HALEY ALDRICH

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ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
EAST ASH POND
F.B. CULLEY GENERATING STATION
WARRICK COUNTY, INDIANA

by
Haley & Aldrich, Inc.
Greenville, South Carolina

for
Southern Indiana Gas and Electric Company
Evansville, Indiana

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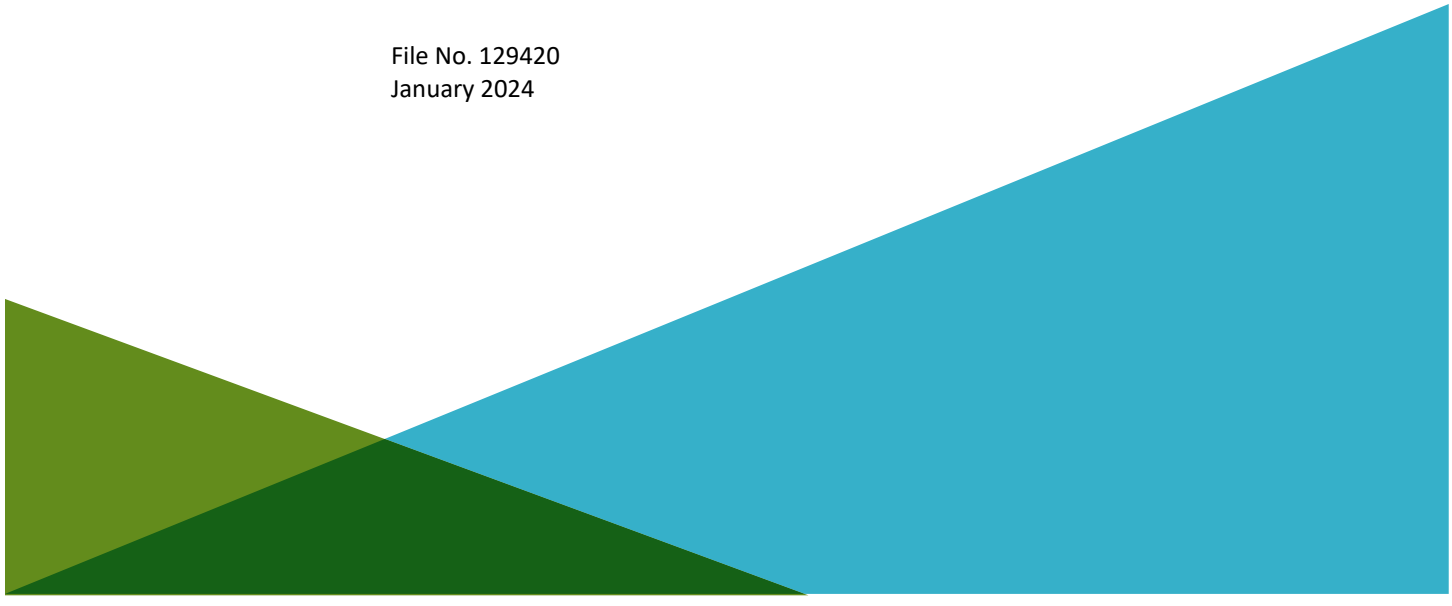

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1. Annual Groundwater Monitoring Report Summary

1.1 CODE OF FEDERAL REGULATIONS TITLE 40 (40 CFR) § 257.90(e)(6) SUMMARY

A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the [coal combustion residual] CCR unit. At a minimum, the summary must specify all of the following.

1.1.1 40 CFR § 257.90(e)(6)(i) – Status of Monitoring Program at Start of Reporting Period

At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in § 257.94 or the assessment monitoring program in § 257.95.

At the start of the current annual reporting period (1 January 2023), the East Ash Pond (EAP) at F.B. Culley Generating Station was operating under an assessment monitoring program in compliance with Code of Federal Regulations Title 40 (40 CFR) § 257.95.

1.1.2 40 CFR § 257.90(e)(6)(ii) – Status of Monitoring Program at End of Reporting Period

At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in § 257.94 or the assessment monitoring program in § 257.95.

At the end of the current annual reporting period (31 December 2023), the EAP was operating under an assessment monitoring program in compliance with 40 CFR § 257.95.

1.1.3 40 CFR § 257.90(e)(6)(iii) – Statistically Significant Increases

If it was determined that there was a statistically significant increase over background for one or more constituents listed in appendix III to this part pursuant to § 257.94(e).

1.1.3.1 40 CFR § 257.90(e)(6)(iii)(A)

Identify those constituents listed in appendix III to this part and the names of the monitoring wells associated with such an increase.

The EAP was operating under an assessment monitoring program throughout 2023; therefore, no statistical evaluations were conducted on Appendix III constituents in 2023.

1.1.3.2 40 CFR § 257.90(e)(6)(iii)(B)

Provide the date when the assessment monitoring program was initiated for the CCR unit.

An assessment monitoring program was established on 15 August 2018 for the EAP to meet the requirements of 40 CFR § 257.95. The EAP has remained in assessment monitoring since that time.

1.1.4 40 CFR § 257.90(e)(6)(iv) – Statistically Significant Levels

If it was determined that there was a statistically significant level above the groundwater protection standard for one or more constituents listed in appendix IV to this part pursuant to § 257.95(g) include all of the following.

1.1.4.1 40 CFR § 257.90(e)(6)(iv)(A) – Statistically Significant Level Constituents

Identify those constituents listed in appendix IV to this part and the names of the monitoring wells associated with such an increase.

Statistical analyses of Appendix IV constituents were completed in 2023 following the November 2022 and May 2023 semiannual assessment monitoring events as described in § 257.93(h)(2) and statistically significant levels (SSLs) of molybdenum were identified downgradient of the EAP at monitoring well CCR-AP-5. A summary of statistical analysis is provided in Appendix A.

1.1.4.2 40 CFR § 257.90(e)(6)(iv)(B) – Initiation of the Assessment of Corrective Measures

Provide the date when the assessment of corrective measures was initiated for the CCR unit.

Assessment of corrective measures was initiated on 15 May 2019 for the EAP.

1.1.4.3 40 CFR § 257.90(e)(6)(iv)(C) – Assessment of Corrective Measures Public Meeting

Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit.

The public was given the opportunity to comment on the assessment of corrective measures prepared for the EAP during a public meeting held on 18 October 2021.

1.1.4.4 40 CFR § 257.90(e)(6)(iv)(D) – Completion of the Assessment of Corrective Measures

Provide the date when the assessment of corrective measures was completed for the CCR unit.

The assessment of corrective measures was completed on 13 September 2019 and placed into the facility's Operating Record, posted to the publicly available website, and the notification sent to the state agency.

1.1.5 40 CFR § 257.90(e)(6)(v) – Selection of Remedy

Whether a remedy was selected pursuant to § 257.97 during the current annual reporting period, and if so, the date of remedy selection.

The selection of remedy required under § 257.97 was ongoing in 2023 for molybdenum at the EAP. A summary of actions completed associated with selection of remedy are provided in the March 2023 and September 2023 Semi-annual Remedy Selection Progress Reports.

Additional site investigation was completed to refine understanding of groundwater flow heterogeneity and the geochemical characteristics of the aquifer materials. In-field and laboratory testing completed to inform the selection of remedy included:

- Pneumatic slug testing performed at select groundwater monitoring wells in May 2023. Estimated hydraulic conductivity data is provided in Table 1. Those results will inform the groundwater flow and transport model that will be used to compare remedial alternatives.
- Groundwater and soil quality data were collected in June 2023. Groundwater quality data including total metals and major ions is provided in Table 2 and soil quality data is provided in Table 3. Those results will determine if aquifer materials, either naturally or when enhanced, effectively attenuate molybdenum.

1.1.6 40 CFR § 257.90(e)(6)(vi) – Remedial Activities

Whether remedial activities were initiated or are ongoing pursuant to § 257.98 during the current annual reporting period.

While the groundwater remedy has yet to be selected and implemented, the Assessment of Corrective Measures illustrated that source removal should be part of the selected remedy. Closure of the ash pond will be completed by removal of the CCR material and was initiated in November 2023, when dewatering of the EAP began to facilitate the removal of CCR material from the unit. Groundwater level monitoring was performed using a series of pressure transducers during dewatering activities to monitor changes that occurred in the hydrogeologic system at the EAP. Monitoring is ongoing at the end of the reporting period; therefore, results will be presented within the next reporting period.

1.2 40 CFR § 257.90(a)

Except as provided for in § 257.100 for inactive CCR surface impoundments, all CCR landfills, CCR surface impoundments, and lateral expansions of CCR units are subject to the groundwater monitoring and corrective action requirements under § 257.90 through § 257.98.

The EAP is subject to the groundwater monitoring and corrective action requirements described under 40 CFR § 257.90 through § 257.98 (Rule). The remainder of this document addresses the specific requirements for the Owner/Operator to prepare an Annual Groundwater Monitoring and Corrective Action Report per § 257.90(e).

1.3 40 CFR § 257.90(e) – SUMMARY

Annual groundwater monitoring and corrective action report. For existing CCR landfills and existing CCR surface impoundments, no later than January 31, 2018, and annually thereafter, the owner or operator must prepare an annual groundwater monitoring and corrective action report. For new CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units, the owner or operator must prepare the initial annual groundwater monitoring and corrective action report no later than January 31 of the year following the calendar year a groundwater monitoring system has been established for such CCR unit as required by this subpart, and annually thereafter. For the preceding calendar year, the annual report must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve

the problems, and project key activities for the upcoming year. For purposes of this section, the owner or operator has prepared the annual report when the report is placed in the facility's operating record as required by § 257.105(h)(1).

This 2023 Annual Groundwater Monitoring and Corrective Action Report documents the activities completed in 2023 for the EAP as required by the Rule. Semiannual groundwater sampling and analysis was conducted per the requirements described in § 257.93, and the status of the groundwater monitoring program described in § 257.95 is provided in this report. Field forms for the groundwater sampling events are provided in Appendix B. Laboratory analytical reports are provided in Appendix C.

1.3.1 Status of the Groundwater Monitoring Program

Following completion of the Assessment of Corrective Measures in September 2019, a semiannual groundwater sampling plan was implemented to satisfy requirements of § 257.95(b) and 257.95(d)(1). During the 2023 reporting period, groundwater samples were collected from monitoring wells at the EAP from 23 to 25 May 2023 and again on 2 November 2023.

Statistical analysis of Appendix IV constituents collected during the November 2022 sampling event was completed on 15 February 2023, within 90-days following the receipt of laboratory analytical results on 11 January 2023, per the requirements of § 257.93(h)(2). Statistical analysis of Appendix IV constituents collected during the May 2023 sampling event was completed on 12 December 2023, within 90-days following the receipt of laboratory analytical results on 5 October 2023, per the requirements of § 257.93(h)(2). Statistical analysis of Appendix IV constituents collected during the November 2023 sampling event will be completed within the 2024 reporting period and will be included in the 2024 annual report.

Statistical analysis of Appendix IV constituents during the 2023 reporting period determined that SSLs of molybdenum continue to be observed downgradient of the EAP, which is consistent with previous findings. The selection of remedy process required under § 257.97 was still on-going, as discussed in Section 1.1.5, during the 2023 reporting period.

1.3.2 Key Actions Completed

The following key actions were completed in 2023:

- 31 January 2023 – Prepared 2022 Annual Groundwater Monitoring and Corrective Action Report (2022 Annual Report) including:
  - Pursuant to § 257.105(h)(1), the 2022 Annual Report was placed in the facility's operating record on 31 January 2023;
  - Pursuant to § 257.106(h)(1), the notification was sent to the relevant State Director and/or Tribal authority within 30 days of the 2022 Annual Report being placed in the facility's operating record [§ 257.106(d)];
  - Pursuant to § 257.107(h)(1), the 2022 Annual Report was posted to the CCR Website within 30 days of the 2022 Annual Report being placed in the facility's operating record [§ 257.107(d) and 257.107(h)(1)];
- 15 February 2023 – Completed statistical analysis of November 2022 assessment monitoring laboratory analytical results received on 11 January 2023.

- 15 March 2023 – Prepared semiannual selection of remedy progress report in accordance with § 257.97(a) to document progress. The semiannual progress report was placed in the operating record as required by § 257.105(h)(12) and posted on the facility's publicly available website as required by § 257.107(h)(9).
- 23 May 2023 – Static water level measurements were collected in a synoptic gaging at the beginning of the May 2023 sampling event and again immediately prior to collecting each sample to evaluate groundwater flow direction and rate per the requirements of § 257.93(c).
- 23 to 24 May 2023 – Completed hydraulic testing using pneumatic slug tests to refine aquifer parameter estimates and inform pond closure and corrective measures design. A summary of hydraulic testing results is provided in Table 1.
- 24 May 2023 – Deployed pressure transducers in select monitoring wells to monitor changes in groundwater levels resulting from dewatering activities at the EAP. Collection of groundwater level data is on-going at the close of the 2023 reporting period.
- 23 to 25 May 2023 – Collected groundwater samples from monitoring wells at the EAP for laboratory analysis in accordance with § 257.95.
- 14 to 16 June 2023 – Collected groundwater and soil quality data to evaluate various post-closure groundwater treatment considerations.
- 15 to 18 August 2023 – Collected groundwater samples during dewatering system design pumping test. The pumping test and groundwater sampling was completed to design a dewatering system in support of source removal and ash pond closure.
- 14 September 2023 – Prepared semiannual selection of remedy progress report in accordance with § 257.97(a) to document progress. The semiannual progress report was placed in the operating record as required by § 257.105(h)(12) and posted on the facility's publicly available website as required by § 257.107(h)(9).
- 1 November 2023 – Static water level measurements were collected in a synoptic gaging at the beginning of the November 2023 sampling event and again immediately prior to collecting each sample to evaluate groundwater flow direction and rate per the requirements of § 257.93(c).
- 2 November 2023 – Collected groundwater samples from monitoring wells at the EAP for laboratory analysis in accordance with § 257.95.
- 12 December 2023 – Completed statistical analysis of May 2023 assessment monitoring laboratory analytical results received on 5 October 2023.

1.3.3 Problems Encountered

Problems encountered during the May 2023 and November 2023 sampling events include:

- Following the May 2023 sampling event, laboratory samples for CCR-AP-1R and CCR-AP-2 were analyzed improperly for radium (radium-226 and radium-228). Laboratory methods were altered without authorization and did not conform to the methods and requirements outlined in the approved Haley & Aldrich, Inc. Sampling and Analysis Plan.
- Entrained particulates (measured as turbidity) within the November 2023 groundwater samples at CCR-AP-1R may have contributed to elevated radium results (radium-226 and radium-228) compared to typically detected concentrations. Confirmation samples were collected on 22 December 2023 to verify if the concentrations observed were valid or biased high during

analysis due to turbidity of the sample. Laboratory analysis of the confirmation sample was on-going at the end of the 2023 reporting period. No other constituents at CCR-AP-1R were detected at an uncharacteristically high concentration.

- Monitoring well CCR-AP-9 was determined to be dry during the November 2023 sampling event and a sample could not be collected.

1.3.4 Actions to Resolve Problems

Confirmation samples were collected for radium at CCR-AP-1R and CCR-AP-2 on 28 July 2023 following the May 2023 sampling event to resolve the problem encountered with laboratory analysis of the initial samples. Laboratory analysis of the confirmation samples collected in July 2023 was completed using approved methods and results were incorporated into the statistical analysis of Appendix IV constituents.

Confirmation samples were collected on 22 December 2023 at CCR-AP-1R for radium analysis following the November 2023 sampling event to resolve sampling and analysis errors which may have occurred due to elevated sample turbidity encountered during the initial sample collection. Laboratory analysis of the confirmation samples is not yet complete at the end of the 2023 reporting period; therefore, confirmation sample results will be included in the statistical analysis of Appendix IV constituents from the November 2023 sampling event when it is completed in the 2024 reporting period and included in the 2024 annual report.

Monitoring well redevelopment is planned to remove suspected sediment buildup and scaling prior to the May 2024 sampling event. Redevelopment can remove suspected sediment buildup and scaling and improve communication between the monitoring well screen and the formation to produce representative groundwater samples for collection.

Groundwater levels in monitoring well CCR-AP-9 will be monitored and if it is determined that the normal water table elevation has fallen below the screened interval of the well due to dewatering at the EAP, the monitoring well will be replaced and screened at an appropriate depth interval.

1.3.5 Project Key Activities for Upcoming Year

Key activities to be completed in 2024 include the following:

- Continue semiannual groundwater monitoring in accordance with § 257.95.
- Complete statistical analyses of the semiannual groundwater sampling results within 90-days of sampling and analysis as required by § 257.93(h)(2).
- As soon as feasible select a remedy that, at a minimum, meets the standards outlined in § 257.97(b) and considers the evaluation factors in § 257.97(c).
- As part of the selected remedy the Southern Indiana Gas and Electric Company will develop a schedule for implementing and completing remedial activities as defined in § 257.97(d).
- Prepare semiannual and annual progress reports, as necessary, describing the progress in selecting and designing the remedy as outlined in § 257.97(a).
- Following remedy selection initiate remedial activities and implement the corrective action groundwater monitoring program as outlined in § 257.98.

1.4 40 CFR § 257.90(e) – INFORMATION

At a minimum, the annual groundwater monitoring and corrective action report must contain the following information, to the extent available.

1.4.1 40 CFR § 257.90(e)(1)

A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit.

As required by § 257.90(e)(1), a map showing the location of the EAP and associated upgradient, downgradient and nature and extent monitoring wells is presented on Figure 1. Groundwater elevation contours for the May 2023 sampling event are presented on Figure 2. Groundwater elevation contours for the November 2023 sampling event are presented on Figure 3.

1.4.2 40 CFR § 257.90(e)(2)

Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken.

There was no installation or decommissioning of monitoring wells during 2023. Groundwater monitoring well location and construction details for the existing monitoring well network are summarized in Table 4.

1.4.3 40 CFR § 257.90(e)(3)

In addition to all the monitoring data obtained under § 257.90 through § 257.98, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs.

In accordance with § 257.95(b) and § 257.95(d)(1), two independent samples from each background and downgradient monitoring well were collected and analyzed. A summary table including the sample names, dates of sample collection, reason for sample collection (detection or assessment), and monitoring data obtained for the groundwater monitoring program for the EAP is presented in Table 5.

1.4.4 40 CFR § 257.90(e)(4)

A narrative discussion of any transition between monitoring programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase over background levels).

Statistical analysis of Appendix IV constituents was completed for the November 2022 and May 2023 sampling events as described in § 257.93(h)(2) and demonstrate that molybdenum remains the only

constituent at a SSL to be observed downgradient of the EAP, which is consistent with previous results. As a result, the monitoring program did not change, and the EAP remained in assessment monitoring throughout 2023. Statistical analysis for the November 2023 sampling event is ongoing and will be completed within 90 days after sampling and analysis to determine if a statistically significant increase over background has occurred.

1.4.5 40 CFR § 257.90(e)(5)

Other information required to be included in the annual report as specified in § 257.90 through § 257.98.

Other information including development of groundwater protection standards, recording of groundwater monitoring results in the operating record, and an evaluation of alternate sources was discussed in prior annual reports.

TABLES

TABLE 1

SUMMARY OF HYDRAULIC CONDUCTIVITY VALUES

EAST ASH POND

F.B. CULLEY GENERATING STATION

WARRICK COUNTY, INDIANA

Well ID	Falling Head Test #1 (cm/sec)	Falling Head Geometric Mean (cm/sec)	Rising Head Test #1 (cm/sec)	Rising Head Test #2 (cm/sec)	Rising Head Test #3 (cm/sec)	Rising Head Test #4 (cm/sec)	Rising Head Geometric Mean (cm/sec)	Combined Geometric Mean (cm/sec)	Combined Geometric Mean (ft/day)
CCR-AP-1R	5.04E-03	5.04E-03	5.10E-03	3.98E-03	-	-	4.50E-03	**4.68E-03**	**13.26**
CCR-AP-5	-	-	6.55E-04	6.71E-04	6.71E-04	6.82E-04	6.70E-04	**6.70E-04**	**1.90**
CCR-AP-5I	1.85E-04	1.85E-04	-	8.63E-05	-	-	8.63E-05	**1.26E-04**	**0.36**
CCR-AP-6	-	-	8.29E-03	1.08E-02	1.10E-02	9.26E-03	9.76E-03	**9.76E-03**	**27.68**
CCR-AP-6I	-	-	8.44E-02	8.26E-02	7.98E-02	7.65E-02	8.08E-02	**8.08E-02**	**228.92**
CCR-AP-8I	-	-	1.75E-02	1.67E-02	1.70E-02	1.70E-02	1.71E-02	**1.71E-02**	**48.36**

Notes and Abbreviations:

Hydrualic conductivity field tests conducted on 23 and 24 May 2023 using pnumatic slug testing methods.

cm/sec: centimeters per second

ft/day: feet per day

"-" test was not completed or was excluded based on poor data quality

TABLE 2
SUMMARY OF SUPPLEMENTARY GROUNDWATER QUALITY DATA - JUNE 2023
EAST ASH POND
F.B. CULLEY GENERATING STATION
WARRICK COUNTY, INDIANA

Location Group	Action Level	Down-Gradient			Up-Gradient
Location Name	Groundwater Protection Standard	CCR-AP-5	CCR-AP-6I	CCR-AP-8I	CCR-AP-1R
Sample Name		CCR-AP-5-061323	CCR-AP-6I-061323	CCR-AP-8I-061323	CCR-AP-1R-061323
Sample Date		06/13/2023	06/13/2023	06/13/2023	06/13/2023
Lab Sample ID		180-158155-3	180-158155-2	180-158155-4	180-158155-1
Inorganic Compounds (mg/L)					
Aluminum, Dissolved	NA	**0.48**	**0.058**	**0.091**	**11**
Iron, Dissolved	NA	**2.6**	**1.1**	**17**	**20**
Manganese, Dissolved	NA	**8.1**	**19**	**2.8**	**0.59**
Antimony, Total	0.006	0.002 U	0.002 U	0.002 U	0.002 U
Arsenic, Total	0.025	**0.0061**	**0.0038 J**	**0.002 J**	**0.0055**
Barium, Total	2	**0.099**	**0.033**	**0.23**	**0.06**
Beryllium, Total	0.004	0.001 U	0.001 U	0.001 U	0.001 U
Boron, Total	4	**17**	**21**	**12**	**0.68**
Cadmium, Total	0.005	0.001 U	0.001 U	0.001 U	0.001 U
Calcium, Total	NA	**290**	**580**	**490**	**73**
Chromium, Total	0.1	**0.0017 J**	0.005 U	**0.0012 J**	**0.0073**
Cobalt, Total	0.019	**0.0023**	**0.002**	0.001 U	**0.0041**
Lead, Total	0.035	**0.0005 J**	0.001 U	0.001 U	**0.0042**
Lithium, Total	0.04	**0.086**	**0.069**	**0.44**	**0.041**
Magnesium, Total	NA	**140**	**41**	**36**	**34**
Mercury, Total	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum, Total	0.1	**0.3**	**0.56**	**0.36**	**0.0087**
Potassium, Total	NA	**33**	**67**	**260**	**5.1**
Selenium, Total	0.05	0.005 U	0.005 U	0.005 U	0.005 U
Sodium, Total	NA	**54**	**84**	**120**	**230**
Thallium, Total	0.002	0.001 U	0.001 U	0.001 U	0.001 U
Other					
Chloride (mg/L)	NA	**220**	**250**	**520**	**17**
Fluoride (mg/L)	4	**1.3**	**0.16 J**	**0.31**	**0.46**
Nitrate (as N) (mg/L)	NA	0.1 R	0.1 R	**0.1 J+**	**0.11 J+**
Nitrite (as N) (mg/L)	NA	0.05 R	0.05 R	0.13 R	**0.2 J+**
Sulfate (mg/L)	NA	**650**	**1400**	**990**	**260**
Total Organic Carbon (TOC) (mg/L)	NA	**3**	**1.6**	**3.5**	**1.2**
Sulfide, Total (mg/L)	NA	3 U	**43**	3 U	3 U
Field Parameters					
Temperature (Deg C)	NA	**17.84**	**19.05**	**18.41**	-
Dissolved Oxygen, Field (mg/L)	NA	**0.00**	**0.12**	**0.00**	-
Conductivity, Field (mS/cm)	NA	**2.37**	**3.06**	**3.69**	-
Oxidation Reduction Potential (ORP), Field (mv)	NA	**-90**	**-73**	**-142**	-
Turbidity, Field (NTU)	NA	**20.40**	**1.20**	**0.00**	-
pH, Field (SU)	NA	**7.08**	**7.26**	**6.87**	-

Notes and Abbreviations:

mg/L: milligram per liter
Deg C: Degrees Celsius
mS/cm: milliSiemen per centimeter
mv: millivolts
NTU: Nephelometric Turbidity Units
NA: not available
SU: Standard Units (pH)
U: not detected, value is the reporting limit
J: value is estimated
J+: value is estimated with a potential high bias
R: value is rejected
*Results in **bold** are detected*
Shaded value indicates an exceedance of the Groundwater Protection Standard.
"-" Field parameters not measured during sampling due to limited available sample volume.

