/L			12/17/24 09:23	100
1,2,3-Trichloropropane	ND		100	41	ug/L			12/17/24 09:23	100
N-Propylbenzene	ND		100	50	ug/L			12/17/24 09:23	100
2-Chlorotoluene	ND		100	51	ug/L			12/17/24 09:23	100
4-Chlorotoluene	ND		100	38	ug/L			12/17/24 09:23	100

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: PA-19d-121224

Lab Sample ID: 580-146567-15

Date Collected: 12/12/24 12:47

Matrix: Water

Date Received: 12/13/24 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
tert-Butylbenzene	ND		200	58	ug/L			12/17/24 09:23	100
1,2,4-Trimethylbenzene	ND		300	61	ug/L			12/17/24 09:23	100
sec-Butylbenzene	ND		100	49	ug/L			12/17/24 09:23	100
4-Isopropyltoluene	ND		100	28	ug/L			12/17/24 09:23	100
1,3-Dichlorobenzene	ND		100	48	ug/L			12/17/24 09:23	100
1,4-Dichlorobenzene	ND		100	46	ug/L			12/17/24 09:23	100
n-Butylbenzene	ND		100	44	ug/L			12/17/24 09:23	100
1,2-Dichlorobenzene	ND		100	46	ug/L			12/17/24 09:23	100
1,2-Dibromo-3-Chloropropane	ND		300	57	ug/L			12/17/24 09:23	100
1,2,4-Trichlorobenzene	ND		100	33	ug/L			12/17/24 09:23	100
Hexachlorobutadiene	ND		300	79	ug/L			12/17/24 09:23	100
Naphthalene	ND		300	93	ug/L			12/17/24 09:23	100
1,2,3-Trichlorobenzene	ND		200	43	ug/L			12/17/24 09:23	100
1,3,5-Trimethylbenzene	ND		100	55	ug/L			12/17/24 09:23	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		12/17/24 09:23	100
1,2-Dichloroethane-d4 (Surr)	101		80 - 120		12/17/24 09:23	100
4-Bromofluorobenzene (Surr)	101		80 - 120		12/17/24 09:23	100
Dibromofluoromethane (Surr)	103		80 - 120		12/17/24 09:23	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	11000		1000	440	ug/L			12/20/24 07:56	1000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	94		80 - 120		12/20/24 07:56	1000
1,2-Dichloroethane-d4 (Surr)	100		80 - 120		12/20/24 07:56	1000
4-Bromofluorobenzene (Surr)	107		80 - 120		12/20/24 07:56	1000
Dibromofluoromethane (Surr)	108		80 - 120		12/20/24 07:56	1000

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	100		20	9.1	ug/L			12/19/24 02:41	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	300		7.5	2.2	mg/L			01/09/25 00:42	5

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: MWA-56d-121224

Lab Sample ID: 580-146567-16

Date Collected: 12/12/24 11:53

Matrix: Water

Date Received: 12/13/24 09:00

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			12/17/24 08:37	10
Chloromethane	ND	F1	10	2.8	ug/L			12/17/24 08:37	10
Vinyl chloride	ND	F1	10	2.2	ug/L			12/17/24 08:37	10
Bromomethane	ND	F1	10	2.1	ug/L			12/17/24 08:37	10
Chloroethane	ND	F1	10	3.5	ug/L			12/17/24 08:37	10
Trichlorofluoromethane	ND	F1	10	3.6	ug/L			12/17/24 08:37	10
Carbon disulfide	ND		10	5.3	ug/L			12/17/24 08:37	10
1,1-Dichloroethene	ND		10	2.8	ug/L			12/17/24 08:37	10
Acetone	ND		150	32	ug/L			12/17/24 08:37	10
Methylene Chloride	ND		50	14	ug/L			12/17/24 08:37	10
Methyl tert-butyl ether	ND		10	4.4	ug/L			12/17/24 08:37	10
trans-1,2-Dichloroethene	ND		10	3.9	ug/L			12/17/24 08:37	10
1,1-Dichloroethane	ND		10	2.2	ug/L			12/17/24 08:37	10
2-Butanone (MEK)	ND		150	47	ug/L			12/17/24 08:37	10
2,2-Dichloropropane	ND		10	3.2	ug/L			12/17/24 08:37	10
cis-1,2-Dichloroethene	ND		10	3.5	ug/L			12/17/24 08:37	10
Chlorobromomethane	ND		10	2.9	ug/L			12/17/24 08:37	10
Chloroform	160	F1	10	2.6	ug/L			12/17/24 08:37	10
1,1,1-Trichloroethane	ND		10	3.9	ug/L			12/17/24 08:37	10
Carbon tetrachloride	ND		10	3.0	ug/L			12/17/24 08:37	10
1,1-Dichloropropene	ND		10	2.9	ug/L			12/17/24 08:37	10
Benzene	ND		10	2.4	ug/L			12/17/24 08:37	10
1,2-Dichloroethane	ND		10	4.2	ug/L			12/17/24 08:37	10
Trichloroethene	ND		10	2.6	ug/L			12/17/24 08:37	10
1,2-Dichloropropane	ND		10	1.8	ug/L			12/17/24 08:37	10
4-Methyl-2-pentanone (MIBK)	ND		50	25	ug/L			12/17/24 08:37	10
Dibromomethane	ND		10	3.4	ug/L			12/17/24 08:37	10
Dichlorobromomethane	ND		10	2.9	ug/L			12/17/24 08:37	10
cis-1,3-Dichloropropene	ND		10	4.2	ug/L			12/17/24 08:37	10
Toluene	ND		10	3.9	ug/L			12/17/24 08:37	10
trans-1,3-Dichloropropene	ND		10	4.1	ug/L			12/17/24 08:37	10
1,1,2-Trichloroethane	ND		10	2.4	ug/L			12/17/24 08:37	10
Tetrachloroethene	ND		10	4.1	ug/L			12/17/24 08:37	10
1,3-Dichloropropane	ND		10	3.5	ug/L			12/17/24 08:37	10
Chlorodibromomethane	ND		10	4.3	ug/L			12/17/24 08:37	10
Ethylene Dibromide	ND		10	4.0	ug/L			12/17/24 08:37	10
Chlorobenzene	ND		10	4.4	ug/L			12/17/24 08:37	10
1,1,1,2-Tetrachloroethane	ND		10	1.8	ug/L			12/17/24 08:37	10
Ethylbenzene	ND		10	5.0	ug/L			12/17/24 08:37	10
m-Xylene & p-Xylene	ND		20	5.3	ug/L			12/17/24 08:37	10
o-Xylene	ND		10	3.9	ug/L			12/17/24 08:37	10
Styrene	ND		10	5.3	ug/L			12/17/24 08:37	10
Bromoform	ND		10	5.1	ug/L			12/17/24 08:37	10
Isopropylbenzene	ND		10	4.4	ug/L			12/17/24 08:37	10
Bromobenzene	ND		10	4.3	ug/L			12/17/24 08:37	10
1,1,2,2-Tetrachloroethane	ND		10	5.2	ug/L			12/17/24 08:37	10
1,2,3-Trichloropropane	ND		10	4.1	ug/L			12/17/24 08:37	10
N-Propylbenzene	ND		10	5.0	ug/L			12/17/24 08:37	10
2-Chlorotoluene	ND		10	5.1	ug/L			12/17/24 08:37	10

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: MWA-56d-121224

Lab Sample ID: 580-146567-16

Date Collected: 12/12/24 11:53

Matrix: Water

Date Received: 12/13/24 09:00

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			12/17/24 08:37	10
tert-Butylbenzene	ND		20	5.8	ug/L			12/17/24 08:37	10
1,2,4-Trimethylbenzene	ND		30	6.1	ug/L			12/17/24 08:37	10
sec-Butylbenzene	ND		10	4.9	ug/L			12/17/24 08:37	10
4-Isopropyltoluene	ND		10	2.8	ug/L			12/17/24 08:37	10
1,3-Dichlorobenzene	ND		10	4.8	ug/L			12/17/24 08:37	10
1,4-Dichlorobenzene	ND		10	4.6	ug/L			12/17/24 08:37	10
n-Butylbenzene	ND		10	4.4	ug/L			12/17/24 08:37	10
1,2-Dichlorobenzene	ND		10	4.6	ug/L			12/17/24 08:37	10
1,2-Dibromo-3-Chloropropane	ND		30	5.7	ug/L			12/17/24 08:37	10
1,2,4-Trichlorobenzene	ND		10	3.3	ug/L			12/17/24 08:37	10
Hexachlorobutadiene	ND		30	7.9	ug/L			12/17/24 08:37	10
Naphthalene	ND		30	9.3	ug/L			12/17/24 08:37	10
1,2,3-Trichlorobenzene	ND		20	4.3	ug/L			12/17/24 08:37	10
1,3,5-Trimethylbenzene	ND		10	5.5	ug/L			12/17/24 08:37	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 120		12/17/24 08:37	10
1,2-Dichloroethane-d4 (Surr)	103		80 - 120		12/17/24 08:37	10
4-Bromofluorobenzene (Surr)	103		80 - 120		12/17/24 08:37	10
Dibromofluoromethane (Surr)	105		80 - 120		12/17/24 08:37	10

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	19000	E	2.0	0.91	ug/L			12/19/24 03:23	1

Method: EPA 314.0 - Perchlorate (IC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	13000		2000	910	ug/L			12/19/24 16:47	1000

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	12000		1500	430	mg/L			01/09/25 01:05	1000

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: PA-30d-121224

Lab Sample ID: 580-146567-17

Date Collected: 12/12/24 14:23

Matrix: Water

Date Received: 12/13/24 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		500	270	ug/L			12/17/24 23:24	500
Chloromethane	ND		500	140	ug/L			12/17/24 23:24	500
Vinyl chloride	ND		500	110	ug/L			12/17/24 23:24	500
Bromomethane	ND		500	110	ug/L			12/17/24 23:24	500
Chloroethane	ND		500	180	ug/L			12/17/24 23:24	500
Trichlorofluoromethane	ND		500	180	ug/L			12/17/24 23:24	500
Carbon disulfide	ND		500	270	ug/L			12/17/24 23:24	500
1,1-Dichloroethene	ND		500	140	ug/L			12/17/24 23:24	500
Acetone	ND		7500	1600	ug/L			12/17/24 23:24	500
Methylene Chloride	ND		2500	720	ug/L			12/17/24 23:24	500
Methyl tert-butyl ether	ND		500	220	ug/L			12/17/24 23:24	500
trans-1,2-Dichloroethene	ND		500	200	ug/L			12/17/24 23:24	500
1,1-Dichloroethane	ND		500	110	ug/L			12/17/24 23:24	500
2-Butanone (MEK)	ND		7500	2400	ug/L			12/17/24 23:24	500
2,2-Dichloropropane	ND		500	160	ug/L			12/17/24 23:24	500
cis-1,2-Dichloroethene	ND		500	180	ug/L			12/17/24 23:24	500
Chlorobromomethane	ND		500	150	ug/L			12/17/24 23:24	500
Chloroform	ND		500	130	ug/L			12/17/24 23:24	500
1,1,1-Trichloroethane	ND		500	200	ug/L			12/17/24 23:24	500
Carbon tetrachloride	ND		500	150	ug/L			12/17/24 23:24	500
1,1-Dichloropropene	ND		500	150	ug/L			12/17/24 23:24	500
Benzene	ND		500	120	ug/L			12/17/24 23:24	500
1,2-Dichloroethane	ND		500	210	ug/L			12/17/24 23:24	500
Trichloroethene	ND		500	130	ug/L			12/17/24 23:24	500
1,2-Dichloropropane	ND		500	90	ug/L			12/17/24 23:24	500
4-Methyl-2-pentanone (MIBK)	ND		2500	1300	ug/L			12/17/24 23:24	500
Dibromomethane	ND		500	170	ug/L			12/17/24 23:24	500
Dichlorobromomethane	ND		500	150	ug/L			12/17/24 23:24	500
cis-1,3-Dichloropropene	ND		500	210	ug/L			12/17/24 23:24	500
Toluene	ND		500	200	ug/L			12/17/24 23:24	500
trans-1,3-Dichloropropene	ND		500	210	ug/L			12/17/24 23:24	500
1,1,2-Trichloroethane	ND		500	120	ug/L			12/17/24 23:24	500
Tetrachloroethene	ND		500	210	ug/L			12/17/24 23:24	500
1,3-Dichloropropane	ND		500	180	ug/L			12/17/24 23:24	500
Chlorodibromomethane	ND		500	220	ug/L			12/17/24 23:24	500
Ethylene Dibromide	ND		500	200	ug/L			12/17/24 23:24	500
Chlorobenzene	7000		500	220	ug/L			12/17/24 23:24	500
1,1,1,2-Tetrachloroethane	ND		500	90	ug/L			12/17/24 23:24	500
Ethylbenzene	ND		500	250	ug/L			12/17/24 23:24	500
m-Xylene & p-Xylene	ND		1000	270	ug/L			12/17/24 23:24	500
o-Xylene	ND		500	200	ug/L			12/17/24 23:24	500
Styrene	ND		500	270	ug/L			12/17/24 23:24	500
Bromoform	ND		500	260	ug/L			12/17/24 23:24	500
Isopropylbenzene	ND		500	220	ug/L			12/17/24 23:24	500
Bromobenzene	ND		500	220	ug/L			12/17/24 23:24	500
1,1,2,2-Tetrachloroethane	ND		500	260	ug/L			12/17/24 23:24	500
1,2,3-Trichloropropane	ND		500	210	ug/L			12/17/24 23:24	500
N-Propylbenzene	ND		500	250	ug/L			12/17/24 23:24	500
2-Chlorotoluene	ND		500	260	ug/L			12/17/24 23:24	500

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: PA-30d-121224

Lab Sample ID: 580-146567-17

Date Collected: 12/12/24 14:23

Matrix: Water

Date Received: 12/13/24 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		500	190	ug/L			12/17/24 23:24	500
tert-Butylbenzene	ND		1000	290	ug/L			12/17/24 23:24	500
1,2,4-Trimethylbenzene	ND		1500	310	ug/L			12/17/24 23:24	500
sec-Butylbenzene	ND		500	250	ug/L			12/17/24 23:24	500
4-Isopropyltoluene	ND		500	140	ug/L			12/17/24 23:24	500
1,3-Dichlorobenzene	ND		500	240	ug/L			12/17/24 23:24	500
1,4-Dichlorobenzene	ND		500	230	ug/L			12/17/24 23:24	500
n-Butylbenzene	ND		500	220	ug/L			12/17/24 23:24	500
1,2-Dichlorobenzene	ND		500	230	ug/L			12/17/24 23:24	500
1,2-Dibromo-3-Chloropropane	ND		1500	290	ug/L			12/17/24 23:24	500
1,2,4-Trichlorobenzene	ND		500	170	ug/L			12/17/24 23:24	500
Hexachlorobutadiene	ND		1500	400	ug/L			12/17/24 23:24	500
Naphthalene	ND		1500	470	ug/L			12/17/24 23:24	500
1,2,3-Trichlorobenzene	ND		1000	220	ug/L			12/17/24 23:24	500
1,3,5-Trimethylbenzene	ND		500	280	ug/L			12/17/24 23:24	500

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 120		12/17/24 23:24	500
1,2-Dichloroethane-d4 (Surr)	105		80 - 120		12/17/24 23:24	500
4-Bromofluorobenzene (Surr)	101		80 - 120		12/17/24 23:24	500
Dibromofluoromethane (Surr)	101		80 - 120		12/17/24 23:24	500

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		200	91	ug/L			12/19/24 05:27	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	250		150	43	mg/L			01/09/25 10:39	100

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: MWA-11i(d)-121224

Lab Sample ID: 580-146567-18

Date Collected: 12/12/24 13:54

Matrix: Water

Date Received: 12/13/24 09:00

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			12/18/24 00:11	1
Chloromethane	ND		0.50	0.14	ug/L			12/18/24 00:11	1
Vinyl chloride	ND		0.10	0.040	ug/L			12/18/24 00:11	1
Bromomethane	ND		0.50	0.13	ug/L			12/18/24 00:11	1
Chloroethane	ND		0.50	0.24	ug/L			12/18/24 00:11	1
Carbon disulfide	ND		0.40	0.20	ug/L			12/18/24 00:11	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			12/18/24 00:11	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			12/18/24 00:11	1
Acetone	ND		10	3.1	ug/L			12/18/24 00:11	1
Methylene Chloride	ND		5.0	1.2	ug/L			12/18/24 00:11	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			12/18/24 00:11	1
2-Butanone (MEK)	ND		10	2.5	ug/L			12/18/24 00:11	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			12/18/24 00:11	1
1,1-Dichloroethane	ND		0.20	0.064	ug/L			12/18/24 00:11	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			12/18/24 00:11	1
cis-1,2-Dichloroethene	0.13	J	0.20	0.055	ug/L			12/18/24 00:11	1
Chlorobromomethane	ND		0.20	0.050	ug/L			12/18/24 00:11	1
Chloroform	ND		0.20	0.030	ug/L			12/18/24 00:11	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			12/18/24 00:11	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			12/18/24 00:11	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			12/18/24 00:11	1
Benzene	0.12	J B	0.20	0.030	ug/L			12/18/24 00:11	1
1,2-Dichloroethane	ND		0.25	0.12	ug/L			12/18/24 00:11	1
Trichloroethene	ND		0.20	0.066	ug/L			12/18/24 00:11	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			12/18/24 00:11	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.7	ug/L			12/18/24 00:11	1
Dibromomethane	ND		0.20	0.062	ug/L			12/18/24 00:11	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			12/18/24 00:11	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			12/18/24 00:11	1
Toluene	ND		0.20	0.050	ug/L			12/18/24 00:11	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			12/18/24 00:11	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			12/18/24 00:11	1
Tetrachloroethene	ND		0.24	0.084	ug/L			12/18/24 00:11	1
1,3-Dichloropropane	ND		0.20	0.056	ug/L			12/18/24 00:11	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			12/18/24 00:11	1
Ethylene Dibromide	ND		0.15	0.067	ug/L			12/18/24 00:11	1
Chlorobenzene	ND		0.20	0.060	ug/L			12/18/24 00:11	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.11	ug/L			12/18/24 00:11	1
Ethylbenzene	ND		0.20	0.082	ug/L			12/18/24 00:11	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			12/18/24 00:11	1
o-Xylene	ND		0.50	0.23	ug/L			12/18/24 00:11	1
Styrene	ND		1.0	0.33	ug/L			12/18/24 00:11	1
Bromoform	ND		0.50	0.16	ug/L			12/18/24 00:11	1
Isopropylbenzene	ND		1.0	0.27	ug/L			12/18/24 00:11	1
Bromobenzene	ND		0.20	0.038	ug/L			12/18/24 00:11	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			12/18/24 00:11	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			12/18/24 00:11	1
N-Propylbenzene	ND		0.30	0.091	ug/L			12/18/24 00:11	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			12/18/24 00:11	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: MWA-11i(d)-121224

Lab Sample ID: 580-146567-18

Date Collected: 12/12/24 13:54

Matrix: Water

Date Received: 12/13/24 09:00

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			12/18/24 00:11	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			12/18/24 00:11	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			12/18/24 00:11	1
1,2,4-Trimethylbenzene	ND		0.55	0.23	ug/L			12/18/24 00:11	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			12/18/24 00:11	1
4-Isopropyltoluene	ND		0.50	0.25	ug/L			12/18/24 00:11	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			12/18/24 00:11	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			12/18/24 00:11	1
n-Butylbenzene	ND		1.0	0.35	ug/L			12/18/24 00:11	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			12/18/24 00:11	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.48	ug/L			12/18/24 00:11	1
1,2,4-Trichlorobenzene	ND		1.5	0.36	ug/L			12/18/24 00:11	1
Hexachlorobutadiene	ND		0.50	0.16	ug/L			12/18/24 00:11	1
Naphthalene	ND		1.5	0.52	ug/L			12/18/24 00:11	1
1,2,3-Trichlorobenzene	ND		1.5	0.47	ug/L			12/18/24 00:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	91		80 - 120		12/18/24 00:11	1
Dibromofluoromethane (Surr)	103		80 - 120		12/18/24 00:11	1
4-Bromofluorobenzene (Surr)	97		80 - 120		12/18/24 00:11	1
1,2-Dichloroethane-d4 (Surr)	101		80 - 120		12/18/24 00:11	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			12/19/24 06:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	570		150	43	mg/L			01/09/25 10:51	100

Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: RB-02-121224

Lab Sample ID: 580-146567-19

Date Collected: 12/12/24 06:00

Matrix: Water

Date Received: 12/13/24 09:00

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			12/17/24 02:50	1
Chloromethane	ND		1.0	0.28	ug/L			12/17/24 02:50	1
Vinyl chloride	ND		1.0	0.22	ug/L			12/17/24 02:50	1
Bromomethane	ND		1.0	0.21	ug/L			12/17/24 02:50	1
Chloroethane	ND		1.0	0.35	ug/L			12/17/24 02:50	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			12/17/24 02:50	1
Carbon disulfide	ND		1.0	0.53	ug/L			12/17/24 02:50	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			12/17/24 02:50	1
Acetone	ND		15	3.2	ug/L			12/17/24 02:50	1
Methylene Chloride	ND		5.0	1.4	ug/L			12/17/24 02:50	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			12/17/24 02:50	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			12/17/24 02:50	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			12/17/24 02:50	1
2-Butanone (MEK)	ND		15	4.7	ug/L			12/17/24 02:50	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			12/17/24 02:50	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			12/17/24 02:50	1
Chlorobromomethane	ND		1.0	0.29	ug/L			12/17/24 02:50	1
Chloroform	ND		1.0	0.26	ug/L			12/17/24 02:50	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			12/17/24 02:50	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			12/17/24 02:50	1
1,1-Dichloropropene	ND		1.0	0.29	ug/L			12/17/24 02:50	1
Benzene	ND		1.0	0.24	ug/L			12/17/24 02:50	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			12/17/24 02:50	1
Trichloroethene	ND		1.0	0.26	ug/L			12/17/24 02:50	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			12/17/24 02:50	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/17/24 02:50	1
Dibromomethane	ND		1.0	0.34	ug/L			12/17/24 02:50	1
Dichlorobromomethane	ND		1.0	0.29	ug/L			12/17/24 02:50	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/17/24 02:50	1
Toluene	ND		1.0	0.39	ug/L			12/17/24 02:50	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			12/17/24 02:50	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			12/17/24 02:50	1
Tetrachloroethene	ND		1.0	0.41	ug/L			12/17/24 02:50	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			12/17/24 02:50	1
Chlorodibromomethane	ND		1.0	0.43	ug/L			12/17/24 02:50	1
Ethylene Dibromide	ND		1.0	0.40	ug/L			12/17/24 02:50	1
Chlorobenzene	ND		1.0	0.44	ug/L			12/17/24 02:50	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			12/17/24 02:50	1
Ethylbenzene	ND		1.0	0.50	ug/L			12/17/24 02:50	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			12/17/24 02:50	1
o-Xylene	ND		1.0	0.39	ug/L			12/17/24 02:50	1
Styrene	ND		1.0	0.53	ug/L			12/17/24 02:50	1
Bromoform	ND		1.0	0.51	ug/L			12/17/24 02:50	1
Isopropylbenzene	ND		1.0	0.44	ug/L			12/17/24 02:50	1
Bromobenzene	ND		1.0	0.43	ug/L			12/17/24 02:50	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			12/17/24 02:50	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			12/17/24 02:50	1
N-Propylbenzene	ND		1.0	0.50	ug/L			12/17/24 02:50	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			12/17/24 02:50	1

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Client Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: RB-02-121224

Lab Sample ID: 580-146567-19

Date Collected: 12/12/24 06:00

Matrix: Water

Date Received: 12/13/24 09:00

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			12/17/24 02:50	1
tert-Butylbenzene	ND		2.0	0.58	ug/L			12/17/24 02:50	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			12/17/24 02:50	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			12/17/24 02:50	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			12/17/24 02:50	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			12/17/24 02:50	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/17/24 02:50	1
n-Butylbenzene	ND		1.0	0.44	ug/L			12/17/24 02:50	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			12/17/24 02:50	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			12/17/24 02:50	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			12/17/24 02:50	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			12/17/24 02:50	1
Naphthalene	ND		3.0	0.93	ug/L			12/17/24 02:50	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			12/17/24 02:50	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			12/17/24 02:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		80 - 120		12/17/24 02:50	1
1,2-Dichloroethane-d4 (Surr)	103		80 - 120		12/17/24 02:50	1
4-Bromofluorobenzene (Surr)	103		80 - 120		12/17/24 02:50	1
Dibromofluoromethane (Surr)	104		80 - 120		12/17/24 02:50	1

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			12/19/24 06:50	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			01/09/25 11:03	1

QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

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

Lab Sample ID: MB 580-480564/7

Matrix: Water

Analysis Batch: 480564

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			12/16/24 14:28	1
Chloromethane	ND		0.50	0.14	ug/L			12/16/24 14:28	1
Vinyl chloride	ND		0.10	0.040	ug/L			12/16/24 14:28	1
Bromomethane	ND		0.50	0.13	ug/L			12/16/24 14:28	1
Chloroethane	ND		0.50	0.24	ug/L			12/16/24 14:28	1
Carbon disulfide	ND		0.40	0.20	ug/L			12/16/24 14:28	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			12/16/24 14:28	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			12/16/24 14:28	1
Acetone	ND		10	3.1	ug/L			12/16/24 14:28	1
Methylene Chloride	ND		5.0	1.2	ug/L			12/16/24 14:28	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			12/16/24 14:28	1
2-Butanone (MEK)	ND		10	2.5	ug/L			12/16/24 14:28	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			12/16/24 14:28	1
1,1-Dichloroethane	ND		0.20	0.064	ug/L			12/16/24 14:28	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			12/16/24 14:28	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			12/16/24 14:28	1
Chlorobromomethane	ND		0.20	0.050	ug/L			12/16/24 14:28	1
Chloroform	ND		0.20	0.030	ug/L			12/16/24 14:28	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			12/16/24 14:28	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			12/16/24 14:28	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			12/16/24 14:28	1
Benzene	ND		0.20	0.030	ug/L			12/16/24 14:28	1
1,2-Dichloroethane	ND		0.25	0.12	ug/L			12/16/24 14:28	1
Trichloroethene	ND		0.20	0.066	ug/L			12/16/24 14:28	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			12/16/24 14:28	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.7	ug/L			12/16/24 14:28	1
Dibromomethane	ND		0.20	0.062	ug/L			12/16/24 14:28	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			12/16/24 14:28	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			12/16/24 14:28	1
Toluene	ND		0.20	0.050	ug/L			12/16/24 14:28	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			12/16/24 14:28	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			12/16/24 14:28	1
Tetrachloroethene	ND		0.24	0.084	ug/L			12/16/24 14:28	1
1,3-Dichloropropane	ND		0.20	0.056	ug/L			12/16/24 14:28	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			12/16/24 14:28	1
Ethylene Dibromide	ND		0.15	0.067	ug/L			12/16/24 14:28	1
Chlorobenzene	ND		0.20	0.060	ug/L			12/16/24 14:28	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.11	ug/L			12/16/24 14:28	1
Ethylbenzene	ND		0.20	0.082	ug/L			12/16/24 14:28	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			12/16/24 14:28	1
o-Xylene	ND		0.50	0.23	ug/L			12/16/24 14:28	1
Styrene	ND		1.0	0.33	ug/L			12/16/24 14:28	1
Bromoform	ND		0.50	0.16	ug/L			12/16/24 14:28	1
Isopropylbenzene	ND		1.0	0.27	ug/L			12/16/24 14:28	1
Bromobenzene	ND		0.20	0.038	ug/L			12/16/24 14:28	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			12/16/24 14:28	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			12/16/24 14:28	1
N-Propylbenzene	ND		0.30	0.091	ug/L			12/16/24 14:28	1

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

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

Lab Sample ID: MB 580-480564/7

Matrix: Water

Analysis Batch: 480564

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			12/16/24 14:28	1
4-Chlorotoluene	ND		0.30	0.12	ug/L			12/16/24 14:28	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			12/16/24 14:28	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			12/16/24 14:28	1
1,2,4-Trimethylbenzene	ND		0.55	0.23	ug/L			12/16/24 14:28	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			12/16/24 14:28	1
4-Isopropyltoluene	ND		0.50	0.25	ug/L			12/16/24 14:28	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			12/16/24 14:28	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			12/16/24 14:28	1
n-Butylbenzene	ND		1.0	0.35	ug/L			12/16/24 14:28	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			12/16/24 14:28	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.48	ug/L			12/16/24 14:28	1
1,2,4-Trichlorobenzene	ND		1.5	0.36	ug/L			12/16/24 14:28	1
Hexachlorobutadiene	ND		0.50	0.16	ug/L			12/16/24 14:28	1
Naphthalene	ND		1.5	0.52	ug/L			12/16/24 14:28	1
1,2,3-Trichlorobenzene	ND		1.5	0.47	ug/L			12/16/24 14:28	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		12/16/24 14:28	1
Dibromofluoromethane (Surr)	101		80 - 120		12/16/24 14:28	1
4-Bromofluorobenzene (Surr)	101		80 - 120		12/16/24 14:28	1
1,2-Dichloroethane-d4 (Surr)	102		80 - 120		12/16/24 14:28	1

Lab Sample ID: LCS 580-480564/4

Matrix: Water

Analysis Batch: 480564

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	4.15		ug/L		83	20 - 150
Chloromethane	5.00	3.85		ug/L		77	32 - 150
Vinyl chloride	5.00	4.68		ug/L		94	41 - 150
Bromomethane	5.00	4.74		ug/L		95	51 - 148
Chloroethane	5.00	4.65		ug/L		93	54 - 140
Carbon disulfide	5.00	4.14		ug/L		83	54 - 142
Trichlorofluoromethane	5.00	4.66		ug/L		93	60 - 132
1,1-Dichloroethene	5.00	4.29		ug/L		86	60 - 129
Acetone	25.0	29.0		ug/L		116	49 - 150
Methylene Chloride	5.00	4.71	J	ug/L		94	40 - 142
Methyl tert-butyl ether	5.00	5.17		ug/L		103	61 - 131
2-Butanone (MEK)	25.0	29.5		ug/L		118	37 - 150
trans-1,2-Dichloroethene	5.00	4.50		ug/L		90	69 - 121
1,1-Dichloroethane	5.00	4.49		ug/L		90	74 - 120
2,2-Dichloropropane	5.00	5.01		ug/L		100	55 - 140
cis-1,2-Dichloroethene	5.00	4.54		ug/L		91	72 - 120
Chlorobromomethane	5.00	4.58		ug/L		92	79 - 121
Chloroform	5.00	4.51		ug/L		90	75 - 120
1,1,1-Trichloroethane	5.00	4.69		ug/L		94	70 - 121
Carbon tetrachloride	5.00	4.68		ug/L		94	66 - 130

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

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

Lab Sample ID: LCS 580-480564/4

Matrix: Water

Analysis Batch: 480564

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	4.75		ug/L		95	72 - 125
Benzene	5.00	4.57		ug/L		91	80 - 120
1,2-Dichloroethane	5.00	4.67		ug/L		93	74 - 127
Trichloroethene	5.00	4.58		ug/L		92	72 - 120
1,2-Dichloropropane	5.00	4.80		ug/L		96	69 - 130
4-Methyl-2-pentanone (MIBK)	25.0	25.2		ug/L		101	63 - 137
Dibromomethane	5.00	5.01		ug/L		100	65 - 141
Dichlorobromomethane	5.00	4.93		ug/L		99	74 - 131
cis-1,3-Dichloropropene	5.00	4.48		ug/L		90	77 - 131
Toluene	5.00	4.35		ug/L		87	80 - 126
trans-1,3-Dichloropropene	5.00	5.14		ug/L		103	71 - 138
1,1,2-Trichloroethane	5.00	4.87		ug/L		97	73 - 127
Tetrachloroethene	5.00	4.54		ug/L		91	75 - 124
1,3-Dichloropropane	5.00	4.79		ug/L		96	69 - 138
Chlorodibromomethane	5.00	5.04		ug/L		101	62 - 141
Ethylene Dibromide	5.00	4.72		ug/L		94	61 - 143
Chlorobenzene	5.00	4.50		ug/L		90	74 - 123
1,1,1,2-Tetrachloroethane	5.00	4.91		ug/L		98	69 - 127
Ethylbenzene	5.00	4.46		ug/L		89	80 - 124
m-Xylene & p-Xylene	5.00	4.34		ug/L		87	75 - 124
o-Xylene	5.00	4.47		ug/L		89	71 - 124
Styrene	5.00	4.75		ug/L		95	74 - 127
Bromoform	5.00	4.62		ug/L		92	48 - 127
Isopropylbenzene	5.00	4.91		ug/L		98	71 - 123
Bromobenzene	5.00	4.50		ug/L		90	74 - 130
1,1,2,2-Tetrachloroethane	5.00	5.09		ug/L		102	67 - 136
1,2,3-Trichloropropane	5.00	4.91		ug/L		98	67 - 135
N-Propylbenzene	5.00	4.46		ug/L		89	72 - 126
2-Chlorotoluene	5.00	4.41		ug/L		88	73 - 120
4-Chlorotoluene	5.00	4.58		ug/L		92	75 - 124
1,3,5-Trimethylbenzene	5.00	4.56		ug/L		91	75 - 123
tert-Butylbenzene	5.00	4.43		ug/L		89	70 - 129
1,2,4-Trimethylbenzene	5.00	4.56		ug/L		91	71 - 127
sec-Butylbenzene	5.00	4.46		ug/L		89	75 - 126
4-Isopropyltoluene	5.00	4.45		ug/L		89	78 - 125
1,3-Dichlorobenzene	5.00	4.50		ug/L		90	72 - 125
1,4-Dichlorobenzene	5.00	4.59		ug/L		92	71 - 129
n-Butylbenzene	5.00	4.45		ug/L		89	69 - 127
1,2-Dichlorobenzene	5.00	4.62		ug/L		92	72 - 129
1,2-Dibromo-3-Chloropropane	5.00	4.79		ug/L		96	55 - 135
1,2,4-Trichlorobenzene	5.00	4.90		ug/L		98	60 - 130
Hexachlorobutadiene	5.00	4.83		ug/L		97	63 - 130
Naphthalene	5.00	4.64		ug/L		93	54 - 137
1,2,3-Trichlorobenzene	5.00	4.86		ug/L		97	60 - 136

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

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

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

Lab Sample ID: LCS 580-480564/4

Matrix: Water

Analysis Batch: 480564

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		80 - 120
1,2-Dichloroethane-d4 (Surr)	101		80 - 120