TABLE 3

SUMMARY OF SUPPLEMENTARY SOIL QUALITY DATA - JUNE 2023

EAST ASH POND

F.B. CULLEY GENERATING STATION

WARRICK COUNTY, INDIANA

Location Name	CCR-AP-6I	CCR-AP-8I	CMA-01
Sample Name	CCR-SB-AP6I(68.5-70)	CCR-SB-AP8I(63-64)	CMA-SB-01(50-51)
Sample Date	06/16/2023	06/14/2023	06/15/2023
Lab Sample ID	180-158155-5	180-158155-6	180-158155-7
Sample Depth (bgs)	68.5 - 70 (ft)	63 - 64 (ft)	50 - 51 (ft)
Inorganic Compounds (mg/kg)			
Aluminum	**1400**	**1000**	**13000**
Iron	**10000**	**3000**	**29000**
Lithium	**2.4**	**2**	**19**
Manganese	**220**	**59**	**840**
Molybdenum	**6.7**	**0.77 J**	**12**
Other			
Total Organic Carbon (TOC) (mg/L)	1.4 U	1.2 U	**2.7 J+**

Notes and Abbreviations:

bgs: below ground surface

mg/kg: milligram per kilogram

mg/L: milligrams per liter

U: not detected, value is the reporting limit

J: result is estimated

J+: result is estimated with a potential high bias

*Results in **bold** are detected*

TABLE 4
GROUNDWATER MONITORING WELL LOCATION AND CONSTRUCTION DETAILS
EAST ASH POND
F.B. CULLEY GENERATING STATION
WARRICK COUNTY, INDIANA

Well ID	Date Installed	Easting	Northing	Top of Pad Elevation (ft NAVD88)	Top of Riser Elevation* (ft NAVD88)	Surface Grout (ft bgs)	Bentonite (ft bgs)	Sand Pack (ft bgs)	Screen Zone (ft bgs)	Top of Screen (ft NAVD88)	Bottom of Screen (ft NAVD88)	Screen Length (ft)	Well Radius (in)	Status
Background Wells														
CCR-AP-1R	March 2016	2883429.69	969939.69	438.50	441.64	1.0 - 51.0	51.0 - 53.0	53.0 - 65.0	55.0 - 65.0	383.5	373.5	10	2	Active
CCR-AP-7	March 2016	2883090.34	970774.64	429.50	434.11	1.0 - 16.0	16.0 - 18.0	18.0 - 30.0	20.0 - 30.0	409.5	399.5	10	2	Active
CCR-AP-9	February 2017	2883998.96	969768.61	445.58	448.69	1.0 - 56.0	56.0 - 58.0	58.0 - 70.0	60.0 - 70.0	385.6	375.6	10	2	Active
East Ash Pond Wells														
CCR-AP-2	December 2015	2884168.88	969117.46	394.40	394.02	1.0 - 30.5	30.5 - 32.5	32.5 - 45.0	36.0 - 46.0	358.4	348.4	10	2	Active
CCR-AP-3	December 2015	2883542.17	969007.88	395.00	394.55	1.0 - 31.0	31.0 - 32.8	32.8 - 45.0	35.0 - 45.0	360.0	350.0	10	2	Active
CCR-AP-4	December 2015	2883281.67	969641.72	395.40	394.98	1.0 - 19.7	19.7 - 22.5	23.0 - 35.5	25.5 - 35.5	369.9	359.9	10	2	Active
CCR-AP-5	December 2015	2884016.86	969379.74	394.90	394.38	1.0 - 28.6	28.6 - 30.6	30.6 - 44.0	34.0 - 44.0	360.9	350.9	10	2	Active
CCR-AP-5I	January 2019	2884022.40	969377.37	394.90	394.59	1.0 - 71.2	71.2 - 73.0	73.0 - 86.0	75.3 - 85.3	319.6	309.3	10	2	Active
CCR-AP-6	March 2016	2883285.02	969122.07	397.10	396.75	1.0 - 31.5	31.5 - 33.0	33.5 - 45.5	35.5 - 45.5	361.6	351.6	10	2	Active
CCR-AP-6I	November 2018	2883289.37	969119.68	397.20	396.88	1.0 - 60.7	60.7 - 62.7	62.7 - 64.7	64.7 - 74.7	332.5	322.2	10	2	Active
CCR-AP-8	February 2017	2883846.86	969045.93	394.00	393.68	1.0 - 31.5	31.5 - 33.0	33.5 - 45.5	35.5 - 45.5	358.5	348.5	10	2	Active
CCR-AP-8I	November 2018	2883853.30	969046.82	393.80	393.46	1.0 - 53.7	53.7 - 56.7	56.7 - 69.0	58.7 - 68.7	334.8	324.8	10	2	Active
CCR-AP-10	January 2019	2883772.84	969536.11	--	402.40	1.0 - 36.5	36.5 - 38.0	38.0 - 50.5	40.2 - 50.2	362.2	352.2	10	2	Abandoned[1]
CCR-AP-11	January 2019	2884485.51	969352.71	--	385.10	1.0 - 40.0	40.0 - 41.8	41.8 - 54.7	44.4 - 54.4	340.7	330.7	10	2	Active
2022 Aquifer Performance Test Wells														
CCR-PW-1	July 2022	2883797.21	969046.55	394.80	394.40	0.0 - 37.0	37.0 - 43.0	43.0 - 70.0	50.0 - 70.0	344.8	324.8	20	16	NA
CCR-OW-1	June 2022	2883701.02	969027.17	395.00	394.62	0.0 - 1.5	1.5 - 4.4	34.0 - 48.0	36.0 - 46.0	359.0	349.0	10	2	NA
CCR-OW-1I	June 2022	2883704.95	969027.17	394.90	394.44	0.0 - 1.5	1.5 - 58.0	58.0 - 70.4	60.0 - 70.0	334.9	324.9	10	2	NA
CCR-OW-2	June 2022	2883773.63	969041.30	394.40	393.97	0.0 - 1.5	1.5 - 33.0	33.0 - 46.0	34.0 - 44.0	360.4	350.4	10	2	NA
CCR-OW-2I	July 2022	2883777.40	969042.58	394.20	394.08	0.0 - 1.5	1.5 - 54.0	54.0 - 68.0	56.0 - 66.0	338.2	328.2	10	2	NA
CCR-OW-3	June 2022	2883807.86	969047.93	393.90	393.69	0.0 - 1.5	1.5 - 34.0	34.0 - 47.0	35.0 - 45.0	358.9	348.9	10	2	NA
CCR-OW-3I	June 2022	2883811.66	969048.75	394.00	393.61	0.0 - 1.5	1.5 - 57.0	57.0 - 70.0	58.0 - 68.0	336.0	326.0	10	2	NA
CCR-OW-4	June 2022	2883872.53	969059.36	394.10	393.77	0.0 - 1.5	1.5 - 34.0	34.0 - 47.0	36.0 - 46.0	358.1	348.1	10	2	NA
CCR-OW-4I	June 2022	2883876.12	969059.67	394.10	393.86	0.0 - 1.5	1.5 - 55.0	55.0 - 69.0	58.0 - 68.0	336.1	326.1	10	2	NA
CCR-OW-5I	July 2022	2883799.69	969110.80	392.00	391.65	0.0 - 1.5	1.5 - 51.0	51.0 - 63.0	58.0 - 63.0	334.0	329.0	5	2	NA

Notes and Abbreviations:
bgs: below ground surface
"--"was not surveyed
ft: feet
in: inches
NA: not available
Datum of Elevations in NAVD 88
[1] Monitoring well CCR-AP-10 abandoned January 2022.
**Elevations measured on 12 September and 26 October 2022 - background wells were not resurveyed.*

TABLE 5
SUMMARY OF GROUNDWATER QUALITY DATA - MAY AND NOVEMBER 2023
EAST ASH POND
F.B. CULLEY GENERATING STATION
WARRICK COUNTY, INDIANA

Location Group	Action Level	Background					
Location Name	GWPS	CCR-AP-1R	CCR-AP-1R	CCR-AP-1R	CCR-AP-7	CCR-AP-7	CCR-AP-9
Sample Name		CCR-AP-1R-20230523	CCR-AP-1R-20230728	CCR-AP-1R-20231102	CCR-AP-7-20230522	CCR-AP-7-20231106	CCR-AP-9-20230523
Sample Date		05/23/2023	07/28/2023**	11/02/2023	05/22/2023	11/06/2023	05/23/2023
Lab Sample ID		180-157162-1	180-160084-1	180-164860-10	180-157134-1	180-165178-25	180-157227-7
Detection Monitoring - EPA Appendix III Constituents (mg/L)							
Boron, Total	4	**0.73**	**0.69**	**0.74**	0.1 U	**0.036 J**	**0.38**
Calcium, Total	NA	**65**	**87**	**85**	**120**	**110**	**140**
Chloride	NA	**18**	**17**	**17**	**35**	**42**	**11**
Fluoride	4	**0.43**	**0.4**	**0.38**	**0.49**	**0.29**	**0.35 J+**
pH (lab) (pH units)	NA	**7.4 J**	**7.5 J**	**7.4 J**	**7.3 J**	**7.5 HF**	**7.6 J**
Sulfate	NA	**250**	**300**	**340**	**110**	**84**	**140**
Total Dissolved Solids (TDS)	NA	**910**	**980**	**990**	**590**	**590**	**710**
Assessment Monitoring - EPA Appendix IV Constituents (mg/L)							
Antimony, Total	0.006	**0.0015 J**	**0.0011 J**	**0.00087 J**	0.002 U	0.005 U	**0.00083 J**
Arsenic, Total	0.025	**0.012**	**0.016**	**0.015**	**0.004 J**	**0.0019 J**	**0.0073**
Barium, Total	2	**0.14**	**0.2**	**0.21**	**0.11**	**0.1**	**0.23**
Beryllium, Total	0.004	**0.002**	**0.0022**	**0.0031**	0.001 U	0.0005 U	**0.00074 J**
Cadmium, Total	0.005	**0.00022 J**	**0.00031 J**	**0.00024 J**	0.001 U	0.0005 U	0.001 U
Chromium, Total	0.1	**0.036**	**0.055**	**0.065**	0.005 U	0.01 U	**0.018**
Cobalt, Total	0.019	**0.019**	**0.036**	**0.035**	**0.00039 J**	0.002 U	**0.014**
Fluoride	4	**0.43**	**0.4**	**0.38**	**0.49**	**0.29**	**0.35 J+**
Lead, Total	0.035	**0.019**	**0.036**	**0.037**	0.001 U	0.003 U	**0.0092**
Lithium, Total	0.04	**0.076**	**0.085**	**0.12**	**0.01**	**0.011**	**0.04**
Mercury, Total	0.002	0.0002 U	0.0002 U	0.0005 U	0.0002 U	0.0005 U	0.0002 U
Molybdenum, Total	0.1	**0.0092**	**0.0067**	**0.005**	**0.0018 J**	0.005 U	0.005 U
Selenium, Total	0.05	**0.0015 J**	**0.0013 J**	**0.0046 J**	0.005 U	0.005 U	0.005 U
Thallium, Total	0.002	**0.00086 J**	0.001 U	0.002 U	0.001 U	0.002 U	0.001 U
Radiological (pCi/L)							
Radium-226	NA	-	**1.08 ± 0.306**	**14.5 ± 1.81**	**0.269 ± 0.12**	1 U ± 0.233	**2.08 ± 0.493**
Radium-228	NA	-	1 U ± 0.714	1.91 U ± 1.17	1 U ± 0.452	**1.22 ± 0.422**	**3.96 J ± 1.35**
Radium-226 & 228	5	-	**1.44 J ± 0.777**	**16.4 ± 2.16**	**0.764 J ± 0.468**	**1.44 ± 0.482**	**6.04 J ± 1.44**
Field Parameters							
Temperature (Deg C)	NA	-	-	**-***	**19.01**	**17.68**	**20.20**
Dissolved Oxygen, Field (mg/L)	NA	-	-	**4.19**	**0.42**	**0.05**	**7.22**
Conductivity, Field (mS/cm)	NA	-	-	**0.97**	**0.93**	**0.62**	**0.15**
Oxidation Reduction Potential (ORP), Field (mv)	NA	-	-	**14.88**	**-74.80**	**-111.40**	**79.80**
Turbidity, Field (NTU)	NA	-	-	**475.00**	**1.08**	**28.94**	**9.27**
pH, Field (SU)	NA	-	-	**7.19**	**7.13**	**7.26**	**6.87**

Notes and Abbreviations:

- Some field parameters were erroneously not recorded by field staff
- Field parameter recorded is erroneous and therefore omitted*
CCR: Coal Combustion Residuals
mg/L: milligram per liter
pCi/L: picoCurie per liter
Deg C: Degrees Celsius
mS/cm: milliSiemen per centimeter
mv: millivolts
NTU: Nephelometric Turbidity Units
NA: not available
SU: Standard Units (pH)
U: not detected, value is the laboratory reporting limit
J: value is estimated
J+: value is estimated with a potential high bias
USEPA: United States Environmental Protection Agency
GWPS: Ground Water Protection Standard
*Results in **bold** are detected*
Shaded values indicate a GWPS exceedance
***Confirmation samples*
USEPA. 2020. Final Rule: Disposal of Coal Combustion Residuals from Electric Utilities. December 14. 40 CFR Part 257.
https://www.epa.gov/coalash/coal-ash-rule

TABLE 5
SUMMARY OF GROUNDWATER QUALITY DATA - MAY AND NOVEMBER 2023
EAST ASH POND
F.B. CULLEY GENERATING STATION
WARRICK COUNTY, INDIANA

Location Group	Action Level	Down-Gradient													
Location Name	GWPS	CCR-AP-2	CCR-AP-2	CCR-AP-2	CCR-AP-3	CCR-AP-5	CCR-AP-5	CCR-AP-5	CCR-AP-5	CCR-AP-5I	CCR-AP-5I	CCR-AP-6	CCR-AP-6	CCR-AP-6I	CCR-AP-6I
Sample Name		CCR-AP-2-20230523	CCR-AP-2-20230728	CCR-AP-2-20231102	CCR-AP-3-20230523	CCR-AP-5-20230525	BLIND DUP 1-20230525	CCR-AP-5-20231102	DUP-1-20231102	CCR-AP-5I-20230525	CCR-AP-5I-20231102	CCR-AP-6-20230523	CCR-AP-6-20231102	CCR-AP-6I-20230526	CCR-AP-6I-20231102
Sample Date		05/23/2023	07/28/2023**	11/02/2023	05/23/2023	05/25/2023	05/25/2023	11/02/2023	11/02/2023	05/25/2023	11/02/2023	05/23/2023	11/02/2023	05/26/2023	11/02/2023
Lab Sample ID		180-157162-2	180-160084-2	180-164860-2	180-157162-3	180-157227-1	180-157227-9	180-164860-11	180-164860-13	180-157227-2	180-164860-4	180-157227-3	180-164860-6	180-157227-4	180-164860-8
Detection Monitoring - EPA Appendix III Constituents (mg/L)															
Boron, Total	4	**5.8**	**10**	**6.6**	**0.16**	**16**	**16**	**6.6**	**7.5**	**22**	**19**	**0.59**	**0.62**	**21**	**24**
Calcium, Total	NA	**170**	**240**	**180**	**180**	**290**	**290**	**310**	**270**	**390**	**360**	**210**	**180**	**580**	**340**
Chloride	NA	**200**	**220**	**240**	**27**	**220**	**220**	**86**	**100**	**440**	**430**	**42**	**50**	**230**	**460**
Fluoride	4	**0.47**	**0.5**	**0.55**	**0.25 J+**	**0.91**	**0.92**	**2.3**	**2.2**	**0.28 J+**	**0.26**	**0.27 J+**	**0.51**	0.11 U	**0.098 J**
pH (lab) (pH units)	NA	**6.9 J**	**7 J**	**6.7 J**	**7.1 J**	**7.6 J**	**7.5 J**	**7.5 J**	**7.6 J**	**7.5 J**	**7.2 J**	**7.6 J**	**7.3 J**	**7.5 J**	**7.8 J**
Sulfate	NA	**250**	**260**	**450**	**3.2**	**650**	**650**	**580**	**590**	**790**	**730**	**10**	**4.3**	**1400**	**1300**
Total Dissolved Solids (TDS)	NA	**790**	**1100**	**1300**	**990**	**1800**	**1800**	**1200**	**1300**	**2300**	**2100**	**1000**	**980**	**2700**	**2900**
Assessment Monitoring - EPA Appendix IV Constituents (mg/L)															
Antimony, Total	0.006	**0.0041**	**0.0013 J**	**0.0013 J**	**0.00086 J**	**0.0011 J**	**0.0013 J**	**0.0024 J**	**0.0024 J**	0.002 U	0.005 U	**0.0017 J**	**0.00066 J**	0.002 U	0.005 U
Arsenic, Total	0.025	**0.03**	**0.048**	**0.04**	**0.08**	**0.0091**	**0.0095**	**0.024**	**0.022**	**0.0016 J**	**0.0041 J**	**0.11**	**0.096**	**0.0038 J**	**0.0047 J**
Barium, Total	2	**0.4**	**0.56**	**0.64**	**0.42**	**0.12**	**0.13**	**0.2**	**0.21**	**0.038**	**0.059**	**0.51**	**0.48**	**0.039**	**0.029**
Beryllium, Total	0.004	**0.0031**	**0.0049**	**0.0072**	0.001 U	0.001 U	0.001 U	**0.0016**	**0.0016**	0.001 U	**0.00032 J**	0.001 U	0.0005 U	0.001 U	0.0005 U
Cadmium, Total	0.005	**0.0012**	**0.0014**	**0.0023**	0.001 U	**0.00038 J**	**0.00046 J**	**0.0014**	**0.0015**	**0.0003 J**	**0.00062**	0.001 U	**0.000094 J**	0.001 U	**0.00027 J**
Chromium, Total	0.1	**0.079**	**0.1**	**0.14**	**0.0021 J**	**0.0091**	**0.01**	**0.056**	**0.057**	0.005 U	**0.0084 J**	**0.0067**	**0.0047 J**	0.005 U	0.01 U
Cobalt, Total	0.019	**0.04**	**0.072**	**0.091**	**0.0047**	**0.0032**	**0.0035**	**0.01**	**0.0099**	**0.0028**	**0.0046**	**0.0055**	**0.0047**	**0.0023**	0.002 U
Fluoride	4	**0.47**	**0.5**	**0.55**	**0.25 J+**	**0.91**	**0.92**	**2.3**	**2.2**	**0.28 J+**	**0.26**	**0.27 J+**	**0.51**	0.11 U	**0.098 J**
Lead, Total	0.035	**0.049**	**0.074**	**0.1**	**0.00055 J**	**0.003**	**0.0034**	**0.02**	**0.019**	**0.0005 J**	**0.0031**	**0.0066**	**0.0027 J**	**0.00053 J**	0.003 U
Lithium, Total	0.04	**0.064**	**0.083**	**0.11**	**0.0021 J**	**0.072**	**0.072**	**0.059**	**0.066**	**0.029**	**0.039**	0.008 U	**0.002 J**	**0.061**	**0.15**
Mercury, Total	0.002	**0.00071**	**0.00033**	**0.00042 J**	0.0002 U	**0.00032**	**0.00034**	**0.0016**	**0.0015**	0.0002 U	0.0005 U	**0.00041**	0.0005 U	0.0002 U	0.0005 U
Molybdenum, Total	0.1	**0.0078**	**0.01**	**0.0083**	**0.0086**	**0.21**	**0.21**	**0.14**	**0.17**	**0.0052**	**0.006**	**0.022**	**0.015**	**0.52**	**1.3**
Selenium, Total	0.05	**0.0042 J**	**0.0035 J**	**0.013**	**0.0019 J**	**0.0034 J**	**0.0034 J**	**0.02**	**0.022**	0.005 U	0.005 U	**0.0014 J**	**0.0012 J**	0.005 U	0.005 U
Thallium, Total	0.002	**0.0013**	**0.0013**	**0.0012 J**	0.001 U	0.001 U	0.001 U	**0.00096 J**	**0.001 J**	0.001 U	0.002 U	0.001 U	0.002 U	0.001 U	0.002 U
Radiological (pCi/L)															
Radium-226	NA	-	1 U ± 0.193	**1.18 ± 0.362**	**0.777 ± 0.367**	**1.38 ± 0.47**	**1.11 ± 0.355**	**2.95 ± 0.542**	**2.41 ± 0.577**	**0.391 ± 0.242**	**0.422 ± 0.262**	**0.605 ± 0.317**	**0.863 ± 0.289**	1 U ± 0.126	1 U ± 0.0975
Radium-228	NA	-	1 U ± 0.566	2.06 U ± 1.02	1 U ± 1.12	2.33 U ± 1.25	1 U ± 0.601	2.59 U ± 0.891	1 U ± 0.966	1 U ± 0.668	1 U ± 1.07	1 U ± 0.708	1.86 U ± 0.975	1 U ± 0.457	1 U ± 0.468
Radium-226 & 228	5	-	5 U ± 0.598	**3.23 J+ ± 1.08**	5 U ± 1.18	3.71 U ± 1.34	5 UJ ± 0.698	**5.54 J+ ± 1.04**	**3.05 J ± 1.13**	5 UJ ± 0.71	5 UJ ± 1.1	**1.36 J ± 0.776**	2.72 U ± 1.02	5 U ± 0.474	5 U ± 0.478
Field Parameters															
Temperature (Deg C)	NA	-	-	**17.25**	-	**20.32**	**20.32**	**17.92**	**17.92**	**18.93**	**17.65**	-	**14.25**	**18.40**	**17.77**
Dissolved Oxygen, Field (mg/L)	NA	-	-	**5.41**	-	**2.91**	**2.91**	**6.18**	**6.18**	**0.48**	**0.07**	-	**1.09**	**0.46**	**0.20**
Conductivity, Field (mS/cm)	NA	-	-	**1.05**	-	**0.88**	**0.88**	**0.75**	**0.75**	**1.25**	**1.39**	-	**1.49**	**0.70**	**3.03**
Oxidation Reduction Potential (ORP), Field (mv)	NA	-	-	**-11.40**	-	**-49.10**	**-49.10**	**7.90**	**7.90**	**-8.60**	**-38.10**	-	**-122.50**	**-15.10**	**-48.00**
Turbidity, Field (NTU)	NA	-	-	**325.00**	-	**120.74**	**120.74**	**215.82**	**215.82**	**17.41**	**401.99**	-	**77.21**	**30.06**	**2.83**
pH, Field (SU)	NA	-	-	**6.90**	-	**7.17**	**7.17**	**7.33**	**7.33**	**6.85**	**6.73**	-	**7.24**	**7.00**	**7.73**

Notes and Abbreviations:

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- Field parameter recorded is erroneous and therefore omitted*
CCR: Coal Combustion Residuals
mg/L: milligram per liter
pCi/L: picoCurie per liter
Deg C: Degrees Celsius
mS/cm: milliSiemen per centimeter
mv: millivolts
NTU: Nephelometric Turbidity Units
NA: not available
SU: Standard Units (pH)
U: not detected, value is the laboratory reporting limit
J: value is estimated
J+: value is estimated with a potential high bias
USEPA: United States Environmental Protection Agency
GWPS: Ground Water Protection Standard
*Results in **bold** are detected*
Shaded values indicate a GWPS exceedance
***Confirmation samples*
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https://www.epa.gov/coalash/coal-ash-rule

TABLE 5
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EAST ASH POND
F.B. CULLEY GENERATING STATION
WARRICK COUNTY, INDIANA

Location Group	Action Level	Down-Gradient				
Location Name	GWPS	CCR-AP-8	CCR-AP-8I	CCR-AP-8I	CCR-AP-11	CCR-AP-11
Sample Name		CCR-AP-8-20230525	CCR-AP-8I-20230525	CCR-AP-8I-20231102	CCR-AP-11-20230526	CCR-AP-11-20231102
Sample Date		05/25/2023	05/25/2023	11/02/2023	05/26/2023	11/02/2023
Lab Sample ID		180-157227-5	180-157227-6	180-164860-3	180-157227-8	180-164860-12
Detection Monitoring - EPA Appendix III Constituents (mg/L)						
Boron, Total	4	0.1 U	**13**	**12**	**0.41**	**0.37**
Calcium, Total	NA	**250**	**470**	**440**	**56**	**110**
Chloride	NA	**17**	**500**	**570**	**1.2**	**16**
Fluoride	4	**0.19 J+**	**0.21 J+**	**0.2 J**	**0.57**	**0.8**
pH (lab) (pH units)	NA	**7.4 J**	**7.3 J**	**7 J**	**7.3 J**	**6.7 J**
Sulfate	NA	**1.5**	**950**	**1000**	**100**	**370**
Total Dissolved Solids (TDS)	NA	**1100**	**2700**	**2600 J**	**240**	**660**
Assessment Monitoring - EPA Appendix IV Constituents (mg/L)						
Antimony, Total	0.006	**0.00066 J**	0.002 U	**0.00038 J**	0.002 U	0.005 U
Arsenic, Total	0.025	**0.11**	**0.002 J**	**0.0028 J**	0.005 U	**0.024**
Barium, Total	2	**0.43**	**0.22**	**0.22**	**0.021**	**0.13**
Beryllium, Total	0.004	0.001 U	0.001 U	0.0005 U	0.001 U	0.0005 U
Cadmium, Total	0.005	0.001 U	0.001 U	**0.00015 J**	0.001 U	0.0005 U
Chromium, Total	0.1	**0.0014 J**	0.005 U	**0.0027 J**	0.005 U	**0.0014 J**
Cobalt, Total	0.019	**0.0026**	**0.0003 J**	0.002 U	**0.00033 J**	**0.037**
Fluoride	4	**0.19 J+**	**0.21 J+**	**0.2 J**	**0.57**	**0.8**
Lead, Total	0.035	**0.00052 J**	0.001 U	**0.001 J**	0.001 U	0.003 U
Lithium, Total	0.04	0.008 U	**0.37**	**0.43**	**0.0029 J**	**0.0028 J**
Mercury, Total	0.002	0.0002 U	**0.00023**	0.0005 U	0.0002 U	0.0005 U
Molybdenum, Total	0.1	**0.0078**	**0.29**	**0.34**	**0.0018 J**	0.005 U
Selenium, Total	0.05	**0.0019 J**	0.005 U	**0.00091 J**	**0.0021 J**	**0.0014 J**
Thallium, Total	0.002	0.001 U	0.001 U	0.002 U	0.001 U	0.002 U
Radiological (pCi/L)						
Radium-226	NA	1 U ± 0.211	**1.48 ± 0.339**	**1.53 ± 0.326**	1 U ± 0.0978	1 U ± 0.168
Radium-228	NA	1.21 U ± 0.798	1.75 U ± 0.73	**2.94 J ± 0.839**	1 U ± 0.435	1 U ± 0.565
Radium-226 & 228	5	1.43 UJ ± 0.825	**3.24 J ± 0.805**	**4.47 J ± 0.9**	5 U ± 0.446	5 U ± 0.589
Field Parameters						
Temperature (Deg C)	NA	**19.09**	**18.31**	**17.20**	**20.20**	**15.93**
Dissolved Oxygen, Field (mg/L)	NA	**1.18**	**0.32**	**0.02**	**7.22**	**8.61**
Conductivity, Field (mS/cm)	NA	**0.55**	**1.36**	**2.21**	**0.15**	**0.50**
Oxidation Reduction Potential (ORP), Field (mv)	NA	**-146.10**	**-119.40**	**-117.60**	**79.80**	**-31.10**
Turbidity, Field (NTU)	NA	**40.13**	**11.75**	**26.57**	**9.27**	**40.04**
pH, Field (SU)	NA	**6.88**	**7.00**	**6.80**	**6.87**	**6.66**

Notes and Abbreviations:

- Some field parameters were erroneously not recorded by field staff
- Field parameter recorded is erroneous and therefore omitted*
CCR: Coal Combustion Residuals
mg/L: milligram per liter
pCi/L: picoCurie per liter
Deg C: Degrees Celsius
mS/cm: milliSiemen per centimeter
mv: millivolts
NTU: Nephelometric Turbidity Units
NA: not available
SU: Standard Units (pH)
U: not detected, value is the laboratory reporting limit
J: value is estimated
J+: value is estimated with a potential high bias
USEPA: United States Environmental Protection Agency
GWPS: Ground Water Protection Standard
*Results in **bold** are detected*
Shaded values indicate a GWPS exceedance
***Confirmation samples*
USEPA. 2020. Final Rule: Disposal of Coal Combustion Residuals from Electric Utilities. December 14. 40 CFR Part 257.
https://www.epa.gov/coalash/coal-ash-rule

FIGURES

LEGEND

- UPGRADIENT GROUNDWATER MONITORING WELL
- DOWNGRADIENT GROUNDWATER MONITORING WELL
- CREEK BOUNDARY
- APPROXIMATE UNIT BOUNDARY
- APPROXIMATE PROPERTY BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. CCR = COAL COMBUSTION RESIDUALS
3. AERIAL IMAGERY SOURCE: HEXAGON, 25 JULY 2023

N

0 230 460

SCALE IN FEET

HALEY ALDRICH

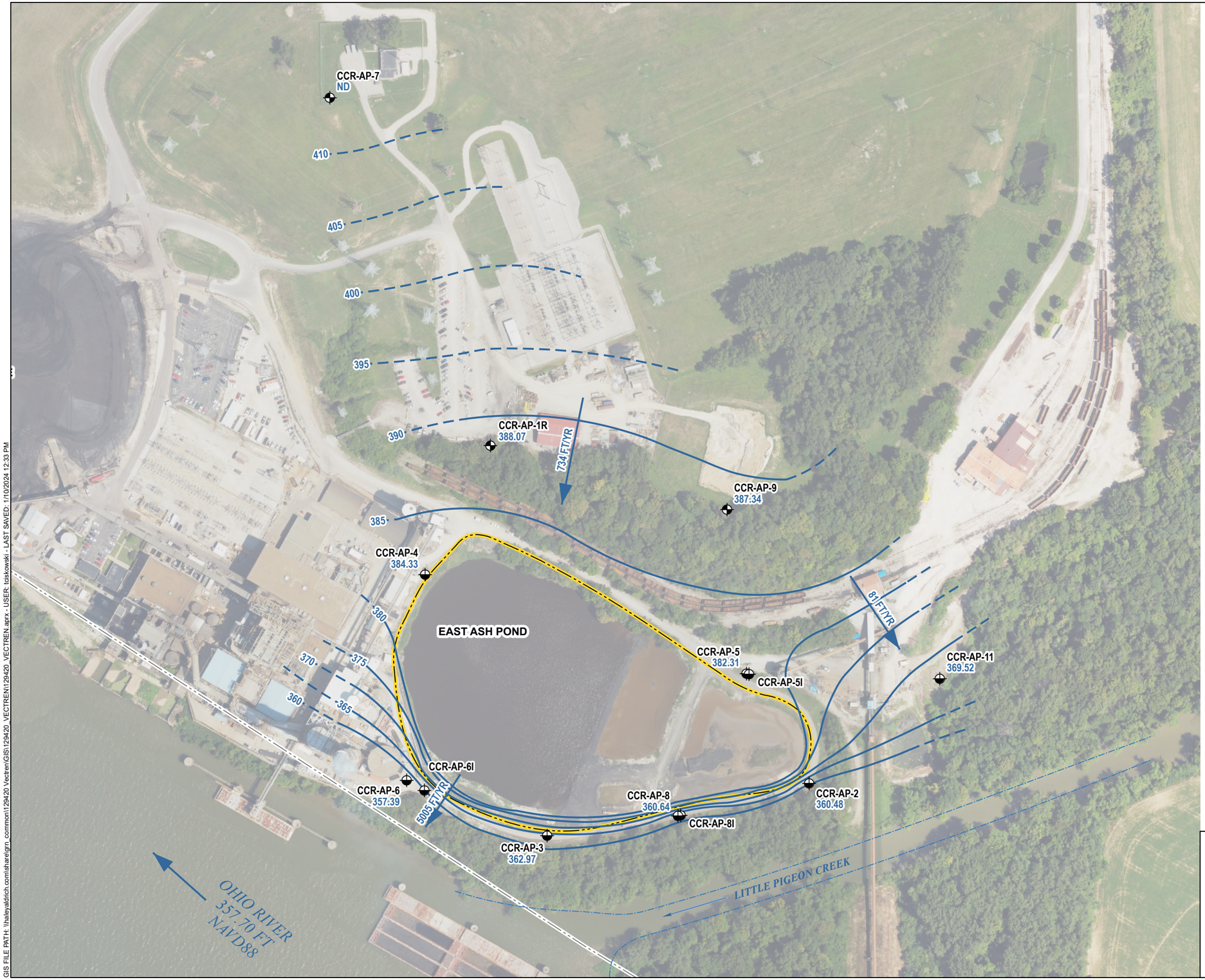
EAST ASH POND
F.B, CULLEY GENERATING STATION
WARRICK COUNTY, INDIANA

GROUNDWATER MONITORING WELL LOCATIONS - EAST ASH POND

JANUARY 2024

FIGURE 1

GIS FILE PATH: \\haleyaldrich.com\share\gm_common\129420 Vectren\GIS\129420_VECTREN\129420_VECTREN_BASEMAPS_FOR_DRAFTING.aprx - USER: tciskowski - LAST SAVED: 1/10/2024 10:37 AM



LEGEND

- UPGRADIENT GROUNDWATER MONITORING WELL
- DOWNGRADIENT GROUNDWATER MONITORING WELL
- GROUNDWATER FLOW DIRECTION
- CREEK BOUNDARY
- GROUNDWATER ELEVATION CONTOUR, 5-FT INTERVAL, DASHED WHERE INFERRED
- APPROXIMATE UNIT BOUNDARY
- APPROXIMATE PROPERTY BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

2. DEFINITIONS:
CCR = COAL COMBUSTION RESIDUALS
ND = NO DATA
NAVD88 = NORTH AMERICAN VERTICAL DATUM OF 1988

3. WATER LEVELS GAGED ON 23 MAY 2023

4. OHIO RIVER LEVEL COLLECTED BY USGS OWENSBORO GAGE #03303502 ON 23 MAY 2023 AT 12:00 PM

5. GROUNDWATER VELOCITY SHOWN IN FEET PER YEAR

6. $V = \frac{k(i)}{n_e}$

V = GROUNDWATER VELOCITY (FT/YR)
K = HYDRAULIC CONDUCTIVITY (FT/YR)
i = GROUNDWATER GRADIENT
n_e = EFFECTIVE POROSITY

7. AERIAL IMAGERY SOURCE: HEXAGON, 25 JULY 2023

8. CCR-AP-7 NOT ACCESSIBLE DURING GAGING. GROUNDWATER ELEVATION MEASURED DURING SAMPLING USED TO INFER CONTOURS NORTH OF CC-AP-1R.

N

0 230 460
SCALE IN FEET

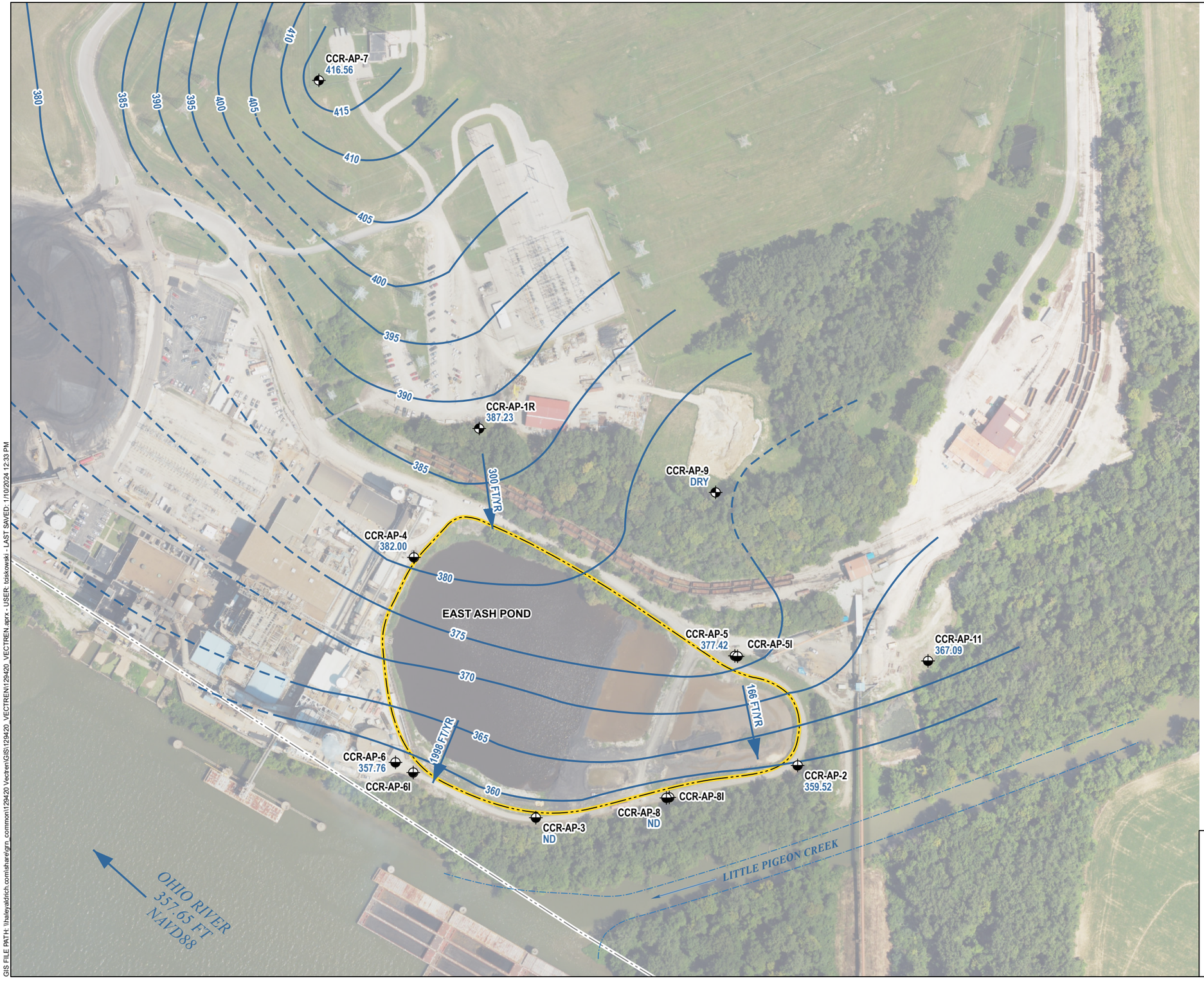
HALEY ALDRICH

EAST ASH POND
F.B. CULLEY GENERATING STATION
WARRICK COUNTY, INDIANA

SHALLOW GROUNDWATER CONFIGURATION - EAST ASH POND 23 MAY 2023

JANUARY 2024

FIGURE 2



LEGEND

- UPGRADIENT GROUNDWATER MONITORING WELL
- DOWNGRADIENT GROUNDWATER MONITORING WELL
- GROUNDWATER FLOW DIRECTION
- CREEK BOUNDARY
- GROUNDWATER ELEVATION CONTOUR, 5-FT INTERVAL, DASHED WHERE INFERRED
- APPROXIMATE UNIT BOUNDARY
- APPROXIMATE PROPERTY BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

2. DEFINITIONS:
CCR = COAL COMBUSTION RESIDUALS
ND = NO DATA
NAVD88 = NORTH AMERICAN VERTICAL DATUM OF 1988

3. WATER LEVELS GAGED ON 1 NOVEMBER 2023

4. OHIO RIVER LEVEL COLLECTED BY USGS OWENSBORO GAGE #03303502 ON 1 NOVEMBER 2023 AT 12:00 PM

5. GROUNDWATER VELOCITY SHOWN IN FEET PER YEAR

6. CONTOURS IN NORTHWEST QUADRANT ARE CALCULATED FROM WEST ASH POND WELL DATA NOT SHOWN.

7. $V = \frac{k(i)}{n_e}$

V = GROUNDWATER VELOCITY (FT/YR)
K = HYDRAULIC CONDUCTIVITY (FT/YR)
i = GROUNDWATER GRADIENT
n_e = EFFECTIVE POROSITY

8. AERIAL IMAGERY SOURCE: HEXAGON, 25 JULY 2023

N

0 230 460
SCALE IN FEET

HALEY ALDRICH

EAST ASH POND
F.B.CULLEY GENERATING STATION
WARRICK COUNTY, INDIANA

SHALLOW GROUNDWATER CONFIGURATION - EAST ASH POND 1 NOVEMBER 2023

JANUARY 2024

FIGURE 3

GIS FILE PATH: \\haleyaldrich.com\share\grn_common\129420 Vectren\GIS\129420_VECTREN\129420_VECTREN aprx - USER: toskowski - LAST SAVED: 1/10/2024 12:33 PM

APPENDIX A
Summary of Statistical Analysis

HALEY & ALDRICH, INC.
400 Augusta Street
Suite 100
Greenville, SC 29601
864.214.8771

TECHNICAL MEMORANDUM

15 February 2023
File No. 129420

TO: Southern Indiana Gas and Electric Company

FROM: Haley & Aldrich, Inc.
Todd Plating, Sr. Project Manager
Steven F. Putrich, P.E., Project Principal

SUBJECT: Statistical Evaluation of the November 2022 Semi-annual Groundwater Assessment Monitoring Data
Southern Indiana Gas and Electric Company
East Ash Pond
F.B. Culley Generating Station; Warrick County, Indiana

Pursuant to Title 40 Code of Federal Regulations (40 CFR) § 257.93 and § 257.95 (Rule), this memorandum summarizes the statistical evaluation of the analytical results for the November 2022 semi-annual assessment monitoring event for the F.B. Culley Generating Station (FBC) East Ash Pond (EAP). Haley & Aldrich, Inc. (Haley & Aldrich) completed this statistical evaluation to determine if Appendix IV groundwater monitoring constituents have been detected in downgradient wells at statistically significant levels (SSL) greater than Groundwater Protection Standards (GWPS), consistent with the requirements in 40 CFR § 257.95.

Methods used during this statistical analysis are described in the *Statistical Data Analysis Plan for the F.B. Culley Generating Station* (Haley & Aldrich, 2017). A summary of how applicable performance standards described in § 257.93 (g) were achieved include:

- § 257.93 (g) (1) - Data set distribution was evaluated using basic summary statistics, graphical methods, and the Shapiro-Wilks Test of Normality. Parametric methods were used where normal distributions were identified. Those data sets were evaluated for outliers using box plots, Dixon's test and Rosner's test. Outlier identification and data set distribution groups are summarized in Attachment A.
- § 257.93 (g) (2) – Not applicable
- § 257.93 (g) (3) – Not applicable

- § 257.93 (g) (4) – Levels of confidence and additional supporting information for the use of tolerance intervals and prediction limits are included in Attachment A.
- § 257.93 (g) (5) – Non-detect values were accounted for by simple substitution, where the detection limit replaced the non-detect result. Non-detect values are identified and summarized in Attachment A.
- § 257.93 (g) (6) – Time series plots for groundwater monitoring wells included in this evaluation were reviewed to identify potential seasonal variability. No additional statistics to account for seasonality of spatial variability were necessary.

Data from the groundwater sampling event for the downgradient monitoring wells (CCR-AP-2 through CCR-AP-6 and CCR-AP-8) were compared to the GWPS established from the background dataset for the upgradient monitoring wells (CCR-AP-1R, CCR-AP-7, and CCR-AP-9) for detected Appendix IV constituents. GWPS for each of the Appendix IV constituents have been set equal to the highest value of the maximum contaminant level, regional screening level, or background concentration. The results of the assessment monitoring statistical evaluation are discussed below and provided in Attachment A.

Development of GWPS

The Rule provides four specific options for statistical evaluation of groundwater quality data collected at a coal combustion residual (CCR) unit (40 CFR §257.93(f) (1-4)). Haley & Aldrich certified the tolerance limit (TL) as the statistical method used for developing background concentration for the GWPS on 14 January 2019. As noted above, the GWPS for each of the Appendix IV constituents have been set equal to the highest value of the maximum contaminant level, regional screening level, or background concentration. The most recent groundwater sampling result from each compliance well was compared to the GWPS to determine if additional statistical testing is warranted.

STATISTICAL EVALUATION

An interwell statistical evaluation was used to identify SSLs. An interwell evaluation compares the most recent values from downgradient compliance wells to a background dataset composed of upgradient well data. Because the CCR unit is in assessment monitoring, no statistical evaluations were conducted on Appendix III (detection monitoring) constituents.

The parametric TL method was used to complete statistical evaluations of the referenced dataset. The TL procedure is one in which a concentration limit for each constituent is established from the distribution of the background data, with a minimum 95 percent confidence level. The upper endpoint of a tolerance interval is called the UTL. Depending on the data distribution, parametric or non-parametric TL procedures are used to evaluate groundwater monitoring data using this method. Parametric TLs utilize normally distributed data or data normalized via a transformation of the sample background data used to construct the limit. If the data are non-normal and a transformation is not indicated, non-parametric procedures (order statistics or bootstrap methods) are used to calculate the TL. If all the background data are non-detect, a maximum reporting limit may serve as an appropriate UTL.

These statistical evaluations were conducted using the background dataset for all detected Appendix IV constituents using parametric TL. If an Appendix IV constituent concentration from the November 2022 sampling event was greater than the GWPS, the lower confidence limit (LCL) for the downgradient well constituent was used to evaluate if an SSL was indicated. The LCL is the lower end of the confidence interval range, which is an estimated concentration range intended to contain the true mean or median of the population from which the sample is drawn. The confidence interval range is designed to locate the true population mean or median with a high degree of statistical confidence, or conversely, with a low probability of error.

The UTLs were calculated from the background well dataset using Chemstat software after testing for outlier sample results that would warrant removal from the dataset based on likely error in sampling or measurement. Both visual and statistical outlier tests for the background data were performed using Chemstat and United States Environmental Protection Agency's ProUCL 5.1 software, and a visual inspection of the data was performed using box plots and distribution plots for the downgradient sample data. No sample data were identified as outliers that warranted removal from the dataset.