Lab Sample ID: LCSD 580-480564/5

Matrix: Water

Analysis Batch: 480564

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	4.28		ug/L		86	20 - 150	3	30
Chloromethane	5.00	4.10		ug/L		82	32 - 150	6	33
Vinyl chloride	5.00	5.02		ug/L		100	41 - 150	7	32
Bromomethane	5.00	4.97		ug/L		99	51 - 148	5	35
Chloroethane	5.00	4.81		ug/L		96	54 - 140	3	33
Carbon disulfide	5.00	4.36		ug/L		87	54 - 142	5	34
Trichlorofluoromethane	5.00	4.95		ug/L		99	60 - 132	6	32
1,1-Dichloroethene	5.00	4.56		ug/L		91	60 - 129	6	29
Acetone	25.0	29.7		ug/L		119	49 - 150	2	24
Methylene Chloride	5.00	5.08		ug/L		102	40 - 142	8	25
Methyl tert-butyl ether	5.00	5.47		ug/L		109	61 - 131	6	27
2-Butanone (MEK)	25.0	30.7		ug/L		123	37 - 150	4	35
trans-1,2-Dichloroethene	5.00	4.76		ug/L		95	69 - 121	6	27
1,1-Dichloroethane	5.00	4.92		ug/L		98	74 - 120	9	26
2,2-Dichloropropane	5.00	5.29		ug/L		106	55 - 140	5	31
cis-1,2-Dichloroethene	5.00	4.87		ug/L		97	72 - 120	7	22
Chlorobromomethane	5.00	4.90		ug/L		98	79 - 121	7	20
Chloroform	5.00	4.81		ug/L		96	75 - 120	6	21
1,1,1-Trichloroethane	5.00	5.00		ug/L		100	70 - 121	6	24
Carbon tetrachloride	5.00	5.00		ug/L		100	66 - 130	7	24
1,1-Dichloropropene	5.00	5.00		ug/L		100	72 - 125	5	23
Benzene	5.00	4.92		ug/L		98	80 - 120	7	22
1,2-Dichloroethane	5.00	4.92		ug/L		98	74 - 127	5	21
Trichloroethene	5.00	4.86		ug/L		97	72 - 120	6	22
1,2-Dichloropropane	5.00	5.18		ug/L		104	69 - 130	8	22
4-Methyl-2-pentanone (MIBK)	25.0	26.1		ug/L		104	63 - 137	3	26
Dibromomethane	5.00	5.23		ug/L		105	65 - 141	4	22
Dichlorobromomethane	5.00	5.31		ug/L		106	74 - 131	7	21
cis-1,3-Dichloropropene	5.00	4.77		ug/L		95	77 - 131	6	24
Toluene	5.00	4.66		ug/L		93	80 - 126	7	20
trans-1,3-Dichloropropene	5.00	5.37		ug/L		107	71 - 138	4	26
1,1,2-Trichloroethane	5.00	5.23		ug/L		105	73 - 127	7	22
Tetrachloroethene	5.00	4.83		ug/L		97	75 - 124	6	20
1,3-Dichloropropane	5.00	5.08		ug/L		102	69 - 138	6	19
Chlorodibromomethane	5.00	5.32		ug/L		106	62 - 141	5	22
Ethylene Dibromide	5.00	4.96		ug/L		99	61 - 143	5	22
Chlorobenzene	5.00	4.86		ug/L		97	74 - 123	8	21
1,1,1,2-Tetrachloroethane	5.00	5.16		ug/L		103	69 - 127	5	22
Ethylbenzene	5.00	4.78		ug/L		96	80 - 124	7	22
m-Xylene & p-Xylene	5.00	4.74		ug/L		95	75 - 124	9	22

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

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

Lab Sample ID: LCSD 580-480564/5

Matrix: Water

Analysis Batch: 480564

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	7	23
Styrene	5.00	5.03		ug/L		101	74 - 127	6	22
Bromoform	5.00	4.84		ug/L		97	48 - 127	5	23
Isopropylbenzene	5.00	5.27		ug/L		105	71 - 123	7	23
Bromobenzene	5.00	4.88		ug/L		98	74 - 130	8	23
1,1,2,2-Tetrachloroethane	5.00	5.36		ug/L		107	67 - 136	5	24
1,2,3-Trichloropropane	5.00	5.41		ug/L		108	67 - 135	10	25
N-Propylbenzene	5.00	4.80		ug/L		96	72 - 126	7	20
2-Chlorotoluene	5.00	4.87		ug/L		97	73 - 120	10	22
4-Chlorotoluene	5.00	4.93		ug/L		99	75 - 124	7	23
1,3,5-Trimethylbenzene	5.00	4.99		ug/L		100	75 - 123	9	23
tert-Butylbenzene	5.00	4.80		ug/L		96	70 - 129	8	24
1,2,4-Trimethylbenzene	5.00	5.00		ug/L		100	71 - 127	9	23
sec-Butylbenzene	5.00	4.79		ug/L		96	75 - 126	7	23
4-Isopropyltoluene	5.00	4.82		ug/L		96	78 - 125	8	24
1,3-Dichlorobenzene	5.00	4.82		ug/L		96	72 - 125	7	22
1,4-Dichlorobenzene	5.00	4.87		ug/L		97	71 - 129	6	22
n-Butylbenzene	5.00	4.79		ug/L		96	69 - 127	7	24
1,2-Dichlorobenzene	5.00	4.92		ug/L		98	72 - 129	6	22
1,2-Dibromo-3-Chloropropane	5.00	5.23		ug/L		105	55 - 135	9	29
1,2,4-Trichlorobenzene	5.00	5.13		ug/L		103	60 - 130	5	26
Hexachlorobutadiene	5.00	5.14		ug/L		103	63 - 130	6	26
Naphthalene	5.00	4.91		ug/L		98	54 - 137	6	28
1,2,3-Trichlorobenzene	5.00	5.14		ug/L		103	60 - 136	6	28

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

Lab Sample ID: MB 580-480648/7

Matrix: Water

Analysis Batch: 480648

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			12/17/24 01:40	1
Chloromethane	ND		0.50	0.14	ug/L			12/17/24 01:40	1
Vinyl chloride	ND		0.10	0.040	ug/L			12/17/24 01:40	1
Bromomethane	ND		0.50	0.13	ug/L			12/17/24 01:40	1
Chloroethane	ND		0.50	0.24	ug/L			12/17/24 01:40	1
Carbon disulfide	ND		0.40	0.20	ug/L			12/17/24 01:40	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			12/17/24 01:40	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			12/17/24 01:40	1
Acetone	ND		10	3.1	ug/L			12/17/24 01:40	1
Methylene Chloride	ND		5.0	1.2	ug/L			12/17/24 01:40	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			12/17/24 01:40	1
2-Butanone (MEK)	ND		10	2.5	ug/L			12/17/24 01:40	1

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

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

Lab Sample ID: MB 580-480648/7

Matrix: Water

Analysis Batch: 480648

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			12/17/24 01:40	1
1,1-Dichloroethane	ND		0.20	0.064	ug/L			12/17/24 01:40	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			12/17/24 01:40	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			12/17/24 01:40	1
Chlorobromomethane	ND		0.20	0.050	ug/L			12/17/24 01:40	1
Chloroform	ND		0.20	0.030	ug/L			12/17/24 01:40	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			12/17/24 01:40	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			12/17/24 01:40	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			12/17/24 01:40	1
Benzene	ND		0.20	0.030	ug/L			12/17/24 01:40	1
1,2-Dichloroethane	ND		0.25	0.12	ug/L			12/17/24 01:40	1
Trichloroethene	ND		0.20	0.066	ug/L			12/17/24 01:40	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			12/17/24 01:40	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.7	ug/L			12/17/24 01:40	1
Dibromomethane	ND		0.20	0.062	ug/L			12/17/24 01:40	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			12/17/24 01:40	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			12/17/24 01:40	1
Toluene	ND		0.20	0.050	ug/L			12/17/24 01:40	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			12/17/24 01:40	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			12/17/24 01:40	1
Tetrachloroethene	ND		0.24	0.084	ug/L			12/17/24 01:40	1
1,3-Dichloropropane	ND		0.20	0.056	ug/L			12/17/24 01:40	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			12/17/24 01:40	1
Ethylene Dibromide	ND		0.15	0.067	ug/L			12/17/24 01:40	1
Chlorobenzene	ND		0.20	0.060	ug/L			12/17/24 01:40	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.11	ug/L			12/17/24 01:40	1
Ethylbenzene	ND		0.20	0.082	ug/L			12/17/24 01:40	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			12/17/24 01:40	1
o-Xylene	ND		0.50	0.23	ug/L			12/17/24 01:40	1
Styrene	ND		1.0	0.33	ug/L			12/17/24 01:40	1
Bromoform	ND		0.50	0.16	ug/L			12/17/24 01:40	1
Isopropylbenzene	ND		1.0	0.27	ug/L			12/17/24 01:40	1
Bromobenzene	ND		0.20	0.038	ug/L			12/17/24 01:40	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			12/17/24 01:40	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			12/17/24 01:40	1
N-Propylbenzene	ND		0.30	0.091	ug/L			12/17/24 01:40	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			12/17/24 01:40	1
4-Chlorotoluene	ND		0.30	0.12	ug/L			12/17/24 01:40	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			12/17/24 01:40	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			12/17/24 01:40	1
1,2,4-Trimethylbenzene	ND		0.55	0.23	ug/L			12/17/24 01:40	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			12/17/24 01:40	1
4-Isopropyltoluene	ND		0.50	0.25	ug/L			12/17/24 01:40	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			12/17/24 01:40	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			12/17/24 01:40	1
n-Butylbenzene	ND		1.0	0.35	ug/L			12/17/24 01:40	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			12/17/24 01:40	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.48	ug/L			12/17/24 01:40	1
1,2,4-Trichlorobenzene	ND		1.5	0.36	ug/L			12/17/24 01:40	1

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

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

Lab Sample ID: MB 580-480648/7

Matrix: Water

Analysis Batch: 480648

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorobutadiene	ND		0.50	0.16	ug/L			12/17/24 01:40	1
Naphthalene	ND		1.5	0.52	ug/L			12/17/24 01:40	1
1,2,3-Trichlorobenzene	ND		1.5	0.47	ug/L			12/17/24 01:40	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120					12/17/24 01:40	1
Dibromofluoromethane (Surr)	106		80 - 120					12/17/24 01:40	1
4-Bromofluorobenzene (Surr)	103		80 - 120					12/17/24 01:40	1
1,2-Dichloroethane-d4 (Surr)	102		80 - 120					12/17/24 01:40	1

Lab Sample ID: LCS 580-480648/4

Matrix: Water

Analysis Batch: 480648

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	4.22		ug/L		84	20 - 150
Chloromethane	5.00	3.91		ug/L		78	32 - 150
Vinyl chloride	5.00	5.05		ug/L		101	41 - 150
Bromomethane	5.00	4.69		ug/L		94	51 - 148
Chloroethane	5.00	4.66		ug/L		93	54 - 140
Carbon disulfide	5.00	4.35		ug/L		87	54 - 142
Trichlorofluoromethane	5.00	4.89		ug/L		98	60 - 132
1,1-Dichloroethene	5.00	4.64		ug/L		93	60 - 129
Acetone	25.0	27.8		ug/L		111	49 - 150
Methylene Chloride	5.00	4.93	J	ug/L		99	40 - 142
Methyl tert-butyl ether	5.00	4.81		ug/L		96	61 - 131
2-Butanone (MEK)	25.0	25.9		ug/L		104	37 - 150
trans-1,2-Dichloroethene	5.00	4.68		ug/L		94	69 - 121
1,1-Dichloroethane	5.00	4.67		ug/L		93	74 - 120
2,2-Dichloropropane	5.00	4.39		ug/L		88	55 - 140
cis-1,2-Dichloroethene	5.00	4.62		ug/L		92	72 - 120
Chlorobromomethane	5.00	4.75		ug/L		95	79 - 121
Chloroform	5.00	4.64		ug/L		93	75 - 120
1,1,1-Trichloroethane	5.00	4.90		ug/L		98	70 - 121
Carbon tetrachloride	5.00	4.75		ug/L		95	66 - 130
1,1-Dichloropropene	5.00	4.59		ug/L		92	72 - 125
Benzene	5.00	4.59		ug/L		92	80 - 120
1,2-Dichloroethane	5.00	4.63		ug/L		93	74 - 127
Trichloroethene	5.00	4.76		ug/L		95	72 - 120
1,2-Dichloropropane	5.00	4.63		ug/L		93	69 - 130
4-Methyl-2-pentanone (MIBK)	25.0	23.2		ug/L		93	63 - 137
Dibromomethane	5.00	4.98		ug/L		100	65 - 141
Dichlorobromomethane	5.00	4.82		ug/L		96	74 - 131
cis-1,3-Dichloropropene	5.00	4.15		ug/L		83	77 - 131
Toluene	5.00	4.33		ug/L		87	80 - 126
trans-1,3-Dichloropropene	5.00	4.66		ug/L		93	71 - 138
1,1,2-Trichloroethane	5.00	4.49		ug/L		90	73 - 127
Tetrachloroethene	5.00	4.56		ug/L		91	75 - 124

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

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

Lab Sample ID: LCS 580-480648/4

Matrix: Water

Analysis Batch: 480648

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	4.68		ug/L		94	69 - 138
Chlorodibromomethane	5.00	4.83		ug/L		97	62 - 141
Ethylene Dibromide	5.00	4.48		ug/L		90	61 - 143
Chlorobenzene	5.00	4.53		ug/L		91	74 - 123
1,1,1,2-Tetrachloroethane	5.00	4.52		ug/L		90	69 - 127
Ethylbenzene	5.00	4.53		ug/L		91	80 - 124
m-Xylene & p-Xylene	5.00	4.49		ug/L		90	75 - 124
o-Xylene	5.00	4.63		ug/L		93	71 - 124
Styrene	5.00	4.78		ug/L		96	74 - 127
Bromoform	5.00	4.33		ug/L		87	48 - 127
Isopropylbenzene	5.00	5.08		ug/L		102	71 - 123
Bromobenzene	5.00	4.59		ug/L		92	74 - 130
1,1,2,2-Tetrachloroethane	5.00	4.58		ug/L		92	67 - 136
1,2,3-Trichloropropane	5.00	4.74		ug/L		95	67 - 135
N-Propylbenzene	5.00	4.51		ug/L		90	72 - 126
2-Chlorotoluene	5.00	4.50		ug/L		90	73 - 120
4-Chlorotoluene	5.00	4.64		ug/L		93	75 - 124
1,3,5-Trimethylbenzene	5.00	4.63		ug/L		93	75 - 123
tert-Butylbenzene	5.00	4.56		ug/L		91	70 - 129
1,2,4-Trimethylbenzene	5.00	4.56		ug/L		91	71 - 127
sec-Butylbenzene	5.00	4.55		ug/L		91	75 - 126
4-Isopropyltoluene	5.00	4.49		ug/L		90	78 - 125
1,3-Dichlorobenzene	5.00	4.57		ug/L		91	72 - 125
1,4-Dichlorobenzene	5.00	4.55		ug/L		91	71 - 129
n-Butylbenzene	5.00	4.47		ug/L		89	69 - 127
1,2-Dichlorobenzene	5.00	4.68		ug/L		94	72 - 129
1,2-Dibromo-3-Chloropropane	5.00	4.64		ug/L		93	55 - 135
1,2,4-Trichlorobenzene	5.00	4.85		ug/L		97	60 - 130
Hexachlorobutadiene	5.00	4.76		ug/L		95	63 - 130
Naphthalene	5.00	4.51		ug/L		90	54 - 137
1,2,3-Trichlorobenzene	5.00	4.90		ug/L		98	60 - 136

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	102		80 - 120
4-Bromofluorobenzene (Surr)	103		80 - 120
1,2-Dichloroethane-d4 (Surr)	101		80 - 120

Lab Sample ID: LCSD 580-480648/5

Matrix: Water

Analysis Batch: 480648

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	4.24		ug/L		85	20 - 150	0	30
Chloromethane	5.00	3.95		ug/L		79	32 - 150	1	33
Vinyl chloride	5.00	4.93		ug/L		99	41 - 150	2	32
Bromomethane	5.00	4.69		ug/L		94	51 - 148	0	35
Chloroethane	5.00	4.79		ug/L		96	54 - 140	3	33

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

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

Lab Sample ID: LCSD 580-480648/5

Matrix: Water

Analysis Batch: 480648

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	4.36		ug/L		87	54 - 142	0	34
Trichlorofluoromethane	5.00	4.94		ug/L		99	60 - 132	1	32
1,1-Dichloroethene	5.00	4.61		ug/L		92	60 - 129	1	29
Acetone	25.0	28.2		ug/L		113	49 - 150	1	24
Methylene Chloride	5.00	5.01		ug/L		100	40 - 142	2	25
Methyl tert-butyl ether	5.00	4.87		ug/L		97	61 - 131	1	27
2-Butanone (MEK)	25.0	26.4		ug/L		106	37 - 150	2	35
trans-1,2-Dichloroethene	5.00	4.61		ug/L		92	69 - 121	2	27
1,1-Dichloroethane	5.00	4.83		ug/L		97	74 - 120	3	26
2,2-Dichloropropane	5.00	4.31		ug/L		86	55 - 140	2	31
cis-1,2-Dichloroethene	5.00	4.71		ug/L		94	72 - 120	2	22
Chlorobromomethane	5.00	4.88		ug/L		98	79 - 121	3	20
Chloroform	5.00	4.70		ug/L		94	75 - 120	1	21
1,1,1-Trichloroethane	5.00	4.87		ug/L		97	70 - 121	1	24
Carbon tetrachloride	5.00	4.91		ug/L		98	66 - 130	3	24
1,1-Dichloropropene	5.00	4.69		ug/L		94	72 - 125	2	23
Benzene	5.00	4.68		ug/L		94	80 - 120	2	22
1,2-Dichloroethane	5.00	4.68		ug/L		94	74 - 127	1	21
Trichloroethene	5.00	4.86		ug/L		97	72 - 120	2	22
1,2-Dichloropropane	5.00	4.80		ug/L		96	69 - 130	4	22
4-Methyl-2-pentanone (MIBK)	25.0	22.5		ug/L		90	63 - 137	3	26
Dibromomethane	5.00	5.03		ug/L		101	65 - 141	1	22
Dichlorobromomethane	5.00	4.91		ug/L		98	74 - 131	2	21
cis-1,3-Dichloropropene	5.00	4.12		ug/L		82	77 - 131	1	24
Toluene	5.00	4.32		ug/L		86	80 - 126	0	20
trans-1,3-Dichloropropene	5.00	4.64		ug/L		93	71 - 138	0	26
1,1,2-Trichloroethane	5.00	4.50		ug/L		90	73 - 127	0	22
Tetrachloroethene	5.00	4.55		ug/L		91	75 - 124	0	20
1,3-Dichloropropane	5.00	4.67		ug/L		93	69 - 138	0	19
Chlorodibromomethane	5.00	4.80		ug/L		96	62 - 141	1	22
Ethylene Dibromide	5.00	4.45		ug/L		89	61 - 143	1	22
Chlorobenzene	5.00	4.53		ug/L		91	74 - 123	0	21
1,1,1,2-Tetrachloroethane	5.00	4.60		ug/L		92	69 - 127	2	22
Ethylbenzene	5.00	4.45		ug/L		89	80 - 124	2	22
m-Xylene & p-Xylene	5.00	4.45		ug/L		89	75 - 124	1	22
o-Xylene	5.00	4.54		ug/L		91	71 - 124	2	23
Styrene	5.00	4.71		ug/L		94	74 - 127	1	22
Bromoform	5.00	4.34		ug/L		87	48 - 127	0	23
Isopropylbenzene	5.00	5.01		ug/L		100	71 - 123	1	23
Bromobenzene	5.00	4.57		ug/L		91	74 - 130	0	23
1,1,2,2-Tetrachloroethane	5.00	4.39		ug/L		88	67 - 136	4	24
1,2,3-Trichloropropane	5.00	4.80		ug/L		96	67 - 135	1	25
N-Propylbenzene	5.00	4.55		ug/L		91	72 - 126	1	20
2-Chlorotoluene	5.00	4.55		ug/L		91	73 - 120	1	22
4-Chlorotoluene	5.00	4.61		ug/L		92	75 - 124	1	23
1,3,5-Trimethylbenzene	5.00	4.56		ug/L		91	75 - 123	1	23
tert-Butylbenzene	5.00	4.54		ug/L		91	70 - 129	1	24
1,2,4-Trimethylbenzene	5.00	4.55		ug/L		91	71 - 127	0	23
sec-Butylbenzene	5.00	4.49		ug/L		90	75 - 126	1	23

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

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

Lab Sample ID: LCSD 580-480648/5

Matrix: Water

Analysis Batch: 480648

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	4.53		ug/L		91	78 - 125	1	24
1,3-Dichlorobenzene	5.00	4.63		ug/L		93	72 - 125	1	22
1,4-Dichlorobenzene	5.00	4.52		ug/L		90	71 - 129	1	22
n-Butylbenzene	5.00	4.33		ug/L		87	69 - 127	3	24
1,2-Dichlorobenzene	5.00	4.65		ug/L		93	72 - 129	0	22
1,2-Dibromo-3-Chloropropane	5.00	4.71		ug/L		94	55 - 135	2	29
1,2,4-Trichlorobenzene	5.00	4.84		ug/L		97	60 - 130	0	26
Hexachlorobutadiene	5.00	4.60		ug/L		92	63 - 130	3	26
Naphthalene	5.00	4.43		ug/L		89	54 - 137	2	28
1,2,3-Trichlorobenzene	5.00	4.74		ug/L		95	60 - 136	3	28

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

Lab Sample ID: 580-146567-16 MS

Matrix: Water

Analysis Batch: 480648

Client Sample ID: MWA-56d-121224

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Dichlorodifluoromethane	ND		50.0	54.5		ug/L		109	20 - 150
Chloromethane	ND	F1	50.0	49.3		ug/L		99	25 - 150
Vinyl chloride	ND	F1	50.0	62.7		ug/L		125	31 - 150
Bromomethane	ND	F1	50.0	54.1		ug/L		108	36 - 150
Chloroethane	ND	F1	50.0	58.4		ug/L		117	38 - 150
Trichlorofluoromethane	ND	F1	50.0	61.4		ug/L		123	45 - 148
Carbon disulfide	ND		50.0	50.8		ug/L		102	63 - 134
1,1-Dichloroethene	ND		50.0	52.9		ug/L		106	70 - 129
Acetone	ND		250	249		ug/L		99	44 - 150
Methylene Chloride	ND		50.0	54.2		ug/L		108	77 - 125
Methyl tert-butyl ether	ND		50.0	51.0		ug/L		102	72 - 120
trans-1,2-Dichloroethene	ND		50.0	52.7		ug/L		105	75 - 120
1,1-Dichloroethane	ND		50.0	53.2		ug/L		106	80 - 120
2-Butanone (MEK)	ND		250	261		ug/L		104	65 - 137
2,2-Dichloropropane	ND		50.0	39.7		ug/L		79	66 - 126
cis-1,2-Dichloroethene	ND		50.0	51.8		ug/L		104	76 - 120
Chlorobromomethane	ND		50.0	52.2		ug/L		104	78 - 120
Chloroform	160	F1	50.0	187	F1	ug/L		53	78 - 127
1,1,1-Trichloroethane	ND		50.0	54.7		ug/L		109	74 - 130
Carbon tetrachloride	ND		50.0	56.2		ug/L		112	72 - 129
1,1-Dichloropropene	ND		50.0	54.3		ug/L		109	74 - 120
Benzene	ND		50.0	51.2		ug/L		102	80 - 122
1,2-Dichloroethane	ND		50.0	50.3		ug/L		101	69 - 126
Trichloroethene	ND		50.0	51.5		ug/L		103	80 - 125
1,2-Dichloropropane	ND		50.0	52.3		ug/L		105	80 - 120
4-Methyl-2-pentanone (MIBK)	ND		250	229		ug/L		92	59 - 141

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

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

Lab Sample ID: 580-146567-16 MS

Matrix: Water

Analysis Batch: 480648

Client Sample ID: MWA-56d-121224

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Dibromomethane	ND		50.0	52.3		ug/L		105	80 - 120
Dichlorobromomethane	ND		50.0	53.6		ug/L		107	75 - 124
cis-1,3-Dichloropropene	ND		50.0	41.7		ug/L		83	77 - 120
Toluene	ND		50.0	46.9		ug/L		94	80 - 120
trans-1,3-Dichloropropene	ND		50.0	46.6		ug/L		93	76 - 122
1,1,2-Trichloroethane	ND		50.0	48.0		ug/L		96	80 - 121
Tetrachloroethene	ND		50.0	50.6		ug/L		101	76 - 125
1,3-Dichloropropane	ND		50.0	48.8		ug/L		98	79 - 120
Chlorodibromomethane	ND		50.0	50.3		ug/L		101	73 - 125
Ethylene Dibromide	ND		50.0	45.9		ug/L		92	79 - 126
Chlorobenzene	ND		50.0	50.0		ug/L		100	80 - 120
1,1,1,2-Tetrachloroethane	ND		50.0	48.1		ug/L		96	79 - 120
Ethylbenzene	ND		50.0	49.4		ug/L		99	80 - 120
m-Xylene & p-Xylene	ND		50.0	47.8		ug/L		96	80 - 120
o-Xylene	ND		50.0	48.1		ug/L		96	80 - 120
Styrene	ND		50.0	44.5		ug/L		89	76 - 122
Bromoform	ND		50.0	44.9		ug/L		90	56 - 139
Isopropylbenzene	ND		50.0	55.0		ug/L		110	80 - 123
Bromobenzene	ND		50.0	45.8		ug/L		92	80 - 120
1,1,2,2-Tetrachloroethane	ND		50.0	47.6		ug/L		95	74 - 124
1,2,3-Trichloropropane	ND		50.0	46.7		ug/L		93	76 - 124
N-Propylbenzene	ND		50.0	47.4		ug/L		95	80 - 122
2-Chlorotoluene	ND		50.0	47.2		ug/L		94	80 - 120
4-Chlorotoluene	ND		50.0	48.0		ug/L		96	73 - 129
tert-Butylbenzene	ND		50.0	47.3		ug/L		95	75 - 123
1,2,4-Trimethylbenzene	ND		50.0	46.9		ug/L		94	80 - 120
sec-Butylbenzene	ND		50.0	47.5		ug/L		95	78 - 122
4-Isopropyltoluene	ND		50.0	46.5		ug/L		93	77 - 126
1,3-Dichlorobenzene	ND		50.0	46.1		ug/L		92	77 - 127
1,4-Dichlorobenzene	ND		50.0	45.1		ug/L		90	80 - 120
n-Butylbenzene	ND		50.0	44.7		ug/L		89	57 - 133
1,2-Dichlorobenzene	ND		50.0	46.4		ug/L		93	80 - 120
1,2-Dibromo-3-Chloropropane	ND		50.0	43.8		ug/L		88	65 - 133
1,2,4-Trichlorobenzene	ND		50.0	46.1		ug/L		92	61 - 148
Hexachlorobutadiene	ND		50.0	47.0		ug/L		94	74 - 131
Naphthalene	ND		50.0	41.3		ug/L		83	63 - 150
1,2,3-Trichlorobenzene	ND		50.0	45.0		ug/L		90	65 - 150
1,3,5-Trimethylbenzene	ND		50.0	47.2		ug/L		94	80 - 122
Surrogate	MS %Recovery	MS Qualifier	Limits						
Toluene-d8 (Surr)	97		80 - 120						
1,2-Dichloroethane-d4 (Surr)	104		80 - 120						
4-Bromofluorobenzene (Surr)	104		80 - 120						
Dibromofluoromethane (Surr)	103		80 - 120						

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

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

Lab Sample ID: 580-146567-16 MSD

Matrix: Water

Analysis Batch: 480648

Client Sample ID: MWA-56d-121224

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		215	54.1		ug/L		25	20 - 150	1	33
Chloromethane	ND	F1	215	49.6	F1	ug/L		23	25 - 150	1	26
Vinyl chloride	ND	F1	215	65.0	F1	ug/L		30	31 - 150	4	26
Bromomethane	ND	F1	215	55.4	F1	ug/L		26	36 - 150	2	33
Chloroethane	ND	F1	215	60.3	F1	ug/L		28	38 - 150	3	28
Trichlorofluoromethane	ND	F1	215	63.3	F1	ug/L		29	45 - 148	3	35
Carbon disulfide	ND		50.0	52.3		ug/L		105	63 - 134	3	24
1,1-Dichloroethene	ND		50.0	54.4		ug/L		109	70 - 129	3	23
Acetone	ND		250	258		ug/L		103	44 - 150	4	33
Methylene Chloride	ND		50.0	56.7		ug/L		113	77 - 125	5	18
Methyl tert-butyl ether	ND		50.0	52.5		ug/L		105	72 - 120	3	18
trans-1,2-Dichloroethene	ND		50.0	54.2		ug/L		108	75 - 120	3	21
1,1-Dichloroethane	ND		50.0	54.6		ug/L		109	80 - 120	3	15
2-Butanone (MEK)	ND		250	267		ug/L		107	65 - 137	2	34
2,2-Dichloropropane	ND		50.0	39.3		ug/L		79	66 - 126	1	22
cis-1,2-Dichloroethene	ND		50.0	53.9		ug/L		108	76 - 120	4	20
Chlorobromomethane	ND		50.0	53.4		ug/L		107	78 - 120	2	13
Chloroform	160	F1	50.0	194	F1	ug/L		67	78 - 127	4	14
1,1,1-Trichloroethane	ND		50.0	58.7		ug/L		117	74 - 130	7	19
Carbon tetrachloride	ND		50.0	57.7		ug/L		115	72 - 129	3	19
1,1-Dichloropropene	ND		50.0	55.5		ug/L		111	74 - 120	2	14
Benzene	ND		50.0	53.0		ug/L		106	80 - 122	3	14
1,2-Dichloroethane	ND		50.0	51.1		ug/L		102	69 - 126	2	11
Trichloroethene	ND		50.0	52.5		ug/L		105	80 - 125	2	13
1,2-Dichloropropane	ND		50.0	53.9		ug/L		108	80 - 120	3	14
4-Methyl-2-pentanone (MIBK)	ND		250	240		ug/L		96	59 - 141	4	22
Dibromomethane	ND		50.0	54.7		ug/L		109	80 - 120	5	11
Dichlorobromomethane	ND		50.0	55.2		ug/L		110	75 - 124	3	13
cis-1,3-Dichloropropene	ND		50.0	43.3		ug/L		87	77 - 120	4	35
Toluene	ND		50.0	49.9		ug/L		100	80 - 120	6	13
trans-1,3-Dichloropropene	ND		50.0	48.5		ug/L		97	76 - 122	4	20
1,1,2-Trichloroethane	ND		50.0	49.2		ug/L		98	80 - 121	3	14
Tetrachloroethene	ND		50.0	52.9		ug/L		106	76 - 125	5	13
1,3-Dichloropropane	ND		50.0	50.1		ug/L		100	79 - 120	2	19
Chlorodibromomethane	ND		50.0	52.1		ug/L		104	73 - 125	3	13
Ethylene Dibromide	ND		50.0	48.6		ug/L		97	79 - 126	6	12
Chlorobenzene	ND		50.0	52.0		ug/L		104	80 - 120	4	10
1,1,1,2-Tetrachloroethane	ND		50.0	50.9		ug/L		102	79 - 120	6	16
Ethylbenzene	ND		50.0	51.9		ug/L		104	80 - 120	5	14
m-Xylene & p-Xylene	ND		50.0	50.9		ug/L		102	80 - 120	6	14
o-Xylene	ND		50.0	51.5		ug/L		103	80 - 120	7	16
Styrene	ND		50.0	49.5		ug/L		99	76 - 122	11	16
Bromoform	ND		50.0	46.7		ug/L		93	56 - 139	4	21
Isopropylbenzene	ND		50.0	57.2		ug/L		114	80 - 123	4	19
Bromobenzene	ND		50.0	49.6		ug/L		99	80 - 120	8	24
1,1,2,2-Tetrachloroethane	ND		50.0	51.0		ug/L		102	74 - 124	7	25
1,2,3-Trichloropropane	ND		50.0	52.0		ug/L		104	76 - 124	11	26
N-Propylbenzene	ND		50.0	51.5		ug/L		103	80 - 122	8	22

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

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

Lab Sample ID: 580-146567-16 MSD

Matrix: Water

Analysis Batch: 480648

Client Sample ID: MWA-56d-121224

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Chlorotoluene	ND		50.0	50.1		ug/L		100	80 - 120	6	20
4-Chlorotoluene	ND		50.0	51.4		ug/L		103	73 - 129	7	29
tert-Butylbenzene	ND		50.0	51.2		ug/L		102	75 - 123	8	21
1,2,4-Trimethylbenzene	ND		50.0	51.1		ug/L		102	80 - 120	9	16
sec-Butylbenzene	ND		50.0	51.0		ug/L		102	78 - 122	7	15
4-Isopropyltoluene	ND		50.0	50.2		ug/L		100	77 - 126	8	20
1,3-Dichlorobenzene	ND		50.0	50.6		ug/L		101	77 - 127	9	35
1,4-Dichlorobenzene	ND		50.0	49.3		ug/L		99	80 - 120	9	17
n-Butylbenzene	ND		50.0	48.9		ug/L		98	57 - 133	9	14
1,2-Dichlorobenzene	ND		50.0	50.5		ug/L		101	80 - 120	9	15
1,2-Dibromo-3-Chloropropane	ND		50.0	46.4		ug/L		93	65 - 133	6	25
1,2,4-Trichlorobenzene	ND		50.0	50.1		ug/L		100	61 - 148	8	27
Hexachlorobutadiene	ND		50.0	52.6		ug/L		105	74 - 131	11	22
Naphthalene	ND		50.0	45.4		ug/L		91	63 - 150	9	33
1,2,3-Trichlorobenzene	ND		50.0	50.5		ug/L		101	65 - 150	11	33
1,3,5-Trimethylbenzene	ND		50.0	51.6		ug/L		103	80 - 122	9	21

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	98		80 - 120
1,2-Dichloroethane-d4 (Surr)	102		80 - 120
4-Bromofluorobenzene (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	103		80 - 120

Lab Sample ID: MB 580-480717/7

Matrix: Water

Analysis Batch: 480717

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			12/17/24 15:42	1
Chloromethane	ND		1.0	0.28	ug/L			12/17/24 15:42	1
Vinyl chloride	ND		1.0	0.22	ug/L			12/17/24 15:42	1
Bromomethane	ND		1.0	0.21	ug/L			12/17/24 15:42	1
Chloroethane	ND		1.0	0.35	ug/L			12/17/24 15:42	1
Trichlorofluoromethane	ND		1.0	0.36	ug/L			12/17/24 15:42	1
Carbon disulfide	ND		1.0	0.53	ug/L			12/17/24 15:42	1
1,1-Dichloroethene	ND		1.0	0.28	ug/L			12/17/24 15:42	1
Acetone	ND		15	3.2	ug/L			12/17/24 15:42	1
Methylene Chloride	ND		5.0	1.4	ug/L			12/17/24 15:42	1
Methyl tert-butyl ether	ND		1.0	0.44	ug/L			12/17/24 15:42	1
trans-1,2-Dichloroethene	ND		1.0	0.39	ug/L			12/17/24 15:42	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			12/17/24 15:42	1
2-Butanone (MEK)	ND		15	4.7	ug/L			12/17/24 15:42	1
2,2-Dichloropropane	ND		1.0	0.32	ug/L			12/17/24 15:42	1
cis-1,2-Dichloroethene	ND		1.0	0.35	ug/L			12/17/24 15:42	1
Chlorobromomethane	ND		1.0	0.29	ug/L			12/17/24 15:42	1
Chloroform	ND		1.0	0.26	ug/L			12/17/24 15:42	1
1,1,1-Trichloroethane	ND		1.0	0.39	ug/L			12/17/24 15:42	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			12/17/24 15:42	1

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

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

Lab Sample ID: MB 580-480717/7

Matrix: Water

Analysis Batch: 480717

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			12/17/24 15:42	1
Benzene	ND		1.0	0.24	ug/L			12/17/24 15:42	1
1,2-Dichloroethane	ND		1.0	0.42	ug/L			12/17/24 15:42	1
Trichloroethene	ND		1.0	0.26	ug/L			12/17/24 15:42	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			12/17/24 15:42	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			12/17/24 15:42	1
Dibromomethane	ND		1.0	0.34	ug/L			12/17/24 15:42	1
Dichlorobromomethane	ND		1.0	0.29	ug/L			12/17/24 15:42	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/17/24 15:42	1
Toluene	ND		1.0	0.39	ug/L			12/17/24 15:42	1
trans-1,3-Dichloropropene	ND		1.0	0.41	ug/L			12/17/24 15:42	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			12/17/24 15:42	1
Tetrachloroethene	ND		1.0	0.41	ug/L			12/17/24 15:42	1
1,3-Dichloropropane	ND		1.0	0.35	ug/L			12/17/24 15:42	1
Chlorodibromomethane	ND		1.0	0.43	ug/L			12/17/24 15:42	1
Ethylene Dibromide	ND		1.0	0.40	ug/L			12/17/24 15:42	1
Chlorobenzene	ND		1.0	0.44	ug/L			12/17/24 15:42	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.18	ug/L			12/17/24 15:42	1
Ethylbenzene	ND		1.0	0.50	ug/L			12/17/24 15:42	1
m-Xylene & p-Xylene	ND		2.0	0.53	ug/L			12/17/24 15:42	1
o-Xylene	ND		1.0	0.39	ug/L			12/17/24 15:42	1
Styrene	ND		1.0	0.53	ug/L			12/17/24 15:42	1
Bromoform	ND		1.0	0.51	ug/L			12/17/24 15:42	1
Isopropylbenzene	ND		1.0	0.44	ug/L			12/17/24 15:42	1
Bromobenzene	ND		1.0	0.43	ug/L			12/17/24 15:42	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.52	ug/L			12/17/24 15:42	1
1,2,3-Trichloropropane	ND		1.0	0.41	ug/L			12/17/24 15:42	1
N-Propylbenzene	ND		1.0	0.50	ug/L			12/17/24 15:42	1
2-Chlorotoluene	ND		1.0	0.51	ug/L			12/17/24 15:42	1
4-Chlorotoluene	ND		1.0	0.38	ug/L			12/17/24 15:42	1
tert-Butylbenzene	ND		2.0	0.58	ug/L			12/17/24 15:42	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			12/17/24 15:42	1
sec-Butylbenzene	ND		1.0	0.49	ug/L			12/17/24 15:42	1
4-Isopropyltoluene	ND		1.0	0.28	ug/L			12/17/24 15:42	1
1,3-Dichlorobenzene	ND		1.0	0.48	ug/L			12/17/24 15:42	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/17/24 15:42	1
n-Butylbenzene	ND		1.0	0.44	ug/L			12/17/24 15:42	1
1,2-Dichlorobenzene	ND		1.0	0.46	ug/L			12/17/24 15:42	1
1,2-Dibromo-3-Chloropropane	ND		3.0	0.57	ug/L			12/17/24 15:42	1
1,2,4-Trichlorobenzene	ND		1.0	0.33	ug/L			12/17/24 15:42	1
Hexachlorobutadiene	ND		3.0	0.79	ug/L			12/17/24 15:42	1
Naphthalene	ND		3.0	0.93	ug/L			12/17/24 15:42	1
1,2,3-Trichlorobenzene	ND		2.0	0.43	ug/L			12/17/24 15:42	1
1,3,5-Trimethylbenzene	ND		1.0	0.55	ug/L			12/17/24 15:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		12/17/24 15:42	1
1,2-Dichloroethane-d4 (Surr)	103		80 - 120		12/17/24 15:42	1

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

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

Lab Sample ID: MB 580-480717/7

Matrix: Water

Analysis Batch: 480717

Client Sample ID: Method Blank

Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 120		12/17/24 15:42	1
Dibromofluoromethane (Surr)	103		80 - 120		12/17/24 15:42	1

Lab Sample ID: LCS 580-480717/4

Matrix: Water

Analysis Batch: 480717

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	3.83		ug/L		77	20 - 150
Chloromethane	5.00	3.78		ug/L		76	25 - 150
Vinyl chloride	5.00	4.85		ug/L		97	31 - 150
Bromomethane	5.00	4.57		ug/L		91	36 - 150
Chloroethane	5.00	4.40		ug/L		88	38 - 150
Trichlorofluoromethane	5.00	4.74		ug/L		95	45 - 148
Carbon disulfide	5.00	4.05		ug/L		81	63 - 134
1,1-Dichloroethene	5.00	4.23		ug/L		85	70 - 129
Acetone	25.0	25.7		ug/L		103	44 - 150
Methylene Chloride	5.00	5.15		ug/L		103	77 - 125
Methyl tert-butyl ether	5.00	4.74		ug/L		95	72 - 120
trans-1,2-Dichloroethene	5.00	4.36		ug/L		87	75 - 120
1,1-Dichloroethane	5.00	4.40		ug/L		88	80 - 120
2-Butanone (MEK)	25.0	25.9		ug/L		104	65 - 137
2,2-Dichloropropane	5.00	4.95		ug/L		99	66 - 126
cis-1,2-Dichloroethene	5.00	4.51		ug/L		90	76 - 120
Chlorobromomethane	5.00	4.47		ug/L		89	78 - 120
Chloroform	5.00	4.41		ug/L		88	78 - 127
1,1,1-Trichloroethane	5.00	4.63		ug/L		93	74 - 130
Carbon tetrachloride	5.00	4.56		ug/L		91	72 - 129
1,1-Dichloropropene	5.00	4.55		ug/L		91	74 - 120
Benzene	5.00	4.47		ug/L		89	80 - 122
1,2-Dichloroethane	5.00	4.48		ug/L		90	69 - 126
Trichloroethene	5.00	4.37		ug/L		87	80 - 125
1,2-Dichloropropane	5.00	4.73		ug/L		95	80 - 120
4-Methyl-2-pentanone (MIBK)	25.0	23.1		ug/L		93	59 - 141
Dibromomethane	5.00	4.83		ug/L		97	80 - 120
Dichlorobromomethane	5.00	4.75		ug/L		95	75 - 124
cis-1,3-Dichloropropene	5.00	4.19		ug/L		84	77 - 120
Toluene	5.00	4.18		ug/L		84	80 - 120
trans-1,3-Dichloropropene	5.00	4.76		ug/L		95	76 - 122
1,1,2-Trichloroethane	5.00	4.58		ug/L		92	80 - 121
Tetrachloroethene	5.00	4.33		ug/L		87	76 - 125
1,3-Dichloropropane	5.00	4.58		ug/L		92	79 - 120
Chlorodibromomethane	5.00	4.69		ug/L		94	73 - 125
Ethylene Dibromide	5.00	4.44		ug/L		89	79 - 126
Chlorobenzene	5.00	4.36		ug/L		87	80 - 120
1,1,1,2-Tetrachloroethane	5.00	4.50		ug/L		90	79 - 120
Ethylbenzene	5.00	4.32		ug/L		86	80 - 120
m-Xylene & p-Xylene	5.00	4.24		ug/L		85	80 - 120

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

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

Lab Sample ID: LCS 580-480717/4

Matrix: Water

Analysis Batch: 480717

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
o-Xylene	5.00	4.33		ug/L		87	80 - 120
Styrene	5.00	4.51		ug/L		90	76 - 122
Bromoform	5.00	4.26		ug/L		85	56 - 139
Isopropylbenzene	5.00	4.76		ug/L		95	80 - 123
Bromobenzene	5.00	4.31		ug/L		86	80 - 120
1,1,2,2-Tetrachloroethane	5.00	4.84		ug/L		97	74 - 124
1,2,3-Trichloropropane	5.00	4.88		ug/L		98	76 - 124
N-Propylbenzene	5.00	4.33		ug/L		87	80 - 122
2-Chlorotoluene	5.00	4.25		ug/L		85	80 - 120
4-Chlorotoluene	5.00	4.28		ug/L		86	73 - 129
tert-Butylbenzene	5.00	4.24		ug/L		85	75 - 123
1,2,4-Trimethylbenzene	5.00	4.30		ug/L		86	80 - 120
sec-Butylbenzene	5.00	4.23		ug/L		85	78 - 122
4-Isopropyltoluene	5.00	4.28		ug/L		86	77 - 126
1,3-Dichlorobenzene	5.00	4.36		ug/L		87	77 - 127
1,4-Dichlorobenzene	5.00	4.29		ug/L		86	80 - 120
n-Butylbenzene	5.00	4.22		ug/L		84	57 - 133
1,2-Dichlorobenzene	5.00	4.38		ug/L		88	80 - 120
1,2-Dibromo-3-Chloropropane	5.00	4.61		ug/L		92	65 - 133
1,2,4-Trichlorobenzene	5.00	4.50		ug/L		90	61 - 148
Hexachlorobutadiene	5.00	4.59		ug/L		92	74 - 131
Naphthalene	5.00	4.19		ug/L		84	63 - 150
1,2,3-Trichlorobenzene	5.00	4.53		ug/L		91	65 - 150
1,3,5-Trimethylbenzene	5.00	4.32		ug/L		86	80 - 122

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

Lab Sample ID: LCSD 580-480717/5

Matrix: Water

Analysis Batch: 480717

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	4.05		ug/L		81	20 - 150	6	33
Chloromethane	5.00	3.76		ug/L		75	25 - 150	0	26
Vinyl chloride	5.00	4.85		ug/L		97	31 - 150	0	26
Bromomethane	5.00	4.62		ug/L		92	36 - 150	1	33
Chloroethane	5.00	4.55		ug/L		91	38 - 150	3	28
Trichlorofluoromethane	5.00	4.87		ug/L		97	45 - 148	3	35
Carbon disulfide	5.00	4.13		ug/L		83	63 - 134	2	24
1,1-Dichloroethene	5.00	4.28		ug/L		86	70 - 129	1	23
Acetone	25.0	26.7		ug/L		107	44 - 150	4	33
Methylene Chloride	5.00	5.20		ug/L		104	77 - 125	1	18
Methyl tert-butyl ether	5.00	4.87		ug/L		97	72 - 120	3	18
trans-1,2-Dichloroethene	5.00	4.47		ug/L		89	75 - 120	2	21

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

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

Lab Sample ID: LCSD 580-480717/5

Matrix: Water

Analysis Batch: 480717

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	5.00	4.53		ug/L		91	80 - 120	3	15
2-Butanone (MEK)	25.0	26.6		ug/L		106	65 - 137	3	34
2,2-Dichloropropane	5.00	5.06		ug/L		101	66 - 126	2	22
cis-1,2-Dichloroethene	5.00	4.60		ug/L		92	76 - 120	2	20
Chlorobromomethane	5.00	4.64		ug/L		93	78 - 120	4	13
Chloroform	5.00	4.48		ug/L		90	78 - 127	2	14
1,1,1-Trichloroethane	5.00	4.76		ug/L		95	74 - 130	3	19
Carbon tetrachloride	5.00	4.67		ug/L		93	72 - 129	2	19
1,1-Dichloropropene	5.00	4.47		ug/L		89	74 - 120	2	14
Benzene	5.00	4.49		ug/L		90	80 - 122	0	14
1,2-Dichloroethane	5.00	4.63		ug/L		93	69 - 126	3	11
Trichloroethene	5.00	4.54		ug/L		91	80 - 125	4	13
1,2-Dichloropropane	5.00	4.74		ug/L		95	80 - 120	0	14
4-Methyl-2-pentanone (MIBK)	25.0	23.2		ug/L		93	59 - 141	0	22
Dibromomethane	5.00	4.87		ug/L		97	80 - 120	1	11
Dichlorobromomethane	5.00	4.84		ug/L		97	75 - 124	2	13
cis-1,3-Dichloropropene	5.00	4.24		ug/L		85	77 - 120	1	35
Toluene	5.00	4.29		ug/L		86	80 - 120	3	13
trans-1,3-Dichloropropene	5.00	4.87		ug/L		97	76 - 122	2	20
1,1,2-Trichloroethane	5.00	4.74		ug/L		95	80 - 121	4	14
Tetrachloroethene	5.00	4.55		ug/L		91	76 - 125	5	13
1,3-Dichloropropane	5.00	4.63		ug/L		93	79 - 120	1	19
Chlorodibromomethane	5.00	4.80		ug/L		96	73 - 125	2	13
Ethylene Dibromide	5.00	4.51		ug/L		90	79 - 126	1	12
Chlorobenzene	5.00	4.47		ug/L		89	80 - 120	3	10
1,1,1,2-Tetrachloroethane	5.00	4.61		ug/L		92	79 - 120	2	16
Ethylbenzene	5.00	4.39		ug/L		88	80 - 120	2	14
m-Xylene & p-Xylene	5.00	4.35		ug/L		87	80 - 120	2	14
o-Xylene	5.00	4.41		ug/L		88	80 - 120	2	16
Styrene	5.00	4.62		ug/L		92	76 - 122	2	16
Bromoform	5.00	4.42		ug/L		88	56 - 139	4	21
Isopropylbenzene	5.00	4.88		ug/L		98	80 - 123	2	19
Bromobenzene	5.00	4.41		ug/L		88	80 - 120	2	24
1,1,2,2-Tetrachloroethane	5.00	4.89		ug/L		98	74 - 124	1	25
1,2,3-Trichloropropane	5.00	4.92		ug/L		98	76 - 124	1	26
N-Propylbenzene	5.00	4.41		ug/L		88	80 - 122	2	22
2-Chlorotoluene	5.00	4.44		ug/L		89	80 - 120	4	20
4-Chlorotoluene	5.00	4.47		ug/L		89	73 - 129	4	29
tert-Butylbenzene	5.00	4.35		ug/L		87	75 - 123	3	21
1,2,4-Trimethylbenzene	5.00	4.45		ug/L		89	80 - 120	3	16
sec-Butylbenzene	5.00	4.37		ug/L		87	78 - 122	3	15
4-Isopropyltoluene	5.00	4.37		ug/L		87	77 - 126	2	20
1,3-Dichlorobenzene	5.00	4.52		ug/L		90	77 - 127	4	35
1,4-Dichlorobenzene	5.00	4.50		ug/L		90	80 - 120	5	17
n-Butylbenzene	5.00	4.39		ug/L		88	57 - 133	4	14
1,2-Dichlorobenzene	5.00	4.50		ug/L		90	80 - 120	3	15
1,2-Dibromo-3-Chloropropane	5.00	4.42		ug/L		88	65 - 133	4	25
1,2,4-Trichlorobenzene	5.00	4.67		ug/L		93	61 - 148	4	27
Hexachlorobutadiene	5.00	4.64		ug/L		93	74 - 131	1	22

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

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

Lab Sample ID: LCSD 580-480717/5

Matrix: Water

Analysis Batch: 480717

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	5.00	4.32		ug/L		86	63 - 150	3	33
1,2,3-Trichlorobenzene	5.00	4.62		ug/L		92	65 - 150	2	33
1,3,5-Trimethylbenzene	5.00	4.44		ug/L		89	80 - 122	3	21

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

Lab Sample ID: MB 580-480750/11

Matrix: Water

Analysis Batch: 480750

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			12/17/24 23:01	1
Chloromethane	ND		0.50	0.14	ug/L			12/17/24 23:01	1
Vinyl chloride	ND		0.10	0.040	ug/L			12/17/24 23:01	1
Bromomethane	ND		0.50	0.13	ug/L			12/17/24 23:01	1
Chloroethane	ND		0.50	0.24	ug/L			12/17/24 23:01	1
Carbon disulfide	ND		0.40	0.20	ug/L			12/17/24 23:01	1
Trichlorofluoromethane	ND		0.50	0.12	ug/L			12/17/24 23:01	1
1,1-Dichloroethene	ND		0.20	0.035	ug/L			12/17/24 23:01	1
Acetone	3.10	J	10	3.1	ug/L			12/17/24 23:01	1
Methylene Chloride	ND		5.0	1.2	ug/L			12/17/24 23:01	1
Methyl tert-butyl ether	ND		0.30	0.070	ug/L			12/17/24 23:01	1
2-Butanone (MEK)	ND		10	2.5	ug/L			12/17/24 23:01	1
trans-1,2-Dichloroethene	ND		0.20	0.033	ug/L			12/17/24 23:01	1
1,1-Dichloroethane	ND		0.20	0.064	ug/L			12/17/24 23:01	1
2,2-Dichloropropane	ND		0.50	0.060	ug/L			12/17/24 23:01	1
cis-1,2-Dichloroethene	ND		0.20	0.055	ug/L			12/17/24 23:01	1
Chlorobromomethane	ND		0.20	0.050	ug/L			12/17/24 23:01	1
Chloroform	ND		0.20	0.030	ug/L			12/17/24 23:01	1
1,1,1-Trichloroethane	ND		0.20	0.025	ug/L			12/17/24 23:01	1
Carbon tetrachloride	ND		0.20	0.025	ug/L			12/17/24 23:01	1
1,1-Dichloropropene	ND		0.20	0.084	ug/L			12/17/24 23:01	1
Benzene	0.0980	J	0.20	0.030	ug/L			12/17/24 23:01	1
1,2-Dichloroethane	ND		0.25	0.12	ug/L			12/17/24 23:01	1
Trichloroethene	ND		0.20	0.066	ug/L			12/17/24 23:01	1
1,2-Dichloropropane	ND		0.20	0.060	ug/L			12/17/24 23:01	1
4-Methyl-2-pentanone (MIBK)	ND		10	2.7	ug/L			12/17/24 23:01	1
Dibromomethane	ND		0.20	0.062	ug/L			12/17/24 23:01	1
Dichlorobromomethane	ND		0.20	0.060	ug/L			12/17/24 23:01	1
cis-1,3-Dichloropropene	ND		0.20	0.090	ug/L			12/17/24 23:01	1
Toluene	ND		0.20	0.050	ug/L			12/17/24 23:01	1
trans-1,3-Dichloropropene	ND		0.20	0.092	ug/L			12/17/24 23:01	1
1,1,2-Trichloroethane	ND		0.20	0.070	ug/L			12/17/24 23:01	1
Tetrachloroethene	ND		0.24	0.084	ug/L			12/17/24 23:01	1

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

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

Lab Sample ID: MB 580-480750/11

Matrix: Water

Analysis Batch: 480750

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichloropropane	ND		0.20	0.056	ug/L			12/17/24 23:01	1
Chlorodibromomethane	ND		0.20	0.055	ug/L			12/17/24 23:01	1
Ethylene Dibromide	ND		0.15	0.067	ug/L			12/17/24 23:01	1
Chlorobenzene	ND		0.20	0.060	ug/L			12/17/24 23:01	1
1,1,1,2-Tetrachloroethane	ND		0.30	0.11	ug/L			12/17/24 23:01	1
Ethylbenzene	ND		0.20	0.082	ug/L			12/17/24 23:01	1
m-Xylene & p-Xylene	ND		0.50	0.12	ug/L			12/17/24 23:01	1
o-Xylene	ND		0.50	0.23	ug/L			12/17/24 23:01	1
Styrene	ND		1.0	0.33	ug/L			12/17/24 23:01	1
Bromoform	ND		0.50	0.16	ug/L			12/17/24 23:01	1
Isopropylbenzene	ND		1.0	0.27	ug/L			12/17/24 23:01	1
Bromobenzene	ND		0.20	0.038	ug/L			12/17/24 23:01	1
1,1,2,2-Tetrachloroethane	ND		0.20	0.056	ug/L			12/17/24 23:01	1
1,2,3-Trichloropropane	ND		0.20	0.050	ug/L			12/17/24 23:01	1
N-Propylbenzene	ND		0.30	0.091	ug/L			12/17/24 23:01	1
2-Chlorotoluene	ND		0.50	0.12	ug/L			12/17/24 23:01	1
4-Chlorotoluene	ND		0.30	0.12	ug/L			12/17/24 23:01	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			12/17/24 23:01	1
tert-Butylbenzene	ND		0.50	0.26	ug/L			12/17/24 23:01	1
1,2,4-Trimethylbenzene	ND		0.55	0.23	ug/L			12/17/24 23:01	1
sec-Butylbenzene	ND		1.0	0.17	ug/L			12/17/24 23:01	1
4-Isopropyltoluene	ND		0.50	0.25	ug/L			12/17/24 23:01	1
1,3-Dichlorobenzene	ND		0.30	0.050	ug/L			12/17/24 23:01	1
1,4-Dichlorobenzene	ND		0.30	0.050	ug/L			12/17/24 23:01	1
n-Butylbenzene	ND		1.0	0.35	ug/L			12/17/24 23:01	1
1,2-Dichlorobenzene	ND		0.30	0.038	ug/L			12/17/24 23:01	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.48	ug/L			12/17/24 23:01	1
1,2,4-Trichlorobenzene	ND		1.5	0.36	ug/L			12/17/24 23:01	1
Hexachlorobutadiene	ND		0.50	0.16	ug/L			12/17/24 23:01	1
Naphthalene	ND		1.5	0.52	ug/L			12/17/24 23:01	1
1,2,3-Trichlorobenzene	ND		1.5	0.47	ug/L			12/17/24 23:01	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	93		80 - 120		12/17/24 23:01	1
Dibromofluoromethane (Surr)	101		80 - 120		12/17/24 23:01	1
4-Bromofluorobenzene (Surr)	96		80 - 120		12/17/24 23:01	1
1,2-Dichloroethane-d4 (Surr)	99		80 - 120		12/17/24 23:01	1

Lab Sample ID: LCS 580-480750/6

Matrix: Water

Analysis Batch: 480750

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	5.23		ug/L		105	20 - 150
Chloromethane	5.00	5.26		ug/L		105	32 - 150
Vinyl chloride	5.00	5.88		ug/L		118	41 - 150
Bromomethane	5.00	4.83		ug/L		97	51 - 148
Chloroethane	5.00	5.05		ug/L		101	54 - 140

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

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

Lab Sample ID: LCS 580-480750/6

Matrix: Water

Analysis Batch: 480750

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon disulfide	5.00	4.47		ug/L		89	54 - 142
Trichlorofluoromethane	5.00	5.12		ug/L		102	60 - 132
1,1-Dichloroethene	5.00	4.96		ug/L		99	60 - 129
Acetone	25.0	28.7		ug/L		115	49 - 150
Methylene Chloride	5.00	5.78		ug/L		116	40 - 142
Methyl tert-butyl ether	5.00	5.22		ug/L		104	61 - 131
2-Butanone (MEK)	25.0	28.1		ug/L		112	37 - 150
trans-1,2-Dichloroethene	5.00	4.97		ug/L		99	69 - 121
1,1-Dichloroethane	5.00	5.17		ug/L		103	74 - 120
2,2-Dichloropropane	5.00	4.90		ug/L		98	55 - 140
cis-1,2-Dichloroethene	5.00	5.13		ug/L		103	72 - 120
Chlorobromomethane	5.00	5.10		ug/L		102	79 - 121
Chloroform	5.00	4.87		ug/L		97	75 - 120
1,1,1-Trichloroethane	5.00	4.70		ug/L		94	70 - 121
Carbon tetrachloride	5.00	4.62		ug/L		92	66 - 130
1,1-Dichloropropene	5.00	5.35		ug/L		107	72 - 125
Benzene	5.00	5.33		ug/L		107	80 - 120
1,2-Dichloroethane	5.00	4.78		ug/L		96	74 - 127
Trichloroethene	5.00	4.92		ug/L		98	72 - 120
1,2-Dichloropropane	5.00	5.47		ug/L		109	69 - 130
4-Methyl-2-pentanone (MIBK)	25.0	24.2		ug/L		97	63 - 137
Dibromomethane	5.00	5.17		ug/L		103	65 - 141
Dichlorobromomethane	5.00	4.94		ug/L		99	74 - 131
cis-1,3-Dichloropropene	5.00	4.55		ug/L		91	77 - 131
Toluene	5.00	4.72		ug/L		94	80 - 126
trans-1,3-Dichloropropene	5.00	4.77		ug/L		95	71 - 138
1,1,2-Trichloroethane	5.00	4.98		ug/L		100	73 - 127
Tetrachloroethene	5.00	4.55		ug/L		91	75 - 124
1,3-Dichloropropane	5.00	4.98		ug/L		100	69 - 138
Chlorodibromomethane	5.00	4.43		ug/L		89	62 - 141
Ethylene Dibromide	5.00	4.77		ug/L		95	61 - 143
Chlorobenzene	5.00	4.82		ug/L		96	74 - 123
1,1,1,2-Tetrachloroethane	5.00	4.70		ug/L		94	69 - 127
Ethylbenzene	5.00	4.93		ug/L		99	80 - 124
m-Xylene & p-Xylene	5.00	4.97		ug/L		99	75 - 124
o-Xylene	5.00	4.87		ug/L		97	71 - 124
Styrene	5.00	4.70		ug/L		94	74 - 127
Bromoform	5.00	4.30		ug/L		86	48 - 127
Isopropylbenzene	5.00	5.16		ug/L		103	71 - 123
Bromobenzene	5.00	4.61		ug/L		92	74 - 130
1,1,2,2-Tetrachloroethane	5.00	4.96		ug/L		99	67 - 136
1,2,3-Trichloropropane	5.00	4.76		ug/L		95	67 - 135
N-Propylbenzene	5.00	4.88		ug/L		98	72 - 126
2-Chlorotoluene	5.00	4.89		ug/L		98	73 - 120
4-Chlorotoluene	5.00	5.02		ug/L		100	75 - 124
1,3,5-Trimethylbenzene	5.00	4.88		ug/L		98	75 - 123
tert-Butylbenzene	5.00	4.88		ug/L		98	70 - 129
1,2,4-Trimethylbenzene	5.00	4.90		ug/L		98	71 - 127
sec-Butylbenzene	5.00	4.79		ug/L		96	75 - 126

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

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

Lab Sample ID: LCS 580-480750/6

Matrix: Water

Analysis Batch: 480750

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4-Isopropyltoluene	5.00	4.76		ug/L		95	78 - 125
1,3-Dichlorobenzene	5.00	4.85		ug/L		97	72 - 125
1,4-Dichlorobenzene	5.00	4.75		ug/L		95	71 - 129
n-Butylbenzene	5.00	4.57		ug/L		91	69 - 127
1,2-Dichlorobenzene	5.00	4.84		ug/L		97	72 - 129
1,2-Dibromo-3-Chloropropane	5.00	4.17		ug/L		83	55 - 135
1,2,4-Trichlorobenzene	5.00	4.95		ug/L		99	60 - 130
Hexachlorobutadiene	5.00	4.74		ug/L		95	63 - 130
Naphthalene	5.00	4.87		ug/L		97	54 - 137
1,2,3-Trichlorobenzene	5.00	4.79		ug/L		96	60 - 136

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	97		80 - 120
4-Bromofluorobenzene (Surr)	102		80 - 120
1,2-Dichloroethane-d4 (Surr)	95		80 - 120

Lab Sample ID: LCSD 580-480750/7

Matrix: Water

Analysis Batch: 480750

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Dichlorodifluoromethane	5.00	5.16		ug/L		103	20 - 150	1	30
Chloromethane	5.00	5.10		ug/L		102	32 - 150	3	33
Vinyl chloride	5.00	5.49		ug/L		110	41 - 150	7	32
Bromomethane	5.00	4.49		ug/L		90	51 - 148	7	35
Chloroethane	5.00	4.87		ug/L		97	54 - 140	4	33
Carbon disulfide	5.00	4.36		ug/L		87	54 - 142	3	34
Trichlorofluoromethane	5.00	4.99		ug/L		100	60 - 132	2	32
1,1-Dichloroethene	5.00	4.92		ug/L		98	60 - 129	1	29
Acetone	25.0	29.0		ug/L		116	49 - 150	1	24
Methylene Chloride	5.00	5.64		ug/L		113	40 - 142	3	25
Methyl tert-butyl ether	5.00	5.05		ug/L		101	61 - 131	3	27
2-Butanone (MEK)	25.0	28.2		ug/L		113	37 - 150	0	35
trans-1,2-Dichloroethene	5.00	4.88		ug/L		98	69 - 121	2	27
1,1-Dichloroethane	5.00	5.08		ug/L		102	74 - 120	2	26
2,2-Dichloropropane	5.00	4.66		ug/L		93	55 - 140	5	31
cis-1,2-Dichloroethene	5.00	5.24		ug/L		105	72 - 120	2	22
Chlorobromomethane	5.00	5.01		ug/L		100	79 - 121	2	20
Chloroform	5.00	4.85		ug/L		97	75 - 120	1	21
1,1,1-Trichloroethane	5.00	4.62		ug/L		92	70 - 121	2	24
Carbon tetrachloride	5.00	4.52		ug/L		90	66 - 130	2	24
1,1-Dichloropropene	5.00	5.17		ug/L		103	72 - 125	3	23
Benzene	5.00	5.12		ug/L		102	80 - 120	4	22
1,2-Dichloroethane	5.00	4.62		ug/L		92	74 - 127	4	21
Trichloroethene	5.00	4.92		ug/L		98	72 - 120	0	22
1,2-Dichloropropane	5.00	5.23		ug/L		105	69 - 130	4	22
4-Methyl-2-pentanone (MIBK)	25.0	24.3		ug/L		97	63 - 137	0	26

Eurofins Seattle

QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

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

Lab Sample ID: LCSD 580-480750/7

Matrix: Water

Analysis Batch: 480750

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Dibromomethane	5.00	5.10		ug/L		102	65 - 141	1	22
Dichlorobromomethane	5.00	4.82		ug/L		96	74 - 131	2	21
cis-1,3-Dichloropropene	5.00	4.44		ug/L		89	77 - 131	2	24
Toluene	5.00	4.51		ug/L		90	80 - 126	4	20
trans-1,3-Dichloropropene	5.00	4.64		ug/L		93	71 - 138	3	26
1,1,2-Trichloroethane	5.00	4.74		ug/L		95	73 - 127	5	22
Tetrachloroethene	5.00	4.38		ug/L		88	75 - 124	4	20
1,3-Dichloropropane	5.00	4.68		ug/L		94	69 - 138	6	19
Chlorodibromomethane	5.00	4.27		ug/L		85	62 - 141	4	22
Ethylene Dibromide	5.00	4.55		ug/L		91	61 - 143	5	22
Chlorobenzene	5.00	4.65		ug/L		93	74 - 123	4	21
1,1,1,2-Tetrachloroethane	5.00	4.41		ug/L		88	69 - 127	6	22
Ethylbenzene	5.00	4.72		ug/L		94	80 - 124	4	22
m-Xylene & p-Xylene	5.00	4.75		ug/L		95	75 - 124	5	22
o-Xylene	5.00	4.70		ug/L		94	71 - 124	4	23
Styrene	5.00	4.55		ug/L		91	74 - 127	3	22
Bromoform	5.00	4.19		ug/L		84	48 - 127	3	23
Isopropylbenzene	5.00	4.91		ug/L		98	71 - 123	5	23
Bromobenzene	5.00	4.36		ug/L		87	74 - 130	5	23
1,1,2,2-Tetrachloroethane	5.00	4.81		ug/L		96	67 - 136	3	24
1,2,3-Trichloropropane	5.00	4.58		ug/L		92	67 - 135	4	25
N-Propylbenzene	5.00	4.60		ug/L		92	72 - 126	6	20
2-Chlorotoluene	5.00	4.61		ug/L		92	73 - 120	6	22
4-Chlorotoluene	5.00	4.95		ug/L		99	75 - 124	1	23
1,3,5-Trimethylbenzene	5.00	4.70		ug/L		94	75 - 123	4	23
tert-Butylbenzene	5.00	4.60		ug/L		92	70 - 129	6	24
1,2,4-Trimethylbenzene	5.00	4.57		ug/L		91	71 - 127	7	23
sec-Butylbenzene	5.00	4.54		ug/L		91	75 - 126	5	23
4-Isopropyltoluene	5.00	4.47		ug/L		89	78 - 125	6	24
1,3-Dichlorobenzene	5.00	4.59		ug/L		92	72 - 125	6	22
1,4-Dichlorobenzene	5.00	4.56		ug/L		91	71 - 129	4	22
n-Butylbenzene	5.00	4.29		ug/L		86	69 - 127	6	24
1,2-Dichlorobenzene	5.00	4.60		ug/L		92	72 - 129	5	22
1,2-Dibromo-3-Chloropropane	5.00	3.92		ug/L		78	55 - 135	6	29
1,2,4-Trichlorobenzene	5.00	4.73		ug/L		95	60 - 130	5	26
Hexachlorobutadiene	5.00	4.51		ug/L		90	63 - 130	5	26
Naphthalene	5.00	4.72		ug/L		94	54 - 137	3	28
1,2,3-Trichlorobenzene	5.00	4.59		ug/L		92	60 - 136	4	28

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
Toluene-d8 (Surr)	96		80 - 120
Dibromofluoromethane (Surr)	98		80 - 120
4-Bromofluorobenzene (Surr)	104		80 - 120
1,2-Dichloroethane-d4 (Surr)	95		80 - 120

Eurofins Seattle

QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

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

Lab Sample ID: MB 580-480994/7

Matrix: Water

Analysis Batch: 480994

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	ND		1.0	0.44	ug/L			12/20/24 01:45	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	93		80 - 120					12/20/24 01:45	1
1,2-Dichloroethane-d4 (Surr)	98		80 - 120					12/20/24 01:45	1
4-Bromofluorobenzene (Surr)	107		80 - 120					12/20/24 01:45	1
Dibromofluoromethane (Surr)	103		80 - 120					12/20/24 01:45	1