BACKGROUND DISTRIBUTIONS

The groundwater analytical results for each sampling event from the background sample locations were combined to calculate the UTL for each detected Appendix IV constituent. The variability and distribution of the pooled dataset was evaluated to determine the method for UTL calculation. The background concentrations were periodically updated per the document *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, March 2009* (Unified Guidance).

TREND SUMMARY

Mann Kendall trend analyses were performed on data sets of sufficient sample size. Results of the trend analysis are included as Attachment A. Molybdenum has been previously identified at statistically significant levels. An increasing trend in molybdenum concentration was identified at CCR-AP-2, however that concentration is almost an order of magnitude less than the GWPS. An increasing trend was also identified at CCR-AP-6. A stable trend was identified at CCR-AP-5 where an SSL for molybdenum has been previously identified.

RESULTS OF APPENDIX IV DOWNGRADIENT STATISTICAL COMPARISONS

The sample concentrations from the downgradient wells for each of the detected Appendix IV constituents from the November 2022 assessment monitoring event were compared to their respective GWPS (Attachment A). A sample concentration greater than the GWPS is considered to represent an SSL. A summary of SSLs and trends is provided in Table 1. Based on previous compliance sampling events and statistical evaluations, interwell comparisons were utilized for downgradient wells and constituents except for arsenic. Based on previous compliance sampling events and statistical evaluations, interwell comparisons were used to evaluate constituents not subject to an Alternative Source Demonstration (ASD) in downgradient monitoring wells. Because a successful ASD was completed for arsenic, an intrawell statistical analysis was used to evaluate that constituent.

The results of the statistical analyses conducted for detected Appendix IV constituents confirm that molybdenum remains the only SSL downgradient of the EAP. As a result, the East Ash Pond will remain in Assessment Monitoring.

Table 1 – Statistically Significant Level Summary

Location ID	Trend	Constituent	Newly Identified SSL	Concentration (mg/L)
CCR-AP-5	Stable	Molybdenum	No	0.24

Enclosure:

Attachment A - Assessment Monitoring Statistical Summary – November 2022

G:\129420 Vectren\Deliverables\FB_Culley\East Ash Pond\SSL Notification\2022-11 Nov Sampling SSL Memo\2023_0403 FBC EAP November 2022 Statistical Evaluation Summary_F.docx

ATTACHMENT A
Summary of Assessment Monitoring Statistical Evaluation – November 2022

Attachment A
Assessment Monitoring Statistical Summary - November 2022
F.B. Culley Generating Station
East Ash Pond
Prepared: 15 February 2023

														MCL Comparison					Inter-well Analysis					Intra-well Analysis		GWPS		
Location ID	Frequency of Detection	Percent Non-Detects	Range of Non-Detect	Mean	50th Percentile (Median)	95th Percentile	Maximum Detect	Variance	Standard Deviation	Coefficient of Variance	CCR MCL/RSL	Report Result Unit	Detection Exceedances (Y/N)	Number of Detection Exceedances	Number of Non-Detection Exceedances	Outlier Presence	Outlier Removed	Trend	Distribution Group	November 2022 Concentration (mg/L)	Detect?	Lower Confidence Level (LCL)	Upper Tolerance Limit (mg/L)	SSI (Exceedance above Background at Individual Well)	Upper Prediction Limits (mg/L)	SSI (Exceedance above Background at Individual Well)	Groundwater Protection Standard (Higher of MCL/RSL or Upper Tolerance Limit) (mg/L)	Exceedance above GWPS at Individual Well	SSL
CCR Appendix-IV: Antimony, Total (mg/L)																												
CCR-AP-1R	13/19	32%	0.002-0.02	0.00398	0.002	0.02	0.0041	0.00003635	0.006029	1.514	0.006	mg/L	N	0	3	N	N	Stable											
CCR-AP-7	3/21	86%	0.002-0.002	0.00179	0.002	0.002	0.00083	2.871E-07	0.0005358	0.2992	0.006	mg/L	N	0	0	Y	N	Stable	Non-parametric				0.02			0.02		
CCR-AP-9	14/19	26%	0.002-0.02	0.00455	0.0014	0.02	0.0079	0.00003712	0.006093	1.339	0.006	mg/L	Y	2	3	Y	N	Stable											
CCR-AP-2	10/19	47%	0.002-0.02	0.00378	0.002	0.011	0.0079	0.00002411	0.00491	1.298	0.006	mg/L	Y	1	3	Y	N	Stable		0.0079	Y			N				N	No
CCR-AP-3	3/19	84%	0.002-0.002	0.00184	0.002	0.00201	0.0021	2.448E-07	0.0004947	0.2686	0.006	mg/L	N	0	0	Y	N	Stable		0.0021	Y			N				N	No
CCR-AP-4R	5/19	74%	0.002-0.01	0.00359	0.002	0.0118	0.028	0.00003874	0.006224	1.735	0.006	mg/L	Y	1	1	Y	N	Stable		0.028	Y	0.002		Y				N	No[1]
CCR-AP-5	4/19	79%	0.002-0.02	0.00283	0.002	0.00623	0.0047	0.00001812	0.004257	1.503	0.006	mg/L	N	0	1	Y	N	Stable		0.0047	Y			N				N	No
CCR-AP-6	10/19	47%	0.002-0.01	0.00268	0.002	0.0108	0.018	0.00001811	0.004256	1.589	0.006	mg/L	Y	1	1	Y	N	Stable		0.018	Y			N				N	No
CCR-AP-8	13/19	32%	0.002-0.002	0.00143	0.0011	0.00226	0.0046	9.858E-07	0.0009929	0.6961	0.006	mg/L	N	0	0	N	N	Stable		0.0046	Y			N				N	No
CCR Appendix-IV: Arsenic, Total (mg/L)																												
CCR-AP-1R	19/19	0%	-	0.017	0.012	0.0371	0.038	0.0001521	0.01233	0.7264	0.01	mg/L	Y	10	0	N	N	Increase											
CCR-AP-7	21/21	0%	-	0.00616	0.0058	0.015	0.018	0.00001765	0.004201	0.6821	0.01	mg/L	Y	2	0	N	N	Decrease	Non-parametric				0.038			0.038		
CCR-AP-9	19/19	0%	-	0.0106	0.0088	0.0212	0.032	0.00004129	0.006425	0.6071	0.01	mg/L	Y	5	0	Y	N	Stable											
CCR-AP-2	19/19	0%	-	0.0117	0.011	0.0221	0.032	0.0000726	0.008521	0.7283	0.01	mg/L	Y	10	0	N	N	Increase	Normal	0.013	Y			N	0.044	N		N	No
CCR-AP-3	19/19	0%	-	0.0757	0.077	0.0869	0.095	0.00007489	0.008654	0.1143	0.01	mg/L	Y	19	0	N	N	Stable	Normal	0.073	Y			Y	0.107	N		N	No[2]
CCR-AP-4R	19/19	0%	-	0.113	0.086	0.321	0.33	0.006892	0.08302	0.7354	0.01	mg/L	Y	19	0	Y	N	Increase	Log-transformed	0.16	Y			Y	0.650	N		N	No[2]
CCR-AP-5	17/19	11%	0.001-0.01	0.00313	0.001	0.0114	0.024	0.00003249	0.0057	1.82	0.01	mg/L	Y	1	0	Y	N	Stable	Non-parametric	0.024	Y			N	0.010	Y		N	No
CCR-AP-6	19/19	0%	-	0.0934	0.1	0.12	0.12	0.0004998	0.02236	0.2394	0.01	mg/L	Y	19	0	N	N	Increase	Normal	0.12	Y			Y	0.173	N		N	No[2]
CCR-AP-8	19/19	0%	-	0.09	0.095	0.12	0.12	0.0004713	0.02171	0.2412	0.01	mg/L	Y	19	0	N	N	Increase	Normal	0.1	Y			Y	0.168	N		N	No[2]
CCR Appendix-IV: Barium, Total (mg/L)																												
CCR-AP-1R	19/19	0%	-	0.235	0.16	0.554	0.59	0.02773	0.1665	0.7097	2	mg/L	N	0	0	N	N	Increase											
CCR-AP-7	21/21	0%	-	0.13	0.13	0.19	0.19	0.0008478	0.02912	0.2233	2	mg/L	N	0	0	N	N	Stable	Non-parametric				0.72			2		
CCR-AP-9	19/19	0%	-	0.296	0.27	0.423	0.72	0.01546	0.1243	0.4196	2	mg/L	N	0	0	Y	N	Increase											
CCR-AP-2	19/19	0%	-	0.205	0.22	0.448	0.52	0.01624	0.1274	0.622	2	mg/L	N	0	0	N	N	Increase		0.23	Y			N				N	No
CCR-AP-3	19/19	0%	-	0.429	0.43	0.481	0.49	0.0009719	0.03118	0.07259	2	mg/L	N	0	0	N	N	Stable		0.4	Y			N				N	No
CCR-AP-4R	19/19	0%	-	0.701	0.63	1.31	1.4	0.06319	0.2514	0.3589	2	mg/L	N	0	0	N	N	Stable		0.89	Y			Y				N	No
CCR-AP-5	19/19	0%	-	0.0517	0.04	0.0978	0.15	0.000876	0.0296	0.5727	2	mg/L	N	0	0	Y	N	Stable		0.15	Y			N				N	No
CCR-AP-6	19/19	0%	-	0.592	0.6	0.69	0.69	0.003925	0.06265	0.1059	2	mg/L	N	0	0	N	N	Stable		0.69	Y			N				N	No
CCR-AP-8	19/19	0%	-	0.562	0.57	0.671	0.68	0.006058	0.07784	0.1386	2	mg/L	N	0	0	N	N	Stable		0.37	Y			N				N	No
CCR Appendix-IV: Beryllium, Total (mg/L)																												
CCR-AP-1R	19/19	0%	-	0.00274	0.0014	0.00615	0.0066	0.000005424	0.002329	0.851	0.004	mg/L	Y	8	0	Y	N	Increase											
CCR-AP-7	7/21	67%	0.001-0.001	0.00075	0.001	0.001	0.00075	1.473E-07	0.0003838	0.5118	0.004	mg/L	N	0	0	N	N	Stable	Non-parametric				0.01			0.01		
CCR-AP-9	18/19	5%	0.01-0.01	0.0015	0.00092	0.00469	0.0041	0.000004964	0.002228	1.483	0.004	mg/L	Y	1	1	Y	N	Increase											
CCR-AP-2	19/19	0%	-	0.00163	0.0013	0.0032	0.0077	0.000002784	0.001668	1.022	0.004	mg/L	Y	1	0	N	N	Increase		0.0013	Y			N				N	No
CCR-AP-3	0/19	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.004	mg/L	N	0	0	NA	NA	NA	NA	0.001	N			N				N	No
CCR-AP-4R	14/19	26%	0.001-0.001	0.000688	0.00061	0.00134	0.0017	2.057E-07	0.0004536	0.6589	0.004	mg/L	N	0	0	N	N	Stable		0.0013	Y			N				N	No
CCR-AP-5	5/19	74%	0.001-0.01	0.00134	0.001	0.0019	0.00096	0.000004482	0.002117	1.585	0.004	mg/L	N	0	1	Y	N	Stable		0.001	N			N				N	No
CCR-AP-6	13/19	32%	0.001-0.005	0.000801	0.00046	0.0014	0.00096	0.000001145	0.00107	1.336	0.004	mg/L	N	0	1	Y	N	Stable		0.00096	Y			N				N	No
CCR-AP-8	6/19	68%	0.001-0.001	0.000764	0.001	0.001	0.00039	0.000000129	0.0003592	0.47	0.004	mg/L	N	0	0	N	N	Stable		0.001	N			N				N	No
CCR Appendix-IV: Cadmium, Total (mg/L)																												
CCR-AP-1R	7/19	63%	0.001-0.01	0.00235	0.001	0.01	0.00087	0.000009898	0.003146	1.336	0.005	mg/L	N	0	2	N	N	Stable											
CCR-AP-7	2/21	90%	0.001-0.001	0.000927	0.001	0.001	0.00032	5.445E-08	0.0002334	0.2518	0.005	mg/L	N	0	0	Y	N	NA	Non-parametric				0.01			0.01		
CCR-AP-9	11/19	42%	0.001-0.01	0.00188	0.00022	0.01	0.0004	0.00001038	0.003222	1.709	0.005	mg/L	N	0	2	Y	N	Increase											
CCR-AP-2	16/19	16%	0.005-0.01	0.00203	0.00078	0.00694	0.0066	0.000007181	0.00268	1.321	0.005	mg/L	Y	1	1	Y	N	Increase		0.0007	Y			N				N	No
CCR-AP-3	0/19	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.005	mg/L	N	0	0	N	N	NA		0.001	N			N				N	No
CCR-AP-4R	9/19	53%	0.001-0.005	0.000907	0.001	0.0014	0.00079	0.000001112	0.001054	1.162	0.005	mg/L	N	0	0	N	N	Stable		0.00079	Y			N				N	No
CCR-AP-5	14/19	26%	0.001-0.01	0.00108	0.00057	0.00208	0.0012	0.000004777	0.002186	2.022	0.005	mg/L	N	0	1	Y	N	Stable		0.0008	Y			N				N	No
CCR-AP-6	12/19	37%	0.001-0.001	0.000629	0.00052	0.00101	0.0011	1.275E-07	0.0003571	0.5678	0.005	mg/L	N	0	0	N	N	Stable		0.0011	Y			N				N	No
CCR-AP-8	5/19	74%	0.001-0.001	0.000818	0.001	0.001	0.00064	1.056E-07	0.000325	0.3971	0.005	mg/L	N	0	0	N	N	Stable		0.00064	Y			N				N	No
CCR Appendix-IV: Chromium, Total (mg/L)																												
CCR-AP-1R	19/19	0%	-	0.0581	0.03	0.133	0.16	0.00258	0.05079	0.8741	0.1	mg/L	Y	5	0	N	N	Increase											
CCR-AP-7	11/21	48%	0.0014-0.005	0.0035	0.002	0.0062	0.019	0.00001529	0.003911	1.118	0.1	mg/L	N	0	0	N	N	Stable	Non-parametric				0.16			0.16		
CCR-AP-9	19/19	0%	-	0.0266	0.016	0.0555	0.15	0.001046	0.03234	1.216	0.1	mg/L	Y	1	0	N	N	Increase											
CCR-AP-2	19/19	0%	-	0.0311	0.025	0.0604	0.082	0.000522	0.02285	0.7338	0.1	mg/L	N	0	0	N	N	Increase		0.035	Y			N				N	No
CCR-AP-3	15/19	21%	0.002-0.002	0.00243	0.0021	0.0041	0.0041	4.912E-07	0.0007008	0.2882	0.1	mg/L	N	0	0	N	N	Stable		0.0028	Y			N				N	No
CCR-AP-4R	17/19	11%	0.002-0.0034	0.013	0.0076	0.0418	0.058	0.0002285	0.01511	1.164	0.1	mg/L	N	0	0	N	N	Stable		0.04	Y			N				N	No
CCR-AP-5	2/19	89%	0.0014-0.02	0.00425	0.002	0.0207	0.027	0.00004745	0.006888	1.622	0.1	mg/L	N	0	0	Y	N	NA		0.027	Y			N				N	No
CCR-AP-6	18/19	5%	0.002-0.002	0.0141	0.0098	0.0322	0.043	0.0001267	0.01126	0.7988	0.1	mg/L	N	0	0	N	N	Increase		0.043	Y			N				N	No
CCR-AP-8	17/19	11%	0.002-0.0034	0.00451	0.0029	0.0122	0.014	0.00001213	0.003483	0.7731	0.1	mg/L	N	0	0	N	N	Stable		0.014	Y			N				N	No
CCR Appendix-IV: Cobalt, Total (mg/L)																												
CCR-AP-1R	19/19	0%	-	0.0321	0.017	0.0801	0.081	0.0007747	0.02783	0.8675	0.006	mg/L	Y	16	0	N	N	Increase											
CCR-AP-7	20/21	5%	0.0005-0.0005	0.00236	0.001	0.0054	0.015	0.00001134	0.003368	1.425	0.006	mg/L	Y	1	0	N	N	Decrease	Non-parametric				0.081			0.081		
CCR-AP-9	19/19	0%	-	0.0153	0.014	0.0254	0.047	0.00007586	0.00871	0.5687	0.006	mg/L	Y	19	0	N	N	Increase											
CCR-AP-2	19/19	0%	-	0.0214	0.021	0.0344	0.038	0.00007717	0.008785	0.4112	0.006	mg/L	Y	19	0	N	N	Increase		0.021	Y			N				N	No
CCR-AP-3	19/19	0%	-	0.00593	0.0056	0.00814	0.0094	0.000002084	0.001444	0.2436	0.006	mg/L	Y	8	0	N	N	Decrease		0.004	Y			N				N	No
CCR-AP-4R	19/19	0%	-	0.00741	0.0064	0.0201	0.021	0.0000329	0.005736	0.7745	0.006	mg/L	Y	10	0	N	N	Stable		0.02	Y			N				N	No
CCR-AP-5	19/19	0%	-	0.00381	0.0041	0.00691	0.007	0.000005452	0.002335	0.6135	0.006	mg/L	Y	6	0	N	N	Decrease		0.0041	Y			N				N	No
CCR-AP-6	19/19	0%	-	0.00918	0.0087	0.0181	0.019	0.00001997	0.004468	0.4868	0.006	mg/L	Y	14	0	N	N	Increase		0.019	Y			N				N	No
CCR-AP-8	19/19	0%	-	0.00937	0.0086	0.0152	0.017	0.00001218	0.00349	0.3724	0.006	mg/L	Y	16	0	N	N	Decrease		0.008	Y			N				N	No
CCR Appendix-III/IV: Fluoride (mg/L)																												
CCR-AP-1R	19/19	0%	-	0.522	0.5	0.648	0.81	0.00854	0.09241	0.177	4	mg/L	N	0	0	Y	N	Stable											
CCR-AP-7	21/21	0%	-	0.318	0.29	0.57	0.72	0.01936	0.1391	0.4374	4	mg/L	N	0	0	N	N	Increase	Normal				0.622778			4		
CCR-AP-9	19/19	0%	-	0.329	0.34	0.393	0.42	0.004477	0.06691	0.2034	4	mg/L	N	0	0	Y	N	Stable											
CCR-AP-2	19/19	0%	-	0.344	0.3	0.636	0.69	0.02288	0.1513	0.4401	4	mg/L	N	0	0	N	N	Stable		0.55	Y			N				N	No
CCR-AP-3	18/19	5%	0.1-0.1	0.421	0.39	0.606	0.93	0.03653	0.1911	0.4539	4	mg/L	N	0	0	N	N	Stable		0.21	Y			N				N	No
CCR-AP-4R	18/19	5%	0.1-0.1	0.371	0.36	0.532	0.64	0.01301	0.114	0.3078	4	mg/L	N	0	0	N	N	Stable		0.39	Y			N				N	No
CCR-AP-5	19/19	0%	-	1.26	1.2	2.03	2.3	0.1593	0.3992	0.3177	4	mg/L	N	0	0	N	N	Stable		2	Y			Y				N	No
CCR-AP-6	19/19	0%	-	0.507	0.48	0.672	0.69	0.0159	0.1261	0.2485	4	mg/L	N	0	0	N	N	Stable		0.48	Y			N				N	No
CCR-AP-8	18/19	5%	0.1-0.1	0.293	0.28	0.429	0.51	0.01199	0.1095	0.3741	4	mg/L	N	0	0	N	N	Stable		0.36	Y			N				N	No

Attachment A
Assessment Monitoring Statistical Summary - November 2022
F.B. Culley Generating Station
East Ash Pond
Prepared: 15 February 2023