Lab Sample ID: LCS 580-480994/4

Matrix: Water

Analysis Batch: 480994

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorobenzene	5.00	5.35		ug/L		107	80 - 120		
Surrogate	%Recovery	LCS Qualifier	Limits						
Toluene-d8 (Surr)	96		80 - 120						
1,2-Dichloroethane-d4 (Surr)	98		80 - 120						
4-Bromofluorobenzene (Surr)	105		80 - 120						
Dibromofluoromethane (Surr)	102		80 - 120						

Lab Sample ID: LCSD 580-480994/5

Matrix: Water

Analysis Batch: 480994

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorobenzene	5.00	5.28		ug/L		106	80 - 120	1	10
Surrogate	%Recovery	LCSD Qualifier	Limits						
Toluene-d8 (Surr)	95		80 - 120						
1,2-Dichloroethane-d4 (Surr)	98		80 - 120						
4-Bromofluorobenzene (Surr)	106		80 - 120						
Dibromofluoromethane (Surr)	101		80 - 120						

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-515388/7

Matrix: Water

Analysis Batch: 515388

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			12/18/24 15:58	1

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: LCS 570-515388/8

Matrix: Water

Analysis Batch: 515388

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	24.2		ug/L		97	85 - 115

Lab Sample ID: LCSD 570-515388/9

Matrix: Water

Analysis Batch: 515388

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
Perchlorate	25.0	24.0		ug/L		96	85 - 115	1	15

Lab Sample ID: 580-146567-16 MS

Matrix: Water

Analysis Batch: 515388

Client Sample ID: MWA-56d-121224

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	19000	E	25.0	16300	E 4	ug/L		-8706	80 - 120

Lab Sample ID: 580-146567-16 MSD

Matrix: Water

Analysis Batch: 515388

Client Sample ID: MWA-56d-121224

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	19000	E	25.0	16100	E 4	ug/L		-9670	80 - 120	1	15

Lab Sample ID: MB 570-515854/7

Matrix: Water

Analysis Batch: 515854

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			12/19/24 14:43	1

Lab Sample ID: LCS 570-515854/8

Matrix: Water

Analysis Batch: 515854

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	25.0		ug/L		100	85 - 115

Lab Sample ID: LCSD 570-515854/9

Matrix: Water

Analysis Batch: 515854

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
Perchlorate	25.0	26.1		ug/L		104	85 - 115	4	15

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QC Sample Results

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Method: 314.0 - Perchlorate (IC) - DL

Lab Sample ID: 580-146567-16 MS

Matrix: Water

Analysis Batch: 515854

Client Sample ID: MWA-56d-121224

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate - DL	13000		25000	39000		ug/L		102	80 - 120

Lab Sample ID: 580-146567-16 MSD

Matrix: Water

Analysis Batch: 515854

Client Sample ID: MWA-56d-121224

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate - DL	13000		25000	38900		ug/L		102	80 - 120	0	15

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 580-482307/3

Matrix: Water

Analysis Batch: 482307

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			01/08/25 14:45	1

Lab Sample ID: LCS 580-482307/4

Matrix: Water

Analysis Batch: 482307

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 580-482307/5

Matrix: Water

Analysis Batch: 482307

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

Lab Sample ID: 580-146567-16 MS

Matrix: Water

Analysis Batch: 482307

Client Sample ID: MWA-56d-121224

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	12000		50000	67100		mg/L		109	90 - 110

Lab Sample ID: 580-146567-16 MSD

Matrix: Water

Analysis Batch: 482307

Client Sample ID: MWA-56d-121224

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	12000		50000	66800		mg/L		109	90 - 110	0	15

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Lab Chronicle

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: MWA-81i-121124

Lab Sample ID: 580-146567-1

Date Collected: 12/11/24 08:00

Matrix: Water

Date Received: 12/13/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	480564	AA	EET SEA	12/16/24 16:25
Total/NA	Analysis	314.0		1	515388	M5Z3	EET CAL 4	12/18/24 17:02
Total/NA	Analysis	300.0		1	482307	FCG	EET SEA	01/08/25 15:21

Client Sample ID: MWA-41-121124

Lab Sample ID: 580-146567-2

Date Collected: 12/11/24 09:49

Matrix: Water

Date Received: 12/13/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	480564	AA	EET SEA	12/16/24 16:02
Total/NA	Analysis	314.0		1	515388	M5Z3	EET CAL 4	12/18/24 17:43
Total/NA	Analysis	300.0		1	482307	FCG	EET SEA	01/08/25 15:45

Client Sample ID: PA-15i-121124

Lab Sample ID: 580-146567-3

Date Collected: 12/11/24 07:49

Matrix: Water

Date Received: 12/13/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	480564	AA	EET SEA	12/16/24 19:07
Total/NA	Analysis	314.0		10	515388	M5Z3	EET CAL 4	12/18/24 18:25
Total/NA	Analysis	300.0		1	482307	FCG	EET SEA	01/08/25 16:09

Client Sample ID: PA-24d-121124

Lab Sample ID: 580-146567-4

Date Collected: 12/11/24 09:27

Matrix: Water

Date Received: 12/13/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	480564	AA	EET SEA	12/16/24 16:49
Total/NA	Analysis	314.0		1	515388	M5Z3	EET CAL 4	12/18/24 19:06
Total/NA	Analysis	300.0		1000	482307	FCG	EET SEA	01/08/25 16:33

Client Sample ID: MWA-82-121124

Lab Sample ID: 580-146567-5

Date Collected: 12/11/24 11:31

Matrix: Water

Date Received: 12/13/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	480648	AA	EET SEA	12/17/24 05:32
Total/NA	Analysis	314.0		10	515388	M5Z3	EET CAL 4	12/18/24 19:47
Total/NA	Analysis	300.0		1	482307	FCG	EET SEA	01/08/25 17:44

Lab Chronicle

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: PA-23d-121124

Lab Sample ID: 580-146567-6

Date Collected: 12/11/24 12:46

Matrix: Water

Date Received: 12/13/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	480648	AA	EET SEA	12/17/24 05:55
Total/NA	Analysis	314.0		1	515388	M5Z3	EET CAL 4	12/18/24 20:29
Total/NA	Analysis	300.0		1000	482307	FCG	EET SEA	01/08/25 18:44

Client Sample ID: PA-44i-121124

Lab Sample ID: 580-146567-7

Date Collected: 12/11/24 13:26

Matrix: Water

Date Received: 12/13/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	480648	AA	EET SEA	12/17/24 06:18
Total/NA	Analysis	314.0		10	515388	M5Z3	EET CAL 4	12/18/24 21:10
Total/NA	Analysis	300.0		1	482307	FCG	EET SEA	01/08/25 18:56

Client Sample ID: RB-01-121124

Lab Sample ID: 580-146567-8

Date Collected: 12/11/24 13:30

Matrix: Water

Date Received: 12/13/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	480648	AA	EET SEA	12/17/24 02:27
Total/NA	Analysis	314.0		1	515388	M5Z3	EET CAL 4	12/18/24 21:52
Total/NA	Analysis	300.0		1	482307	FCG	EET SEA	01/08/25 19:43

Client Sample ID: TB-01-121224

Lab Sample ID: 580-146567-9

Date Collected: 12/12/24 00:01

Matrix: Water

Date Received: 12/13/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	480648	AA	EET SEA	12/17/24 02:04

Client Sample ID: PA-22d-121224

Lab Sample ID: 580-146567-10

Date Collected: 12/12/24 07:21

Matrix: Water

Date Received: 12/13/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	480648	AA	EET SEA	12/17/24 06:41
Total/NA	Analysis	314.0	DL	1000	515854	UIP1	EET CAL 4	12/19/24 15:45
Total/NA	Analysis	300.0		100	482307	FCG	EET SEA	01/08/25 20:31

Client Sample ID: MWA-31i(d)-121224

Lab Sample ID: 580-146567-11

Date Collected: 12/12/24 07:24

Matrix: Water

Date Received: 12/13/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	480648	AA	EET SEA	12/17/24 07:04
Total/NA	Analysis	314.0	DL	1000	515854	UIP1	EET CAL 4	12/19/24 16:05

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Lab Chronicle

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: MWA-31i(d)-121224

Lab Sample ID: 580-146567-11

Date Collected: 12/12/24 07:24

Matrix: Water

Date Received: 12/13/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1000	482307	FCG	EET SEA	01/08/25 21:55

Client Sample ID: MWA-58d-121224

Lab Sample ID: 580-146567-12

Date Collected: 12/12/24 08:56

Matrix: Water

Date Received: 12/13/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		10	480648	AA	EET SEA	12/17/24 07:51
Total/NA	Analysis	314.0	DL	1000	515854	UIP1	EET CAL 4	12/19/24 16:26
Total/NA	Analysis	300.0		1000	482307	FCG	EET SEA	01/08/25 22:42

Client Sample ID: PA-20d-121224

Lab Sample ID: 580-146567-13

Date Collected: 12/12/24 09:56

Matrix: Water

Date Received: 12/13/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	480648	AA	EET SEA	12/17/24 07:27
Total/NA	Analysis	314.0		1	515388	M5Z3	EET CAL 4	12/19/24 01:19
Total/NA	Analysis	300.0		10	482307	FCG	EET SEA	01/08/25 23:06

Client Sample ID: Dup-02-121224

Lab Sample ID: 580-146567-14

Date Collected: 12/12/24 12:00

Matrix: Water

Date Received: 12/13/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	480750	AA	EET SEA	12/18/24 04:27
Total/NA	Analysis	314.0		1	515388	M5Z3	EET CAL 4	12/19/24 02:00
Total/NA	Analysis	300.0		10	482307	FCG	EET SEA	01/08/25 23:42

Client Sample ID: PA-19d-121224

Lab Sample ID: 580-146567-15

Date Collected: 12/12/24 12:47

Matrix: Water

Date Received: 12/13/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		100	480648	AA	EET SEA	12/17/24 09:23
Total/NA	Analysis	8260D	DL	1000	480994	AA	EET SEA	12/20/24 07:56
Total/NA	Analysis	314.0		10	515388	M5Z3	EET CAL 4	12/19/24 02:41
Total/NA	Analysis	300.0		5	482307	FCG	EET SEA	01/09/25 00:42

Client Sample ID: MWA-56d-121224

Lab Sample ID: 580-146567-16

Date Collected: 12/12/24 11:53

Matrix: Water

Date Received: 12/13/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		10	480648	AA	EET SEA	12/17/24 08:37

Eurofins Seattle

Lab Chronicle

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Client Sample ID: MWA-56d-121224

Lab Sample ID: 580-146567-16

Date Collected: 12/12/24 11:53

Matrix: Water

Date Received: 12/13/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	314.0	DL	1	515388	M5Z3	EET CAL 4	12/19/24 03:23
Total/NA	Analysis	314.0		1000	515854	UIP1	EET CAL 4	12/19/24 16:47
Total/NA	Analysis	300.0		1000	482307	FCG	EET SEA	01/09/25 01:05

Client Sample ID: PA-30d-121224

Lab Sample ID: 580-146567-17

Date Collected: 12/12/24 14:23

Matrix: Water

Date Received: 12/13/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		500	480717	AA	EET SEA	12/17/24 23:24
Total/NA	Analysis	314.0		100	515388	M5Z3	EET CAL 4	12/19/24 05:27
Total/NA	Analysis	300.0		100	482307	FCG	EET SEA	01/09/25 10:39

Client Sample ID: MWA-11i(d)-121224

Lab Sample ID: 580-146567-18

Date Collected: 12/12/24 13:54

Matrix: Water

Date Received: 12/13/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	480750	AA	EET SEA	12/18/24 00:11
Total/NA	Analysis	314.0		1	515388	M5Z3	EET CAL 4	12/19/24 06:08
Total/NA	Analysis	300.0		100	482307	FCG	EET SEA	01/09/25 10:51

Client Sample ID: RB-02-121224

Lab Sample ID: 580-146567-19

Date Collected: 12/12/24 06:00

Matrix: Water

Date Received: 12/13/24 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	480648	AA	EET SEA	12/17/24 02:50
Total/NA	Analysis	314.0		1	515388	M5Z3	EET CAL 4	12/19/24 06:50
Total/NA	Analysis	300.0		1	482307	FCG	EET SEA	01/09/25 11:03

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Laboratory: Eurofins Seattle

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

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4167	07-07-25

Laboratory: Eurofins Calscience

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

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	12-22-24
Arkansas DEQ	State	88-01672	07-02-25
California	Los Angeles County Sanitation Districts	9257304	07-31-26
California	SCAQMD LAP	17LA0919	11-30-25
California	State	3082	07-31-25
Kansas	NELAP	E-10420	07-31-25
Nevada	State	CA00111	07-31-25
Oregon	NELAP	4175	02-02-25
USDA	US Federal Programs	525-23-159-97150	06-08-26
Washington	State	C916	10-11-25

Sample Summary

Client: ERM-West
Project/Site: Arkema - Q4 2024 Groundwater Event

Job ID: 580-146567-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-146567-1	MWA-81i-121124	Water	12/11/24 08:00	12/13/24 09:00
580-146567-2	MWA-41-121124	Water	12/11/24 09:49	12/13/24 09:00
580-146567-3	PA-15i-121124	Water	12/11/24 07:49	12/13/24 09:00
580-146567-4	PA-24d-121124	Water	12/11/24 09:27	12/13/24 09:00
580-146567-5	MWA-82-121124	Water	12/11/24 11:31	12/13/24 09:00
580-146567-6	PA-23d-121124	Water	12/11/24 12:46	12/13/24 09:00
580-146567-7	PA-44i-121124	Water	12/11/24 13:26	12/13/24 09:00
580-146567-8	RB-01-121124	Water	12/11/24 13:30	12/13/24 09:00
580-146567-9	TB-01-121224	Water	12/12/24 00:01	12/13/24 09:00
580-146567-10	PA-22d-121224	Water	12/12/24 07:21	12/13/24 09:00
580-146567-11	MWA-31i(d)-121224	Water	12/12/24 07:24	12/13/24 09:00
580-146567-12	MWA-58d-121224	Water	12/12/24 08:56	12/13/24 09:00
580-146567-13	PA-20d-121224	Water	12/12/24 09:56	12/13/24 09:00
580-146567-14	Dup-02-121224	Water	12/12/24 12:00	12/13/24 09:00
580-146567-15	PA-19d-121224	Water	12/12/24 12:47	12/13/24 09:00
580-146567-16	MWA-56d-121224	Water	12/12/24 11:53	12/13/24 09:00
580-146567-17	PA-30d-121224	Water	12/12/24 14:23	12/13/24 09:00
580-146567-18	MWA-11i(d)-121224	Water	12/12/24 13:54	12/13/24 09:00
580-146567-19	RB-02-121224	Water	12/12/24 06:00	12/13/24 09:00

Eurofins TestAmerica, Seattle

5755 8th Street East

Tacoma, WA 98424

Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record

Environment Testing
TestAmerica

580-146567 Chain of Custody

Client Information		Sampler: <u>Paul Van Nevel</u>		Lab PM: <u>Cruz, Sheri L</u>								
Client Contact: <u>Avery Soplat and Andrew Gardner</u>		Phone: <u>840-755-1398</u>		E-Mail: <u>sheri.cruz@testamericainc.com</u>								
Company: <u>ERM-West</u>		Due Date Requested:		Analysis Requested								
Address: <u>1050 SW 6th Avenue Suite 1650</u>		TAT Requested (days): <u>15BD</u>		Job #:								
City: <u>Portland</u>		PO #: <u>PN 0732445.207</u>		Preservation Codes:								
State, Zip: <u>OR, 97204</u>		WO #: <u></u>		A - HCL M - Hexane								
Phone: <u></u>		Project #: <u>0732445</u>		B - NaOH N - None								
Email: <u>avery.soplat@erm.com andrew.gardner@erm.com</u>		SSOW#: <u></u>		C - Zn Acetate O - AsNaO2								
Project Name: <u>Arkema - Q4 2024 Groundwater event</u>		Field Filtered Sample (Yes or No) <u></u>		D - Nitric Acid P - Na2O4S								
Site: <u></u>		Perform S/MS/MSD (Yes or No) <u></u>		E - NaHSO4 Q - Na2SO3								
		8260C regular level standard VOA list-Seattle		F - MeOH R - Na2SO3								
		8260C_LL - Standard VOA list-Seattle		G - Amchlor S - H2SO4								
		300.0_28D-Chloride-Seattle		H - Ascorbic Acid T - TSP Dodecahydrate								
		314 Perchlorate		I - Ice U - Acetone								
				J - DI Water V - MCAA								
				K - EDTA W - pH 4-5								
				L - EDA Z - other (specify)								
				Other:								
				Special Instructions/Note:								
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform S/MS/MSD (Yes or No)	8260C regular level standard VOA list-Seattle	8260C_LL - Standard VOA list-Seattle	300.0_28D-Chloride-Seattle	314 Perchlorate	Total Number of containers	Preservation Code:
MWA-81i-121124	12/11/24	0800	G	Water			X	X	X		5	
MWA-41-121124		0949	G	Water			X	X	X		5	
PA-15i-121124		0749	G	Water			X	X	X		5	
PA-24d-121124		0937	G	Water		X	X	X			5	
MWA-82-121124		1131	G	Water			X	X	X		5	
PA-23d-121124		1246	G	Water		X	X	X			5	
PA-44i-121124		1326	G	Water			X	X	X		5	
RB-31-121124		1330	G	Water			X	X	X		5	
TB-01-121224	12/12/24		G	Water			X				2	
PA-22d-121224	12/12/24	0721	G	Water		X	X	X			5	

Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
☐ Non-Hazard	☐ Flammable	☐ Return To Client	☐ Disposal By Lab
☐ Skin Irritant	☐ Poison B	☐ Archive For	☐ Months
☐ Unknown	☐ Radiological	Special Instructions/QC Requirements: please run at lowest dilution possible for ND.	

Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:	
Relinquished by: <u>[Signature]</u>	Date/Time: <u>12/13/2024 0900</u>	Company: <u>ERM</u>	Received by: <u>[Signature]</u>	Date/Time: <u>12/13/24 900</u>	Company: <u>[Signature]</u>
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seals Intact:	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
☐ Yes ☐ No		<u>1.8/1.9</u> <u>PDX Seal</u>

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Page 77 of 85

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

Chain of Custody Record

Environment Testing
TestAmerica

580-146567 Chain of Custody

Client Information		Sampler: <u>Paul Van Nieuw</u>		Lab PM: <u>Cruz, Sheri L</u>		COC No: <u>1 of 2</u>	
Client Contact: <u>Avery Soplat and Andrew Gardner</u>		Phone: <u>840-755-1308</u>		E-Mail: <u>Sheri.Cruz@testamericainc.com</u>		Page: <u>1 of 2</u>	
Company: <u>ERM-West</u>		Due Date Requested:		Analysis Requested		Job #:	
Address: <u>1050 SW 6th Avenue Suite 1650</u>		TAT Requested (days): <u>15BD</u>				Preservation Codes:	
City: <u>Portland</u>						A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Ammonia H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsH2O2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecylaldehyde U - Acetone V - MCAA W - pH 4.5 Z - other (Specify)	
State, Zip: <u>OR, 97204</u>		PO #: <u>PN 0732445.207</u>					
Phone: <u>503-244-5047</u>		WO #: <u>0732445</u>					
Email: <u>avery.soplat@erm.com andrew.gardner@erm.com</u>		Project #: <u>0732445</u>					
Project Name: <u>Arkema - Q4 2024 Groundwater event</u>		SSOW#: <u>0732445</u>					
Site: <u>SSOW#:</u>							
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, B=bioreactor, A=air)	Field Filtered Sample (Yes or No)	Permit MS/MS
MWA-81-121124		12/11/24	0800	G	Water	X	X
MWA-41-121124			0949	G	Water	X	X
PA-151-121124			0749	G	Water	X	X
PA-24d-121124			0947	G	Water	X	X
MWA-88-121124			1131	G	Water	X	X
PA-23d-121124			1246	G	Water	X	X
PA-41-121124			1326	G	Water	X	X
RB-01-121124			1330	G	Water	X	X
TB-01-121224		12/12/24		G	Water	X	X
PA-22d-121224		12/12/24	0721	G	Water	X	X
Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)					
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological		☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months					
Deliverable Requested: I, II, III, IV, Other (Specify)		Special Instructions/QC Requirements: please run at lowest dilution possible for ND.					
Empty Kit Relinquished by: _____		Date: _____	Time: _____	Method of Shipment: _____			
Relinquished by: _____		Date/Time: <u>12/13/2024 0900</u>	Company: <u>ERM</u>	Received by: _____		Date/Time: <u>12/13/24 900</u>	Company: <u>ERM</u>
Relinquished by: _____		Date/Time: <u>12/15/24 1100</u>	Company: <u>ERM</u>	Received by: _____		Date/Time: <u>12/14/24 930</u>	Company: <u>ERM</u>
Relinquished by: _____		Date/Time: _____	Company: _____	Received by: _____		Date/Time: _____	Company: _____
Custody Seal Intact: ☐ Yes ☐ No		Custody Seal No.:		COC Temperature and Other Remarks: <u>1.8/1.9</u> <u>CDX SC IN</u>			

Chain of Custody Record

Client Information		Sampler: <i>Paul Van Nieuw</i>	Lab PM: <i>Cruz, Sheri L</i>	Carrier Tracking No(s):		COC No: <i>2 of 2</i>
Client Contact: <i>Avery Soplat and Andrew Gardner</i>		Phone: <i>840-755-1348</i>	E-Mail: <i>sherl.cruz@testamericainc.com</i>			
Company: <i>ERM-West</i>		Due Date Requested:		Analysis Requested		
Address: <i>1050 SW 6th Avenue Suite 1650</i>		TAT Requested (days): <i>15BD</i>				
City: <i>Portland</i>						
State, Zip: <i>OR, 97204</i>						
Phone: <i>PO # PN 0732445 207</i>						
Email: <i>avery.soplat@erm.com andrew.gardner@erm.com</i>		WO #:				
Project Name: <i>Arkema - Q4 2024 Groundwater event</i>		Project #:				
Site: <i>SSOW#:</i>		SSOW#:				
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=soil, B=bitumen, A=air)	Field Filtered Sample (Yes or No)
<i>MWA-31(d)-121224</i>		<i>12/12/24</i>	<i>0744</i>	<i>G</i>	<i>Water</i>	<i>X</i>
<i>MWA-56d-121224</i>		<i>12/12/24</i>	<i>0856</i>	<i>G</i>	<i>Water</i>	<i>X</i>
<i>PA-80d-121224</i>		<i>12/12/24</i>	<i>0956</i>	<i>G</i>	<i>Water</i>	<i>X</i>
<i>000-08-121224</i>		<i>12/12/24</i>	<i>1200</i>	<i>G</i>	<i>Water</i>	<i>X</i>
<i>PA-10d-121224</i>		<i>12/12/24</i>	<i>1200</i>	<i>G</i>	<i>Water</i>	<i>X</i>
<i>MWA-56d-121224</i>		<i>12/12/24</i>	<i>1153</i>	<i>G</i>	<i>Water</i>	<i>X</i>
<i>PA-30d-121224</i>		<i>12/12/24</i>	<i>1423</i>	<i>G</i>	<i>Water</i>	<i>X</i>
<i>MWA-11(d)-121224</i>		<i>12/12/24</i>	<i>1351</i>	<i>G</i>	<i>Water</i>	<i>X</i>
<i>EB-02-121224</i>		<i>12/12/24</i>	<i>0600</i>	<i>C</i>	<i>Water</i>	<i>X</i>
Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)				
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological		☐ Return To Client ☐ Disposal By Lab ☐ Archive For ☐ Months				
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/OC Requirements: please run at lowest dilution possible for ND.				
Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:		
Relinquished by: <i>[Signature]</i>		Date/Time: <i>12/13/2024 0900</i>	Company: <i>ERM</i>	Received by: <i>[Signature]</i>	Date/Time: <i>12/13/24 900</i>	Company: <i>ERM</i>
Relinquished by: <i>[Signature]</i>		Date/Time: <i>12/13/24 1200</i>	Company: <i>ERM</i>	Received by: <i>[Signature]</i>	Date/Time: <i>12/14/24 930</i>	Company: <i>ERM</i>
Custody Seal Intact: ☒ Yes ☐ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: <i>12/11 0.9/1.9</i>		

ORIGIN ID: BNOA (503) 906-9200
SAMPLE RECEIVING
EUROFINS PORTLAND
7959 SW CIRrus DR
BUILDING 22
BEAVERTON, OR 970087145
UNITED STATES US

SHIP DATE: 13DEC24
ACTWGT: 41.65 LB MAN
CAD: 0893932/CAFE3855

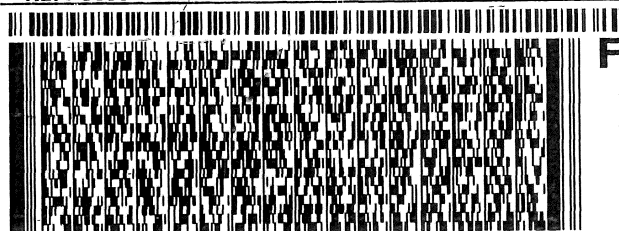
BILL THIRD PARTY

TO **SHIPPING/RECEIVING**
EUROFINS ENVIRONMENT TESTING SOUTHW
2841 DOW AVENUE, SUITE 100

TUSTIN CA 92780

(714) 895-5494

REF: S580-65517



FedEx
Express



589C4/EB78/FE2D

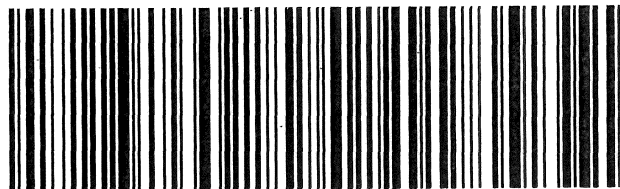
J243024070401UV

TRK# 4254 2766 8461
0201

SATURDAY 1:30P
PRIORITY OVERNIGHT

WO DTHA

92780
CA-US SNA

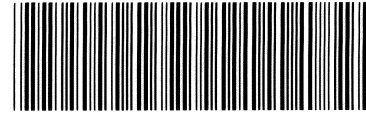


580-146567 Waybill

Eurofins Seattle

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

Chain of Custody Record



eurofins

Environment Testing

Loc: 580

146567

Client Information (Sub Contract Lab)		Sampler: N/A		Lab PM: Cruz, Sheri L		580-146567 Chain of Custody		COC No: 580-140160.1		
Client Contact: Shipping/Receiving		Phone: N/A		E-Mail: Sheri.Cruz@et.eurofinsus.com		State of Origin: Oregon		Page: Page 1 of 3		
Company: Eurofins Environment Testing Southwest,				Accreditations Required (See note): NELAP - Oregon				Job #: 580-146567-1		
Address: 2841 Dow Avenue, Suite 100,		Due Date Requested: 1/7/2025		Analysis Requested				Preservation Codes: -		
City: Tustin		TAT Requested (days): N/A								
State, Zip: CA, 92780										
Phone: 714-895-5494(Tel)		PO #: N/A								
Email: N/A		WO #: N/A								
Project Name: Arkema - Q4 2024 Groundwater Event		Project #: 58016290						Other: N/A		
Site: N/A		SSOW#: N/A								
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	314.0/ Perchlorate	Total Number of containers	Special Instructions/Note:
				Preservation Code:						
MWA-81i-121124 (580-146567-1)		12/11/24	08:00 Pacific	G	Water		X			1
MWA-41-121124 (580-146567-2)		12/11/24	09:49 Pacific	G	Water		X			1
PA-15i-121124 (580-146567-3)		12/11/24	07:49 Pacific	G	Water		X			1
PA-24d-121124 (580-146567-4)		12/11/24	09:27 Pacific	G	Water		X			1
MWA-82-121124 (580-146567-5)		12/11/24	11:31 Pacific	G	Water		X			1
PA-23d-121124 (580-146567-6)		12/11/24	12:46 Pacific	G	Water		X			1
PA-44i-121124 (580-146567-7)		12/11/24	13:26 Pacific	G	Water		X			1
RB-01-121124 (580-146567-8)		12/11/24	13:30 Pacific	G	Water		X			1
PA-22d-121224 (580-146567-10)		12/12/24	07:21 Pacific	G	Water		X			1
Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northwest, LLC.										
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)				
Unconfirmed						☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months				
Deliverable Requested: I, II, III, IV, Other (specify)				Primary Deliverable Rank: 2		Special Instructions/QC Requirements:				
Empty Kit Relinquished by:			Date:		Time:		Method of Shipment:			
Relinquished by:		Date/Time: 12/13/24 1700		Company:		Received by:		Date/Time: 12-11-24 941T		Company:
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:
Custody Seals Intact: ☐ Yes ☐ No		Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks: -6/1.3 5012				

Ver: 10/10/2024

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

eurofins | Environment Testing

1/9/2025

 eurofins | Environment Testing

1/9/2025

Login Sample Receipt Checklist

Client: ERM-West

Job Number: 580-146567-1

Login Number: 146567

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 $<6\text{mm}$ (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: 580-146567-1

Login Number: 146567

List Number: 2

Creator: Skinner, Alma D

List Source: Eurofins Calscience

List Creation: 12/16/24 09:10 AM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	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	



APPENDIX C DATA VALIDATION MEMOS



MEMO

TO	Sarah Seekins
FROM	Isaac Barraza
DATE	2025-01-17
REFERENCE	0732445
SUBJECT	Data Review of Arkema, Fourth Quarter 2024 Groundwater. Samples Collected December 9-12, 2024: Eurofins, Data Package(s) 580-146493-1 and 580-146567-1.

Environmental Resources Management, Inc. (ERM) assessed the data quality and applied any necessary qualifiers following the *USEPA National Functional Guidelines for Organic Superfund Methods Data Review*, November 2020 and *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.

ERM performed a Stage 2A data validation on 100 percent of the laboratory data.

ERM reviewed the following items as part of the data validation.

- **Chain of Custody:** The chains of custody were reviewed for proper completion and that the laboratory performed the requested methods and reported the requested target analytes for each sample.
- **Dilutions and Reanalysis:** Dilutions, calibration ranges, and reanalyses were reviewed as applicable. The best result was chosen when more than one result was reported as final.
- **Case Narrative:** The case narrative was reviewed for comments and any necessary qualifiers added.
- **Sample Preservation:** The appropriate temperature and chemical preservation requirements were reviewed. Headspace for volatile sample analysis was reviewed.
- **Holding Times:** The period of time between collection of the sample and preparation/analysis of the sample was evaluated.
- **Laboratory Blank Samples:** The preparation and analysis of reagent (contaminant-free) water was evaluated, along with the required frequency.

- **Field Blank Samples:** The collection and analysis of field blanks was evaluated. The reviewed data package(s) included the following associated field blanks: trip and rinse.
- **Laboratory Control Spike Samples:** Laboratory control spike sample preparation frequency and recoveries were reviewed as applicable.
- **Matrix Spike Samples:** Matrix spike and post digestion spike sample preparation frequency and recoveries were reviewed as applicable.
- **Surrogate Spikes:** The addition of appropriate surrogates and their recoveries were evaluated.
- **Field Duplicate Samples:** Field duplicate recoveries and/or absolute differences were reviewed as applicable.

Data validation findings are summarized in the sections below. As necessary, the following data quality flags were applied during validation. Professional judgment was used when multiple flags were applied to one result; therefore, the final flag may differ from the one presented in an individual table.

- J = estimated concentration
- J+ = the result is an estimated concentration, but may be biased high
- J- = the result is an estimated concentration, but may be biased low
- UJ = estimated reporting limit
- U = evaluated to be non-detected at the reporting limit
- R = rejected, data not usable
- NJ = tentative identification and estimated concentration

Validation outliers and any necessary data qualifications are summarized in tables at the end of this memo. The table below indicates the included validation tables with findings.

List of Attached Tables

Table 1: Samples with Non-Preferred Results

Table 2: Case Narrative Evaluation

Table 3: Laboratory Blank Evaluation

Table 4: Field Blank Evaluation

Table 5: Matrix Spike Evaluation

Table 6: Field Duplicate Evaluation

List of Attached Tables

Table 7: Calibration Range Evaluation

CHAIN-OF-CUSTODY DISCREPANCIES

The laboratory did not note discrepancies between the chains-of-custody and the received sample containers.

SAMPLES WITH NON-PREFERRED RESULTS

Samples referenced in Table 1 had more than one final result reported for a single analyte and method combination due to the following possible reasons.

- Analyte concentration exceeds calibration range; concentration within calibration preferred

Non-preferred results are considered not reportable and should not be used for reporting or for decision making purposes. Non-preferred results have been excluded from the subsequent outlier tables in this report.

CASE NARRATIVE EVALUATION

The laboratory observed additional issues encountered during sample preparation or analysis as noted in Table 2.

PRESERVATION EVALUATION

The laboratory received the sample shipments in good condition, within the method-prescribed temperature preservation requirements of less than 6°C, with acceptable sample pH values, and, as applicable, all vials for volatile analysis were received with no documented headspace.

HOLDING TIME EVALUATION

The samples were prepared and analyzed within the method-prescribed time period from the date of collection, with appropriate considerations for sample preservation requirements.

LABORATORY BLANK EVALUATION

The laboratory blank sample results were non-detected for each of the target analytes, with the exceptions and any necessary qualifications noted in Table 3. The following criteria were taken into consideration when assessing blank contamination and applying any necessary qualifications:

- Non-detected results or results greater than five times the blank concentration (ten times for inorganics or common laboratory contaminants) were considered not affected by contamination and were not qualified.

- If results were associated with more than one blank, the greater of the two blank concentrations was used for applying qualifications.
- Results less than the reporting limit, as adjusted for dilution, were qualified as non-detect (U) at the sample reporting limit.
- Results within five times the blank concentration (ten times for inorganics or common laboratory contaminants), greater than the reporting limit, but less than the blank concentration, as adjusted for dilution, were qualified as non-detect (U) at the sample concentration.
- Results within five times the blank concentration (ten times for inorganics or common laboratory contaminants), greater than the reporting limit, and greater than the blank concentration, as adjusted for dilution, were qualified as estimates with a high bias (J+).