CCR Appendix-IV: Lead, Total (mg/L)																										
CCR-AP-1R	19/19	0%	-	0.0355	0.02	0.0796	0.094	0.0009243	0.0304	0.8576	0.015	mg/L	Y	10	0	N	N	Increase	Non-parametric				0.094			0.094			
CCR-AP-7	14/21	33%	0.001-0.001	0.00309	0.001	0.0087	0.02	0.00002119	0.004603	1.49	0.015	mg/L	Y	1	0	N	N	Stable											
CCR-AP-9	19/19	0%	-	0.013	0.011	0.0266	0.041	0.00008279	0.009099	0.7005	0.015	mg/L	Y	5	0	N	N	Increase											
CCR-AP-2	19/19	0%	-	0.0207	0.017	0.0438	0.051	0.0002259	0.01503	0.7266	0.015	mg/L	Y	11	0	N	N	Increase		0.019	Y			N			N	No
CCR-AP-3	15/19	21%	0.001-0.001	0.000788	0.00078	0.00142	0.0016	1.542E-07	0.0003926	0.4983	0.015	mg/L	N	0	0	N	N	Stable		0.0013	Y			N			N	No
CCR-AP-4R	19/19	0%	-	0.011	0.0048	0.0416	0.047	0.0001703	0.01305	1.191	0.015	mg/L	Y	4	0	N	N	Stable		0.041	Y			N			N	No
CCR-AP-5	6/19	68%	0.001-0.01	0.00169	0.001	0.00838	0.0082	0.00000703	0.002651	1.572	0.015	mg/L	N	0	0	Y	N	Stable		0.0082	Y			N			N	No
CCR-AP-6	19/19	0%	-	0.0105	0.0074	0.0257	0.041	0.00009834	0.009917	0.946	0.015	mg/L	Y	4	0	N	N	Increase		0.041	Y			N			N	No
CCR-AP-8	19/19	0%	-	0.00222	0.0017	0.00625	0.0076	0.000003438	0.001854	0.8337	0.015	mg/L	N	0	0	N	N	Stable		0.0061	Y			N			N	No
CCR Appendix-IV: Lithium, Total (mg/L)																										
CCR-AP-1R	19/19	0%	-	0.094	0.063	0.176	0.23	0.003295	0.0574	0.6107	0.04	mg/L	Y	16	0	N	N	Increase	Non-parametric				0.23			0.23			
CCR-AP-7	21/21	0%	-	0.0138	0.011	0.02	0.039	0.00005051	0.007107	0.5168	0.04	mg/L	N	0	0	Y	N	Decrease											
CCR-AP-9	19/19	0%	-	0.0482	0.041	0.0768	0.12	0.0004358	0.02088	0.4335	0.04	mg/L	Y	10	0	Y	N	Increase											
CCR-AP-2	14/19	26%	0.05-0.25	0.0459	0.033	0.0871	0.069	0.00271	0.05206	1.133	0.04	mg/L	Y	3	5	Y	N	Stable		0.028	Y			N			N	No
CCR-AP-3	1/19	95%	0.005-0.05	0.0263	0.0078	0.05	0.0022	0.0005338	0.0231	0.8779	0.04	mg/L	N	0	9	Y	N	NA		0.0022	Y			N			N	No
CCR-AP-4R	13/19	32%	0.005-0.05	0.0228	0.014	0.05	0.047	0.0003798	0.01949	0.8536	0.04	mg/L	Y	1	5	N	N	Stable		0.025	Y			N			N	No
CCR-AP-5	19/19	0%	-	0.0959	0.099	0.15	0.15	0.00187	0.04324	0.4507	0.04	mg/L	Y	16	0	N	N	Decrease		0.069	Y			N			N	No
CCR-AP-6	9/19	53%	0.005-0.25	0.037	0.016	0.07	0.018	0.003068	0.05539	1.496	0.04	mg/L	N	0	8	N	N	Stable		0.018	Y			N			N	No
CCR-AP-8	5/19	74%	0.005-0.05	0.0247	0.0093	0.05	0.014	0.0004969	0.02229	0.9031	0.04	mg/L	N	0	8	N	N	Stable		0.0067	Y			N			N	No
CCR Appendix-IV: Mercury, Total (mg/L)																										
CCR-AP-1R	0/18	100%	0.0002-0.002	0.000317	0.0002	0.000725		1.815E-07	0.000426	1.345	0.002	mg/L	N	0	1	NA	NA	NA	Non-parametric				0.002			0.002			
CCR-AP-7	0/18	100%	0.0002-0.0002	0.0002	0.0002	0.0002		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA											
CCR-AP-9	0/18	100%	0.0002-0.0002	0.0002	0.0002	0.0002		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA											
CCR-AP-2	5/18	72%	0.0002-0.0002	0.000202	0.0002	0.000227	0.00038	2.254E-09	0.00004747	0.2348	0.002	mg/L	N	0	0	NA	NA	NA		0.00017	Y			N			N	No
CCR-AP-3	0/18	100%	0.0002-0.0002	0.0002	0.0002	0.0002		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA		0.0002	N			N			N	No
CCR-AP-4R	0/18	100%	0.0002-0.0004	0.000211	0.0002	0.00023		2.222E-09	0.00004714	0.2233	0.002	mg/L	N	0	0	NA	NA	NA		0.0002	N			N			N	No
CCR-AP-5	1/18	94%	0.0002-0.0002	0.000239	0.0002	0.000305	0.0009	2.722E-08	0.000165	0.6907	0.002	mg/L	N	0	0	NA	NA	NA		0.0009	Y			N			N	No
CCR-AP-6	1/18	94%	0.0002-0.0002	0.000198	0.0002	0.0002	0.00017	5E-11	0.000007071	0.03565	0.002	mg/L	N	0	0	NA	NA	NA		0.00017	Y			N			N	No
CCR-AP-8	1/18	94%	0.0002-0.0002	0.000203	0.0002	0.000209	0.00026	2E-10	0.00001414	0.06955	0.002	mg/L	N	0	0	NA	NA	NA		0.00026	Y			N			N	No
CCR Appendix-IV: Molybdenum, Total (mg/L)																										
CCR-AP-1R	19/19	0%	-	0.00985	0.0093	0.0158	0.023	0.0000172	0.004148	0.4212	0.1	mg/L	N	0	0	N	N	Stable	Non-parametric				0.05			0.1			
CCR-AP-7	21/21	0%	-	0.0038	0.0025	0.0088	0.013	0.000009967	0.003157	0.8298	0.1	mg/L	N	0	0	N	N	Decrease											
CCR-AP-9	18/19	5%	0.05-0.05	0.00793	0.0049	0.0158	0.012	0.0001117	0.01057	1.332	0.1	mg/L	N	0	0	N	N	Decrease											
CCR-AP-2	19/19	0%	-	0.00407	0.004	0.0078	0.0078	0.000005572	0.00236	0.58	0.1	mg/L	N	0	0	N	N	Increase		0.0067	Y			N			N	No
CCR-AP-3	19/19	0%	-	0.0107	0.01	0.014	0.014	0.000005855	0.00242	0.227	0.1	mg/L	N	0	0	N	N	Decrease		0.0066	Y			N			N	No
CCR-AP-4R	17/19	11%	0.005-0.005	0.00301	0.0022	0.00964	0.01	0.000007363	0.002714	0.9004	0.1	mg/L	N	0	0	N	N	Decrease		0.01	Y			N			N	No
CCR-AP-5	19/19	0%	-	0.306	0.34	0.422	0.53	0.01387	0.1178	0.3848	0.1	mg/L	Y	18	0	N	N	Stable	Normal	0.24	Y	0.26		Y			Y	Yes[1]
CCR-AP-6	19/19	0%	-	0.0255	0.024	0.0334	0.037	0.00002882	0.005368	0.2107	0.1	mg/L	N	0	0	N	N	Increase		0.037	Y			N			N	No
CCR-AP-8	19/19	0%	-	0.0146	0.014	0.0236	0.029	0.00002954	0.005435	0.3717	0.1	mg/L	N	0	0	N	N	Decrease		0.029	Y			N			N	No
CCR Appendix-IV: Radium-226 & 228 (pCi/L)																										
CCR-AP-1R	16/19	16%	0.862-2.09	4.49	5	7.632	8.55	5.914	2.432	0.5414	5	pCi/L	Y	17	0	N	N	Stable	Non-parametric				12.6			12.6			
CCR-AP-7	15/21	29%	0.126-1.33	0.807	0.677	1.55	1.72	0.1865	0.4319	0.5352	5	pCi/L	Y	7	0	N	N	Decrease											
CCR-AP-9	17/19	11%	0.934-1.36	3.35	2.6	8.829	12.6	7.737	2.782	0.8299	5	pCi/L	Y	18	0	N	N	Stable											
CCR-AP-2	15/19	21%	0.682-5.53	2.08	1.91	5.395	5.38	1.985	1.409	0.6764	5	pCi/L	Y	13	0	N	N	Stable		2.16	N			N			N	No
CCR-AP-3	15/19	21%	0.695-3.95	1.64	1.58	4.042	4.87	1.209	1.1	0.6697	5	pCi/L	Y	13	0	N	N	Stable		4.87	Y			N			N	No
CCR-AP-4R	19/19	0%	-	3.78	2.38	6.852	30	41.17	6.416	1.698	5	pCi/L	Y	19	0	Y	N	Stable		2.82	Y			N			N	No
CCR-AP-5	12/19	37%	0.292-2.81	0.847	0.64	2.189	1.21	0.4138	0.6432	0.7593	5	pCi/L	Y	4	0	Y	N	Stable		2.12	N			N			N	No
CCR-AP-6	16/19	16%	0.351-3.21	2.45	1.81	6.357	10.2	4.83	2.198	0.8957	5	pCi/L	Y	18	0	Y	N	Increase		2.7	Y			N			N	No
CCR-AP-8	15/19	21%	0.449-2.88	1.43	1.35	2.376	2.32	0.4152	0.6444	0.45	5	pCi/L	Y	15	0	N	N	Stable		1.07	N			N			N	No
CCR Appendix-IV: Selenium, Total (mg/L)																										
CCR-AP-1R	7/19	63%	0.005-0.05	0.0128	0.005	0.05	0.025	0.0002539	0.01593	1.244	0.05	mg/L	N	0	2	N	N	Stable	Non-parametric				0.05			0.05			
CCR-AP-7	3/19	84%	0.005-0.005	0.00441	0.005	0.005	0.0028	0.000002122	0.001457	0.3299	0.05	mg/L	N	0	0	Y	N	Stable											
CCR-AP-9	6/19	68%	0.005-0.05	0.0091	0.005	0.0275	0.0099	0.0001431	0.01196	1.315	0.05	mg/L	N	0	1	N	N	Stable											
CCR-AP-2	12/19	37%	0.005-0.05	0.00913	0.005	0.0284	0.026	0.0001527	0.01236	1.354	0.05	mg/L	N	0	1	Y	N	Stable		0.0026	Y			N			N	No
CCR-AP-3	18/19	5%	0.005-0.005	0.00221	0.0018	0.00518	0.0068	0.000001893	0.001376	0.6235	0.05	mg/L	N	0	0	N	N	Stable		0.0019	Y			N			N	No
CCR-AP-4R	10/19	47%	0.005-0.005	0.00471	0.005	0.0076	0.031	0.00004364	0.006606	1.401	0.05	mg/L	N	0	0	N	N	Stable		0.002	Y			N			N	No
CCR-AP-5	5/19	74%	0.005-0.05	0.00716	0.005	0.01157	0.0073	0.0001094	0.01046	1.46	0.05	mg/L	N	0	1	N	N	NA		0.0073	Y			N			N	No
CCR-AP-6	15/19	21%	0.005-0.025	0.00368	0.0019	0.00727	0.0053	0.00002878	0.005364	1.458	0.05	mg/L	N	0	0	N	N	Increase		0.003	Y			N			N	No
CCR-AP-8	16/19	16%	0.005-0.005	0.00282	0.002	0.00529	0.007	0.000002876	0.001696	0.6023	0.05	mg/L	N	0	0	N	N	Stable		0.0051	Y			N			N	No
CCR Appendix-IV: Thallium, Total (mg/L)																										
CCR-AP-1R	15/19	21%	0.001-0.005	0.000977	0.00074	0.00293	0.0027	0.00000136	0.001166	1.194	0.002	mg/L	Y	1	1	N	N	Stable	Non-parametric				0.01			0.01			
CCR-AP-7	4/21	81%	0.001-0.001	0.00085	0.001	0.001	0.00061	1.114E-07	0.0003338	0.3928	0.002	mg/L	N	0	0	N	N	NA											
CCR-AP-9	9/19	53%	0.001-0.01	0.00135	0.001	0.0055	0.00098	0.000005554	0.002357	1.748	0.002	mg/L	N	0	2	N	N	Increase											
CCR-AP-2	16/19	16%	0.001-0.005	0.00116	0.00068	0.00526	0.0076	0.000003593	0.001896	1.64	0.002	mg/L	Y	1	1	N	N	Increase		0.00086	Y			N			N	No
CCR-AP-3	1/19	95%	0.001-0.001	0.000953	0.001	0.001	0.0001	4.263E-08	0.0002065	0.2167	0.002	mg/L	N	0	0	N	N	Stable		0.001	N			N			N	No
CCR-AP-4R	10/19	47%	0.001-0.005	0.000778	0.00047	0.0014	0.00047	0.000001223	0.001106	1.422	0.002	mg/L	N	0	1	N	N	Stable		0.00047	Y			N			N	No
CCR-AP-5	6/19	68%	0.001-0.01	0.00121	0.001	0.0019	0.00027	0.000004685	0.002165	1.788	0.002	mg/L	N	0	1	Y	N	Stable		0.00027	Y			N			N	No
CCR-AP-6	8/19	58%	0.001-0.005	0.000844	0.001	0.0014	0.00022	0.000001202	0.001096	1.3	0.002	mg/L	N	0	1	Y	N	Stable		0.001	N			N			N	No
CCR-AP-8	5/19	74%	0.001-0.001	0.000771	0.001	0.001	0.00029	1.571E-07	0.0003963	0.514	0.002	mg/L	N	0	0	N	N	Stable		0.001	N			N			N	No

Notes:
1 - Groundwater protection standards compared against lower confidence limit to determine statistically significant levels
2 - A successful Alternative Source Demonstration was completed for arsenic at the East Ash Pond, therefore an intrawell upper prediction limit is used to determine if a concentration is a SSL.
CCR - Coal Combustion Residuals
MCL - maximum concentration limit
mg/L - milligrams per liter
NA - not applicable
pCi/L - picocuries per liter
SSI - Statistically Significant Increase
SSL - Statistically Signficant Level

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TECHNICAL MEMORANDUM

12 December 2023
File No. 0129420-032

TO: Southern Indiana Gas and Electric Company

FROM: Haley & Aldrich, Inc.
Todd Plating, Sr. Project Manager
Steven F. Putrich, P.E., Project Principal

SUBJECT: Statistical Evaluation of the May 2023 Semi-annual Groundwater Assessment Monitoring Data
Southern Indiana Gas and Electric Company
East Ash Pond
F.B. Culley Generating Station; Warrick County, Indiana

Pursuant to Title 40 Code of Federal Regulations (40 CFR) § 257.93 and § 257.95 (Rule), this memorandum summarizes the statistical evaluation of the analytical results for the May 2023 semi-annual assessment monitoring event for the F.B. Culley Generating Station (FBC) East Ash Pond (EAP). Haley & Aldrich, Inc. (Haley & Aldrich) completed this statistical evaluation to determine if Appendix IV groundwater monitoring constituents have been detected in downgradient wells at statistically significant levels (SSL) greater than Groundwater Protection Standards (GWPS), consistent with the requirements in 40 CFR § 257.95.

Methods used during this statistical analysis are described in the *Statistical Data Analysis Plan for the F.B. Culley Generating Station* (Haley & Aldrich, 2017). A summary of how applicable performance standards described in § 257.93 (g) were achieved include:

- § 257.93 (g) (1) - Data set distribution was evaluated using basic summary statistics, graphical methods, and the Shapiro-Wilks Test of Normality. Parametric methods were used where normal distributions were identified. Those data sets were evaluated for outliers using box plots, Dixon's test and Rosner's test. Outlier identification and data set distribution groups are summarized in Attachment A.
- § 257.93 (g) (2) – Not applicable
- § 257.93 (g) (3) – Not applicable

- § 257.93 (g) (4) – Levels of confidence and additional supporting information for the use of tolerance intervals and prediction limits are included in Attachment A.
- § 257.93 (g) (5) – Non-detect values were accounted for by simple substitution, where the detection limit replaced the non-detect result. Non-detect values are identified and summarized in Attachment A.
- § 257.93 (g) (6) – Time series plots for groundwater monitoring wells included in this evaluation were reviewed to identify potential seasonal variability. No additional statistics to account for seasonality of spatial variability were necessary.

Data from the groundwater sampling event for the downgradient monitoring wells (CCR-AP-2 through CCR-AP-6 and CCR-AP-8) were compared to the GWPS established from the background dataset for the upgradient monitoring wells (CCR-AP-1R, CCR-AP-7, and CCR-AP-9) for detected Appendix IV constituents. GWPS for each of the Appendix IV constituents have been set equal to the highest value of the maximum contaminant level, regional screening level, or background concentration. The results of the assessment monitoring statistical evaluation are discussed below and provided in Attachment A.

Development of GWPS

The Rule provides four specific options for statistical evaluation of groundwater quality data collected at a coal combustion residual (CCR) unit (40 CFR §257.93(f) (1-4)). Haley & Aldrich certified the tolerance limit (TL) as the statistical method used for developing background concentration for the GWPS on 14 January 2019. As noted above, the GWPS for each of the Appendix IV constituents have been set equal to the highest value of the maximum contaminant level, regional screening level, or background concentration. The most recent groundwater sampling result from each compliance well was compared to the GWPS to determine if additional statistical testing is warranted.

STATISTICAL EVALUATION

An interwell statistical evaluation was used to identify SSLs. An interwell evaluation compares the most recent values from downgradient compliance wells to a background dataset composed of upgradient well data. Because the CCR unit is in assessment monitoring, no statistical evaluations were conducted on Appendix III (detection monitoring) constituents.

The parametric TL method was used to complete statistical evaluations of the referenced dataset. The TL procedure is one in which a concentration limit for each constituent is established from the distribution of the background data, with a minimum 95 percent confidence level. The upper endpoint of a tolerance interval is called the UTL. Depending on the data distribution, parametric or non-parametric TL procedures are used to evaluate groundwater monitoring data using this method. Parametric TLs utilize normally distributed data or data normalized via a transformation of the sample background data used to construct the limit. If the data are non-normal and a transformation is not indicated, non-parametric procedures (order statistics or bootstrap methods) are used to calculate the TL. If all the background data are non-detect, a maximum reporting limit may serve as an appropriate UTL.

These statistical evaluations were conducted using the background dataset for all detected Appendix IV constituents using parametric TL. If an Appendix IV constituent concentration from the May 2023 sampling event was greater than the GWPS, the lower confidence limit (LCL) for the downgradient well constituent was used to evaluate if an SSL was indicated. The LCL is the lower end of the confidence interval range, which is an estimated concentration range intended to contain the true mean or median of the population from which the sample is drawn. The confidence interval range is designed to locate the true population mean or median with a high degree of statistical confidence, or conversely, with a low probability of error.

The UTLs were calculated from the background well dataset using Chemstat software after testing for outlier sample results that would warrant removal from the dataset based on likely error in sampling or measurement. Both visual and statistical outlier tests for the background data were performed using Chemstat and United States Environmental Protection Agency's ProUCL 5.1 software, and a visual inspection of the data was performed using box plots and distribution plots for the downgradient sample data. No sample data were identified as outliers that warranted removal from the dataset.

BACKGROUND DISTRIBUTIONS

The groundwater analytical results for each sampling event from the background sample locations were combined to calculate the UTL for each detected Appendix IV constituent. The variability and distribution of the pooled dataset was evaluated to determine the method for UTL calculation. The background concentrations were periodically updated per the document *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, March 2009* (Unified Guidance).

TREND SUMMARY

Mann Kendall trend analyses were performed on data sets of sufficient sample size. Results of the trend analysis are summarized in Attachment A. Molybdenum has been previously identified at statistically significant levels. Identified trends for SSLs (molybdenum) are summarized below:

- The majority of identified trends pertaining to molybdenum, were determined to be decreasing based on results collected from monitoring wells CCR-AP-7, CCR-AP-9, CCR-AP-3, and CCR-AP-5.
- Increasing trends were identified at monitoring locations CCR-AP-2 and CCR-AP-4R. Analytical results from those locations are less than the molybdenum GWPS.
- Stable trends were identified at the background monitoring location CCR-AP-1R and two monitoring locations downgradient from the EAP, CCR-AP-6, and CCR-AP-8. Analytical results from both of those monitoring wells are less than the molybdenum GWPS.

RESULTS OF APPENDIX IV DOWNGRADIENT STATISTICAL COMPARISONS

The sample concentrations from the downgradient wells for each of the detected Appendix IV constituents from the May 2023 assessment monitoring event were compared to their respective GWPS (Attachment A). A sample concentration greater than the GWPS is considered to represent an SSL. A summary of SSLs and trends is provided in Table 1. Based on previous compliance sampling events and statistical evaluations, interwell comparisons were utilized for downgradient wells and constituents

except for arsenic. Based on previous compliance sampling events and statistical evaluations, interwell comparisons were used to evaluate constituents not subject to an Alternative Source Demonstration (ASD) in downgradient monitoring wells. Because a successful ASD was completed for arsenic, an intrawell statistical analysis was used to evaluate that constituent.

The results of the statistical analyses conducted for detected Appendix IV constituents confirm that molybdenum remains the only SSL downgradient of the EAP. As a result, the East Ash Pond will remain in Assessment Monitoring.

Table 1 – Statistically Significant Level Summary

Location ID	Trend	Constituent	Newly Identified SSL	Concentration (mg/L)
CCR-AP-5	Decreasing	Molybdenum	No	0.21

Enclosure:

Attachment A - Assessment Monitoring Statistical Summary – May 2023

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ATTACHMENT A
Assessment Monitoring Statistical Summary – May 2023

Attachment A
Assessment Monitoring Statistical Summary - May 2023
F.B. Culley Generating Station
East Ash Pond
Prepared: 12 December 2023