FIELD BLANK EVALUATION

The trip and rinse blank sample results were non-detected for each of the target analytes, with the exceptions and any necessary qualifications noted in Table 4. Any field blank detections associated with laboratory blank contamination and qualified as non-detected (U) are not included in Table 4. The following criteria were taken into consideration when assessing blank contamination and applying any necessary qualifications:

- Non-detected results or results greater than five times the blank concentration (ten times for inorganics or common laboratory contaminants) were considered not affected by contamination and were not qualified.
- If results were associated with more than one blank, the greater of the two blank concentrations was used for applying qualifications.
- Results less than the reporting limit were qualified as non-detect (U) at the sample reporting limit.
- Results within five times the blank concentration (ten times for inorganics or common laboratory contaminants), greater than the reporting limit, but less than the blank concentration were qualified as non-detect (U) at the sample concentration.
- Results within five times the blank concentration (ten times for inorganics or common laboratory contaminants), greater than the reporting limit, and greater than the blank concentration were qualified as estimates with a high bias (J+).
- Equipment and field blank results associated with method blank contamination were attributed to and qualified for laboratory introduced contamination. No additional qualifications were made to sample results based on the equipment and/or field blanks in these instances.

LABORATORY CONTROL SPIKE EVALUATION

The laboratory control sample (LCS) recoveries and, if included, the laboratory control sample duplicate (LCSD) recoveries and relative percent differences (RPD) were within the laboratory's limits of acceptance. The LCS/LCSD recoveries and RPDs indicate acceptable laboratory accuracy and precision.

MATRIX SPIKE EVALUATION

The matrix spike (MS) recoveries and, if included, the matrix spike duplicate (MSD) recoveries and RPDs were within the laboratory's limits of acceptance for target analytes for spiked project samples, with the exceptions and any necessary qualifications noted in Table 5. MS/MSDs performed on non-project parent samples, if included, are not representative of the matrix for this project and were therefore not reviewed or presented. Results were not qualified if the paired spiked sample recovery was acceptable, if high recoveries or RPDs were associated with non-detected results, if the parent sample result was greater than four times that of the spike, if the spike was diluted out, or if the exception was not associated with reported results.

SURROGATE EVALUATION

The surrogate recoveries were within the laboratory limits of acceptance. The acceptable surrogate recoveries indicate minimal matrix interference in the samples.

FIELD DUPLICATE EVALUATION

One or more samples were submitted to the laboratory as field duplicates. RPDs or absolute differences were calculated as appropriate for detected results. When results were greater than or equal to five times the reporting limit, RPD control limits of 30 for an aqueous matrix or 50 for a non-aqueous matrix were used. When results were less than five times the reporting limit, difference limits of $\pm$ two times the reporting limit for an aqueous matrix or $\pm$ four times the reporting limit for a non-aqueous matrix were used. Control limits were not applicable if both results were less than the reporting limits. If one result was greater than the reporting limit and the other was not detected, the reporting limit for the non-detect result was used when calculating differences. Additionally, if the reporting limits were not the same between the parent and field duplicate samples, professional judgment was used to determine the difference control limit or if the calculation was meaningful. The RPDs and/or absolute differences were within QAPP criteria or EPA Region 1 guidance, whichever is applicable, with any exceptions and necessary qualifications noted in Table 6.

CALIBRATION RANGE EVALUATION

All results were reported within each instrument's calibration range, with the exceptions and any necessary qualifications noted in Table 7.

PROFESSIONAL JUDGEMENT EVALUATION

Additional qualifiers using the validator's professional judgement were not necessary.

OVERALL ASSESSMENT

None of the data required rejection. All the data, including any 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
Fourth Quarter 2024 Groundwater
Arkema
Portland, Oregon

Lab Package	Sample ID	Method	Analysis Date / Time	Reason	Analyte	Result	Units
580-146567-1	MWA-56D-121224	314.0	12/19/2024 3:23	Analyte concentration exceeds calibration range; concentration within calibration preferred	Perchlorate	19000	µg/L

Notes:
µg/L = micrograms per liter

Table 2
Case Narrative Evaluation
Fourth Quarter 2024 Groundwater
Arkema
Portland, Oregon

Lab Package	Sample ID	Method	Analyte	Reason	ERM Qualifier
580-146493-1	PA-31-121024 PA-26D-121024 DUP-01-121024	8260D 8260D_LL	Chloromethane	Batch 580-480341 CCV high bias	J+
	None for qualification, associated samples ND		Acetone		--
	2-Butanone				
	4-Methyl-2-pentanone				
580-146567-1	None for qualification, associated samples ND	8260D 8260D_LL	2-Butanone	Batch 580-480564 CCV high bias	--
	MWA-31I(D)-121224	8260D 8260D_LL	Dichlorodifluoromethane Bromomethane Chloroethane	Batch 580-480648 CCV low bias	UJ
	MWA-56D-121224				
	MWA-58D-121224				
	MWA-82-121124				
	PA-19D-121224				
	PA-20D-121224				
	PA-22D-121224				
	PA-23D-121124				
	PA-44I-121124				
	TB-01-121224				
	RB-01-121124				
	RB-02-121224				
	PA-30D-121224	8260D	Chloromethane	Batch 580-480717 CCV low bias	UJ
	None for qualification, associated samples ND	8260D 8260D_LL	Dichlorodifluoromethane	Batch 580-480750 CCV high bias	--
			1,1-Dichloroethene		
			Acetone		
Methylene Chloride					
Methyl tert-butyl ether					
2-Butanone					
trans-1,2-Dichloroethene					

Table 2
Case Narrative Evaluation
Fourth Quarter 2024 Groundwater
Arkema
Portland, Oregon

Lab Package	Sample ID	Method	Analyte	Reason	ERM Qualifier
580-146567-1	None for qualification, associated samples ND	8260D 8260D_LL	1,1-Dichloroethane	Batch 580-480750 CCV high bias	--
			2,2-Dichloropropane		
			cis-1,2-Dichloroethene		
580-146567-1	None for qualification, associated samples ND	8260D 8260D_LL	Chlorobromomethane	Batch 580-480750 CCV high bias	--
			1,1-Dichloropropene		
			Benzene		
			1,2-Dichloropropane		

Notes:

-- = not applicable; associated data not affected

CCV = continuing calibration verification

UJ = non-detected, estimated report limit

Table 3
Laboratory Blank Evaluation
Fourth Quarter 2024 Groundwater
Arkema
Portland, Oregon

Lab Package	Blank ID	Analyte	Reported Blank Conc.	Blank RL	Associated Sample	Assoc. Sample Result	Assoc. Sample RL	Units	ERM Qualifier
580-146493-1	MB 580-480341/7	Benzene	0.0438	0.20	PA-03-120924	0.088	0.20	µg/L	0.20 U
					PA-08-120924	0.041	0.20		
					TB-01-121024	0.034	0.20		
					PA-26d-121024	0.034	0.20		
					PA-09-121024	0.038	0.20		
					PA-16i-121024	0.048	0.20		
					PA-04-121024	0.066	0.20		
					Dup-01-121024	0.14	0.20		
					PA-32i-121024	0.14	0.20		
					PA-31-121024	0.13	0.20		
					PA-10i-121024	0.074	0.20		
					PA-25d-121024	0.049	0.20		
580-146567-1	MB 580-480750/11	Acetone	3.10	10	None for qualification, samples ND	--	--	µg/L	--
		Benzene	0.0980	0.20	MWA-11i(d)-121224	0.12	0.20		0.20 U

Notes:

-- = not applicable; associated data not affected

Conc. = concentration

MB = method blank

µg/L = micrograms per liter

RL = reporting limit

U = non-detected

Table 4
Field Blank Evaluation
Fourth Quarter 2024 Groundwater
Arkema
Portland, Oregon

Lab Package	Blank ID	Analyte	Reported Blank Conc.	Blank RL	Associated Sample	Assoc. Sample Result	Assoc. Sample RL	Units	ERM Qualifier
570-146567-1	RB-01-121124	Chloride	4.2	1.50	MWA-41-121124	4.9	1.5	mg/L	J+
					MWA-63-121024	15	1.5		
					MWA-81I-121124	33	1.5		
					MWA-82-121124	9.2	1.5		
					PA-03-120924	4.3	1.5		
					PA-04-121024	5.2	1.5		
					PA-09-121024	6.6	1.5		
					PA-10I-121024	25	1.5		
					PA-16I-121024	15	1.5		
					PA-25D-121024	30	1.5		
					PA-31-121024	4.2	1.5		

Notes:

Conc. = concentration

J+ = detected results are estimated with a high bias

mg/L = milligrams per liter

RB = rinse blank

RL = reporting limit

Table 5
Matrix Spike Evaluation
Fourth Quarter 2024 Groundwater
Arkema
Portland, Oregon

Lab Package	Spike Sample ID	Associated Sample	Analyte	Recovery (%)	Limit (%)	RPD	RPD Limit	Result	Units	ERM Qualifier
580-146493-1	PA-25d-121024 MS/MSD	None for qualification, parent sample ND	trans-1,2-Dichloroethene	124/126	69-121	Pass	27	--		--
			1,1-Dichloroethane	133/133	74-120	Pass	26			
			cis-1,2-Dichloroethene	126/121	72-120	Pass	22			
			1,1-Dichloropropene	138/136	72-125	Pass	23			
		PA-25d-121024	Benzene	128/132	80-120	Pass	22	0.049		
		None for qualification, parent sample ND	1,2-Dichloropropane	140/140	69-130	Pass	22	--	µg/L	--
			Toluene	Pass/131	80-126	Pass	20			
			m-Xylene & p-Xylene	Pass/128	75-124	Pass	22			
			o-Xylene	Pass/125	71-124	Pass	23			
			1,1,2,2-Tetrachloroethane	Pass/139	67-136	Pass	24			
			N-Propylbenzene	Pass/127	72-126	Pass	20			
			2-Chlorotoluene	122/123	73-120	Pass	22			
			4-Chlorotoluene	Pass/130	75-124	Pass	23			
580-146567-1	MWA-56d-121224 MS/MSD	None for qualification, one recovery passes	Chloromethane	Pass/23	25-150	Pass	26	--	µg/L	--
			Vinyl chloride	Pass/30	31-150	Pass	26			
			Bromomethane	Pass/26	36-150	Pass	33			
			Chloroethane	Pass/28	38-150	Pass	28			
			Trichlorofluoromethane	Pass/29	45-148	Pass	35			
		MWA-56d-121224	Chloroform	53/67	78-127	Pass	14	160		J-
		None for qualification, parent sample > 4x spike concentration	Perchlorate	-8706/-9670	80-120	Pass	15	--	µg/L	--

Notes:

-- = not applicable; associated data not affected

4X = The unspiked sample result was greater than four times the spike concentration.

J- = detected results are estimated with a low bias

J+ = detected results are estimated with a high bias

MS = matrix spike

MSD = matrix spike duplicate

µg/L = micrograms per liter

ND = not detected

RPD = relative percent difference

Table 6
Field Duplicate Evaluation
Fourth Quarter 2024 Groundwater
Arkema
Portland, Oregon

Lab Package	Primary / Duplicate Sample ID	Analyte	Concentration		Report Limit		Units	AbD	RPD	Limit	ERM Qualifier
			Sample	Duplicate	Sample	Duplicate					
580-146493-1	PA-32i-121024/ Dup-01-121024	1,1-Dichloroethene	0.069	0.071	0.20	0.20	µg/L	--	--	NA	--
		1,1-Dichloroethane	0.10	0.11	0.20	0.20		--	--	NA	--
		cis-1,2-Dichloroethene	0.12	0.11	0.20	0.20		--	--	NA	--
		Benzene	0.14	0.14	0.20	0.20		--	--	NA	--
		Chlorobenzene	0.29	0.31	0.20	0.20		0.02	--	0.40	--
		1,2-Dichlorobenzene	0.30	0.30	0.30	0.30		0.00	--	0.60	--
		Chloromethane	ND	0.21	0.50	0.50		--	--	NA	--
		Chloroethane	ND	0.26	0.50	0.50		--	--	NA	--
580-146567-1	PA-20d-121224/ Dup-02-121224	Chloride	79	78	1.5	1.5	mg/L	--	1.3	30	--
		1,1-Dichloroethane	0.28	0.32	1.0	1.0	µg/L	--	--	NA	--
		Chlorobenzene	1.7	1.8	1.0	1.0		0.1	--	2.0	--
		Perchlorate	48	46	2.0	2.0		--	4.3	30	--
		Chloride	580	590	15	15	mg/L	--	1.7	30	--

Notes:

-- = not applicable; associated data not affected

AbD = absolute Difference

µg/L = micrograms per liter

mg/L = milligrams per liter

NA = not applicable

ND = not detected

RPD = relative percent difference

Table 7
Calibration Range Evaluation
Fourth Quarter 2024 Groundwater
Arkema
Portland, Oregon

Lab Package	Sample ID	Analyte	Reported Concentration	Units	ERM Qualifier
580-146567-1	MWA-56d-121224 MS	Perchlorate	16300	µg/L	No qualification for laboratory QC
	MWA-56d-121224 MSD		16100		

Notes:

MS = matrix spike

MSD = matrix spike duplicate

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 4, 2024, 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-41	GCC6 & Proximal Wells	MWA-41-061323	06/13/2023	7,500	< 0.060	< 2.0
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-082123	08/21/2023	7,100	< 0.060 U	< 2.0 U
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-121023	12/10/2023	5,600	< 0.20 U	< 2.0 U
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-022624	02/26/2024	8,000	< 0.060 U	< 2.0 U
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-061024	06/10/2024	7,600	0.060 j	2.6 j
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-091024	09/10/2024	18,000	< 0.060 U	< 0.91 U
Shallow	MWA-41	GCC6 & Proximal Wells	MWA-41-121124	12/11/2024	4,900 J+	< 0.44 U	< 0.91 U
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-110619	11/06/2019	83,000	< 44 U	< 0.95 U
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-021720	02/17/2020	8,400	< 0.44 U	< 0.95 U
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-052620	05/26/2020	13,000	< 0.44 U	< 0.95 U
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-082420	08/24/2020	29,000	< 0.44 U	< 0.95 U
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-110320	11/03/2020	71,000	< 0.44 U	< 4.8 U
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-032921	03/29/2021	7,200 J	< 0.44 U	< 2.0 U
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-092321	09/23/2021	58,000 J	< 0.44 UJ	< 2.0 U
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-121521	12/15/2021	14,000	< 0.44	< 2.0
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-031522	03/15/2022	5,500 J-	< 4.4 UJ	< 2.0 U
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-060822	06/08/2022	4,900	< 0.30 U	13
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-110922	11/09/2022	33,000	< 0.44 U	< 2.0 U
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-030923	03/09/2023	5,500	5.6 j	< 10 UJ
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-061523	06/15/2023	5,700 j	< 0.44	< 2.0
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-082323	08/23/2023	17,000	< 0.44 U	< 2.0 U
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-121223	12/12/2023	15,000	< 0.44 U	< 2.0 U
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-022724	02/27/2024	4,500	< 4.4 U	< 2.0 U
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-061324	06/13/2024	6,600	< 0.44 U	< 2.0 U
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-091024	09/10/2024	23,000	< 0.44 U	< 0.91 U
Shallow	MWA-63	GCC1 & Proximal Wells	MWA-63-121024	12/10/2024	15,000 J+	< 0.44 U	< 4.5 U
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-102319	10/23/2019	14,700	< 0.44 U	190
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-021120	02/11/2020	34,800	0.24	< 48 U
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-051920	05/19/2020	10,000	< 0.025 U	71 j
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-081820	08/18/2020	15,000	0.030 j	530
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-102720	10/27/2020	14,000	< 0.20 U	77
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-031821	03/18/2021	11,000 J	< 0.025 U	290
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-092121	09/21/2021	14,000	< 0.025 U	56
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-121421	12/14/2021	13,000	< 0.025	150
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-031422	03/14/2022	11,000 J-	< 0.060 U	52
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-060622	06/06/2022	11,000	< 0.060 U	340
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-110722	11/07/2022	9,000	< 0.060 U	120
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-030623	03/06/2023	11,000	< 0.060 U	210 J-
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-061323	06/13/2023	9,900	< 0.060	150
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-082123	08/21/2023	9,700	< 0.060 U	210
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-121023	12/10/2023	14,000	< 0.20 U	< 10 U
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-022524	02/25/2024	7,900	< 0.060 U	20
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-061024	06/10/2024	11,000	0.11 j	270
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-090924	09/09/2024	11,000	< 0.060 U	220
Shallow	MWA-82	GCC6 & Proximal Wells	MWA-82-121124	12/11/2024	9,200 J+	< 0.060 U	56
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-102519	10/25/2019	9,700	< 0.44 U	< 4.8 U
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-021420	02/14/2020	9,700	0.29	< 48 U
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-052120	05/21/2020	8,300	< 0.025 U	< 48 U
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-081820	08/18/2020	10,000	< 0.025 U	< 95 U
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-102820	10/28/2020	< 9,000 U	< 0.025 U	< 19 U
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-032221	03/22/2021	9,600 J	< 0.025 U	< 20 U
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-092221	09/22/2021	7,800	< 0.025 U	< 20 U
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-121321	12/13/2021	7,300	< 0.025	< 20
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-031622	03/16/2022	7,300	< 0.060 U	< 20 U
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-060822	06/08/2022	5,500	< 0.070 U	< 4.0 U
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-110822	11/08/2022	6,200	< 0.060 U	< 4.0 U
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-030723	03/07/2023	6,500	< 0.060 U	< 4.0 UJ
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-061423	06/14/2023	4,500	< 0.060	< 2.0
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-082223	08/22/2023	4,500	< 0.060 U	< 2.0 U
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-121123	12/11/2023	4,600	< 0.060 U	< 4.0 U
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-022624	02/26/2024	4,200	< 0.20 U	< 2.0 U

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Aquifer	Well ID	Cluster	Sample ID	Date	Chloride	Chlorobenzene	Perchlorate
					ug/L	ug/L	ug/L
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-061224	06/12/2024	3,700	< 0.060 U	< 10 U
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-090924	09/09/2024	3,800	< 0.060 U	< 9.1 U
Shallow	PA-03	GCC1 & Proximal Wells	PA-03-120924	12/09/2024	4,300 J+	< 0.060 U	< 9.1 U
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-102819	10/28/2019	14,300	< 2.0 U	< 4.8 U
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-021720	02/17/2020	13,700	0.14 j	< 48 U
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-052220	05/22/2020	12,000	< 0.025 U	< 4.8 U
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-081920	08/19/2020	14,000 J+	< 0.025 U	< 19 U
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-102920	10/29/2020	12,000	< 0.025 U	< 4.8 U
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-032421	03/24/2021	7,900 J	< 0.025 U	< 20 U
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-092221	09/22/2021	11,000	< 0.025 U	< 10 U
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-121321	12/13/2021	7,000	< 0.025	< 20
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-031722	03/17/2022	6,500	< 0.060 U	< 2.0 U
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-060822	06/08/2022	7,900	< 0.35 U	< 2.0 U
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-110922	11/09/2022	4,600	< 0.060 U	< 4.0 U
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-030823	03/08/2023	5,400	< 0.060 U	< 10 UJ
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-061523	06/15/2023	6,900 j	< 0.060	< 4.0
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-082223	08/22/2023	5,900	< 0.060 U	< 10 U
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-121223	12/12/2023	6,100	< 0.060 U	< 2.0 U
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-022724	02/27/2024	5,300	< 0.025 U	< 4.0 U
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-061224	06/12/2024	5,700	< 0.060 U	< 2.0 U
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-091024	09/10/2024	4,900	< 0.060 U	< 4.5 U
Shallow	PA-04	GCC1 & Proximal Wells	PA-04-121024	12/10/2024	5,200 J+	< 0.060 U	< 9.1 U
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-102219	10/22/2019	201,000	< 0.44 U	< 19 U
Shallow	PA-08	GCC6 & Proximal Wells	Pa-08-021320	02/13/2020	197,000	0.53	< 48 U
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-051920	05/19/2020	130,000	0.11 j	< 48 U
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-081820	08/18/2020	100,000	< 0.025 U	< 48 U
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-102720	10/27/2020	130,000	0.092 j	< 19 U
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-031821	03/18/2021	110,000	< 0.025 U	< 20 U
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-092121	09/21/2021	200,000	< 0.25 U	< 20 U
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-121321	12/13/2021	130,000	0.084	< 20
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-031422	03/14/2022	250,000 J-	< 0.060 U	< 20 U
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-060622	06/06/2022	330,000	< 0.60 U	< 20 U
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-110722	11/07/2022	770,000	< 0.060 U	< 10 U
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-030723	03/07/2023	380,000	0.24	< 10 UJ
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-061323	06/13/2023	110,000	< 0.060	11
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-082123	08/21/2023	53,000	< 0.060 U	17
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-121123	12/11/2023	29,000	< 0.060 U	< 4.0 U
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-022624	02/26/2024	140,000	< 0.060 U	< 10 U
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-061024	06/10/2024	190,000	0.10 j	19 j
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-090924	09/09/2024	280,000	< 0.060 U	< 9.1 U
Shallow	PA-08	GCC6 & Proximal Wells	PA-08-120924	12/09/2024	230,000	< 0.060 U	33
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-110119	11/01/2019	23,600	< 0.44 U	< 48 U
Shallow	PA-09	GCC6 & Proximal Wells	Pa-09-021220	02/12/2020	199,000	0.16 j	< 0.95 U
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-051820	05/18/2020	14,000	< 0.025 U	< 19 U
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-081820	08/18/2020	160,000 J+	< 0.025 U	< 19 U
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-102820	10/28/2020	14,000 J+	< 0.20 U	40
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-031621	03/16/2021	19,000	< 0.025 U	36
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-092121	09/21/2021	61,000	< 0.25 U	< 20 U
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-121321	12/13/2021	13,000	< 0.25	< 20
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-031522	03/15/2022	24,000 J-	< 0.060 U	20
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-060722	06/07/2022	19,000	< 0.060 U	120
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-110822	11/08/2022	68,000	< 0.060 U	< 10 U
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-030723	03/07/2023	120,000 j	0.39	< 4.0 UJ
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-061323	06/13/2023	110,000	< 0.060	6.2
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-082123	08/21/2023	5,700	< 0.060 U	< 2.0 U
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-121123	12/11/2023	5,600	< 0.060 U	< 2.0 U
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-022624	02/26/2024	160,000	< 0.060 U	< 20 U
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-061024	06/10/2024	130,000	< 0.060 U	11 j
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-090924	09/09/2024	15,000	< 0.060 U	84
Shallow	PA-09	GCC6 & Proximal Wells	PA-09-121024	12/10/2024	6,600 J+	< 0.060 U	< 4.5 U
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-103019	10/30/2019	9,300	< 0.44 U	< 9.5 U
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-021820	02/18/2020	10,500	0.15 j	< 48 U
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-052720	05/27/2020	9,500	< 0.025 U	< 9.5 U
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-082420	08/24/2020	8,800 J+	< 0.025 U	< 9.5 U
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-110220	11/02/2020	8,200 j	< 0.025 U	< 4.8 U
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-032921	03/29/2021	5,500 J	< 0.025 U	< 20 U
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-092321	09/23/2021	8,700	< 0.025 U	< 10 U
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-121521	12/15/2021	7,000	< 0.025	< 20
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-031522	03/15/2022	4,500 J-	< 0.060 U	< 10 U
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-060922	06/09/2022	4,300	< 0.070 U	< 100 U
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-110822	11/08/2022	5,900	< 0.060 U	< 4.0 U
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-030723	03/07/2023	5,800 J+	< 0.060 U	< 2.0 UJ
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-061623	06/16/2023	2,500	< 0.060	< 40

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Aquifer	Well ID	Cluster	Sample ID	Date	Chloride	Chlorobenzene	Perchlorate
					ug/L	ug/L	ug/L
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-082423	08/24/2023	4,600	< 0.060 U	< 4.0 U
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-121223	12/12/2023	6,400	< 0.060 U	< 2.0 U
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-022724	02/27/2024	3,500	< 0.060 U	< 2.0 U
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-061324	06/13/2024	3,800	< 0.060 U	< 10 U
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-091124	09/11/2024	8,300	< 0.060 U	< 4.5 U
Shallow	PA-31	GCC1 & Proximal Wells	PA-31-121024	12/10/2024	4,200 J+	< 0.060 U	< 4.5 U
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81i-102319	10/23/2019	49,800	< 0.44 U	< 0.95 U
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81i-021220	02/12/2020	37,300	0.26	< 0.95 U
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81i-051820	05/18/2020	95,000	< 0.025 U	< 0.95 U
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81i-081820	08/18/2020	190,000	< 0.025 U	< 0.95 U
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81i-102720	10/27/2020	66,000	< 0.025 U	< 0.95 U
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81i-031821	03/18/2021	42,000	< 0.025 U	< 2.0 U
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81i-092221	09/22/2021	130,000	< 0.025 U	< 2.0 U
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81i-121421	12/14/2021	58,000	< 0.025	< 4.0
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81i-031422	03/14/2022	14,000 J-	< 0.060 U	< 2.0 U
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81i-060622	06/06/2022	34,000	< 0.060 U	< 2.0 U
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81i-110722	11/07/2022	610,000	< 0.060 U	< 10 U
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81i-030623	03/06/2023	95,000	< 0.060 U	< 2.0 UJ
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81i-061323	06/13/2023	27,000	< 0.060	< 2.0
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81i-082123	08/21/2023	19,000	< 0.060 U	< 2.0 U
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81i-121023	12/10/2023	39,000	< 0.20 U	< 2.0 U
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81i-022624	02/26/2024	23,000	< 0.060 U	< 2.0 U
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81i-061024	06/10/2024	26,000	0.085 j	< 2.0 U
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81i-091024	09/10/2024	8,400	< 0.060 U	< 0.91 U
Intermediate	MWA-81i	GCC6 & Proximal Wells	MWA-81i-121124	12/11/2024	33,000 J+	< 0.060 U	< 0.91 U
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10i-102519	10/25/2019	119,000	< 0.44 U	< 4.8 U
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10i-021720	02/17/2020	98,600	0.52	< 48 U
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10i-052620	05/26/2020	82,000	0.51	< 48 U
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10i-081920	08/19/2020	67,000	0.52	< 95 U
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10i-102920	10/29/2020	82,000	0.70	< 4.8 U
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10i-032421	03/24/2021	1,300,000	< 0.44 U	< 20 U
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10i-092221	09/22/2021	76,000	0.67	< 20 U
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10i-121321	12/13/2021	72,000	0.65	< 20
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10i-031722	03/17/2022	90,000	< 0.060 U	< 20 U
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10i-060822	06/08/2022	84,000	0.37 j	< 2.0 U
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10i-110922	11/09/2022	45,000	1.5	< 10 U
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10i-030823	03/08/2023	41,000	5.7	< 10 UJ
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10i-061623	06/16/2023	35,000	1.3 J+	< 20
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10i-082223	08/22/2023	53,000	0.67	< 4.0 U
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10i-121223	12/12/2023	58,000	0.90	< 4.0 U
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10i-022724	02/27/2024	55,000	0.53	< 10 U
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10i-061224	06/12/2024	44,000	0.71	< 10 U
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10i-091024	09/10/2024	30,000	< 0.060 U	< 9.1 U
Intermediate	PA-10i	GCC1 & Proximal Wells	PA-10i-121024	12/10/2024	25,000 J+	0.64	< 91 U
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15i-110519	11/05/2019	115,000	< 0.44 U	< 48 U
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15i-021820	02/18/2020	249,000	< 0.025 U	< 48 U
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15i-051820	05/18/2020	270,000	< 0.025 U	< 48 U
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15i-081720	08/17/2020	250,000	< 0.025 U	< 48 U
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15i-102620	10/26/2020	230,000	< 2.5 U	< 4.8 U
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15i-031721	03/17/2021	260,000	< 0.025 U	< 20 U
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15i-092121	09/21/2021	360,000	< 0.25 U	< 20 U
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15i-121421	12/14/2021	340,000	< 0.025	< 20
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15i-031422	03/14/2022	250,000 J-	< 0.060 U	< 20 U
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15i-060622	06/06/2022	300,000	< 0.60 U	< 20 U
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15i-110722	11/07/2022	850,000	0.29	< 10 U
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15i-030823	03/08/2023	290,000	< 0.060 U	< 10 UJ
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15i-061323	06/13/2023	290,000	0.073 j	< 4.0
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15i-082123	08/21/2023	41,000	< 0.060 U	< 10 U
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15i-121123	12/11/2023	4,400	< 0.20 U	< 10 U
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15i-022624	02/26/2024	20,000	< 0.060 U	< 10 U
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15i-061224	06/12/2024	86,000 J-	< 0.060 U	< 10 U
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15i-090924	09/09/2024	59,000	< 0.060 U	< 9.1 U
Intermediate	PA-15i	GCC6 & Proximal Wells	PA-15i-121124	12/11/2024	64,000	< 0.060 U	< 9.1 U
Intermediate	PA-16i	GCC6 & Proximal Wells	PA-16i-110419	11/04/2019	319,000	< 0.44 U	< 48 U
Intermediate	PA-16i	GCC6 & Proximal Wells	PA-16i-021220	02/12/2020	186,000	0.22	< 48 U
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

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Aquifer	Well ID	Cluster	Sample ID	Date	Chloride	Chlorobenzene	Perchlorate
					ug/L	ug/L	ug/L
Intermediate	PA-16i	GCC6 & Proximal Wells	PA-16i-110822	11/08/2022	270,000	< 0.060 U	< 4.0 U
Intermediate	PA-16i	GCC6 & Proximal Wells	PA-16i-030823	03/08/2023	530,000	< 0.060 U	< 20 UJ
Intermediate	PA-16i	GCC6 & Proximal Wells	PA-16i-061423	06/14/2023	120,000 J-	< 0.060	< 4.0
Intermediate	PA-16i	GCC6 & Proximal Wells	PA-16i-082223	08/22/2023	35,000	< 0.060 U	< 4.0 U
Intermediate	PA-16i	GCC6 & Proximal Wells	PA-16i-121123	12/11/2023	12,000	< 0.20 U	< 4.0 U
Intermediate	PA-16i	GCC6 & Proximal Wells	PA-16i-022724	02/27/2024	12,000	< 0.060 U	< 20 U
Intermediate	PA-16i	GCC6 & Proximal Wells	PA-16i-061024	06/10/2024	17,000	< 0.060 U	< 10 U
Intermediate	PA-16i	GCC6 & Proximal Wells	PA-16i-121024	12/10/2024	15,000 J+	0.15 j	< 9.1 U
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17iR-102819	10/28/2019	73,600	0.57 j	< 48 U
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17iR-021920	02/19/2020	65,400	24	< 190 U
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17iR-052120	05/21/2020	60,000	0.16 j	< 48 U
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17iR-082420	08/24/2020	62,000	< 0.025 U	< 95 U
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17iR-102820	10/28/2020	50,000	< 0.20 U	< 4.8 U
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17iR-032321	03/23/2021	43,000	0.15 J	< 20 U
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17iR-092221	09/22/2021	35,000	< 0.025 U	< 20 U
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17iR-121321	12/13/2021	30,000	< 0.025	< 20
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17iR-031622	03/16/2022	23,000	0.072 j	< 20 U
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17iR-060822	06/08/2022	26,000	< 0.70 U	< 10 U
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17iR-110822	11/08/2022	13,000	< 0.60 U	< 10 U
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17iR-030823	03/08/2023	25,000	< 0.060 U	< 10 UJ
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17iR-061423	06/14/2023	15,000	0.073 j	< 4.0
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17iR-082223	08/22/2023	8,800 J	< 0.060 U	< 2.0 U
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17iR-121123	12/11/2023	20,000	< 0.20 U	< 4.0 U
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17iR-022624	02/26/2024	32,000	< 0.060 U	< 2.0 U
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17iR-061224	06/12/2024	35,000	0.16 j	< 10 U
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17iR-090924	09/09/2024	43,000	< 0.060 U	< 9.1 U
Intermediate	PA-17iR	GCC1 & Proximal Wells	PA-17iR-120924	12/09/2024	49,000	0.12 j	< 91 U
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32i-103019	10/30/2019	161,000	< 0.44 U	< 48 U
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32i-021820	02/18/2020	170,000	0.50 J+	< 190 U
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32i-052220	05/22/2020	160,000	0.28	< 48 U
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32i-082120	08/21/2020	150,000 J+	0.30	< 95 U
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32i-110220	11/02/2020	170,000	< 0.025 U	< 48 U
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32i-040121	04/01/2021	130,000	0.43	< 20 U
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32i-092321	09/23/2021	100,000	< 0.025 U	< 20 U
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32i-121521	12/15/2021	93,000	0.29	< 20
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32i-031522	03/15/2022	89,000 J-	0.28 J+	< 20 U
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32i-060922	06/09/2022	87,000	< 0.70 U	< 20 U
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32i-110822	11/08/2022	75,000 J-	0.28	< 20 U
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32i-030723	03/07/2023	83,000 j	< 0.060 U	< 20 UJ
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32i-061623	06/16/2023	31,000	< 0.29 U	< 40
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32i-082423	08/24/2023	71,000	0.13 j	< 20 U
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32i-121323	12/13/2023	32,000	0.15 j	< 4.0 U
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32i-022824	02/28/2024	7,600,000	0.29	< 20 U
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32i-061324	06/13/2024	85,000	0.36	< 20 U
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32i-091124	09/11/2024	88,000	0.21	< 18 U
Intermediate	PA-32i	GCC1 & Proximal Wells	PA-32i-121024	12/10/2024	79,000	0.29	< 91 U
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44i-102919	10/29/2019	243,000	< 0.44 U	< 4.8 U
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44i-021220	02/12/2020	99,200	0.18 j	< 48 U
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44i-051920	05/19/2020	53,000	< 0.025 U	< 95 U
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44i-081820	08/18/2020	76,000	< 0.025 U	< 48 U
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44i-102720	10/27/2020	34,000	< 0.025 U	< 4.8 U
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44i-031621	03/16/2021	60,000	< 0.025 U	7.1 J
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44i-092321	09/23/2021	39,000	< 0.025 U	390
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44i-121421	12/14/2021	51,000	< 0.025	130
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44i-031522	03/15/2022	23,000 J-	< 0.060 U	270
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44i-060622	06/06/2022	47,000	< 0.30 U	66
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44i-110722	11/07/2022	75,000	< 0.060 U	< 2.0 U
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44i-030623	03/06/2023	15,000	< 0.060 U	< 2.0 UJ
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44i-061323	06/13/2023	20,000	< 0.060	< 2.0
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44i-082223	08/22/2023	370,000	< 0.060 U	< 10 U
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44i-121023	12/10/2023	1,900	< 0.060 U	< 4.0 U
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44i-022524	02/25/2024	93,000	< 0.060 U	< 10 U
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44i-061124	06/11/2024	320,000	< 0.060 U	< 10 U
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44i-091024	09/10/2024	220,000	< 0.060 U	< 4.5 U
Intermediate	PA-44i	GCC6 & Proximal Wells	PA-44i-121124	12/11/2024	55,000	< 0.060 U	< 9.1 U
Deep	MWA-11i(d)	Well Distal from BW and GCC	MWA-11i(d)-110519	11/05/2019	1,640,000	< 0.44 U	< 48 U
Deep	MWA-11i(d)	Well Distal from BW and GCC	MWA-11i(d)-022620	02/26/2020	1,480,000	2.4	< 0.95 U
Deep	MWA-11i(d)	Well Distal from BW and GCC	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 GCC	MWA-11i(d)-082720	08/27/2020	1,500,000	0.071 j	< 0.95 U
Deep	MWA-11i(d)	Well Distal from BW and GCC	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 GCC	MWA-11i(d)-040221	04/02/2021	180,000	0.039 J	< 20 U
Deep	MWA-11i(d)	Well Distal from BW and GCC	MWA-11i(d)-092421	09/24/2021	1,700,000	0.047 j	< 10 U
Deep	MWA-11i(d)	Well Distal from BW and GCC	MWA-11i(d)-121621	12/16/2021	1,500,000	< 0.025	< 20