														MCL Comparison						Inter-well Analysis					Intra-well Analysis		GWPS		
Location ID	Frequency of Detection	Percent Non-Detect	Range of Non-Detect	Mean	50th Percentile (Median)	95th Percentile	Maximum Detect	Variance	Standard Deviation	Coefficient of Variance	CCR MCL/RSL	Report Result Unit	Detection Exceedances (Y/N)	Number of Detection Exceedances	Number of Non-Detection Exceedances	Outlier Presence	Outlier Removed	Trend	Distribution Group	May 2023 Concentration (mg/L)	Detect?	Lower Confidence Level (LCL)	Upper Tolerance Limit (mg/L)	SSI (Exceedance above Background at Individual Well)	Upper Prediction Limits (mg/L)	SSI (Exceedance above Background at Individual Well)	Groundwater Protection Standard (Higher of MCL/RSL or Upper Tolerance Limit) (mg/L)	Exceedance above GWPS at Individual Well	SSL
CCR Appendix-IV: Antimony, Total (mg/L)																													
CCR-AP-1R	15/22	32%	0.002-0.02	0.00365	0.00195	0.0195	0.0041	0.00003191	0.005649	1.549	0.006	mg/L	N	0	3	N	N	Stable												
CCR-AP-7	3/22	86%	0.002-0.002	0.0018	0.002	0.002	0.00083	2.754E-07	0.0005248	0.2915	0.006	mg/L	N	0	0	Y	N	NA	Non-parametric				0.02				0.020		
CCR-AP-9	15/20	25%	0.002-0.02	0.00437	0.0014	0.02	0.0079	0.00003586	0.005988	1.372	0.006	mg/L	Y	2	3	Y	N	Stable												
CCR-AP-2	12/21	43%	0.002-0.02	0.00368	0.002	0.01	0.0079	0.000022	0.004691	1.274	0.006	mg/L	Y	1	3	Y	N	Stable		0.0041	Y			N				N	No
CCR-AP-3	4/20	80%	0.002-0.002	0.00179	0.002	0.002005	0.0021	2.801E-07	0.0005292	0.2952	0.006	mg/L	N	0	0	N	N	NA		0.00086	Y			N				N	No
CCR-AP-4R	6/20	70%	0.002-0.01	0.00345	0.002	0.0109	0.028	0.0000371	0.006091	1.768	0.006	mg/L	Y	1	1	Y	N	Stable		0.00074	Y			N				N	No
CCR-AP-5	5/21	76%	0.002-0.02	0.00271	0.002	0.0047	0.0047	0.00001648	0.004059	1.497	0.006	mg/L	N	0	1	Y	N	NA		0.0011	Y			N				N	No
CCR-AP-6	11/20	45%	0.002-0.01	0.00263	0.00185	0.0104	0.018	0.00001721	0.004148	1.578	0.006	mg/L	Y	1	1	Y	N	Stable		0.0017	Y			N				N	No
CCR-AP-8	14/20	30%	0.002-0.002	0.00139	0.0011	0.00213	0.0046	9.633E-07	0.0009815	0.7071	0.006	mg/L	N	0	0	Y	N	Stable		0.00066	Y			N				N	No
CCR Appendix-IV: Arsenic, Total (mg/L)																													
CCR-AP-1R	22/22	0%	-	0.0162	0.012	0.03685	0.038	0.0001372	0.01171	0.7237	0.01	mg/L	Y	12	0	N	N	Increase												
CCR-AP-7	22/22	0%	-	0.00606	0.00565	0.01467	0.018	0.00001702	0.004126	0.6807	0.01	mg/L	Y	2	0	N	N	Decrease	Non-parametric				0.038				0.038		
CCR-AP-9	20/20	0%	-	0.0104	0.00875	0.0206	0.032	0.00003965	0.006297	0.6043	0.01	mg/L	Y	5	0	Y	N	Stable												
CCR-AP-2	21/21	0%	-	0.0143	0.013	0.032	0.048	0.0001409	0.01187	0.83	0.01	mg/L	Y	12	0	N	N	Increase	Normal	0.03	Y			N	0.044	N		N	No
CCR-AP-3	20/20	0%	-	0.0759	0.077	0.08645	0.095	0.00007188	0.008478	0.1117	0.01	mg/L	Y	20	0	N	N	Increase	Normal	0.08	Y			Y	0.107	N		N	No
CCR-AP-4R	20/20	0%	-	0.112	0.086	0.3205	0.33	0.00656	0.08099	0.7254	0.01	mg/L	Y	20	0	Y	N	Increase	Log-transformed	0.088	Y			Y	0.650	N		N	No
CCR-AP-5	19/21	10%	0.001-0.01	0.00356	0.0011	0.01	0.024	0.00003127	0.005592	1.572	0.01	mg/L	Y	1	0	Y	N	Increase	Non-parametric	0.0091	Y			N	0.010	N		N	No
CCR-AP-6	20/20	0%	-	0.0942	0.1	0.12	0.12	0.0004873	0.02208	0.2343	0.01	mg/L	Y	20	0	N	N	Increase	Normal	0.11	Y			Y	0.173	N		N	No
CCR-AP-8	20/20	0%	-	0.091	0.0955	0.12	0.12	0.0004665	0.0216	0.2374	0.01	mg/L	Y	20	0	N	N	Increase	Normal	0.11	Y			Y	0.168	N		N	No
CCR Appendix-IV: Barium, Total (mg/L)																													
CCR-AP-1R	22/22	0%	-	0.221	0.155	0.546	0.59	0.0255	0.1597	0.7232	2	mg/L	N	0	0	N	N	Stable												
CCR-AP-7	22/22	0%	-	0.129	0.125	0.1885	0.19	0.0008264	0.02875	0.2221	2	mg/L	N	0	0	N	N	Decrease	Non-parametric				0.720				2.000		
CCR-AP-9	20/20	0%	-	0.293	0.27	0.4065	0.72	0.01486	0.1219	0.4161	2	mg/L	N	0	0	Y	N	Increase												
CCR-AP-2	21/21	0%	-	0.231	0.23	0.52	0.56	0.0221	0.1487	0.6434	2	mg/L	N	0	0	N	N	Increase		0.4	Y			N				N	No
CCR-AP-3	20/20	0%	-	0.429	0.425	0.4805	0.49	0.0009253	0.03042	0.0709	2	mg/L	N	0	0	N	N	Stable		0.42	Y			N				N	No
CCR-AP-4R	20/20	0%	-	0.692	0.63	1.305	1.4	0.06132	0.2476	0.3579	2	mg/L	N	0	0	N	N	Stable		0.53	Y			N				N	No
CCR-AP-5	21/21	0%	-	0.0572	0.041	0.12	0.15	0.001102	0.03319	0.5804	2	mg/L	N	0	0	Y	N	Increase		0.12	Y			N				N	No
CCR-AP-6	20/20	0%	-	0.588	0.59	0.69	0.69	0.004051	0.06365	0.1083	2	mg/L	N	0	0	N	N	Stable		0.51	Y			N				N	No
CCR-AP-8	20/20	0%	-	0.555	0.57	0.6705	0.68	0.006605	0.08127	0.1464	2	mg/L	N	0	0	N	N	Decrease		0.43	Y			N				N	No
CCR Appendix-IV: Beryllium, Total (mg/L)																													
CCR-AP-1R	21/22	5%	0.001-0.001	0.0026	0.0017	0.006075	0.0066	0.000004813	0.002194	0.8438	0.004	mg/L	Y	8	0	Y	N	Increase												
CCR-AP-7	7/22	68%	0.001-0.001	0.000761	0.001	0.001	0.00075	1.431E-07	0.0003783	0.497	0.004	mg/L	N	0	0	N	N	Stable	Non-parametric				0.010				0.010		
CCR-AP-9	19/20	5%	0.01-0.01	0.00146	0.00091	0.004395	0.0041	0.000004732	0.002175	1.486	0.004	mg/L	Y	1	1	Y	N	Increase												
CCR-AP-2	21/21	0%	-	0.00186	0.0017	0.0049	0.0077	0.000003094	0.001759	0.9468	0.004	mg/L	Y	2	0	N	N	Increase		0.0031	Y			N				N	No
CCR-AP-3	0/20	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.004	mg/L	N	0	0	NA	NA	NA	NA	0.001	N			N				N	No
CCR-AP-4R	14/20	30%	0.001-0.001	0.000704	0.000725	0.00132	0.0017	1.998E-07	0.0004469	0.6349	0.004	mg/L	N	0	0	N	N	Increase		0.001	N			N				N	No
CCR-AP-5	5/21	76%	0.001-0.01	0.0013	0.001	0.001	0.00096	0.000004044	0.002011	1.543	0.004	mg/L	N	0	1	Y	N	Stable		0.001	N			N				N	No
CCR-AP-6	13/20	35%	0.001-0.005	0.000811	0.000555	0.0012	0.00096	0.000001086	0.001042	1.286	0.004	mg/L	N	0	1	Y	N	Increase		0.001	N			N				N	No
CCR-AP-8	6/20	70%	0.001-0.001	0.000776	0.001	0.001	0.00039	0.000000125	0.0003536	0.4556	0.004	mg/L	N	0	0	N	N	Stable		0.001	N			N				N	No
CCR Appendix-IV: Cadmium, Total (mg/L)																													
CCR-AP-1R	9/22	59%	0.001-0.01	0.0021	0.001	0.00975	0.00087	0.000008921	0.002987	1.42	0.005	mg/L	N	0	2	N	N	Stable												
CCR-AP-7	2/22	91%	0.001-0.001	0.00093	0.001	0.001	0.00032	5.21E-08	0.0002283	0.2454	0.005	mg/L	N	0	0	Y	N	NA	Non-parametric				0.010				0.010		
CCR-AP-9	11/20	45%	0.001-0.01	0.00184	0.00031	0.01	0.0004	0.000009874	0.003142	1.707	0.005	mg/L	N	0	2	Y	N	Increase												
CCR-AP-2	18/21	14%	0.005-0.01	0.00196	0.00086	0.0066	0.0066	0.000006511	0.002552	1.303	0.005	mg/L	Y	1	1	Y	N	Increase		0.0012	Y			N				N	No
CCR-AP-3	0/20	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.005	mg/L	N	0	0	N	N	NA		0.001	N			N				N	No
CCR-AP-4R	9/20	55%	0.001-0.005	0.000912	0.001	0.0012	0.00079	0.000001054	0.001027	1.126	0.005	mg/L	N	0	0	N	N	Stable		0.001	N			N				N	No
CCR-AP-5	15/21	29%	0.001-0.01	0.00104	0.00057	0.0012	0.0012	0.000004323	0.002079	1.992	0.005	mg/L	N	0	1	Y	N	Stable		0.00038	Y			N				N	No
CCR-AP-6	12/20	40%	0.001-0.001	0.000648	0.00056	0.001005	0.0011	1.277E-07	0.0003573	0.5519	0.005	mg/L	N	0	0	N	N	Increase		0.001	N			N				N	No
CCR-AP-8	5/20	75%	0.001-0.001	0.000828	0.001	0.001	0.00064	1.017E-07	0.000319	0.3855	0.005	mg/L	N	0	0	N	N	NA		0.001	N			N				N	No
CCR Appendix-IV: Chromium, Total (mg/L)																													
CCR-AP-1R	22/22	0%	-	0.0547	0.033	0.1295	0.16	0.002346	0.04843	0.8861	0.1	mg/L	Y	5	0	N	N	Stable												
CCR-AP-7	11/22	50%	0.0014-0.005	0.00357	0.002	0.006195	0.019	0.00001467	0.00383	1.074	0.1	mg/L	N	0	0	N	N	Stable	Non-parametric				0.160				0.160		
CCR-AP-9	20/20	0%	-	0.0262	0.017	0.05025	0.15	0.0009945	0.03154	1.205	0.1	mg/L	Y	1	0	N	N	Increase												
CCR-AP-2	21/21	0%	-	0.0367	0.033	0.082	0.1	0.000789	0.02809	0.7655	0.1	mg/L	Y	1	0	N	N	Increase		0.079	Y			N				N	No
CCR-AP-3	16/20	20%	0.002-0.002	0.00242	0.0021	0.0041	0.0041	4.708E-07	0.0006862	0.2841	0.1	mg/L	N	0	0	N	N	Stable		0.0021	Y			N				N	No
CCR-AP-4R	18/20	10%	0.002-0.0034	0.0125	0.0071	0.0409	0.058	0.0002211	0.01487	1.189	0.1	mg/L	N	0	0	N	N	Stable		0.0033	Y			N				N	No
CCR-AP-5	4/21	81%	0.0014-0.02	0.00436	0.002	0.02	0.027	0.00004419	0.006648	1.526	0.1	mg/L	N	0	0	Y	N	NA		0.0091	Y			N				N	No
CCR-AP-6	19/20	5%	0.002-0.002	0.0137	0.0098	0.0316	0.043	0.0001227	0.01108	0.8075	0.1	mg/L	N	0	0	N	N	Stable		0.0067	Y			N				N	No
CCR-AP-8	18/20	10%	0.002-0.0034	0.00435	0.0029	0.0121	0.014	0.00001198	0.003461	0.7955	0.1	mg/L	N	0	0	N	N	Stable		0.0014	Y			N				N	No
CCR Appendix-IV: Cobalt, Total (mg/L)																													
CCR-AP-1R	22/22	0%	-	0.0304	0.018	0.07975	0.081	0.0007073	0.02659	0.8749	0.006	mg/L	Y	18	0	N	N	Increase												
CCR-AP-7	21/22	5%	0.0005-0.0005	0.00227	0.000935	0.005395	0.015	0.00001098	0.003313	1.457	0.006	mg/L	Y	1	0	N	N	Decrease	Non-parametric				0.081				0.081		
CCR-AP-9	20/20	0%	-	0.0153	0.014	0.0242	0.047	0.00007196	0.008483	0.5562	0.006	mg/L	Y	20	0	N	N	Increase												
CCR-AP-2	21/21	0%	-	0.0247	0.021	0.04	0.072	0.0002036	0.01427	0.5786	0.006	mg/L	Y	21	0	N	N	Increase		0.04	Y			N				N	No
CCR-AP-3	20/20	0%	-	0.00587	0.0055	0.00807	0.0094	0.00000205	0.001432	0.2441	0.006	mg/L	Y	8	0	N	N	Decrease		0.0047	Y			N				N	No
CCR-AP-4R	20/20	0%	-	0.00712	0.00595	0.02005	0.021	0.00003279	0.005727	0.8042	0.006	mg/L	Y	10	0	N	N	Stable		0.0017	Y			N				N	No
CCR-AP-5	21/21	0%	-	0.00371	0.0032	0.0069	0.007	0.000005028	0.002242	0.6051	0.006	mg/L	Y	6	0	N	N	Decrease		0.0032	Y			N				N	No
CCR-AP-6	20/20	0%	-	0.00899	0.0081	0.01805	0.019	0.00001959	0.004426	0.4921	0.006	mg/L	Y	14	0	N	N	Stable		0.0055	Y			N				N	No
CCR-AP-8	20/20	0%	-	0.00904	0.0084	0.0151	0.017	0.00001384	0.00372	0.4117	0.006	mg/L	Y	16	0	N	N	Decrease		0.0026	Y			N				N	No
CCR Appendix-III/IV: Fluoride (mg/L)																													
CCR-AP-1R	22/22	0%	-	0.51	0.485	0.34	0.81	0.00845	0.0919	0.18	4	mg/L	N	0	0	Y	N	Decrease												
CCR-AP-7	22/22	0%	-	0.326	0.295	0.11	0.72	0.0198	0.141	0.432	4	mg/L	N	0	0	N	N	Increase	Normal				0.618				4.000		
CCR-AP-9	20/20	0%	-	0.33	0.345	0.14	0.42	0.00426	0.0653	0.198	4	mg/L	N	0	0	Y	N	Stable												
CCR-AP-2	21/21	0%	-	0.357	0.3	0.11	0.69	0.0224	0.15	0.419	4	mg/L	N	0	0	N	N	Increase		0.47	Y			N				N	No
CCR-AP-3	19/20	5%	0.1-0.1	0.413	0.39	0.14	0.93	0.0343	0.185	0.449	4	mg/L	N	0	0	N	N	Stable		0.25	Y			N				N	No
CCR-AP-4R	19/20	5%	0.1-0.1	0.374	0.365	0.26	0.64	0.0119	0.109	0.292	4	mg/L	N	0	0	N	N	Stable		0.43	Y			N				N	No
CCR-AP-5	21/21	0%	-	1.242	1.2	0.58	2.3	0.149	0.386	0.311	4	mg/L	N	0	0	N	N	Increase		0.91	Y			Y				N	No
CCR-AP-6	20/20	0%	-	0.496	0.47	0.24	0.69	0.0179	0.134	0.27	4	mg/L	N	0	0	N	N	Stable		0.27	Y			N				N	No
CCR-AP-8	19/20	5%	0.1-0.1	0.288	0.27	0.13	0.51	0.0113	0.106	0.37	4	mg/L	N	0	0	N	N	Stable		0.19	Y			N				N	No

Attachment A
Assessment Monitoring Statistical Summary - May 2023
F.B. Culley Generating Station
East Ash Pond
Prepared: 12 December 2023

														MCL Comparison						Inter-well Analysis					Intra-well Analysis		GWPS		
Location ID	Frequency of Detection	Percent Non-Detect	Range of Non-Detect	Mean	50th Percentile (Median)	95th Percentile	Maximum Detect	Variance	Standard Deviation	Coefficient of Variance	CCR MCL/RSL	Report Result Unit	Detection Exceedances (Y/N)	Number of Detection Exceedances	Number of Non-Detection Exceedances	Outlier Presence	Outlier Removed	Trend	Distribution Group	May 2023 Concentration (mg/L)	Detect?	Lower Confidence Level (LCL)	Upper Tolerance Limit (mg/L)	SSI (Exceedance above Background at Individual Well)	Upper Prediction Limits (mg/L)	SSI (Exceedance above Background at Individual Well)	Groundwater Protection Standard (Higher of MCL/RSL or Upper Tolerance Limit) (mg/L)	Exceedance above GWPS at Individual Well	SSL
CCR Appendix-IV: Lead, Total (mg/L)																													
CCR-AP-1R	22/22	0%	-	0.0333	0.0195	0.0779	0.094	0.0008469	0.0291	0.8737	0.015	mg/L	Y	12	0	N	N	Increase											
CCR-AP-7	14/22	36%	0.001-0.001	0.00299	0.001	0.008675	0.02	0.00002037	0.004514	1.508	0.015	mg/L	Y	1	0	N	N	Stable	Non-parametric				0.094				0.094		
CCR-AP-9	20/20	0%	-	0.0128	0.0105	0.0258	0.041	0.00007915	0.008897	0.6951	0.015	mg/L	Y	5	0	N	N	Increase											
CCR-AP-2	21/21	0%	-	0.0246	0.019	0.051	0.074	0.0003696	0.01923	0.7824	0.015	mg/L	Y	13	0	N	N	Increase		0.049	Y			N				N	No
CCR-AP-3	16/20	20%	0.001-0.001	0.000776	0.00072	0.00141	0.0016	1.489E-07	0.0003858	0.4972	0.015	mg/L	N	0	0	N	N	Stable		0.00055	Y			N				N	No
CCR-AP-4R	20/20	0%	-	0.0105	0.0047	0.0413	0.047	0.0001655	0.01286	1.225	0.015	mg/L	Y	4	0	N	N	Stable		0.0019	Y			N				N	No
CCR-AP-5	8/21	62%	0.001-0.01	0.00169	0.001	0.0082	0.0082	0.000006484	0.002546	1.504	0.015	mg/L	N	0	0	Y	N	Stable		0.003	Y			N				N	No
CCR-AP-6	20/20	0%	-	0.0103	0.00725	0.02485	0.041	0.00009392	0.009691	0.9419	0.015	mg/L	Y	4	0	N	N	Stable		0.0066	Y			N				N	No
CCR-AP-8	20/20	0%	-	0.00214	0.00155	0.006175	0.0076	0.000003403	0.001845	0.8624	0.015	mg/L	N	0	0	N	N	Stable		0.00052	Y			N				N	No
CCR Appendix-IV: Lithium, Total (mg/L)																													
CCR-AP-1R	22/22	0%	-	0.0904	0.0695	0.1695	0.23	0.002964	0.05444	0.6025	0.04	mg/L	Y	19	0	N	N	Stable											
CCR-AP-7	22/22	0%	-	0.0136	0.011	0.02	0.039	0.00004874	0.006982	0.514	0.04	mg/L	N	0	0	Y	N	Decrease	Non-parametric				0.230				0.230		
CCR-AP-9	20/20	0%	-	0.0477	0.0405	0.0744	0.12	0.0004162	0.0204	0.4272	0.04	mg/L	Y	10	0	Y	N	Increase											
CCR-AP-2	16/21	24%	0.05-0.25	0.0486	0.036	0.083	0.083	0.002517	0.05017	1.033	0.04	mg/L	Y	5	5	Y	N	Stable		0.064	Y			N				N	No
CCR-AP-3	2/20	90%	0.005-0.05	0.0251	0.0064	0.05	0.0022	0.000535	0.02313	0.9213	0.04	mg/L	N	0	9	Y	N	NA		0.0021	Y			N				N	No
CCR-AP-4R	14/20	30%	0.005-0.05	0.022	0.0125	0.05	0.047	0.0003746	0.01936	0.881	0.04	mg/L	Y	1	5	N	N	Stable		0.0056	Y			N				N	No
CCR-AP-5	21/21	0%	-	0.0943	0.095	0.15	0.15	0.001714	0.0414	0.4389	0.04	mg/L	Y	18	0	N	N	Decrease		0.072	Y			N				N	No
CCR-AP-6	9/20	55%	0.005-0.25	0.0356	0.015	0.06	0.018	0.002949	0.0543	1.526	0.04	mg/L	N	0	8	N	N	Decrease		0.008	N			N				N	No
CCR-AP-8	5/20	75%	0.005-0.05	0.0239	0.00865	0.05	0.014	0.0004847	0.02202	0.9231	0.04	mg/L	N	0	8	N	N	Decrease		0.008	N			N				N	No
CCR Appendix-IV: Mercury, Total (mg/L)																													
CCR-AP-1R	0/21	100%	0.0002-0.002	0.0003	0.0002	0.0005		0.000000156	0.000395	1.317	0.002	mg/L	N	0	1	NA	NA	NA											
CCR-AP-7	0/19	100%	0.0002-0.0002	0.0002	0.0002	0.0002		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA	Non-parametric				0.0020				0.002		
CCR-AP-9	0/19	100%	0.0002-0.0002	0.0002	0.0002	0.0002		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA											
CCR-AP-2	7/20	65%	0.0002-0.0002	0.000234	0.0002	0.0003965	0.00071	1.538E-08	0.000124	0.53	0.002	mg/L	N	0	0	NA	NA	NA		0.00071	Y			N				N	No
CCR-AP-3	0/19	100%	0.0002-0.0002	0.0002	0.0002	0.0002		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA		0.0002	N			N				N	No
CCR-AP-4R	0/19	100%	0.0002-0.0004	0.000211	0.0002	0.00022		2.105E-09	0.00004588	0.2179	0.002	mg/L	N	0	0	NA	NA	NA		0.0002	N			N				N	No
CCR-AP-5	2/20	90%	0.0002-0.0002	0.000241	0.0002	0.000349	0.0009	2.478E-08	0.0001574	0.6532	0.002	mg/L	N	0	0	NA	NA	NA		0.00032	Y			N				N	No
CCR-AP-6	2/19	89%	0.0002-0.0002	0.000209	0.0002	0.000221	0.00041	2.405E-09	0.00004904	0.2341	0.002	mg/L	N	0	0	NA	NA	NA		0.00041	Y			N				N	No
CCR-AP-8	1/19	95%	0.0002-0.0002	0.000203	0.0002	0.000206	0.00026	1.895E-10	0.00001376	0.06775	0.002	mg/L	N	0	0	NA	NA	NA		0.0002	N			N				N	No
CCR Appendix-IV: Molybdenum, Total (mg/L)																													
CCR-AP-1R	22/22	0%	-	0.00962	0.00895	0.0149	0.023	0.00001525	0.003905	0.4058	0.1	mg/L	N	0	0	N	N	Stable											
CCR-AP-7	22/22	0%	-	0.00371	0.00225	0.00877	0.013	0.000009676	0.003111	0.8376	0.1	mg/L	N	0	0	N	N	Decrease	Non-parametric				0.050				0.100		
CCR-AP-9	18/20	10%	0.005-0.05	0.00779	0.00495	0.0139	0.012	0.0001062	0.01031	1.324	0.1	mg/L	N	0	0	Y	N	Decrease											
CCR-AP-2	21/21	0%	-	0.00453	0.0043	0.0078	0.01	0.000007246	0.002692	0.5942	0.1	mg/L	N	0	0	N	N	Increase		0.0078	Y			N				N	No
CCR-AP-3	20/20	0%	-	0.0106	0.01	0.014	0.014	0.000005758	0.0024	0.2273	0.1	mg/L	N	0	0	N	N	Decrease		0.0086	Y			N				N	No
CCR-AP-4R	17/20	15%	0.005-0.005	0.00311	0.0022	0.00962	0.01	0.000007173	0.002678	0.8604	0.1	mg/L	N	0	0	N	N	Increase		0.005	N			N				N	No
CCR-AP-5	21/21	0%	-	0.301	0.33	0.41	0.53	0.01292	0.1137	0.3774	0.1	mg/L	Y	20	0	N	N	Decrease	Normal	0.21	Y	0.258		Y				Y	Yes
CCR-AP-6	20/20	0%	-	0.0253	0.024	0.0332	0.037	0.00002791	0.005283	0.2088	0.1	mg/L	N	0	0	N	N	Stable		0.022	Y			N				N	No
CCR-AP-8	20/20	0%	-	0.0143	0.0135	0.0233	0.029	0.00003031	0.005505	0.3855	0.1	mg/L	N	0	0	N	N	Stable		0.0078	Y			N				N	No
CCR Appendix-IV: Radium-226 & 228 (pCi/L)																													
CCR-AP-1R	17/20	15%	0.862-2.09	4.34	4.575	7.581	8.55	6.068	2.463	0.5677	5	pCi/L	Y	18	0	N	N	Stable											
CCR-AP-7	16/22	27%	0.126-1.33	0.805	0.697	1.539	1.72	0.1777	0.4216	0.5237	5	pCi/L	Y	7	0	N	N	Stable	Non-parametric				12.600				12.600		
CCR-AP-9	18/20	10%	0.934-1.36	3.49	2.865	8.62	12.6	7.691	2.773	0.7955	5	pCi/L	Y	19	0	N	N	Stable											
CCR-AP-2	15/20	25%	0.682-5.53	2.23	1.915	5.387	5.38	2.306	1.518	0.6814	5	pCi/L	Y	13	1	N	N	Stable						N				N	No
CCR-AP-3	15/20	25%	0.695-5	1.81	1.615	4.877	4.87	1.709	1.307	0.7224	5	pCi/L	Y	13	1	N	N	Stable		5	N			N				N	No
CCR-AP-4R	20/20	0%	-	3.72	2.39	5.566	30	39.07	6.25	1.68	5	pCi/L	Y	20	0	Y	N	Stable		2.62	Y			N				N	No
CCR-AP-5	12/20	40%	0.292-3.71	0.99	0.6535	2.855	1.21	0.8018	0.8954	0.9041	5	pCi/L	Y	5	0	Y	N	Stable		3.71	N			N				N	No
CCR-AP-6	17/20	15%	0.351-3.21	2.4	1.745	6.143	10.2	4.636	2.153	0.8975	5	pCi/L	Y	19	0	Y	N	Stable		1.36	Y			N				N	No
CCR-AP-8	15/20	25%	0.449-2.88	1.43	1.39	2.348	2.32	0.3934	0.6272	0.438	5	pCi/L	Y	16	0	N	N	Stable		1.43	N			N				N	No
CCR Appendix-IV: Selenium, Total (mg/L)																													
CCR-AP-1R	9/22	59%	0.005-0.05	0.0114	0.005	0.04875	0.025	0.0002309	0.0152	1.331	0.05	mg/L	N	0	2	N	N	Stable											
CCR-AP-7	3/20	85%	0.005-0.005	0.00444	0.005	0.005	0.0028	0.000002027	0.001424	0.3204	0.05	mg/L	N	0	0	Y	N	NA	Non-parametric				0.050				0.050		
CCR-AP-9	6/20	70%	0.005-0.05	0.0089	0.005	0.02625	0.0099	0.0001364	0.01168	1.313	0.05	mg/L	N	0	1	N	N	Stable											
CCR-AP-2	14/21	33%	0.005-0.05	0.00862	0.005	0.026	0.026	0.00014	0.01183	1.372	0.05	mg/L	N	0	1	Y	N	Stable		0.0042	Y			N				N	No
CCR-AP-3	19/20	5%	0.005-0.005	0.00219	0.00185	0.00509	0.0068	0.000001798	0.001341	0.6119	0.05	mg/L	N	0	0	N	N	Stable		0.0019	Y			N				N	No
CCR-AP-4R	10/20	50%	0.005-0.005	0.00473	0.005	0.0063	0.031	0.00004134	0.00643	1.36	0.05	mg/L	N	0	0	N	N	Stable		0.005	N			N				N	No
CCR-AP-5	6/21	71%	0.005-0.05	0.00688	0.005	0.0073	0.0073	0.00009928	0.009964	1.448	0.05	mg/L	N	0	1	N	N	NA		0.0034	Y			N				N	No
CCR-AP-6	16/20	20%	0.005-0.025	0.00356	0.0019	0.006285	0.0053	0.00002752	0.005246	1.472	0.05	mg/L	N	0	0	N	N	Stable		0.0014	Y			N				N	No
CCR-AP-8	17/20	15%	0.005-0.005	0.00277	0.00195	0.005195	0.007	0.000002766	0.001663	0.6005	0.05	mg/L	N	0	0	N	N	Stable		0.0019	Y			N				N	No
CCR Appendix-IV: Thallium, Total (mg/L)																													
CCR-AP-1R	16/22	27%	0.001-0.005	0.000974	0.0009	0.002635	0.0027	0.000001167	0.00108	1.109	0.002	mg/L	Y	1	1	N	N	Stable											
CCR-AP-7	4/22	82%	0.001-0.001	0.000857	0.001	0.001	0.00061	1.071E-07	0.0003273	0.3821	0.002	mg/L	N	0	0	N	N	NA	Non-parametric				0.010				0.010		
CCR-AP-9	9/20	55%	0.001-0.01	0.00133	0.001	0.00525	0.00098	0.000005267	0.002295	1.724	0.002	mg/L	N	0	2	N	N	Increase											
CCR-AP-2	18/21	14%	0.001-0.005	0.00117	0.00079	0.005	0.0076	0.000003236	0.001799	1.538	0.002	mg/L	Y	1	1	N	N	Increase		0.0013	Y			N				N	No
CCR-AP-3	1/20	95%	0.001-0.001	0.000955	0.001	0.001	0.0001	4.05E-08	0.0002012	0.2107	0.002	mg/L	N	0	0	N	N	NA		0.001	N			N				N	No
CCR-AP-4R	10/20	50%	0.001-0.005	0.000789	0.000735	0.0012	0.00047	0.000001161	0.001078	1.366	0.002	mg/L	N	0	1	N	N	Increase		0.001	N			N				N	No
CCR-AP-5	6/21	71%	0.001-0.01	0.00119	0.001	0.001	0.00027	0.000004221	0.002054	1.725	0.002	mg/L	N	0	1	Y	N	Stable		0.001	N			N				N	No
CCR-AP-6	8/20	60%	0.001-0.005	0.000852	0.001	0.0012	0.00022	0.00000114	0.001068	1.254	0.002	mg/L	N	0	1	Y	N	Increase		0.001	N			N				N	No
CCR-AP-8	5/20	75%	0.001-0.001	0.000782	0.001	0.001	0.00029	1.514E-07	0.0003891	0.4973	0.002	mg/L	N	0	0	N	N	Stable		0.001	N			N				N	No