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Aquifer	Well ID	Cluster	Sample ID	Date	Chloride	Chlorobenzene	Perchlorate
					ug/L	ug/L	ug/L
Deep	MWA-11i(d)	Vell Distal from BW and GCC	MWA-11i(d)-031722	03/17/2022	2,200,000	0.060 j	< 20 U
Deep	MWA-11i(d)	Vell Distal from BW and GCC	MWA-11i(d)-060922	06/09/2022	2,000,000	< 0.70 U	< 20 U
Deep	MWA-11i(d)	Vell Distal from BW and GCC	MWA-11i(d)-111022	11/10/2022	1,600,000	1.1	< 40 U
Deep	MWA-11i(d)	Vell Distal from BW and GCC	MWA-11i(d)-030923	03/09/2023	1,200,000	< 0.060 U	< 20 UJ
Deep	MWA-11i(d)	Vell Distal from BW and GCC	MWA-11i(d)-061623	06/16/2023	450,000	7.0	< 10
Deep	MWA-11i(d)	Vell Distal from BW and GCC	MWA-11i(d)-082323	08/23/2023	830,000	< 0.060 U	< 10 U
Deep	MWA-11i(d)	Vell Distal from BW and GCC	MWA-11i(d)-121323	12/13/2023	780,000	< 0.060 U	< 10 U
Deep	MWA-11i(d)	Vell Distal from BW and GCC	MWA-11i(d)-022824	02/28/2024	6,300,000	0.061 j	< 10 U
Deep	MWA-11i(d)	Vell Distal from BW and GCC	MWA-11i(d)-061324	06/13/2024	650,000	< 0.060 U	< 10 U
Deep	MWA-11i(d)	Vell Distal from BW and GCC	MWA-11i(d)-091124	09/11/2024	530,000	< 0.060 U	< 0.91 U
Deep	MWA-11i(d)	Vell Distal from BW and GCC	MWA-11i(d)-121224	12/12/2024	570,000	< 0.060 U	< 0.91 U
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31i(d)-102419	10/24/2019	25,900,000	0.57 j	100,000
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31i(d)-021320	02/13/2020	27,700,000	0.58 j	91,000
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31i(d)-052020	05/20/2020	27,000,000	< 0.44 U	100,000
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31i(d)-081920	08/19/2020	23,000,000	0.52 j	89,000
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31i(d)-103020	10/30/2020	30,000,000	< 0.44 U	91,000
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31i(d)-032421	03/24/2021	27,000,000	< 0.44 U	91,000
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31i(d)-092321	09/23/2021	29,000,000	< 0.44 U	91,000
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31i(d)-121521	12/15/2021	18,000,000	< 0.44	99,000
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31i(d)-031622	03/16/2022	20,000,000	< 0.44 U	97,000
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31i(d)-060722	06/07/2022	28,000,000	0.32 j	100,000
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31i(d)-111022	11/10/2022	19,000,000	0.55 J	97,000
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31i(d)-030923	03/09/2023	25,000,000	0.58 j	97,000 J-
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31i(d)-061523	06/15/2023	16,000,000	< 1.0 U	86,000
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31i(d)-082323	08/23/2023	27,000,000	< 0.44 U	98,000
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31i(d)-121123	12/11/2023	14,000,000	< 0.44 U	28,000
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31i(d)-022824	02/28/2024	26,000,000	< 0.44 U	100,000
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31i(d)-061224	06/12/2024	21,000,000	< 4.4 U	100,000
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31i(d)-091024	09/10/2024	16,000,000	< 0.44 U	87,000
Deep	MWA-31i(d)	GCC5 & Proximal Wells	MWA-31i(d)-121224	12/12/2024	13,000,000	< 0.44 U	74,000
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56d-102419	10/24/2019	20,100,000	< 0.44 U	3,300
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56d-021420	02/14/2020	22,300,000	< 2.0 U	3,500
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56d-052120	05/21/2020	21,000,000	< 0.44 U	5,700
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56d-082020	08/20/2020	24,000,000	< 0.44 U	6,400
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56d-102920	10/29/2020	22,000,000	< 0.44 U	7,100
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56d-032521	03/25/2021	26,000,000	< 4.4 U	6,500
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56d-092421	09/24/2021	21,000,000	< 0.44 U	8,100
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56d-121621	12/16/2021	18,000,000	< 0.44	8,400
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56d-031722	03/17/2022	19,000,000	< 0.44 U	9,200
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56d-060822	06/08/2022	18,000,000	< 0.30 U	11,000
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56d-110922	11/09/2022	15,000,000	< 0.44 U	12,000
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56d-030923	03/09/2023	16,000,000	< 0.44 U	15,000 J-
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56d-061523	06/15/2023	15,000,000	< 4.4	13,000
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56d-082323	08/23/2023	14,000,000	< 4.4 U	14,000
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56d-121223	12/12/2023	14,000,000	< 4.4 U	14,000
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56d-022824	02/28/2024	14,000,000	< 4.4 U	16,000
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56d-061224	06/12/2024	13,000,000	< 4.4 U	15,000
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56d-091124	09/11/2024	10,000,000	< 4.4 U	14,000 J
Deep	MWA-56d	GCC4 & Proximal Wells	MWA-56d-121224	12/12/2024	12,000,000	< 4.4 U	13,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58d-102519	10/25/2019	18,900,000	< 0.44 U	61,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58d-021320	02/13/2020	21,100,000	< 0.44 U	49,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58d-052120	05/21/2020	19,000,000	< 0.44 U	46,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58d-082020	08/20/2020	20,000,000	< 0.44 U	45,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58d-102920	10/29/2020	20,000,000	< 0.44 U	44,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58d-032621	03/26/2021	29,000,000 J-	< 0.44 U	43,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58d-092421	09/24/2021	23,000,000	< 0.44 U	43,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58d-121621	12/16/2021	23,000,000	< 4.4	38,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58d-031722	03/17/2022	26,000,000	< 4.4 U	44,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58d-060822	06/08/2022	23,000,000	< 0.30 U	47,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58d-110922	11/09/2022	19,000,000	< 0.44 UJ	49,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58d-030923	03/09/2023	22,000,000	< 2.2 U	49,000 J-
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58d-061523	06/15/2023	19,000,000	< 2.2	50,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58d-082323	08/23/2023	20,000,000	< 2.2 U	50,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58d-121223	12/12/2023	19,000,000	< 2.2 U	50,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58d-022824	02/28/2024	19,000,000	< 4.4 U	50,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58d-061224	06/12/2024	19,000,000	< 4.4 U	47,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58d-091124	09/11/2024	17,000,000	< 4.4 U	54,000
Deep	MWA-58d	GCC4 & Proximal Wells	MWA-58d-121224	12/12/2024	17,000,000	< 4.4 U	51,000
Deep	PA-18d	GCC1 & Proximal Wells	PA-18d-032921	03/29/2021	110,000	81	< 20 U
Deep	PA-18d	GCC1 & Proximal Wells	PA-18d-030923	03/09/2023	50,000	< 0.44 U	< 20 UJ
Deep	PA-18d	GCC1 & Proximal Wells	PA-18d-061623	06/16/2023	27,000 J-	< 0.44	< 40
Deep	PA-18d	GCC1 & Proximal Wells	PA-18d-082123	08/21/2023	80,000	< 0.44 U	< 10 U
Deep	PA-18d	GCC1 & Proximal Wells	PA-18d-121223	12/12/2023	54,000	< 0.44 U	< 10 U

Appendix D
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Aquifer	Well ID	Cluster	Sample ID	Date	Chloride	Chlorobenzene	Perchlorate
					ug/L	ug/L	ug/L
Deep	PA-18d	GCC1 & Proximal Wells	PA-18d-022724	02/27/2024	98,000	< 0.44 U	< 20 U
Deep	PA-18d	GCC1 & Proximal Wells	PA-18d-061224	06/12/2024	85,000	< 0.44 U	< 10 U
Deep	PA-18d	GCC1 & Proximal Wells	PA-18d-090924	09/09/2024	67,000	< 0.44 U	< 9.1 U
Deep	PA-18d	GCC1 & Proximal Wells	PA-18d-121024	12/10/2024	65,000	< 0.44 U	< 91 U
Deep	PA-19d	GCC2	Pa-19d-110619	11/06/2019	94,000	9,300 J-	< 48 U
Deep	PA-19d	GCC2	Pa-19d-022620	02/26/2020	111,000	8,300	< 48 U
Deep	PA-19d	GCC2	PA-19d-052920	05/29/2020	140,000	8,200	< 48 U
Deep	PA-19d	GCC2	PA-19d-082620	08/26/2020	160,000	5,200	< 95 U
Deep	PA-19d	GCC2	PA-19d-110520	11/05/2020	180,000	3,800	< 48 U
Deep	PA-19d	GCC2	PA-19d-040521	04/05/2021	340,000	7,100	< 20 U
Deep	PA-19d	GCC2	PA-19d-092321	09/23/2021	320,000 J	< 0.44 R	< 20 U
Deep	PA-19d	GCC2	PA-19d-121621	12/16/2021	330,000	2,700 J	< 200
Deep	PA-19d	GCC2	PA-19d-031722	03/17/2022	340,000	2,600	< 20 U
Deep	PA-19d	GCC2	PA-19d-060922	06/09/2022	360,000	3,200	< 20 U
Deep	PA-19d	GCC2	PA-19d-111022	11/10/2022	280,000	2,500	< 20 U
Deep	PA-19d	GCC2	PA-19d-030923	03/09/2023	350,000	12,000 J	< 10 UJ
Deep	PA-19d	GCC2	PA-19d-061623	06/16/2023	320,000	9,000	< 40
Deep	PA-19d	GCC2	PA-19d-082423	08/24/2023	320,000	6,600	< 20 U
Deep	PA-19d	GCC2	PA-19d-121323	12/13/2023	340,000	7,600	< 10 U
Deep	PA-19d	GCC2	PA-19d-022824	02/28/2024	330,000	5,700	< 10 U
Deep	PA-19d	GCC2	PA-19d-061324	06/13/2024	290,000	12,000	< 20 U
Deep	PA-19d	GCC2	PA-19d-091124	09/11/2024	270,000	6,300	< 4.5 U
Deep	PA-19d	GCC2	PA-19d-121224	12/12/2024	300,000	11,000	100
Deep	PA-20d	GCC3	PA-20d-110719	11/07/2019	570,000	41	56 J+
Deep	PA-20d	GCC3	Pa-20d-022420	02/24/2020	789,000	39	58
Deep	PA-20d	GCC3	PA-20d-052120	05/21/2020	840,000	40	46
Deep	PA-20d	GCC3	PA-20d-082520	08/25/2020	800,000 J+	31	58
Deep	PA-20d	GCC3	PA-20d-110320	11/03/2020	840,000	37 J	61
Deep	PA-20d	GCC3	PA-20d-032521	03/25/2021	1,100,000	23	76
Deep	PA-20d	GCC3	PA-20d-092221	09/22/2021	1,100,000	24	99
Deep	PA-20d	GCC3	PA-20d-121521	12/15/2021	1,000,000	23	< 100
Deep	PA-20d	GCC3	PA-20d-031722	03/17/2022	1,200,000	12	140
Deep	PA-20d	GCC3	PA-20d-060922	06/09/2022	1,100,000	18	< 20 U
Deep	PA-20d	GCC3	PA-20d-111022	11/10/2022	1,000,000	9.3	< 20 U
Deep	PA-20d	GCC3	PA-20d-030923	03/09/2023	1,100,000	13	< 10 UJ
Deep	PA-20d	GCC3	PA-20d-061523	06/15/2023	880,000	14	< 20
Deep	PA-20d	GCC3	PA-20d-082323	08/23/2023	840,000	20	< 10 U
Deep	PA-20d	GCC3	PA-20d-121223	12/12/2023	810,000	18	< 10 U
Deep	PA-20d	GCC3	PA-20d-022824	02/28/2024	820,000	14	< 10 U
Deep	PA-20d	GCC3	PA-20d-061324	06/13/2024	680,000	4.5	< 10 U
Deep	PA-20d	GCC3	PA-20d-091124	09/11/2024	620,000	2.7	74
Deep	PA-20d	GCC3	PA-20d-121224	12/12/2024	580,000	1.7	48
Deep	PA-21d	GCC3	Pa-21d-110719	11/07/2019	347,000	27,000	2,400
Deep	PA-21d	GCC3	Pa-21d-022620	02/26/2020	463,000	38,000	1,300
Deep	PA-21d	GCC3	PA-21d-052120	05/21/2020	420,000	49,000 J	1,200
Deep	PA-21d	GCC3	PA-21d-082520	08/25/2020	360,000	36,000	1,300
Deep	PA-21d	GCC3	PA-21d-110420	11/04/2020	370,000	40,000 J+	1,300
Deep	PA-21d	GCC3	PA-21d-040121	04/01/2021	430,000	47,000	< 20 U
Deep	PA-21d	GCC3	PA-21d-092421	09/24/2021	350,000	39,000 J	1,800
Deep	PA-21d	GCC3	PA-21d-121521	12/15/2021	320,000	49,000 J	1,200
Deep	PA-21d	GCC3	PA-21d-031722	03/17/2022	360,000	16,000	1,100
Deep	PA-21d	GCC3	PA-21d-060922	06/09/2022	360,000	27,000	< 20 U
Deep	PA-21d	GCC3	PA-21d-111022	11/10/2022	290,000	15,000	< 100 U
Deep	PA-21d	GCC3	PA-21d-030923	03/09/2023	340,000	30,000 J	110 J-
Deep	PA-21d	GCC3	PA-21d-061623	06/16/2023	330,000	23,000	< 100
Deep	PA-21d	GCC3	PA-21d-082323	08/23/2023	330,000	26,000	< 100 U
Deep	PA-21d	GCC3	PA-21d-121223	12/12/2023	340,000	11,000	< 10 U
Deep	PA-21d	GCC3	PA-21d-022824	02/28/2024	300,000	27,000	< 10 U
Deep	PA-21d	GCC3	PA-21d-061324	06/13/2024	300,000	41,000	< 10 U
Deep	PA-22d	GCC4 & Proximal Wells	PA-22d-102419	10/24/2019	10,200,000	< 0.44 U	54,000
Deep	PA-22d	GCC4 & Proximal Wells	Pa-22d-022120	02/21/2020	9,190,000	< 0.44 U	38,000
Deep	PA-22d	GCC4 & Proximal Wells	PA-22d-052020	05/20/2020	9,800,000	< 0.44 U	40,000
Deep	PA-22d	GCC4 & Proximal Wells	PA-22d-082120	08/21/2020	9,200,000 J+	< 0.44 U	38,000
Deep	PA-22d	GCC4 & Proximal Wells	PA-22d-110320	11/03/2020	9,100,000	< 0.44 U	37,000
Deep	PA-22d	GCC4 & Proximal Wells	PA-22d-032421	03/24/2021	8,200,000	< 0.44 U	33,000
Deep	PA-22d	GCC4 & Proximal Wells	PA-22d-092221	09/22/2021	7,400,000	< 0.44 U	26,000
Deep	PA-22d	GCC4 & Proximal Wells	PA-22d-121521	12/15/2021	7,100,000	< 0.44	24,000
Deep	PA-22d	GCC4 & Proximal Wells	PA-22d-031622	03/16/2022	8,000,000	< 0.44 U	23,000
Deep	PA-22d	GCC4 & Proximal Wells	PA-22d-060822	06/08/2022	7,300,000	< 0.30 U	22,000
Deep	PA-22d	GCC4 & Proximal Wells	PA-22d-110922	11/09/2022	6,000,000	< 0.44 U	17,000
Deep	PA-22d	GCC4 & Proximal Wells	PA-22d-030823	03/08/2023	6,000,000	< 0.44 U	17,000 J-
Deep	PA-22d	GCC4 & Proximal Wells	PA-22d-061523	06/15/2023	5,600,000	< 0.44	15,000
Deep	PA-22d	GCC4 & Proximal Wells	PA-22d-082323	08/23/2023	4,800,000	< 0.44 U	13,000

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Aquifer	Well ID	Cluster	Sample ID	Date	Chloride	Chlorobenzene	Perchlorate
					ug/L	ug/L	ug/L
Deep	PA-22d	GCC4 & Proximal Wells	PA-22d-121223	12/12/2023	5,300,000	< 0.44 U	13,000
Deep	PA-22d	GCC4 & Proximal Wells	PA-22d-022724	02/27/2024	5,300,000	< 0.44 U	14,000
Deep	PA-22d	GCC4 & Proximal Wells	PA-22d-061224	06/12/2024	5,100,000	< 0.44 U	14,000
Deep	PA-22d	GCC4 & Proximal Wells	PA-22d-091124	09/11/2024	4,300,000	< 0.44 U	15,000
Deep	PA-22d	GCC4 & Proximal Wells	PA-22d-121224	12/12/2024	5,000,000	< 0.44 U	14,000
Deep	PA-23d	GCC5 & Proximal Wells	PA-23d-110519	11/05/2019	12,500	2.8	< 0.95 U
Deep	PA-23d	GCC5 & Proximal Wells	Pa-23d-021920	02/19/2020	5,690,000	< 0.44 U	< 0.95 U
Deep	PA-23d	GCC5 & Proximal Wells	PA-23d-052020	05/20/2020	12,000,000	1.3 j	< 4.8 U
Deep	PA-23d	GCC5 & Proximal Wells	PA-23d-082020	08/20/2020	22,000,000	< 0.44 U	< 4.8 U
Deep	PA-23d	GCC5 & Proximal Wells	PA-23d-102920	10/29/2020	27,000,000	< 0.44 U	< 0.95 U
Deep	PA-23d	GCC5 & Proximal Wells	PA-23d-032521	03/25/2021	16,000,000	< 0.44 U	< 1,000 U
Deep	PA-23d	GCC5 & Proximal Wells	PA-23d-092321	09/23/2021	17,000,000	< 0.44 U	< 100 U
Deep	PA-23d	GCC5 & Proximal Wells	PA-23d-121421	12/14/2021	5,700,000	< 0.44	< 50
Deep	PA-23d	GCC5 & Proximal Wells	PA-23d-031622	03/16/2022	89,000	< 0.44 U	< 2.0 U
Deep	PA-23d	GCC5 & Proximal Wells	PA-23d-060722	06/07/2022	9,700,000	< 0.30 U	< 100 U
Deep	PA-23d	GCC5 & Proximal Wells	PA-23d-111022	11/10/2022	6,900,000	< 0.44 U	< 200 U
Deep	PA-23d	GCC5 & Proximal Wells	PA-23d-030823	03/08/2023	17,000,000	< 0.44 U	< 200 UJ
Deep	PA-23d	GCC5 & Proximal Wells	PA-23d-061523	06/15/2023	25,000,000	< 0.44	< 400
Deep	PA-23d	GCC5 & Proximal Wells	PA-23d-082223	08/22/2023	29,000,000	< 0.44 U	< 400 U
Deep	PA-23d	GCC5 & Proximal Wells	PA-23d-121123	12/11/2023	30,000,000	< 0.44 U	< 300 U
Deep	PA-23d	GCC5 & Proximal Wells	PA-23d-022724	02/27/2024	9,700,000	< 0.44 U	< 100 U
Deep	PA-23d	GCC5 & Proximal Wells	PA-23d-061124	06/11/2024	31,000,000	< 0.44 U	< 400 U
Deep	PA-23d	GCC5 & Proximal Wells	PA-23d-091024	09/10/2024	33,000,000	< 0.44 U	< 18 U
Deep	PA-23d	GCC5 & Proximal Wells	PA-23d-121124	12/11/2024	31,000,000	< 0.44 U	< 0.91 U
Deep	PA-24d	GCC5 & Proximal Wells	PA-24d-110619	11/06/2019	42,300,000	< 0.44 U	< 48 U
Deep	PA-24d	GCC5 & Proximal Wells	Pa-24d-022020	02/20/2020	41,500,000	< 0.44 U	< 48 U
Deep	PA-24d	GCC5 & Proximal Wells	PA-24d-051920	05/19/2020	46,000,000	< 0.44 U	< 48 U
Deep	PA-24d	GCC5 & Proximal Wells	PA-24d-082020	08/20/2020	43,000,000	< 0.44 U	< 19 U
Deep	PA-24d	GCC5 & Proximal Wells	PA-24d-102920	10/29/2020	44,000,000	< 0.44 U	< 4.8 U
Deep	PA-24d	GCC5 & Proximal Wells	PA-24d-031821	03/18/2021	44,000,000	< 0.44 U	< 200 U
Deep	PA-24d	GCC5 & Proximal Wells	PA-24d-092221	09/22/2021	38,000,000	< 0.44 U	< 100 U
Deep	PA-24d	GCC5 & Proximal Wells	PA-24d-121521	12/15/2021	35,000,000	< 0.44	< 200
Deep	PA-24d	GCC5 & Proximal Wells	PA-24d-031622	03/16/2022	38,000,000	< 0.44 U	< 200 U
Deep	PA-24d	GCC5 & Proximal Wells	PA-24d-060722	06/07/2022	35,000,000	< 0.30 U	< 400 U
Deep	PA-24d	GCC5 & Proximal Wells	PA-24d-111022	11/10/2022	32,000,000	< 0.44 U	< 200 U
Deep	PA-24d	GCC5 & Proximal Wells	PA-24d-030823	03/08/2023	33,000,000	< 0.44 U	< 400 UJ
Deep	PA-24d	GCC5 & Proximal Wells	PA-24d-061523	06/15/2023	33,000,000	< 0.44	< 400
Deep	PA-24d	GCC5 & Proximal Wells	PA-24d-082223	08/22/2023	31,000,000	< 0.44 U	< 400 U
Deep	PA-24d	GCC5 & Proximal Wells	PA-24d-121123	12/11/2023	31,000,000	< 0.44 U	< 200 U
Deep	PA-24d	GCC5 & Proximal Wells	PA-24d-022724	02/27/2024	30,000,000	< 0.44 U	< 400 U
Deep	PA-24d	GCC5 & Proximal Wells	PA-24d-061224	06/12/2024	30,000,000	< 0.44 U	< 400 U
Deep	PA-24d	GCC5 & Proximal Wells	PA-24d-091024	09/10/2024	30,000,000	< 0.44 U	< 18 U
Deep	PA-24d	GCC5 & Proximal Wells	PA-24d-121124	12/11/2024	30,000,000	< 0.44 U	< 0.91 U
Deep	PA-25d	GCC6 & Proximal Wells	PA-25d-110519	11/05/2019	1,100	< 0.44 U	< 0.95 U
Deep	PA-25d	GCC6 & Proximal Wells	Pa-25d-021820	02/18/2020	22,100	< 0.025 U	< 0.95 U
Deep	PA-25d	GCC6 & Proximal Wells	Pa-25d-051820	05/18/2020	23,000	< 0.025 U	< 0.95 U
Deep	PA-25d	GCC6 & Proximal Wells	PA-25d-081820	08/18/2020	24,000	< 0.025 U	< 9.5 U
Deep	PA-25d	GCC6 & Proximal Wells	PA-25d-102720	10/27/2020	20,000	< 0.20 U	< 0.95 U
Deep	PA-25d	GCC6 & Proximal Wells	PA-25d-031821	03/18/2021	20,000	< 0.025 U	< 2.0 U
Deep	PA-25d	GCC6 & Proximal Wells	PA-25d-092121	09/22/2021	24,000	< 0.025 U	< 2.0 U
Deep	PA-25d	GCC6 & Proximal Wells	PA-25d-121421	12/14/2021	23,000	< 0.025	< 2.0
Deep	PA-25d	GCC6 & Proximal Wells	PA-25d-031422	03/14/2022	18,000 J-	< 0.060 U	< 2.0 U
Deep	PA-25d	GCC6 & Proximal Wells	PA-25d-060722	06/07/2022	23,000	< 0.060 U	< 2.0 U
Deep	PA-25d	GCC6 & Proximal Wells	PA-25d-110722	11/07/2022	34,000	< 0.060 U	< 2.0 U
Deep	PA-25d	GCC6 & Proximal Wells	PA-25d-030823	03/08/2023	11,000 J+	< 0.060 U	< 2.0 UJ
Deep	PA-25d	GCC6 & Proximal Wells	PA-25d-061323	06/13/2023	10,000	< 0.060	< 2.0
Deep	PA-25d	GCC6 & Proximal Wells	PA-25d-082223	08/22/2023	24,000	< 0.060 U	< 2.0 U
Deep	PA-25d	GCC6 & Proximal Wells	PA-25d-121123	12/11/2023	12,000	< 0.060 U	< 2.0 U
Deep	PA-25d	GCC6 & Proximal Wells	PA-25d-022724	02/27/2024	13,000	< 0.060 U	< 2.0 U
Deep	PA-25d	GCC6 & Proximal Wells	PA-25d-061124	06/11/2024	30,000	< 0.060 U	< 2.0 U
Deep	PA-25d	GCC6 & Proximal Wells	PA-25d-090924	09/09/2024	21,000	< 0.060 U	< 0.91 U
Deep	PA-25d	GCC6 & Proximal Wells	PA-25d-121024	12/10/2024	30,000 J+	< 0.060 U	< 0.91 U
Deep	PA-26d	GCC6 & Proximal Wells	PA-26d-110419	11/04/2019	7,400	< 0.44 U	< 0.95 U
Deep	PA-26d	GCC6 & Proximal Wells	Pa-26d-021320	02/13/2020	46,000	0.71	< 0.95 U
Deep	PA-26d	GCC6 & Proximal Wells	PA-26d-051820	05/18/2020	48,000	< 0.025 U	< 0.95 U
Deep	PA-26d	GCC6 & Proximal Wells	PA-26d-081920	08/19/2020	48,000	< 0.025 U	< 9.5 U
Deep	PA-26d	GCC6 & Proximal Wells	PA-26d-102820	10/28/2020	52,000	< 0.025 U	1.1 j
Deep	PA-26d	GCC6 & Proximal Wells	PA-26d-031621	03/16/2021	37,000	< 0.025 U	< 2.0 U
Deep	PA-26d	GCC6 & Proximal Wells	PA-26d-092321	09/23/2021	60,000	< 0.025 U	< 2.0 U
Deep	PA-26d	GCC6 & Proximal Wells	PA-26d-121321	12/13/2021	62,000	< 0.025	< 4.0
Deep	PA-26d	GCC6 & Proximal Wells	PA-26d-031522	03/15/2022	72,000 J-	< 0.060 U	< 2.0 U
Deep	PA-26d	GCC6 & Proximal Wells	PA-26d-060722	06/07/2022	63,000	< 0.060 U	< 2.0 U
Deep	PA-26d	GCC6 & Proximal Wells	PA-26d-110822	11/08/2022	6,500	< 0.060 U	< 2.0 U

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Aquifer	Well ID	Cluster	Sample ID	Date	Chloride	Chlorobenzene	Perchlorate
					ug/L	ug/L	ug/L
Deep	PA-26d	GCC6 & Proximal Wells	PA-26d-030823	03/08/2023	69,000	< 0.060 U	< 2.0 UJ
Deep	PA-26d	GCC6 & Proximal Wells	PA-26d-061423	06/14/2023	67,000 J	< 0.060	< 2.0
Deep	PA-26d	GCC6 & Proximal Wells	PA-26d-082223	08/22/2023	74,000	< 0.060 U	< 2.0 U
Deep	PA-26d	GCC6 & Proximal Wells	PA-26d-121123	12/11/2023	27,000	< 0.060 U	< 2.0 U
Deep	PA-26d	GCC6 & Proximal Wells	PA-26d-022624	02/26/2024	64,000	< 0.060 U	< 2.0 U
Deep	PA-26d	GCC6 & Proximal Wells	PA-26d-061024	06/10/2024	80,000	< 0.060 U	< 2.0 U
Deep	PA-26d	GCC6 & Proximal Wells	PA-26d-090924	09/09/2024	60,000	< 0.060 U	< 0.91 U
Deep	PA-26d	GCC6 & Proximal Wells	PA-26d-121024	12/10/2024	80,000	< 0.060 U	< 0.91 U
Deep	PA-27d	GCC1 & Proximal Wells	PA-27d-102519	10/25/2019	1,150,000	< 0.44 U	< 4.8 U
Deep	PA-27d	GCC1 & Proximal Wells	PA-27d-021420	02/14/2020	824,000	0.84 j	< 48 U
Deep	PA-27d	GCC1 & Proximal Wells	PA-27d-052120	05/21/2020	870,000	< 0.44 U	< 48 U
Deep	PA-27d	GCC1 & Proximal Wells	PA-27d-081820	08/18/2020	810,000 J+	0.52 j	< 95 U
Deep	PA-27d	GCC1 & Proximal Wells	PA-27d-110420	11/04/2020	1,100,000	3.5 J	< 19 U
Deep	PA-27d	GCC1 & Proximal Wells	PA-27d-032321	03/23/2021	710,000 J-	< 0.44 U	< 20 U
Deep	PA-27d	GCC1 & Proximal Wells	PA-27d-092221	09/22/2021	840,000	< 0.44 U	< 20 U
Deep	PA-27d	GCC1 & Proximal Wells	PA-27d-121321	12/13/2021	930,000	< 0.44	< 20
Deep	PA-27d	GCC1 & Proximal Wells	PA-27d-031622	03/16/2022	1,000,000	< 0.44 U	< 20 U
Deep	PA-27d	GCC1 & Proximal Wells	PA-27d-060822	06/08/2022	890,000	< 0.30 U	< 20 U
Deep	PA-27d	GCC1 & Proximal Wells	PA-27d-110822	11/08/2022	960,000	< 0.44 U	< 10 U
Deep	PA-27d	GCC1 & Proximal Wells	PA-27d-030823	03/08/2023	670,000	< 0.44 U	< 20 UJ
Deep	PA-27d	GCC1 & Proximal Wells	PA-27d-061423	06/14/2023	690,000	< 0.44	< 20
Deep	PA-27d	GCC1 & Proximal Wells	PA-27d-082223	08/22/2023	660,000	< 0.44 U	< 10 U
Deep	PA-27d	GCC1 & Proximal Wells	PA-27d-121223	12/12/2023	450,000	< 0.44 U	< 10 U
Deep	PA-27d	GCC1 & Proximal Wells	PA-27d-022724	02/27/2024	460,000	< 0.44 U	< 20 U
Deep	PA-27d	GCC1 & Proximal Wells	PA-27d-061224	06/12/2024	540,000	< 0.44 U	< 10 U
Deep	PA-27d	GCC1 & Proximal Wells	PA-27d-090924	09/09/2024	720,000	< 0.44 U	< 9.1 U
Deep	PA-27d	GCC1 & Proximal Wells	PA-27d-120924	12/09/2024	590,000	< 0.44 U	< 9.1 U
Deep	PA-30d	GCC2	PA-30d-103119	10/31/2019	170,000	4,900 J-	< 48 U
Deep	PA-30d	GCC2	PA-30d-022520	02/25/2020	207,000	5,700	< 190 U
Deep	PA-30d	GCC2	PA-30d-052120	05/21/2020	280,000	5,800	< 48 U
Deep	PA-30d	GCC2	PA-30d-082720	08/27/2020	320,000	5,800	< 95 U
Deep	PA-30d	GCC2	PA-30d-110520	11/05/2020	440,000	4,700	< 48 U
Deep	PA-30d	GCC2	PA-30d-040221	04/02/2021	56,000	4,600	< 100 U
Deep	PA-30d	GCC2	PA-30d-092421	09/24/2021	540,000	< 0.44 R	< 20 U
Deep	PA-30d	GCC2	PA-30d-121621	12/16/2021	490,000	3,500	< 200
Deep	PA-30d	GCC2	PA-30d-031722	03/17/2022	490,000	4,700	< 20 U
Deep	PA-30d	GCC2	PA-30d-060922	06/09/2022	460,000	6,600	< 20 U
Deep	PA-30d	GCC2	PA-30d-111022	11/10/2022	270,000	26,000	< 20 U
Deep	PA-30d	GCC2	PA-30d-030923	03/09/2023	300,000	24,000	< 20 UJ
Deep	PA-30d	GCC2	PA-30d-061623	06/16/2023	310,000	19,000	< 40
Deep	PA-30d	GCC2	PA-30d-082423	08/24/2023	320,000	20,000	< 20 U
Deep	PA-30d	GCC2	PA-30d-121323	12/13/2023	320,000	22,000	< 10 U
Deep	PA-30d	GCC2	PA-30d-022824	02/28/2024	370,000	18,000	< 20 U
Deep	PA-30d	GCC2	PA-30d-061424	06/14/2024	320,000	13,000	< 20 U
Deep	PA-30d	GCC2	PA-30d-091124	09/11/2024	270,000	8,200	< 18 U
Deep	PA-30d	GCC2	PA-30d-121224	12/12/2024	250,000	7,000	< 91 U

Notes:

Bolded values indicate concentrations above the Reportable Detection Limit.

< = Compound not detected. Reportable detection limit shown.