Notes:

1 - Groundwater protection standards compared against lower confidence limit to determine statistically significant levels
2 - A successful Alternative Source Demonstration was completed for arsenic at the East Ash Pond, therefore an intrawell upper prediction limit is used to determine if a concentration is a SSL.
CCR - Coal Combustion Residuals
MCL - maximum concentration limit
mg/L - milligrams per liter
NA - not applicable
pCi/L - picocuries per liter
RSL - Regional Screening Level
SSI - Statistically Significant Increase
SSL - Statistically Significant Level

APPENDIX B
Field Forms

VECTREN - FB CULLEY STATION
EAST ASH POND

CCR Groundwater Sampling Event
Gauging Date: May 23, 2023
ATC Project No. 170LF01499

WELL ID	DATE	TIME	DTW FROM TOC
East Ash Pond Wells			
CCR-AP-2	5/23/2023	9:53	33.49
CCR-AP-3R	5/23/2023	9:58	31.57
CCR-AP-4R	5/23/2023	10:17	10.58
CCR-AP-5	5/23/2023	9:00	12.01
CCR-AP-5I	5/23/2023	9:25	13.53
CCR-AP-6	5/23/2023	10:05	39.32
CCR-AP-6I	5/23/2023	10:03	39.06
CCR-AP-8	5/23/2023	9:48	33.19
CCR-AP-8I	5/23/2023	9:50	35.68
CCR-AP-11	5/23/2023	9:30	15.58
Background Wells			
CCR-AP-1R	5/23/2023	9:10	53.57
CCR-AP-7	5/23/2023	Not Gauged	
CCR-AP-9	5/23/2023	9:15	61.35

NOTES

DTW= Depth to Water

TOC= Top of Casing

Low-Flow Test Report:

Test Date / Time: 5/25/2023 12:18:04 PM
Project: FB Culley East (3)
Operator Name: Hayley Torres

Location Name: CCR-AP-5 **Well Diameter: 2 in** **Casing Type: Pvc** **Screen Length: 10 ft** **Top of Screen: 34 ft** **Total Depth: 44 ft** **Initial Depth to Water: 12.12 ft**	**Pump Type: Mp50** **Pump Intake From TOC: 39 ft** **Estimated Total Volume Pumped: 12900 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.03 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 651971**

Test Notes:

DUP

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 0.3	
5/25/2023 12:18 PM	00:00	7.23 pH	19.73 °C	919.46 µS/cm	0.87 mg/L	1,467.9 NTU	-29.2 mV	12.12 ft	100.00 ml/min
5/25/2023 12:21 PM	03:00	7.22 pH	19.04 °C	934.08 µS/cm	0.85 mg/L	903.00 NTU	-51.6 mV		100.00 ml/min
5/25/2023 12:24 PM	06:00	7.22 pH	18.89 °C	929.94 µS/cm	1.10 mg/L	670.82 NTU	-55.2 mV		100.00 ml/min
5/25/2023 12:27 PM	09:00	7.21 pH	18.83 °C	923.83 µS/cm	1.16 mg/L	559.01 NTU	-57.1 mV	12.12 ft	100.00 ml/min
5/25/2023 12:30 PM	12:00	7.21 pH	18.89 °C	919.19 µS/cm	1.24 mg/L	499.81 NTU	-58.0 mV		100.00 ml/min
5/25/2023 12:33 PM	15:00	7.21 pH	18.80 °C	914.91 µS/cm	1.29 mg/L	437.75 NTU	-58.4 mV		100.00 ml/min
5/25/2023 12:36 PM	18:00	7.21 pH	18.92 °C	913.42 µS/cm	1.32 mg/L	416.79 NTU	-58.7 mV	12.12 ft	100.00 ml/min
5/25/2023 12:39 PM	21:00	7.21 pH	18.88 °C	910.97 µS/cm	1.34 mg/L	357.55 NTU	-59.0 mV		100.00 ml/min
5/25/2023 12:42 PM	24:00	7.21 pH	19.01 °C	911.03 µS/cm	1.36 mg/L	323.59 NTU	-59.3 mV		100.00 ml/min
5/25/2023 12:45 PM	27:00	7.21 pH	19.39 °C	912.08 µS/cm	1.41 mg/L	298.38 NTU	-59.4 mV	12.12 ft	100.00 ml/min
5/25/2023 12:48 PM	30:00	7.21 pH	19.67 °C	913.47 µS/cm	1.40 mg/L	259.42 NTU	-59.3 mV		100.00 ml/min
5/25/2023 12:51 PM	33:00	7.20 pH	20.08 °C	916.55 µS/cm	1.42 mg/L	264.92 NTU	-59.3 mV		100.00 ml/min
5/25/2023 12:54 PM	36:00	7.20 pH	20.07 °C	914.22 µS/cm	1.45 mg/L	269.25 NTU	-59.8 mV	12.12 ft	100.00 ml/min
5/25/2023 12:57 PM	39:00	7.20 pH	20.18 °C	912.54 µS/cm	1.54 mg/L	245.15 NTU	-59.1 mV		100.00 ml/min
5/25/2023 1:00 PM	42:00	7.21 pH	19.59 °C	905.33 µS/cm	1.63 mg/L	225.17 NTU	-58.3 mV		100.00 ml/min
5/25/2023 1:03 PM	45:00	7.20 pH	19.89 °C	905.49 µS/cm	1.75 mg/L	227.32 NTU	-58.0 mV	12.12 ft	100.00 ml/min

5/25/2023 1:06 PM	48:00	7.19 pH	20.49 °C	908.12 µS/cm	1.81 mg/L	206.52 NTU	-57.8 mV		100.00 ml/min
5/25/2023 1:09 PM	51:00	7.21 pH	19.77 °C	897.01 µS/cm	1.88 mg/L	202.83 NTU	-56.8 mV		100.00 ml/min
5/25/2023 1:12 PM	54:00	7.20 pH	20.08 °C	899.71 µS/cm	1.98 mg/L	180.12 NTU	-56.0 mV	12.13 ft	100.00 ml/min
5/25/2023 1:15 PM	57:00	7.21 pH	20.00 °C	897.45 µS/cm	2.04 mg/L	192.21 NTU	-55.3 mV		100.00 ml/min
5/25/2023 1:18 PM	01:00:00	7.20 pH	20.22 °C	898.91 µS/cm	2.13 mg/L	179.98 NTU	-54.5 mV		100.00 ml/min
5/25/2023 1:21 PM	01:03:00	7.20 pH	20.21 °C	896.00 µS/cm	2.21 mg/L	168.88 NTU	-54.3 mV	12.13 ft	100.00 ml/min
5/25/2023 1:24 PM	01:06:00	7.20 pH	20.36 °C	896.51 µS/cm	2.26 mg/L	169.48 NTU	-54.1 mV		100.00 ml/min
5/25/2023 1:27 PM	01:09:00	7.21 pH	19.92 °C	888.14 µS/cm	2.30 mg/L	165.91 NTU	-53.2 mV		100.00 ml/min
5/25/2023 1:30 PM	01:12:00	7.31 pH	18.92 °C	883.99 µS/cm	2.87 mg/L	178.28 NTU	-53.2 mV	12.13 ft	100.00 ml/min
5/25/2023 1:33 PM	01:15:00	7.24 pH	19.11 °C	882.91 µS/cm	2.66 mg/L	160.31 NTU	-51.2 mV		100.00 ml/min
5/25/2023 1:36 PM	01:18:00	7.19 pH	20.58 °C	893.45 µS/cm	2.64 mg/L	123.70 NTU	-51.6 mV		100.00 ml/min
5/25/2023 1:39 PM	01:21:00	7.18 pH	21.18 °C	898.24 µS/cm	2.64 mg/L	131.56 NTU	-52.7 mV	12.13 ft	100.00 ml/min
5/25/2023 1:42 PM	01:24:00	7.18 pH	21.46 °C	900.27 µS/cm	2.62 mg/L	120.52 NTU	-52.5 mV		100.00 ml/min
5/25/2023 1:45 PM	01:27:00	7.18 pH	21.48 °C	899.94 µS/cm	2.80 mg/L	159.35 NTU	-52.6 mV		100.00 ml/min
5/25/2023 1:48 PM	01:30:00	7.18 pH	21.50 °C	900.49 µS/cm	2.86 mg/L	156.91 NTU	-53.1 mV	12.14 ft	100.00 ml/min
5/25/2023 1:51 PM	01:33:00	7.22 pH	19.49 °C	877.72 µS/cm	2.99 mg/L	152.87 NTU	-49.3 mV		100.00 ml/min
5/25/2023 1:54 PM	01:36:00	7.20 pH	19.93 °C	880.78 µS/cm	3.04 mg/L	137.50 NTU	-49.0 mV		100.00 ml/min
5/25/2023 1:57 PM	01:39:00	7.18 pH	20.86 °C	892.33 µS/cm	3.15 mg/L	146.25 NTU	-49.5 mV	12.14 ft	100.00 ml/min
5/25/2023 2:00 PM	01:42:00	7.20 pH	19.86 °C	880.31 µS/cm	3.16 mg/L	137.30 NTU	-49.1 mV		100.00 ml/min
5/25/2023 2:03 PM	01:45:00	7.20 pH	19.76 °C	879.08 µS/cm	3.26 mg/L	118.53 NTU	-48.1 mV		100.00 ml/min
5/25/2023 2:06 PM	01:48:00	7.20 pH	19.70 °C	875.92 µS/cm	3.25 mg/L	112.45 NTU	-47.1 mV	12.14 ft	100.00 ml/min
5/25/2023 2:09 PM	01:51:00	7.19 pH	20.30 °C	882.26 µS/cm	3.21 mg/L	131.72 NTU	-48.0 mV		100.00 ml/min
5/25/2023 2:12 PM	01:54:00	7.19 pH	19.96 °C	879.56 µS/cm	3.15 mg/L	122.35 NTU	-47.9 mV		100.00 ml/min
5/25/2023 2:15 PM	01:57:00	7.20 pH	19.64 °C	876.66 µS/cm	3.08 mg/L	128.60 NTU	-47.3 mV	12.15 ft	100.00 ml/min
5/25/2023 2:18 PM	02:00:00	7.19 pH	19.57 °C	877.30 µS/cm	3.06 mg/L	108.88 NTU	-47.8 mV		100.00 ml/min
5/25/2023 2:21 PM	02:03:00	7.18 pH	20.12 °C	881.06 µS/cm	3.01 mg/L	103.86 NTU	-48.1 mV		100.00 ml/min
5/25/2023 2:24 PM	02:06:00	7.18 pH	20.26 °C	880.08 µS/cm	2.92 mg/L	104.05 NTU	-49.5 mV	12.15 ft	100.00 ml/min
5/25/2023 2:27 PM	02:09:00	7.17 pH	20.32 °C	880.51 µS/cm	2.91 mg/L	120.74 NTU	-49.1 mV		100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/25/2023 10:21:40 AM
Project: FB Culley East (2)
Operator Name: Hayley Torres

Location Name: CCR-AP-5I **Well Diameter: 2 in** **Casing Type: Pvc** **Screen Length: 10 ft** **Top of Screen: 75.3 ft** **Total Depth: 85.3 ft** **Initial Depth to Water: 13.56 ft**	**Pump Type: Mp50** **Pump Intake From TOC: 80.3 ft** **Estimated Total Volume Pumped: 10800 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 120 ml/min** **Final Draw Down: 0.02 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 651971**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 0.3	
5/25/2023 10:21 AM	00:00	6.96 pH	19.00 °C	1,153.1 µS/cm	4.83 mg/L	57.87 NTU	308.0 mV	13.56 ft	120.00 ml/min
5/25/2023 10:24 AM	03:00	6.94 pH	17.50 °C	1,253.4 µS/cm	1.45 mg/L	81.19 NTU	314.3 mV		120.00 ml/min
5/25/2023 10:27 AM	06:00	6.91 pH	17.30 °C	1,248.1 µS/cm	1.62 mg/L	101.51 NTU	213.7 mV		120.00 ml/min
5/25/2023 10:30 AM	09:00	6.88 pH	17.45 °C	1,234.3 µS/cm	1.12 mg/L	85.14 NTU	155.8 mV	13.56 ft	120.00 ml/min
5/25/2023 10:33 AM	12:00	6.86 pH	17.42 °C	1,222.9 µS/cm	0.97 mg/L	88.18 NTU	150.5 mV		120.00 ml/min
5/25/2023 10:36 AM	15:00	6.86 pH	17.49 °C	1,217.9 µS/cm	0.82 mg/L	98.08 NTU	139.9 mV		120.00 ml/min
5/25/2023 10:39 AM	18:00	6.85 pH	17.69 °C	1,218.6 µS/cm	0.78 mg/L	100.17 NTU	120.3 mV	13.56 ft	120.00 ml/min
5/25/2023 10:42 AM	21:00	6.84 pH	17.76 °C	1,221.3 µS/cm	0.74 mg/L	116.83 NTU	100.3 mV		120.00 ml/min
5/25/2023 10:45 AM	24:00	6.92 pH	17.18 °C	1,216.3 µS/cm	2.97 mg/L	106.12 NTU	74.5 mV		120.00 ml/min
5/25/2023 10:48 AM	27:00	6.84 pH	18.00 °C	1,231.8 µS/cm	0.40 mg/L	97.93 NTU	61.3 mV	13.56 ft	120.00 ml/min
5/25/2023 10:51 AM	30:00	6.83 pH	18.70 °C	1,243.4 µS/cm	0.51 mg/L	90.56 NTU	50.6 mV		120.00 ml/min
5/25/2023 10:54 AM	33:00	6.82 pH	18.98 °C	1,248.0 µS/cm	0.71 mg/L	98.31 NTU	42.7 mV		120.00 ml/min
5/25/2023 10:57 AM	36:00	6.83 pH	18.79 °C	1,246.0 µS/cm	0.81 mg/L	80.38 NTU	37.7 mV	13.57 ft	120.00 ml/min
5/25/2023 11:00 AM	39:00	6.84 pH	18.66 °C	1,246.8 µS/cm	0.80 mg/L	98.91 NTU	32.1 mV		120.00 ml/min
5/25/2023 11:03 AM	42:00	6.84 pH	18.56 °C	1,247.9 µS/cm	0.71 mg/L	66.94 NTU	26.4 mV		120.00 ml/min
5/25/2023 11:06 AM	45:00	6.84 pH	18.57 °C	1,249.4 µS/cm	0.75 mg/L	72.25 NTU	21.9 mV	13.57 ft	120.00 ml/min

5/25/2023 11:09 AM	48:00	6.84 pH	18.49 °C	1,248.3 µS/cm	0.85 mg/L	50.73 NTU	19.6 mV		120.00 ml/min
5/25/2023 11:12 AM	51:00	6.84 pH	18.52 °C	1,245.6 µS/cm	0.83 mg/L	75.45 NTU	18.2 mV		120.00 ml/min
5/25/2023 11:15 AM	54:00	6.84 pH	18.49 °C	1,242.3 µS/cm	0.75 mg/L	54.07 NTU	16.8 mV	13.57 ft	120.00 ml/min
5/25/2023 11:18 AM	57:00	6.84 pH	18.60 °C	1,242.5 µS/cm	0.68 mg/L	74.98 NTU	15.1 mV		120.00 ml/min
5/25/2023 11:21 AM	01:00:00	6.84 pH	18.59 °C	1,241.2 µS/cm	0.62 mg/L	47.24 NTU	12.3 mV		120.00 ml/min
5/25/2023 11:24 AM	01:03:00	6.84 pH	18.52 °C	1,241.7 µS/cm	0.57 mg/L	57.00 NTU	9.5 mV	13.58 ft	120.00 ml/min
5/25/2023 11:27 AM	01:06:00	6.84 pH	18.59 °C	1,243.3 µS/cm	0.53 mg/L	37.75 NTU	6.5 mV		120.00 ml/min
5/25/2023 11:30 AM	01:09:00	6.84 pH	18.56 °C	1,242.8 µS/cm	0.50 mg/L	46.76 NTU	4.2 mV		120.00 ml/min
5/25/2023 11:33 AM	01:12:00	6.84 pH	18.63 °C	1,245.6 µS/cm	0.48 mg/L	31.87 NTU	1.8 mV	13.58 ft	120.00 ml/min
5/25/2023 11:36 AM	01:15:00	6.84 pH	18.57 °C	1,243.4 µS/cm	0.48 mg/L	41.51 NTU	-0.5 mV		120.00 ml/min
5/25/2023 11:39 AM	01:18:00	6.85 pH	18.56 °C	1,244.3 µS/cm	0.48 mg/L	25.55 NTU	-2.6 mV		120.00 ml/min
5/25/2023 11:42 AM	01:21:00	6.84 pH	18.68 °C	1,246.7 µS/cm	0.49 mg/L	31.74 NTU	-4.3 mV	13.58 ft	120.00 ml/min
5/25/2023 11:45 AM	01:24:00	6.84 pH	18.85 °C	1,249.5 µS/cm	0.48 mg/L	21.23 NTU	-5.9 mV		120.00 ml/min
5/25/2023 11:48 AM	01:27:00	6.84 pH	18.93 °C	1,250.5 µS/cm	0.47 mg/L	29.53 NTU	-7.3 mV		120.00 ml/min
5/25/2023 11:51 AM	01:30:00	6.85 pH	18.93 °C	1,250.6 µS/cm	0.48 mg/L	17.41 NTU	-8.6 mV	13.58 ft	120.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/26/2023 10:30:05 AM
Project: FB Culley East (6)
Operator Name: Hayley Torres

Location Name: CCR-AP-6I **Well Diameter: 2 in** **Casing Type: Pvc** **Screen Length: 10 ft** **Top of Screen: 64.7 ft** **Total Depth: 74.7 ft** **Initial Depth to Water: 39.41 ft**	**Pump Type: Mp50** **Pump Intake From TOC: 69.7 ft** **Estimated Total Volume Pumped: 6300 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.02 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 651971**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 0.3	
5/26/2023 10:30 AM	00:00	7.23 pH	18.82 °C	651.91 µS/cm	6.27 mg/L	308.70 NTU	194.7 mV	39.41 ft	100.00 ml/min
5/26/2023 10:33 AM	03:00	7.09 pH	17.96 °C	645.55 µS/cm	2.17 mg/L	298.84 NTU	154.1 mV		100.00 ml/min
5/26/2023 10:36 AM	06:00	7.04 pH	18.04 °C	646.97 µS/cm	1.55 mg/L	278.54 NTU	129.2 mV		100.00 ml/min
5/26/2023 10:39 AM	09:00	7.02 pH	18.10 °C	653.52 µS/cm	1.14 mg/L	196.59 NTU	115.1 mV	39.41 ft	100.00 ml/min
5/26/2023 10:42 AM	12:00	7.01 pH	18.08 °C	663.03 µS/cm	0.98 mg/L	146.69 NTU	105.1 mV		100.00 ml/min
5/26/2023 10:45 AM	15:00	7.01 pH	18.15 °C	667.30 µS/cm	0.87 mg/L	115.05 NTU	96.4 mV		100.00 ml/min
5/26/2023 10:48 AM	18:00	7.00 pH	18.14 °C	670.54 µS/cm	0.80 mg/L	107.04 NTU	88.6 mV	39.41 ft	100.00 ml/min
5/26/2023 10:51 AM	21:00	7.00 pH	18.18 °C	684.23 µS/cm	0.74 mg/L	96.38 NTU	79.2 mV		100.00 ml/min
5/26/2023 10:54 AM	24:00	7.00 pH	18.20 °C	691.14 µS/cm	0.69 mg/L	90.01 NTU	68.0 mV		100.00 ml/min
5/26/2023 10:57 AM	27:00	7.01 pH	18.25 °C	692.46 µS/cm	0.67 mg/L	79.70 NTU	57.4 mV	39.41 ft	100.00 ml/min
5/26/2023 11:00 AM	30:00	7.01 pH	18.26 °C	697.03 µS/cm	0.63 mg/L	74.77 NTU	46.5 mV		100.00 ml/min
5/26/2023 11:03 AM	33:00	7.01 pH	18.28 °C	698.52 µS/cm	0.60 mg/L	60.61 NTU	32.5 mV		100.00 ml/min
5/26/2023 11:06 AM	36:00	7.01 pH	18.28 °C	701.24 µS/cm	0.56 mg/L	50.98 NTU	19.4 mV	39.42 ft	100.00 ml/min
5/26/2023 11:09 AM	39:00	7.01 pH	18.34 °C	703.99 µS/cm	0.54 mg/L	48.43 NTU	9.8 mV		100.00 ml/min
5/26/2023 11:12 AM	42:00	7.01 pH	18.36 °C	704.71 µS/cm	0.52 mg/L	41.90 NTU	2.9 mV		100.00 ml/min
5/26/2023 11:15 AM	45:00	7.01 pH	18.46 °C	707.77 µS/cm	0.50 mg/L	39.15 NTU	-2.0 mV	39.42 ft	100.00 ml/min