µg/L = micrograms per liter

Qualifiers:

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

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

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

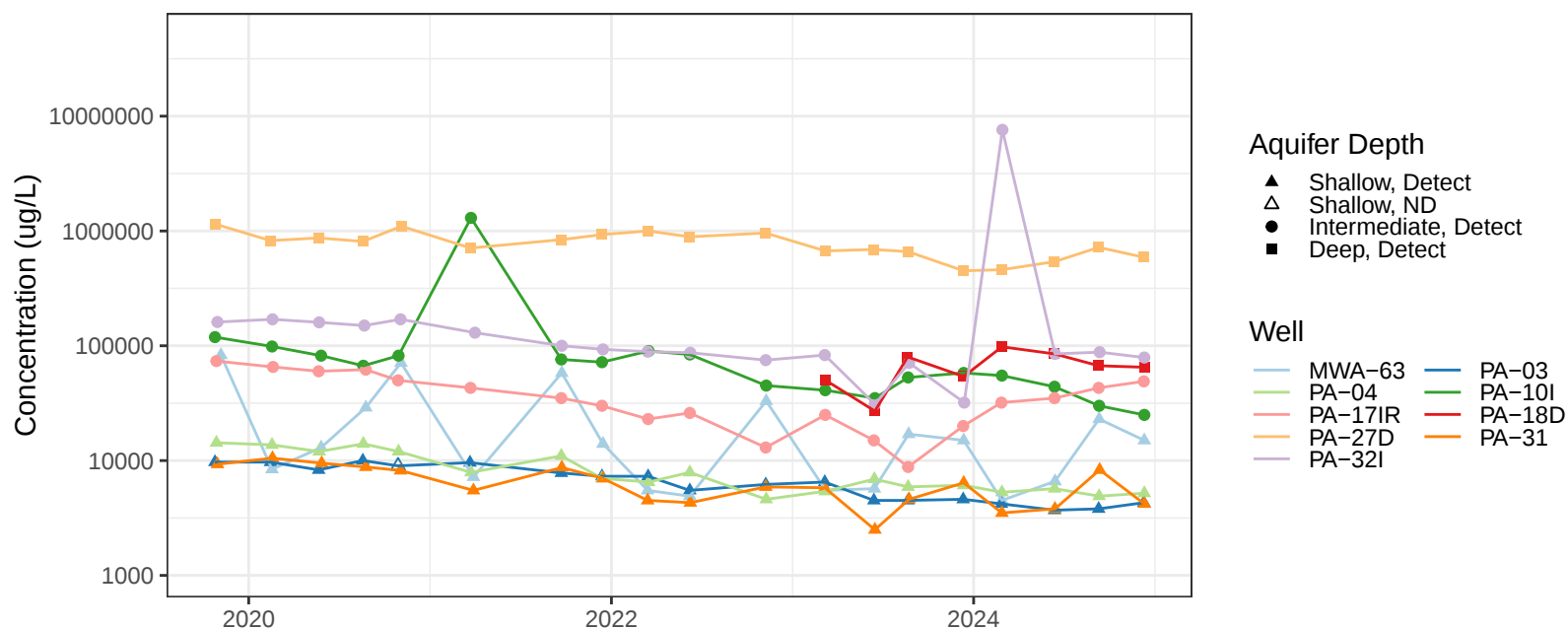
J- = The concentration of the sample is considered to be biased low, as the associated QC results are outside the lower control limits.

U = Compound not detected based on quality assurance review.

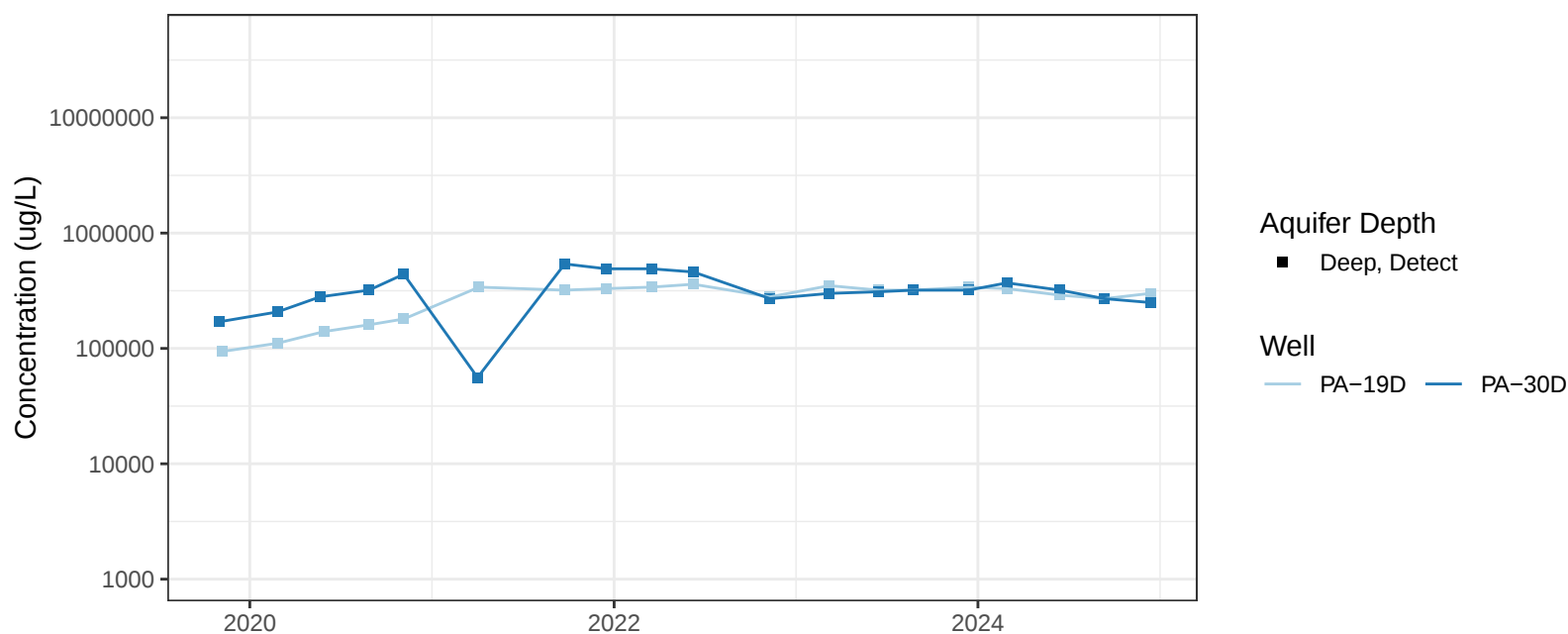
UJ = Analyte was analyzed for, but not detected. The detection limit is a quantitative estimate.

R = Rejected. Quality control indicates that the data are unusable (compound may or not be present).

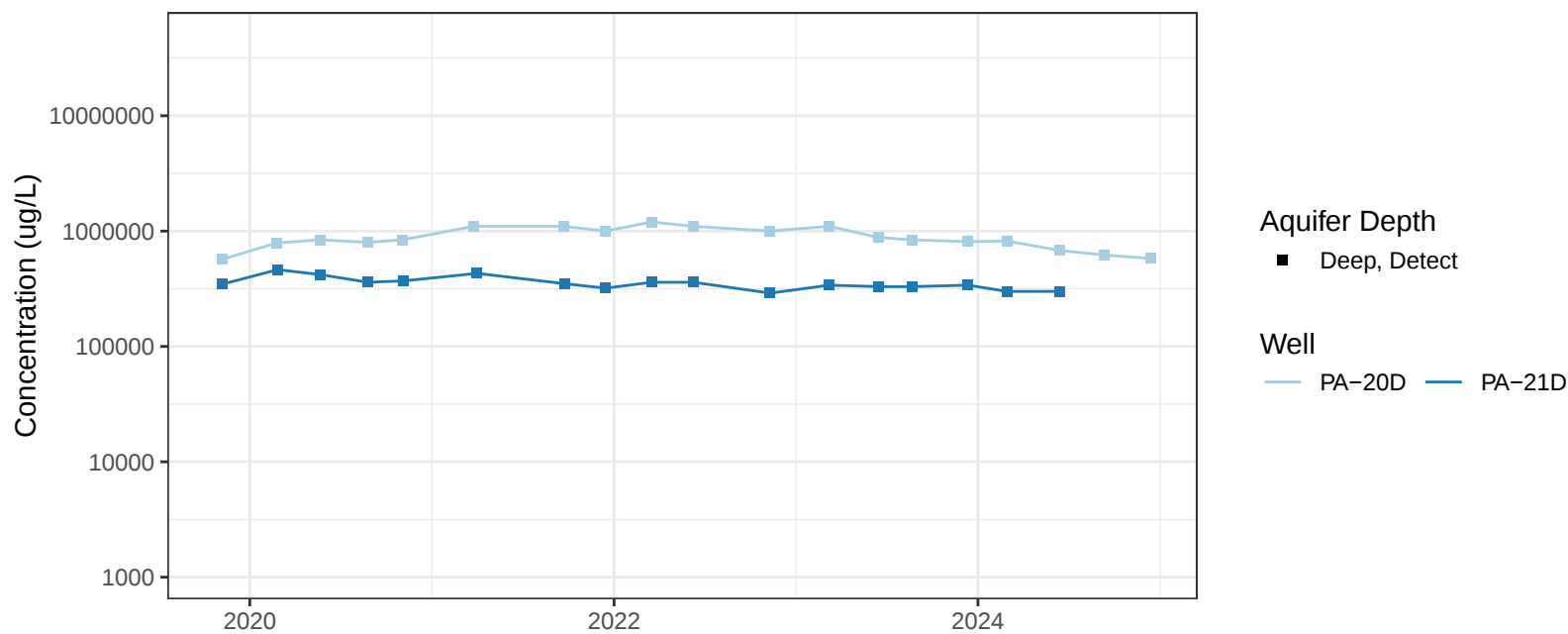
Chloride in GCC1 & Proximal Wells



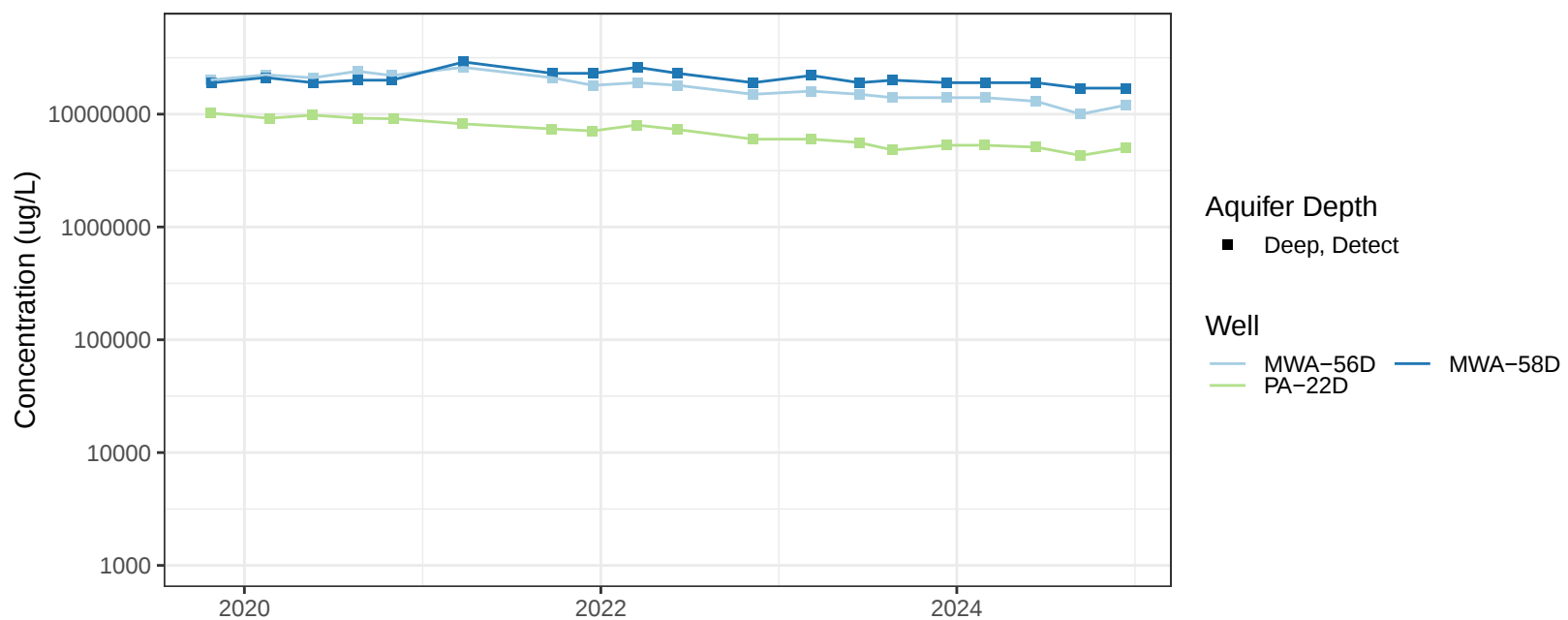
Chloride in GCC2



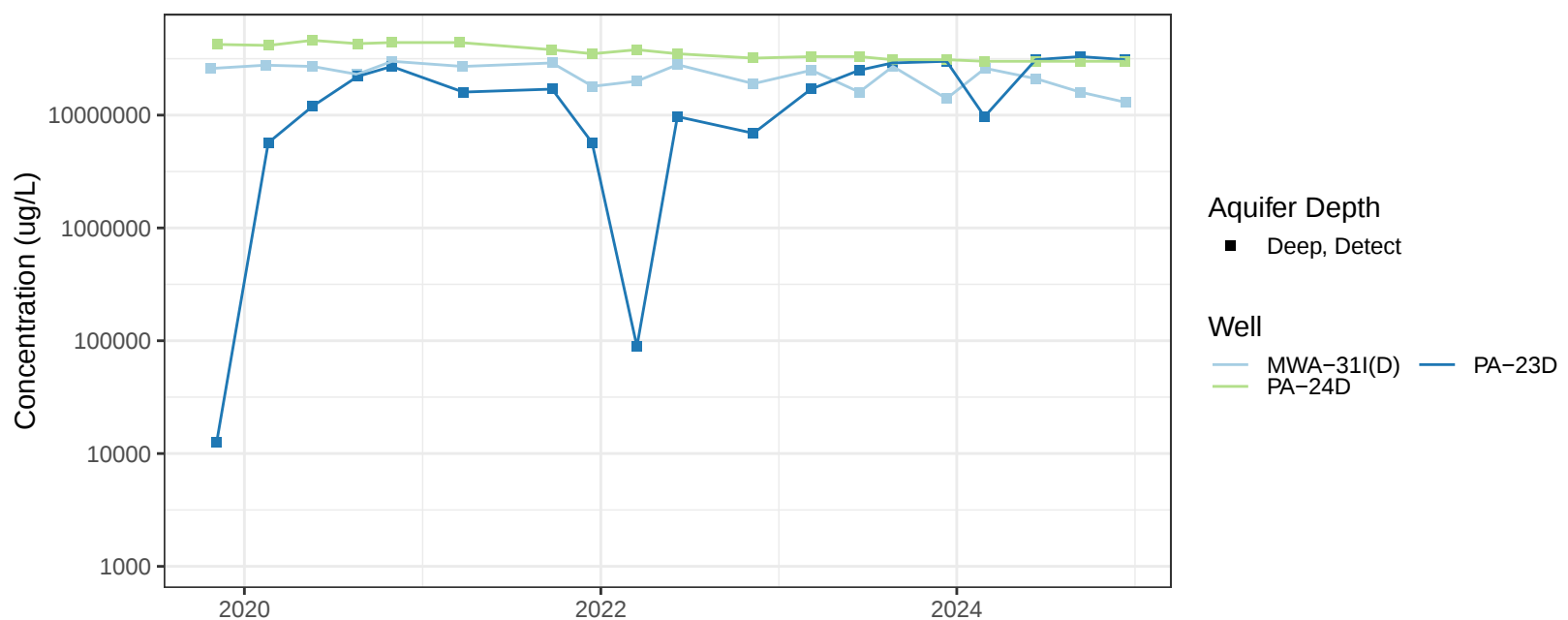
Chloride in GCC3



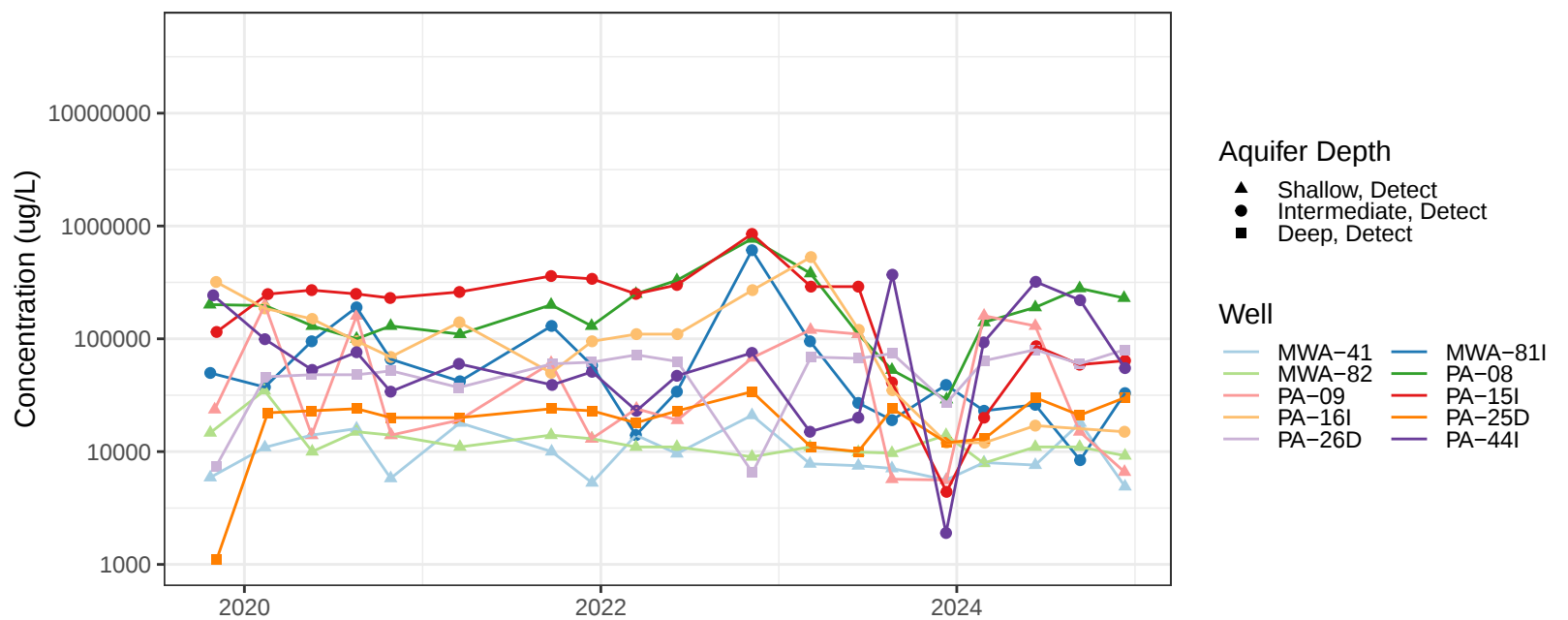
Chloride in GCC4 & Proximal Wells



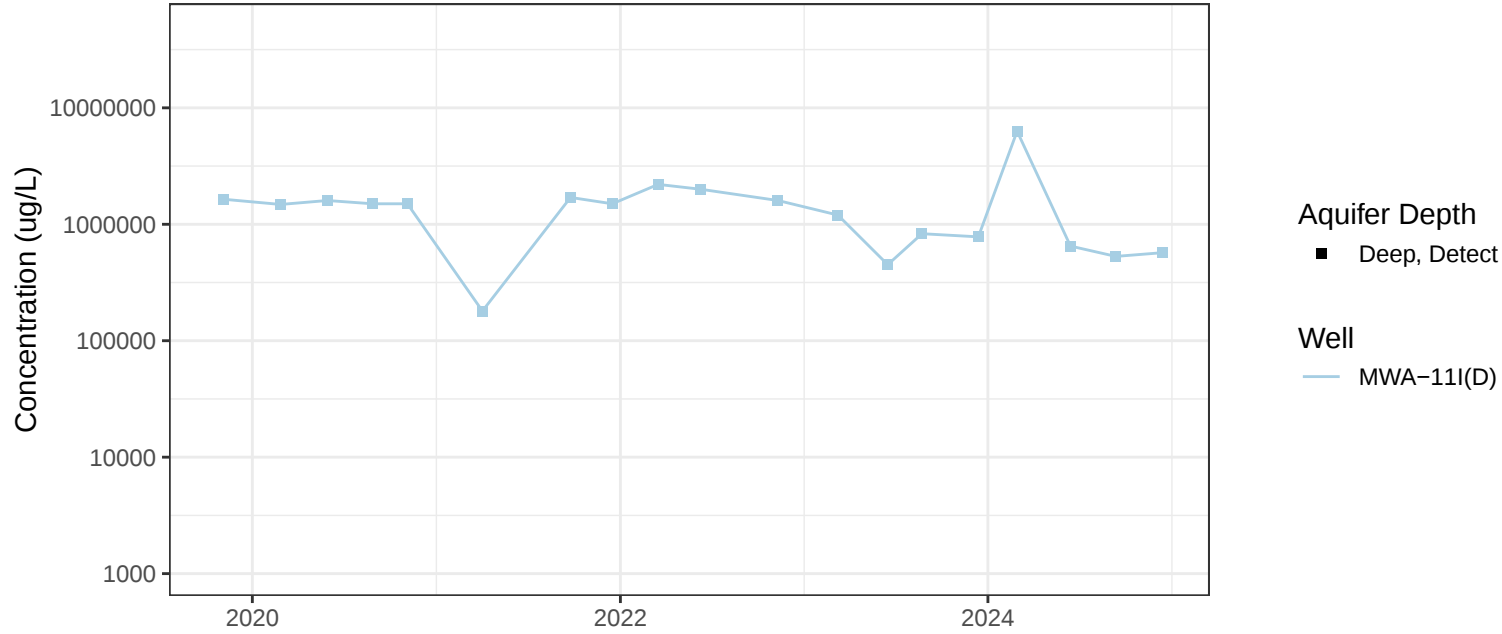
Chloride in GCC5 & Proximal Wells



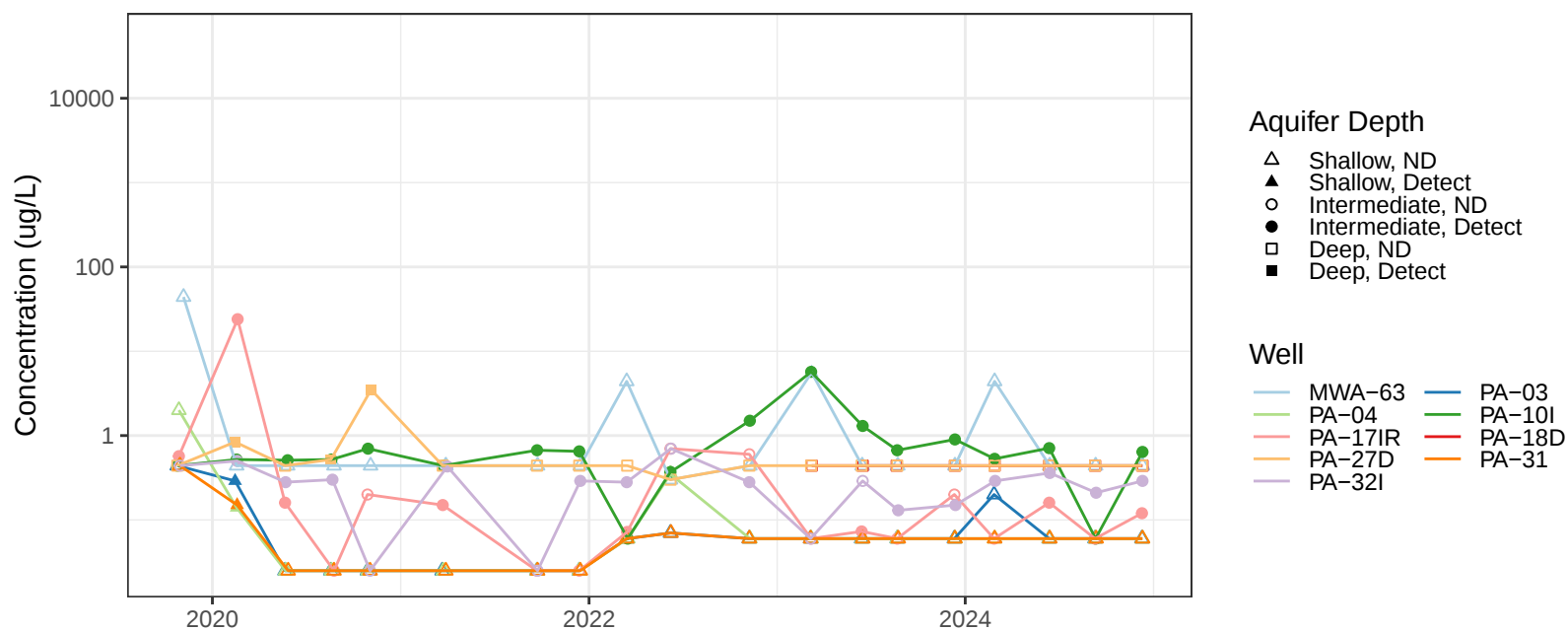
Chloride in GCC6 & Proximal Wells



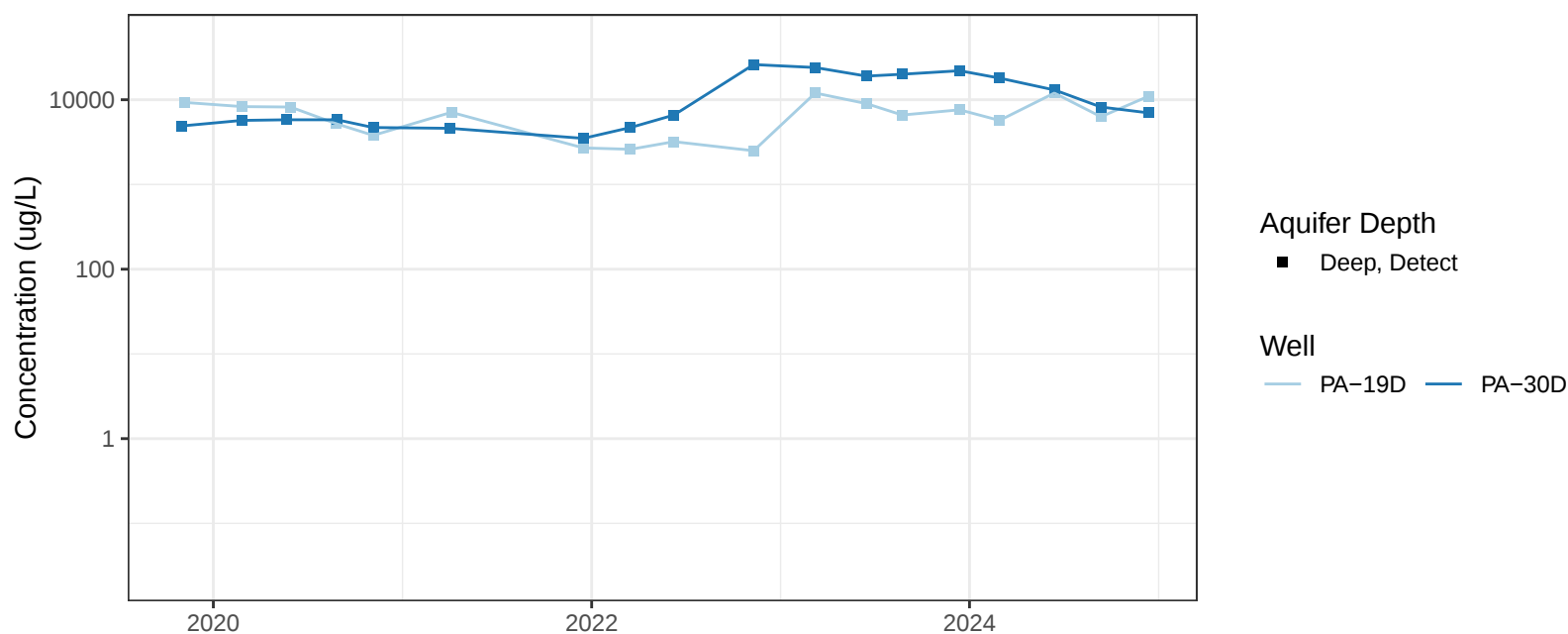
Chloride in Well Distal from BW and GCCs



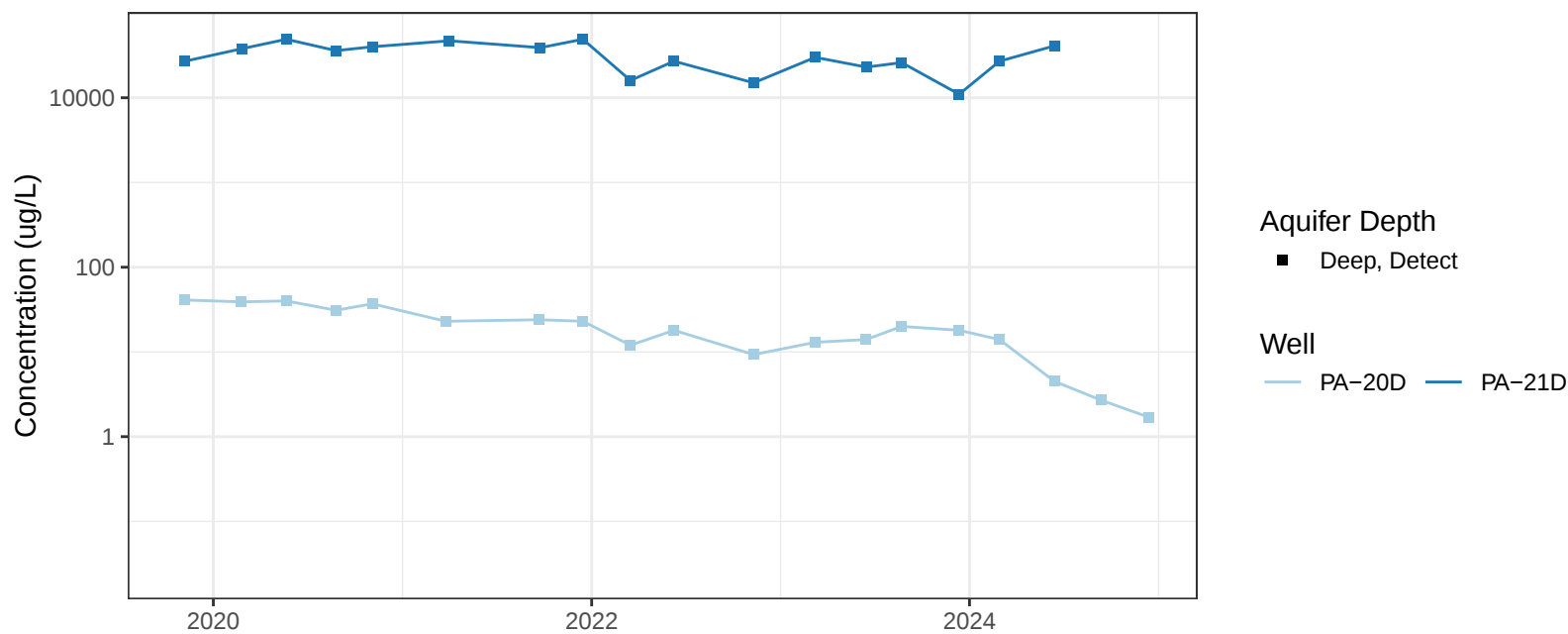
Chlorobenzene in GCC1 & Proximal Wells



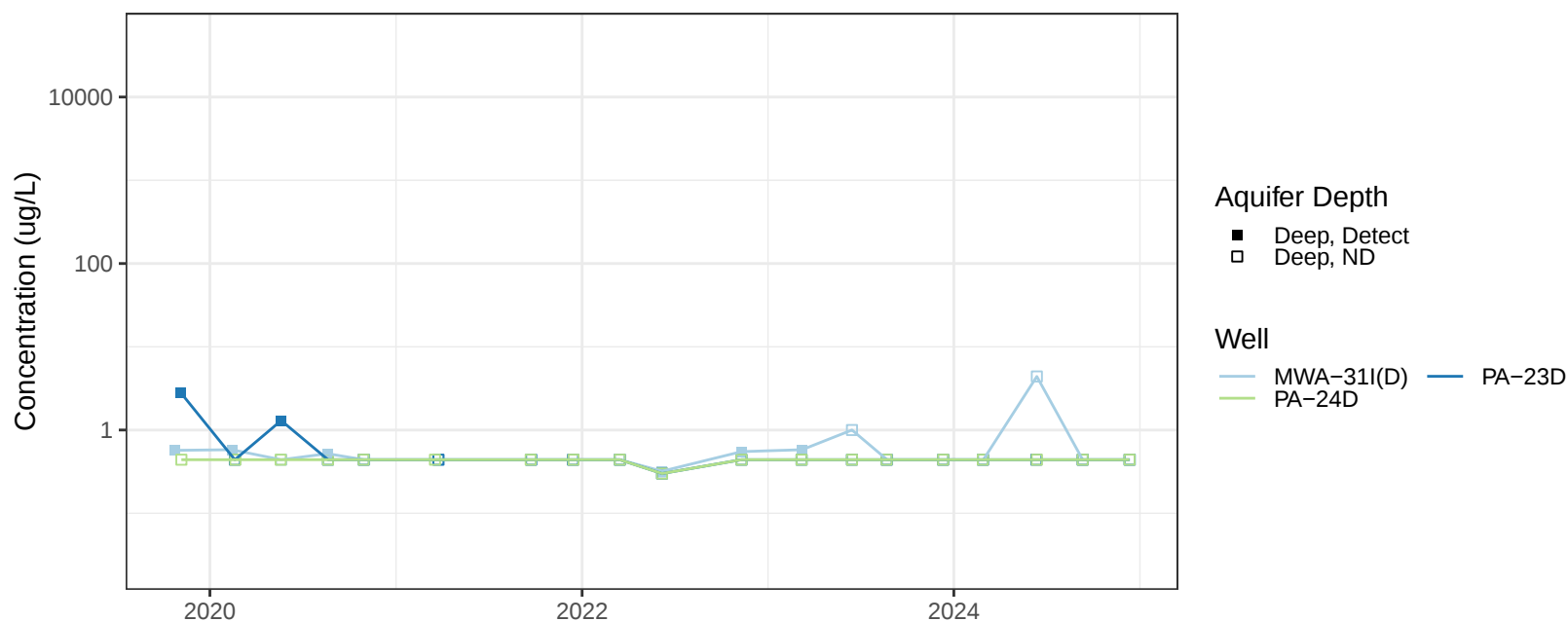
Chlorobenzene in GCC2



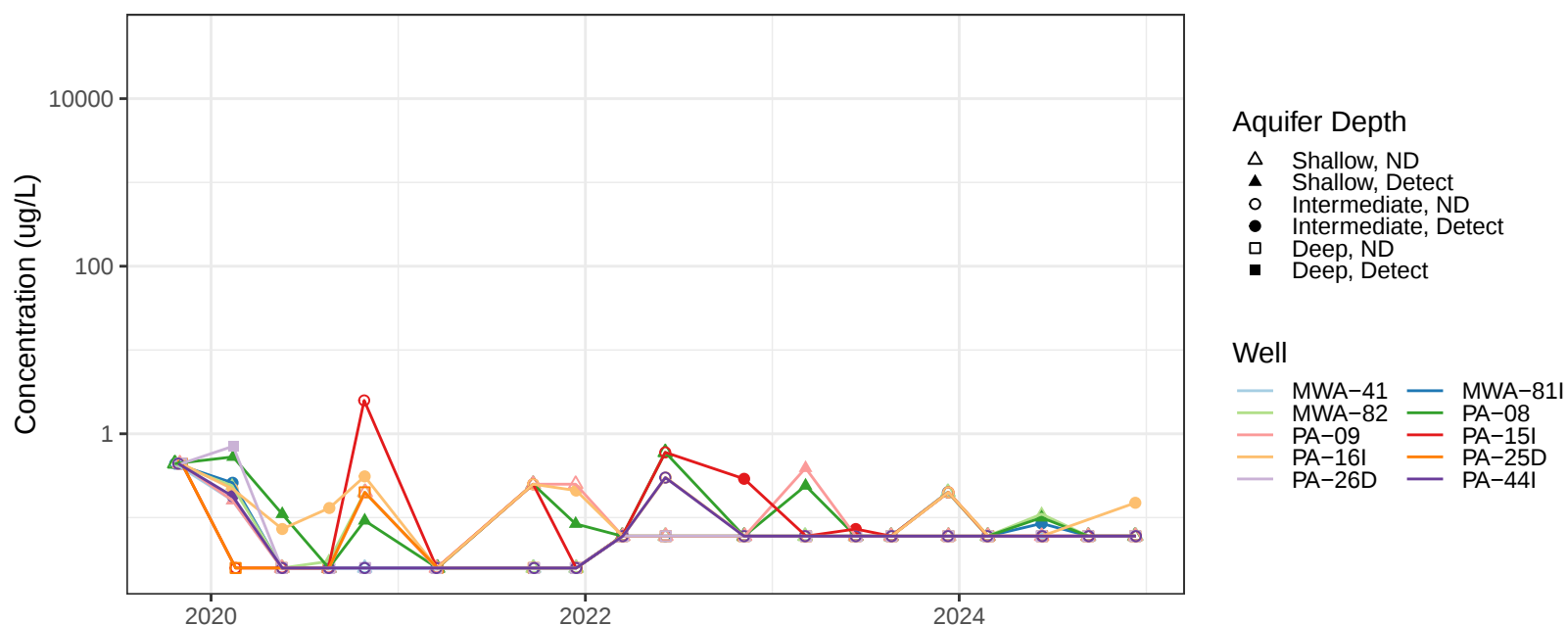
Chlorobenzene in GCC3



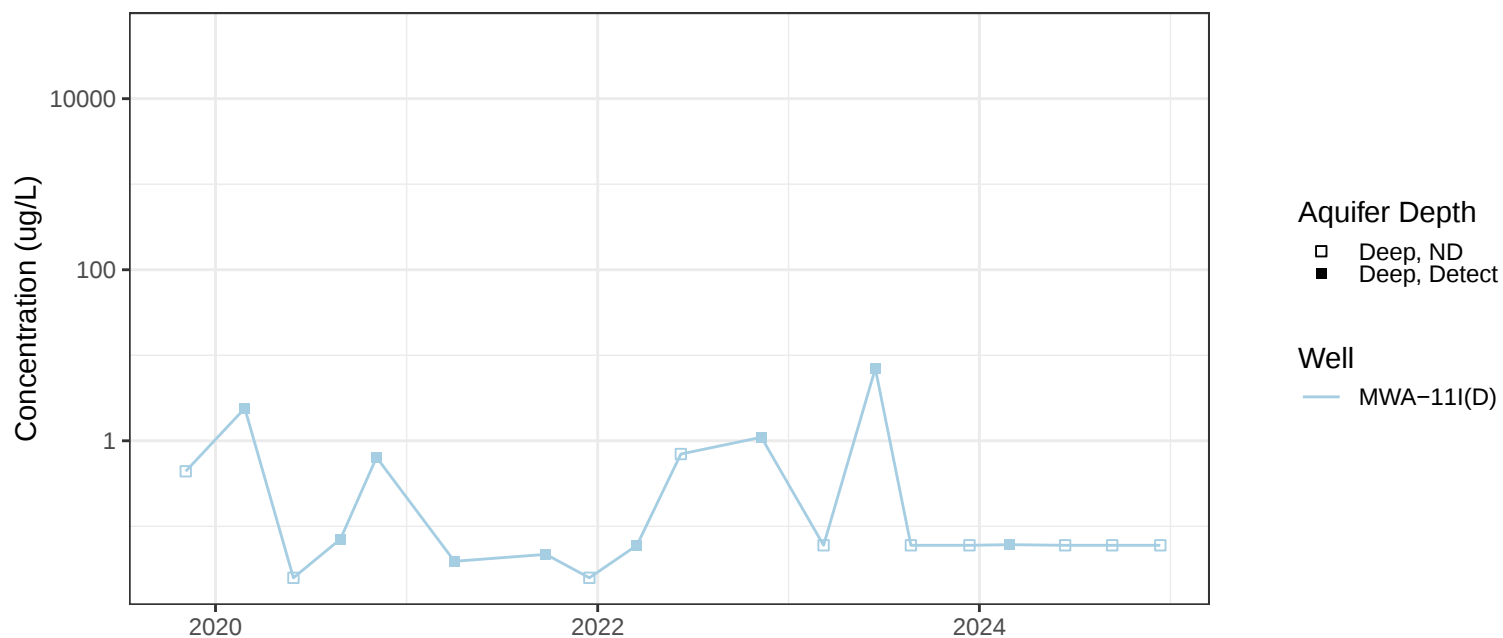
Chlorobenzene in GCC5 & Proximal Wells



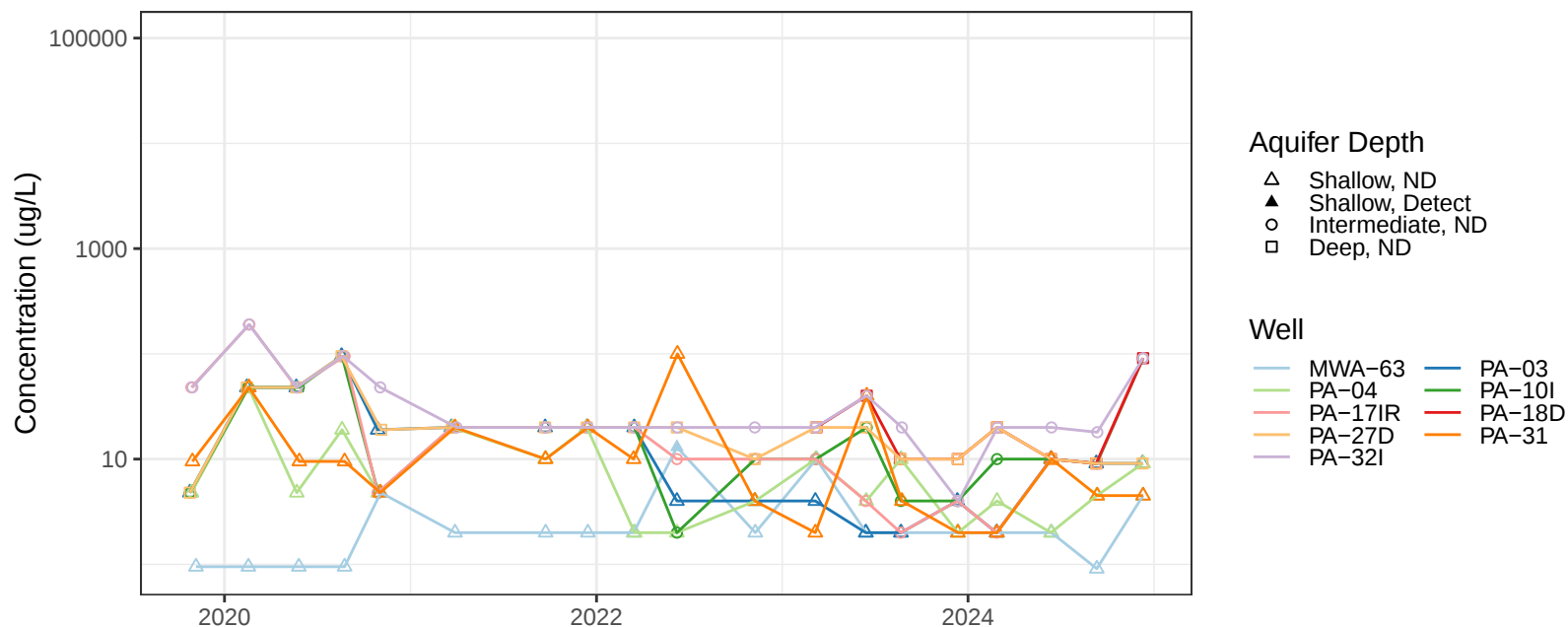
Chlorobenzene in GCC6 & Proximal Wells



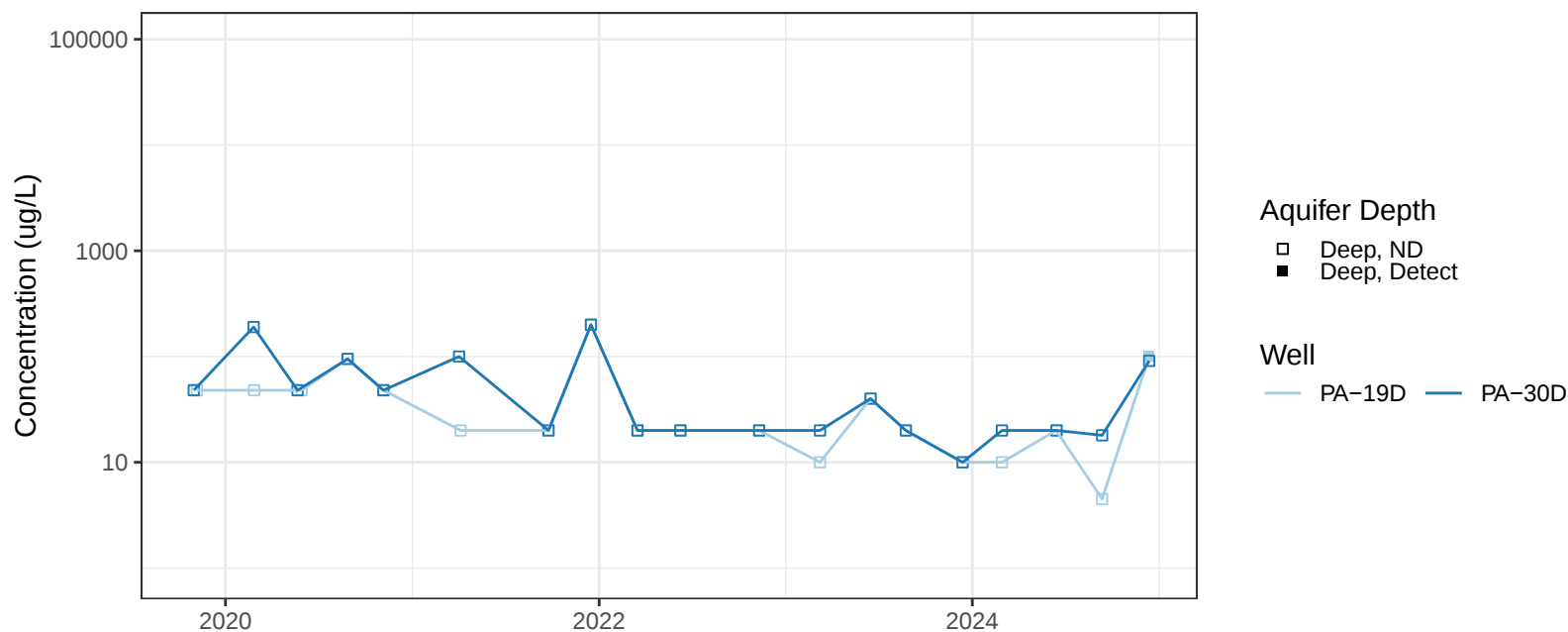
Chlorobenzene in Well Distal from BW and GCCs



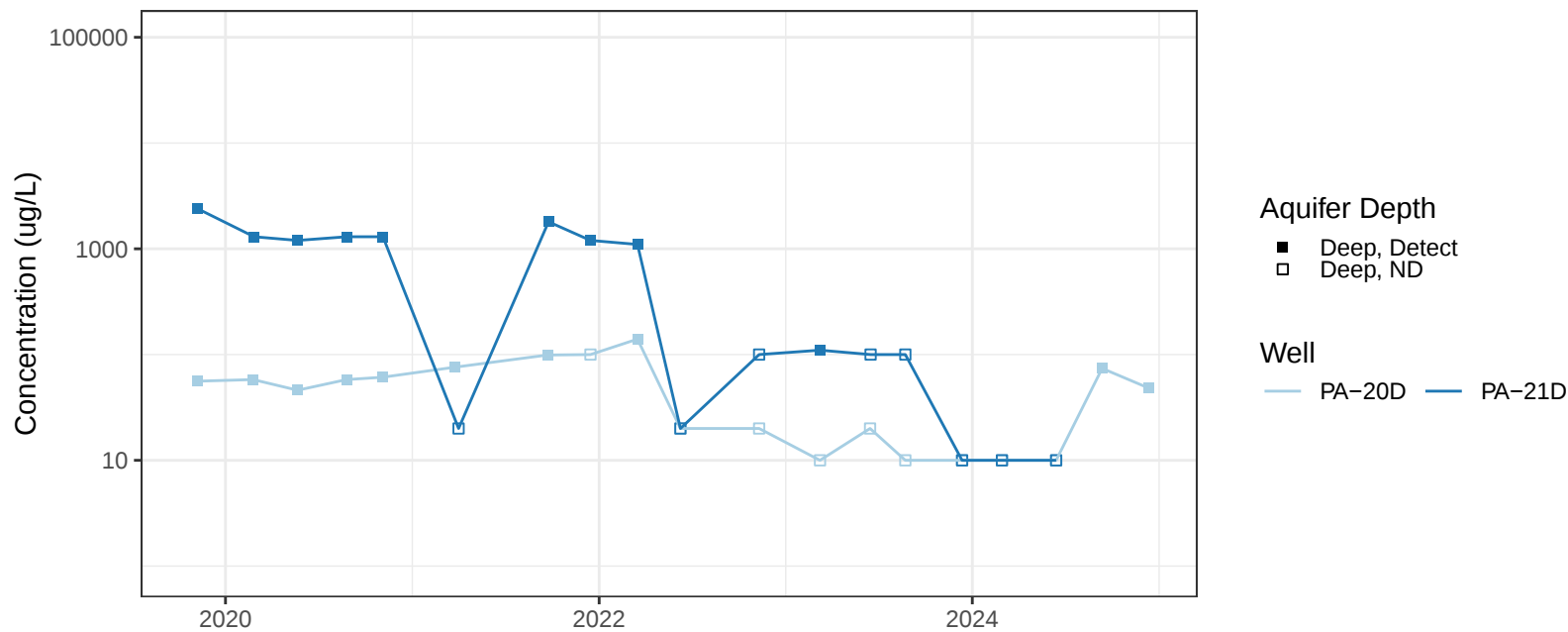
Perchlorate in GCC1 & Proximal Wells



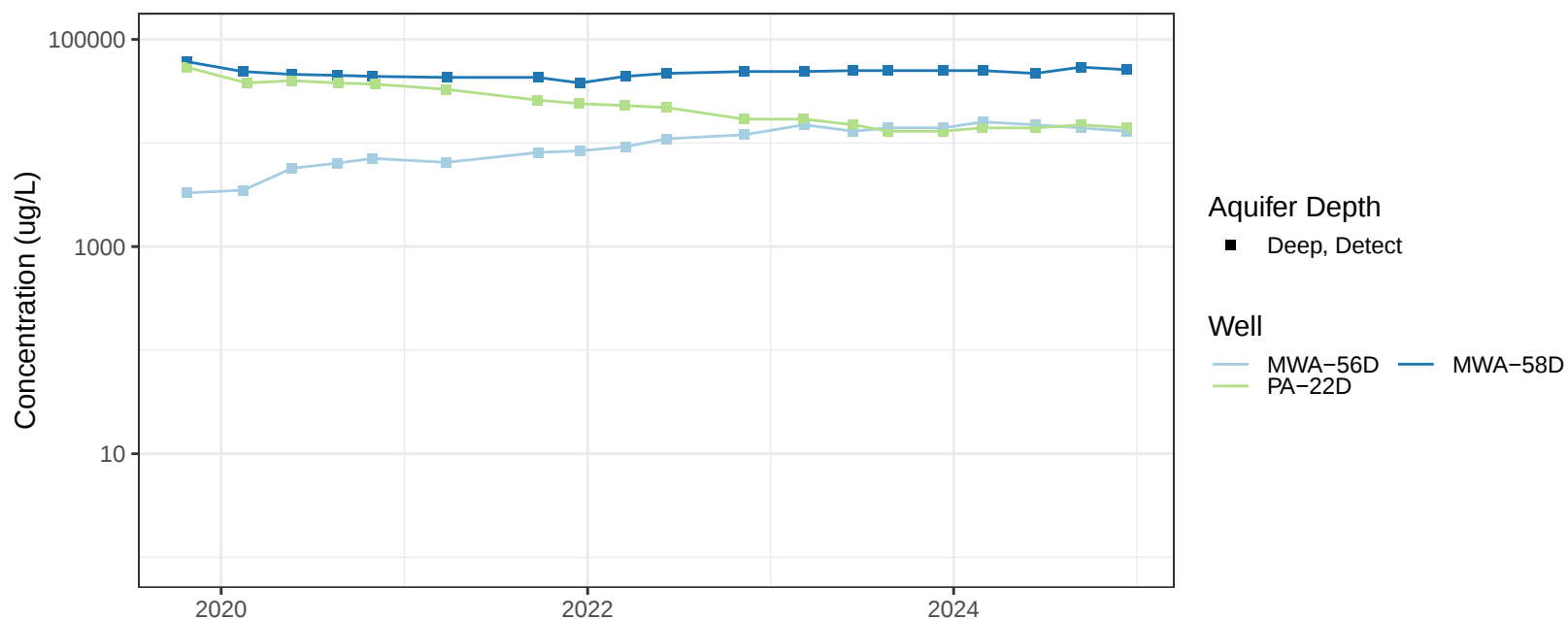
Perchlorate in GCC2



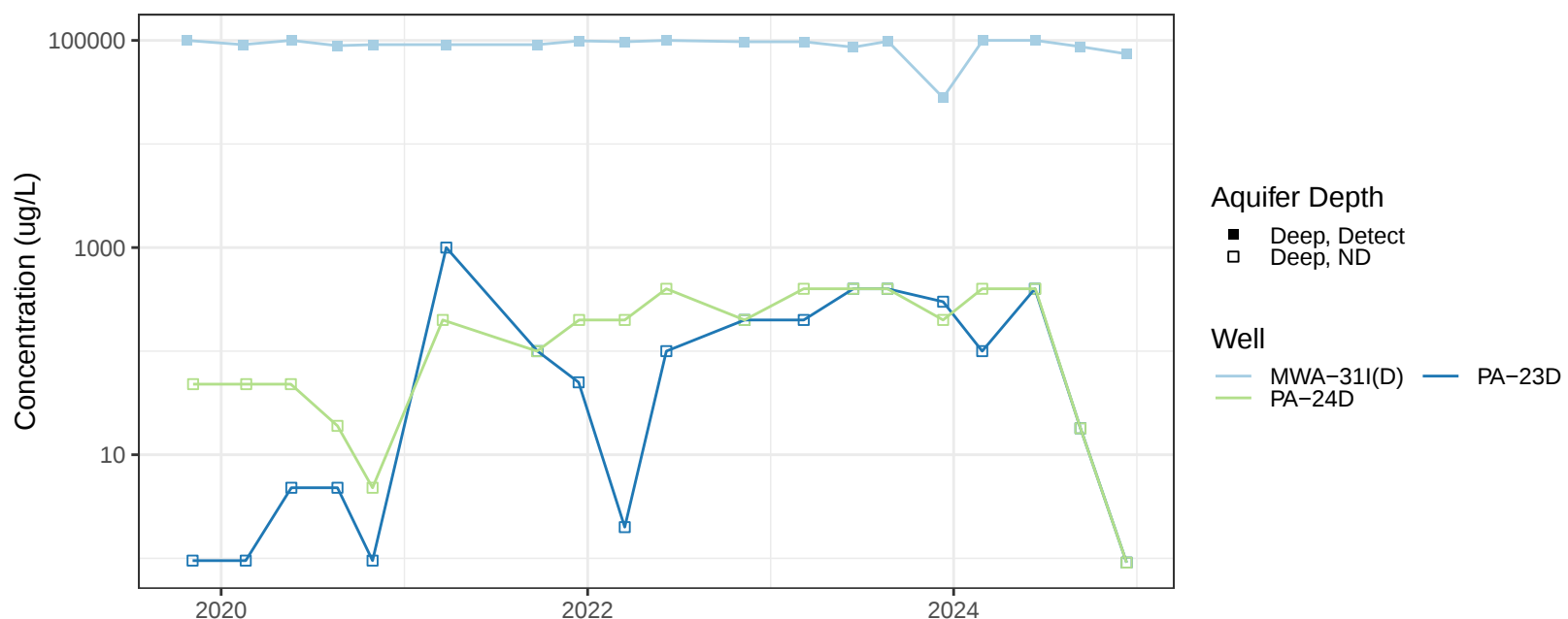
Perchlorate in GCC3



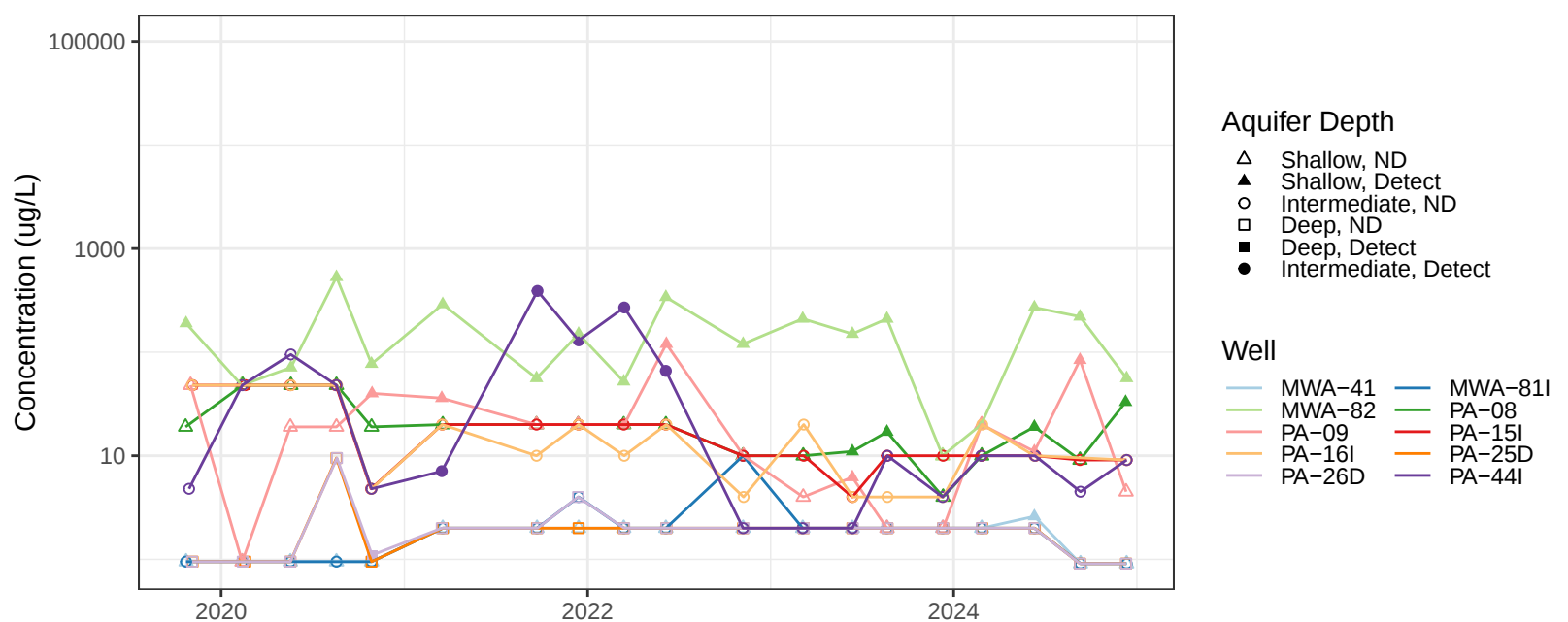
Perchlorate in GCC4 & Proximal Wells



Perchlorate in GCC5 & Proximal Wells



Perchlorate in GCC6 & Proximal Wells





APPENDIX E HISTORICAL DATA TABLE

Appendix E
Historical Data Table
Arkema Quarter 4, 2024, Groundwater Monitoring Report
Arkema Inc. Facility
Portland, Oregon

Aquifer	Well ID	Sample ID	Date	2,4'-DDD	4,4'-DDD	2,4'-DDE	4,4'-DDE	2,4'-DDT	4,4'-DDT	Total of 2,4' and 4,4'-DDD, -DDE, - DDT	Chloride	Chlorobenzene	Chromium (VI)	Perchlorate
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Shallow	MWA-2	GAMWA210297	1/2/1997		< 0.1 U		< 0.1 U		0.12	0.12 T		< 5 U		
Shallow	MWA-2	GAMWA210397	3/12/1997		< 0.1 UJ		< 0.1 UJ		< 0.1 UJ	< 0.1 UJT		7		
Shallow	MWA-2	GAMWA210697	6/24/1997		< 0.1 UJ		< 0.1 UJ		< 0.1 UJ	< 0.1 UJT		6,000		
Shallow	MWA-2	GAMWA210997	9/30/1997		0.17 J		< 0.1 UJ		< 0.1 UJ	0.17 JT		9,000		
Shallow	MWA-2	GW059801	5/28/1998		0.25 J		< 0.04 U		0.33 J	0.58 JT	10,400	4		
Shallow	MWA-2	GW019907	1/27/1999		0.32		0.04		0.18	0.54 T	41,100 T	94		
Shallow	MWA-2	GW029906	4/27/1999		0.8		< 0.04 U		0.6	1.4 T	16,800	970 J		
Shallow	MWA-2	GW039907	8/24/1999		0.7		< 0.4 UJ		< 0.4 UJ	0.7 T	33,800	4,400		
Shallow	MWA-2	GW049905	11/16/1999		0.39 J		< 0.04 UJ		< 0.24 U	0.39 JT	41,700	2,100		
Shallow	MWA-2	GW010111	3/29/2001		0.57		< 0.1 U		< 0.1 U	0.57 T	158,000 J	4,300		
Shallow	MWA-2	GW020106	6/12/2001		0.4		0.055		< 0.05 UJ	0.455 T	384,000	4,600		
Shallow	MWA-2	GW04100205	4/10/2002		0.41		< 0.099 U		< 0.099 U	0.41 T	1,400,000	27,000		
Shallow	MWA-2	GW-060903-01	6/9/2003		< 1.70 U		< 1.70 U		< 2.80 U	< 2.8 UT	981,000	13,700		1,400
Shallow	MWA-2	MWA-2-111004	11/10/2004		< 0.500 UJ		< 0.500 UJ		< 0.500 UJ	< 0.5 UJT		30,200		
Shallow	MWA-2	MWA-2-031005	3/10/2005		< 2.50 UJ		< 2.50 UJ		< 2.50 UJ	< 2.5 UJT		15,400		
Shallow	MWA-2	MWA-2-062205	6/22/2005		3.35		< 0.500 UJ		< 0.500 UJ	3.35 T		12,200		
Shallow	MWA-2	MWA-2-091505	9/15/2005		0.543 J		< 0.184 U		0.0789 J	0.8089 JT		21,900		
Shallow	MWA-2	MWA-2-102705	10/27/2005		0.477		0.0965		< 0.236 UJ	0.5735 T		23,500		
Shallow	MWA-2	MWA-2-122005	12/20/2005		0.312		< 0.239 UJ		< 0.239 UJ	0.312 T		16,200		
Shallow	MWA-2	MWA-2-011306	1/13/2006		0.510		< 0.0971 UJ		< 0.0971 UJ	0.51 T		4		
Shallow	MWA-2	MWA-2-032906	3/29/2006		0.240		< 0.0952 UJ		0.190	0.43 T		4,050		
Shallow	MWA-2	MWA-2-040407	4/4/2007		0.292		< 0.287 U		< 0.191 U	0.292 A	376,000	2,570		73.8
Shallow	MWA-2	MWA-2-080609	8/6/2009		< 0.286 U		< 0.286 U		0.191	0.191 A	340,000	18,200		3.9
Shallow	MWA-15R	GW010117	3/30/2001		37		< 10 U		450	487 T	1960,000 J	260,000		
Shallow	MWA-15R	GW020121	6/15/2001		7.4		< 0.96 U		73 J	80.4 JT	1,560,000	210,000		
Shallow	MWA-15R	GW04160201	4/16/2002		25		4.2 J		75 J	104 JT	407,000	48,000		
Shallow	MWA-15R	GW-061003-04	6/10/2003		28.4 J		< 3.40 U		113	141 JT	388,000	13,300		350
Shallow	MWA-15R	MWA-15R-100203	10/2/2003									27,200		
Shallow	MWA-15R	MWA-15R-111403	11/14/2003									163,000		
Shallow	MWA-15R	MWA-15R-011304	1/13/2004									64,400		
Shallow	MWA-15R	MWA-15R-013004	1/30/2004									24,600		
Shallow	MWA-15R	MWA-15R-030204	3/2/2004									2,450		
Shallow	MWA-15R	MWA-15R-111004	11/10/2004		27.7		< 5.00 UJ		86.2	113 T		154,000		
Shallow	MWA-15R	MWA-15R-031005	3/10/2005		79.7		< 25.0 UJ		534	613.7 T		97,000		
Shallow	MWA-15R	MWA-15R-062205	6/22/2005		40.9		9.88		193	243.78 T		87,700		
Shallow	MWA-15R	MWA-15R-091605	9/16/2005		73.2		11.2 J		619 J	703 JT		240,000		
Shallow	MWA-15R	MWA-15R-122105	12/21/2005		10.1		1.53		86.5	98.13 T		217,000		
Shallow	MWA-15R	MWA-15R-033006	3/30/2006		124		24		458	606 T		72,900		
Shallow	MWA-15R	MWA-15R-041707	4/17/2007		48.3 J		7.71		207	263 JA	129,000	34		
Shallow	MWA-15R	MWA-15R-081909	8/19/2009		111		21.9		702	835 A	156,000	23,500	< 25 UJ	
Shallow	MWA-15R	MWA-15R-090309	9/3/2009		377		52.1		5,210	5,640 A				
Shallow	MWA-18	GW010105	3/27/2001						0.046 J	0.046 JT	1,200,000	41		
Shallow	MWA-18	GW020110	6/13/2001		0.015 J		< 0.0094 U		< 0.026 U	0.015 JT	894,000 J	34	< 50 UJ	
Shallow	MWA-18	GW04040203	4/4/2002		< 0.0096 U		< 0.0096 U		< 0.019 U	< 0.019 UT	2,210,000	8		
Shallow	MWA-18	GW-060603-03	6/6/2003		< 0.0170 U		< 0.0170 U		< 0.0280 U	< 0.028 UT	1,410,000	< 3.06 U		< 25 U
Shallow	MWA-18	MWA-18-050505	5/5/2005								612,000		833	
Shallow	MWA-18	MWA-18-071405	7/14/2005										676	
Shallow	MWA-18	MWA-18	8/3/2005		< 0.0500 U		< 0.0500 U		< 0.0500 U	< 0.05 UT		0.580		
Shallow	MWA-18	MWA-18-081605	8/16/2005										248	
Shallow	MWA-18	MWA-18-091205	9/12/2005								410,000		1,180	3.4
Shallow	MWA-18	MWA-18-120805	12/8/2005										5.90 J	

Appendix E
Historical Data Table
Arkema Quarter 4, 2024, 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-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
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	

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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-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	
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

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				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
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	
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

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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-61	MWA-61-022119	2/21/2019	0.27 J+	0.50 J+	< 0.10	0.016 J+	< 0.10	0.029 J+	0.815		690	< 1.0	37
Shallow	MWA-63	MWA-63-102705	10/27/2005		< 0.0472 U		< 0.0472 U		< 0.0472 U	< 0.0472 UT		7.60		
Shallow	MWA-63	MWA-63-112105	11/21/2005		< 0.0495 U		< 0.0495 U		0.0533 J	0.0533 JT		< 0.272 U		
Shallow	MWA-63	MWA-63-040407	4/4/2007		< 0.00995 UJ		< 0.00995 UJ		0.00603 J	0.00603 JA	358,000	0.180 J		< 4.0 U
Shallow	MWA-63	MWA-63-080509	8/5/2009		< 0.00952 U		< 0.00952 U		0.00574 J	0.00574 JA	690,000	< 100 U		< 8 U
Shallow	MWA-63	MWA-63-022119	2/21/2019	< 0.10	< 0.0050	< 0.10	< 0.0050	< 0.10	< 0.010	< 0.10		5,800	< 1.0 UJ	< 4.0
Shallow	MWA-69	MWA-69	8/2/2005		17.3		< 5.00 UJ		51.1	68.4 T		9,010		
Shallow	MWA-69	MWA-69-102505	10/25/2005		3.93		0.289		6.84	11.059 T		2,690		
Shallow	MWA-69	MWA-69-112205	11/22/2005		4.36		0.425		9.33	14.115 T		3,640		
Shallow	MWA-69	MWA-69-011606	1/16/2006		8.64		0.838		29.5	38.978 T		166		
Shallow	MWA-69	MWA-69-041707	4/17/2007		15.6		1.05 J		46.4 J	62.9 JA	511,000	5,360		29.5 J
Shallow	MWA-69	MWA-69-081109	8/11/2009		50.0		4.16		57.9	112.06	297,000	6,930		< 20 U
Shallow	MWA-69	MWA-69-090309	9/3/2009		7.45		0.369		5.95	13.8 A				
Intermediate	MWA-8I	GWG001	11/24/1998									1,700		
Intermediate	MWA-8I	GW019906	1/27/1999		5.3 J		0.07 J		1 J	6.37 JT	2,660,000	4,800		
Intermediate	MWA-8I	GW029908	4/27/1999		0.16 J		< 0.04 UJ		< 0.04 UJ	0.16 JT	2,290,000	4,300 J		
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

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				µg / L	µg / L	µg / L	µg / L	µg / L	µg / L	µg / L	µg / L	µg / L	µg / L	µg / L
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		
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

Appendix E
Historical Data Table
Arkema Quarter 4, 2024, 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
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	0.25	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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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
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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