5/26/2023 11:18 AM	48:00	7.01 pH	18.49 °C	708.45 µS/cm	0.49 mg/L	35.86 NTU	-5.3 mV		100.00 ml/min
5/26/2023 11:21 AM	51:00	7.01 pH	18.60 °C	714.42 µS/cm	0.48 mg/L	33.61 NTU	-8.6 mV		100.00 ml/min
5/26/2023 11:24 AM	54:00	7.01 pH	18.61 °C	717.34 µS/cm	0.49 mg/L	31.61 NTU	-11.4 mV	39.42 ft	100.00 ml/min
5/26/2023 11:27 AM	57:00	7.01 pH	18.34 °C	716.68 µS/cm	0.44 mg/L	31.26 NTU	-14.0 mV		100.00 ml/min
5/26/2023 11:30 AM	01:00:00	7.01 pH	18.31 °C	704.12 µS/cm	0.48 mg/L	35.11 NTU	-15.6 mV		100.00 ml/min
5/26/2023 11:33 AM	01:03:00	7.00 pH	18.40 °C	702.72 µS/cm	0.46 mg/L	30.06 NTU	-15.1 mV	39.43 ft	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/25/2023 4:42:04 PM
Project: FB Culley East (5)
Operator Name: Hayley Torres

Location Name: CCR-AP-8 **Well Diameter: 2 in** **Casing Type: Pvc** **Screen Length: 10 ft** **Top of Screen: 35.5 m** **Total Depth: 45.5 ft** **Initial Depth to Water: 30.89 ft**	**Pump Type: Mp50** **Pump Intake From TOC: 40.5 ft** **Estimated Total Volume Pumped: 9001.667 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 651971**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 0.3	
5/25/2023 4:42 PM	00:00	7.23 pH	20.03 °C	681.60 µS/cm	2.22 mg/L	19.29 NTU	-148.7 mV	30.89 ft	100.00 ml/min
5/25/2023 4:45 PM	03:00	7.21 pH	19.44 °C	654.01 µS/cm	3.10 mg/L	29.32 NTU	-139.9 mV		100.00 ml/min
5/25/2023 4:48 PM	06:00	7.20 pH	19.24 °C	637.99 µS/cm	3.89 mg/L	46.55 NTU	-131.0 mV		100.00 ml/min
5/25/2023 4:51 PM	09:00	7.19 pH	19.19 °C	630.64 µS/cm	4.39 mg/L	64.22 NTU	-130.0 mV	30.89 ft	100.00 ml/min
5/25/2023 4:54 PM	12:00	7.19 pH	19.13 °C	619.72 µS/cm	4.70 mg/L	81.72 NTU	-130.3 mV		100.00 ml/min
5/25/2023 4:57 PM	15:00	7.17 pH	19.78 °C	620.05 µS/cm	4.80 mg/L	104.13 NTU	-130.9 mV		100.00 ml/min
5/25/2023 5:00 PM	18:00	7.19 pH	20.15 °C	617.23 µS/cm	5.22 mg/L	123.99 NTU	-132.2 mV	30.89 ft	100.00 ml/min
5/25/2023 5:03 PM	21:00	7.16 pH	20.69 °C	617.16 µS/cm	4.98 mg/L	144.39 NTU	-132.2 mV		100.00 ml/min
5/25/2023 5:06 PM	24:00	7.21 pH	18.50 °C	597.23 µS/cm	5.21 mg/L	144.74 NTU	-131.1 mV		100.00 ml/min
5/25/2023 5:09 PM	27:00	7.20 pH	18.68 °C	593.95 µS/cm	5.19 mg/L	161.38 NTU	-130.8 mV	30.90 ft	100.00 ml/min
5/25/2023 5:12 PM	30:00	7.27 pH	21.23 °C	58.27 µS/cm	7.12 mg/L	193.18 NTU	-129.2 mV		100.00 ml/min
5/25/2023 5:15 PM	33:00	7.24 pH	18.38 °C	584.39 µS/cm	4.76 mg/L	191.40 NTU	-132.5 mV		100.00 ml/min
5/25/2023 5:18 PM	36:00	7.22 pH	18.15 °C	516.08 µS/cm	4.96 mg/L	181.18 NTU	-131.7 mV	30.90 ft	100.00 ml/min
5/25/2023 5:21 PM	39:00	7.08 pH	17.91 °C	447.67 µS/cm	4.52 mg/L	147.61 NTU	-132.8 mV		100.00 ml/min
5/25/2023 5:24 PM	42:00	7.01 pH	17.97 °C	228.28 µS/cm	4.05 mg/L	112.77 NTU	-133.7 mV		100.00 ml/min
5/25/2023 5:27 PM	45:01	7.00 pH	17.95 °C	201.44 µS/cm	3.67 mg/L	88.47 NTU	-135.7 mV	30.90 ft	100.00 ml/min

5/25/2023 5:30 PM	48:01	7.00 pH	18.00 °C	546.15 µS/cm	3.36 mg/L	64.44 NTU	-137.0 mV		100.00 ml/min
5/25/2023 5:33 PM	51:01	6.99 pH	17.86 °C	521.97 µS/cm	2.97 mg/L	48.05 NTU	-140.2 mV		100.00 ml/min
5/25/2023 5:36 PM	54:01	6.98 pH	17.93 °C	519.60 µS/cm	2.57 mg/L	33.78 NTU	-144.5 mV	30.90 ft	100.00 ml/min
5/25/2023 5:39 PM	57:01	6.96 pH	17.87 °C	513.19 µS/cm	2.36 mg/L	21.24 NTU	-148.3 mV		100.00 ml/min
5/25/2023 5:42 PM	01:00:01	6.95 pH	17.93 °C	514.21 µS/cm	2.09 mg/L	15.99 NTU	-152.8 mV		100.00 ml/min
5/25/2023 5:45 PM	01:03:01	6.91 pH	19.19 °C	541.09 µS/cm	2.59 mg/L	21.58 NTU	-145.7 mV	30.91 ft	100.00 ml/min
5/25/2023 5:48 PM	01:06:01	6.90 pH	20.73 °C	536.27 µS/cm	2.64 mg/L	41.75 NTU	-135.1 mV		100.00 ml/min
5/25/2023 5:51 PM	01:09:01	6.89 pH	21.43 °C	578.54 µS/cm	2.80 mg/L	75.54 NTU	-129.3 mV		100.00 ml/min
5/25/2023 5:54 PM	01:12:01	6.89 pH	21.83 °C	575.80 µS/cm	2.68 mg/L	101.94 NTU	-128.0 mV	30.91 ft	100.00 ml/min
5/25/2023 5:57 PM	01:15:01	6.89 pH	22.24 °C	577.07 µS/cm	2.29 mg/L	120.66 NTU	-126.8 mV		100.00 ml/min
5/25/2023 6:00 PM	01:18:01	6.90 pH	22.41 °C	576.44 µS/cm	4.52 mg/L	213.12 NTU	-125.0 mV		100.00 ml/min
5/25/2023 6:03 PM	01:21:01	6.89 pH	19.97 °C	575.29 µS/cm	2.77 mg/L	92.33 NTU	-132.9 mV	30.91 ft	100.00 ml/min
5/25/2023 6:06 PM	01:24:01	6.87 pH	19.40 °C	564.71 µS/cm	1.46 mg/L	46.43 NTU	-142.3 mV		100.00 ml/min
5/25/2023 6:09 PM	01:27:01	6.88 pH	19.17 °C	561.47 µS/cm	1.17 mg/L	39.35 NTU	-146.2 mV		100.00 ml/min
5/25/2023 6:12 PM	01:30:01	6.88 pH	19.09 °C	553.56 µS/cm	1.18 mg/L	40.13 NTU	-146.1 mV	30.91 ft	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/25/2023 3:48:02 PM
Project: FB Culley East (4)
Operator Name: Hayley Torres

Location Name: CCR-AP-8I **Well Diameter: 2 in** **Casing Type: Pvc** **Screen Length: 10 ft** **Top of Screen: 58.7 ft** **Total Depth: 68.7 ft** **Initial Depth to Water: 35.58 ft**	**Pump Type: Mp50** **Pump Intake From TOC: 63.7 ft** **Estimated Total Volume Pumped: 2880 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 120 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 651971**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 0.3	
5/25/2023 3:48 PM	00:00	6.99 pH	18.79 °C	1,279.8 µS/cm	1.05 mg/L	50.07 NTU	-99.0 mV	35.58 ft	120.00 ml/min
5/25/2023 3:51 PM	03:00	6.99 pH	18.60 °C	1,338.5 µS/cm	0.78 mg/L	30.54 NTU	-107.1 mV		120.00 ml/min
5/25/2023 3:54 PM	06:00	6.99 pH	18.54 °C	1,359.6 µS/cm	0.63 mg/L	24.13 NTU	-111.3 mV		120.00 ml/min
5/25/2023 3:57 PM	09:00	6.99 pH	18.52 °C	1,368.6 µS/cm	0.54 mg/L	16.47 NTU	-113.7 mV	35.58 ft	120.00 ml/min
5/25/2023 4:00 PM	12:00	7.00 pH	18.55 °C	1,367.9 µS/cm	0.48 mg/L	15.38 NTU	-115.6 mV		120.00 ml/min
5/25/2023 4:03 PM	15:00	7.00 pH	18.44 °C	1,368.9 µS/cm	0.44 mg/L	12.27 NTU	-117.0 mV		120.00 ml/min
5/25/2023 4:06 PM	18:00	7.00 pH	18.43 °C	1,360.5 µS/cm	0.40 mg/L	13.46 NTU	-118.0 mV	35.58 ft	120.00 ml/min
5/25/2023 4:09 PM	21:00	7.00 pH	18.30 °C	1,357.8 µS/cm	0.37 mg/L	13.96 NTU	-118.7 mV		120.00 ml/min
5/25/2023 4:12 PM	24:00	7.00 pH	18.31 °C	1,357.7 µS/cm	0.32 mg/L	11.75 NTU	-119.4 mV		120.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 5/26/2023 12:03:01 PM
Project: FB Culley East (7)
Operator Name: Hayley Torres

Location Name: CCR-AP-11 **Well Diameter: 2 in** **Casing Type: Pvc** **Screen Length: 10 ft** **Top of Screen: 44.4 ft** **Total Depth: 54.4 ft** **Initial Depth to Water: 15.83 ft**	**Pump Type: Peristaltic** **Pump Intake From TOC: 49.4 ft** **Estimated Total Volume Pumped: 1800 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 651971**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 0.3	
5/26/2023 12:03 PM	00:00	7.25 pH	20.44 °C	195.82 µS/cm	7.18 mg/L	16.42 NTU	44.7 mV	15.83 ft	100.00 ml/min
5/26/2023 12:06 PM	03:00	7.08 pH	19.97 °C	159.01 µS/cm	7.32 mg/L	8.26 NTU	56.6 mV		100.00 ml/min
5/26/2023 12:09 PM	06:00	6.97 pH	19.88 °C	154.51 µS/cm	7.34 mg/L	22.17 NTU	65.5 mV		100.00 ml/min
5/26/2023 12:12 PM	09:00	6.91 pH	20.01 °C	155.71 µS/cm	7.32 mg/L	31.30 NTU	70.0 mV	15.83 ft	100.00 ml/min
5/26/2023 12:15 PM	12:00	6.89 pH	20.02 °C	154.50 µS/cm	7.30 mg/L	3.76 NTU	73.3 mV		100.00 ml/min
5/26/2023 12:18 PM	15:00	6.88 pH	20.13 °C	153.98 µS/cm	7.23 mg/L	7.89 NTU	76.8 mV		100.00 ml/min
5/26/2023 12:21 PM	18:00	6.87 pH	20.20 °C	154.25 µS/cm	7.22 mg/L	9.27 NTU	79.8 mV	15.83 ft	100.00 ml/min

Samples

Sample ID:	Description:

HALEY & ALDRICH

GROUNDWATER SAMPLING RECORD

PROJECT	C.W Ley East	H&A FILE NO.	
LOCATION	Newburgh IN	PROJECT MGR.	
CLIENT	Vestrem	FIELD REP	HT
CONTRACTOR	ATLAS	DATE	5-23-23

GROUNDWATER SAMPLING INFORMATION

Well No.	CCR-AP1						
Water Depth (ft)	53.57						
Time							
Product							
Depth Of Well (ft)	65						
Inside Diameter (in)	2						
Standing Water Depth (ft) [1]							
Volume Of Water In Well (gal)							
Purging Device							
Volume of Bailer/Pump Capacity							
Cleaning Procedure							
Bails Removed/ Volume Removed							
Time Purging Started							
Time Purging Stopped							
Sampling Device	M sleeve						
Cleaning Procedure							
TIME SAMPLES TAKEN: VOA							
ABN							
Metals	sample						
	12:10						

PARAMETERS													
Time													
DTW													
pH													
Conductivity													
Turbidity													
Dissolved Oxygen													
Temp, ^{0}C													
ORP													

Remarks: (ie: field filtrations, persons communicated with at site, etc.)

1. Standing Water Depth = Depth of Well - Water Depth

HALEY & ALDRICH

GROUNDWATER SAMPLING RECORD

PROJECT	Culley East	H&A FILE NO.	
LOCATION	Newburgh IN	PROJECT MGR.	
CLIENT	Vectren	FIELD REP	HT
CONTRACTOR	ATLAS	DATE	5-23-23

GROUNDWATER SAMPLING INFORMATION

Well No.	CCR-AP-2						
Water Depth (ft)	33.49						
Time							
Product							
Depth Of Well (ft)	46						
Inside Diameter (in)	2						
Standing Water Depth (ft) (1)							
Volume Of Water In Well (gal)							
Purging Device							
Volume of Bailer/Pump Capacity							
Cleaning Procedure							
Bails Removed/ Volume Removed							
Time Purging Started							
Time Purging Stopped							
Sampling Device	H sleeve						
Cleaning Procedure							
TIME SAMPLES TAKEN: VOA							
ABN							
Metals	Sample						
	13:45						

PARAMETERS: Time													
DTW													
pH													
Conductivity													
Turbidity													
Dissolved Oxygen													
Temp, ^{0} C													
ORP													

Remarks: (ie: field filtrations, persons communicated with at site, etc.)

1. Standing Water Depth = Depth of Well - Water Depth

HALEY & ALDRICH

GROUNDWATER SAMPLING RECORD

Page 1 of 1

PROJECT	CWJay East	H&A FILE NO.	
LOCATION	Newburgh IN	PROJECT MGR.	
CLIENT	Vectren	FIELD REP	HT
CONTRACTOR	ATLAS	DATE	5-23-23

GROUNDWATER SAMPLING INFORMATION

Well No.	CCR-AP-3						
Water Depth (ft)	31.57						
Time							
Product							
Depth Of Well (ft)	45						
Inside Diameter (in)	2						
Standing Water Depth (ft) [1]							
Volume Of Water In Well (gal)							
Purging Device							
Volume of Bailer/Pump Capacity							
Cleaning Procedure							
Bails Removed/ Volume Removed							
Time Purging Started							
Time Purging Stopped							
Sampling Device	H-Sleeve						
Cleaning Procedure							
TIME SAMPLES TAKEN: VOA							
ABN							
Metals	Sample						
	14:15						

PARAMETERS: Time													
DTW													
pH													
Conductivity													
Turbidity													
Dissolved Oxygen													
Temp, ^{0} C													
ORP													

Remarks: (ie: field filtrations, persons communicated with at site, etc.)

1. Standing Water Depth = Depth of Well - Water Depth

Form 3005

HALEY & ALDRICH

GROUNDWATER SAMPLING RECORD

Page 1 of 1

PROJECT	Culley East	H&A FILE NO.	
LOCATION	Newburgh IN	PROJECT MGR.	
CLIENT	Vectren	FIELD REP	MT
CONTRACTOR	ATLAS	DATE	5-23-23

GROUNDWATER SAMPLING INFORMATION

Well No.	CCR-AR4						
Water Depth (ft)	10.58						
Time							
Product							
Depth Of Well (ft)	35.5						
Inside Diameter (in)	2						
Standing Water Depth (ft) [1]							
Volume Of Water In Well (gal)							
Purging Device							
Volume of Bailer/Pump Capacity							
Cleaning Procedure							
Bails Removed/ Volume Removed							
Time Purging Started							
Time Purging Stopped							
Sampling Device	H-sleeve						
Cleaning Procedure							
TIME SAMPLES TAKEN: VOA							
ABN							
Metals	Sample						
	10:30						

PARAMETERS													
Time													
DTW													
pH													
Conductivity													
Turbidity													
Dissolved Oxygen													
Temp, ^{0}C													
ORP													

Remarks: (ie: field filtrations, persons communicated with at site, etc.)

1. Standing Water Depth = Depth of Well - Water Depth

Form 3005

HALEY & ALDRICH

GROUNDWATER SAMPLING RECORD

PROJECT	Cwley East	H&A FILE NO.	
LOCATION	Newburgh IN	PROJECT MGR.	
CLIENT	Vestren	FIELD REP	HT
CONTRACTOR	ATLAS	DATE	5-25-23

GROUNDWATER SAMPLING INFORMATION

Well No.	CCR-AP-50						
Water Depth (ft)	12.12						
Time							
Product							
Depth Of Well (ft)	44						
Inside Diameter (in)	2						
Standing Water Depth (ft) [1]							
Volume Of Water In Well (gal)							
Purging Device	pump						
Volume of Bailer/Pump Capacity							
Cleaning Procedure	decon						
Bails Removed/ Volume Removed	12900						
Time Purging Started	11:18						
Time Purging Stopped	13:27						
Sampling Device	pump						
Cleaning Procedure	decon						
TIME SAMPLES TAKEN: VOA							
ABN							
Metals	sample						
	14:00						

PARAMETERS: Time	11:19	11:21	11:24	11:27	11:30	11:33	11:36	11:39	11:42	11:45	11:48	11:51
DTW	12.12			12.10			12.12			12.12		
pH	7.23	7.22	7.22	7.21	7.21	7.21	7.21	7.21	7.21	7.21	7.21	7.20
Conductivity	919	934	929	923	919	914	913	910	911	912	913	916
Turbidity	1467	903	670	559	499	437	416	357	323	298	259	264
Dissolved Oxygen	0.87	0.85	1.10	1.16	1.24	1.29	1.32	1.34	1.36	1.41	1.40	1.42
Temp, °C	19.73	19.04	18.89	19.83	18.89	18.80	18.92	18.88	19.01	19.39	19.67	20.08
ORP	-29.2	-51.6	-55.2	-57.1	-58.0	-58.4	-58.7	-59.0	-59.3	-59.4	-59.3	-59.3

Remarks: (ie: field filtrations, persons communicated with at site, etc.)

1. Standing Water Depth = Depth of Well - Water Depth

Blind Dup

Well Name CCR-AP-5

Field Parameters (Extra Entries)

	11	12	13	14	15	16	17	18	19	20
Time	11:54	11:57	12:00	12:03	12:06	12:09	12:12	12:15	12:18	12:21
Temperature (°C)	20.07	20.18	19.59	19.89	20.49	19.77	20.08	20.00	20.22	2021
pH (su)	7.20	7.20	7.21	7.20	7.19	7.21	7.20	7.21	7.20	7.20
Conductivity (mS/cm)	914	912	905	905	903	897	899	897	898	896
D.O. (mg/L)	1.45	1.54	1.63	1.75	1.81	1.86	1.98	2.04	2.13	2.21
Turbidity (NTU)	269	245	225	227	206	202	190	192	179	168
ORP (mV)	-54.8	-54.1	-58.3	-58.0	-57.8	-56.8	-56.0	-55.3	-54.5	-54.3
Water Level (DTW)	12.12			12.12			12.13			12.13

Field Parameters (Extra Entries)

	11	12	13	14	15	16	17	18	19	20
Time	12:24	12:27	12:30	12:33	12:36	12:39	12:42	12:45	12:48	12:51
Temperature (°C)	20.36	19.92	18.92	19.11	20.58	21.18	21.46	21.48	21.5	19.49
pH (su)	7.20	7.21	7.24	7.24	7.19	7.18	7.18	7.18	7.18	7.20
Conductivity (mS/cm)	896	880	884	882	893	898	900	899	900	877
D.O. (mg/L)	2.26	2.30	2.87	2.66	2.64	2.64	2.62	2.80	2.86	2.99
Turbidity (NTU)	169	165	178	160	123	131	120	159	156	152
ORP (mV)	-54.1	-53.2	-53.2	-51.2	-51.6	-52.7	-52.5	-52.6	-53.1	-49.3
Water Level (DTW)			12.13			12.13			12.14	

Field Parameters (Extra Entries)

	11	12	13	14	15	16	17	18	19	20
Time	12:54	12:57	13:00	13:03	13:06	13:09	13:12	13:15	13:18	13:21
Temperature (°C)	19.93	20.86	19.86	19.76	19.70	20.30	19.96	19.64	19.52	20.12
pH (su)	7.20	7.14	7.20	7.20	7.20	7.19	7.19	7.20	7.19	7.18
Conductivity (mS/cm)	880	892	880	879	875	882	879	876	877	881
D.O. (mg/L)	3.04	3.15	3.16	3.26	3.25	3.21	3.15	3.06	3.06	3.01
Turbidity (NTU)	137	146	137	116	112	131	122	128	108	103
ORP (mV)	-49.0	-49.5	-49.1	-48.1	-47.1	-48.0	-47.9	-47.3	-47.3	-48.1
Water Level (DTW)		12.14			12.14			12.15		

Field Parameters (Extra Entries)

	11	12	13	14	15	16	17	18	19	20
Time	13:24	13:27								
Temperature (°C)	20.26	20.32								
pH (su)	7.18	7.17								
Conductivity (mS/cm)	886	880								
D.O. (mg/L)	2.92	2.91								
Turbidity (NTU)	104	120								
ORP (mV)	-49.5	-49.1								
Water Level (DTW)	12.15									

Field Parameters (Extra Entries)

	11	12	13	14	15	16	17	18	19	20
Time										
Temperature (°C)										
pH (su)										
Conductivity (mS/cm)										
D.O. (mg/L)										
Turbidity (NTU)										
ORP (mV)										
Water Level (DTW)										

HALEY & ALDRICH

GROUNDWATER SAMPLING RECORD

PROJECT	Cully East	H&A FILE NO.	
LOCATION	Newburgh IN	PROJECT MGR.	
CLIENT	Vectrom	FIELD REP	MT
CONTRACTOR	ATLAS	DATE	5-25-23

GROUNDWATER SAMPLING INFORMATION

Well No.	CCR-AP-5 I						
Water Depth (ft)	13.56						
Time							
Product							
Depth Of Well (ft)	85.3						
Inside Diameter (in)	2						
Standing Water Depth (ft) (1)							
Volume Of Water In Well (gal)							
Purging Device	pump						
Volume of Bailer/Pump Capacity							
Cleaning Procedure	dec						
Bails Removed/ Volume Removed	10 800						
Time Purging Started	9:21						
Time Purging Stopped	10:51						
Sampling Device	Pump						
Cleaning Procedure	dea						
TIME SAMPLES TAKEN: VOA							
ABN							
Metals	Sample						
	11:30						

PARAMETERS												
Time	9:21	9:24	9:27	9:30	9:33	9:36	9:39	9:42	9:45	9:48	9:51	9:54
DTW	13.56			13.56			13.56			13.56		
pH	6.96	6.94	6.91	6.88	6.86	6.86	6.85	6.84	6.92	6.84	6.83	6.82
Conductivity	1153	1253	1248	1234	1222	1217	1218	1221	1216	1231	1243	1248
Turbidity	57	81	101	85	88	98	100	116	106	97	90	98
Dissolved Oxygen	4.83	1.45	1.62	1.12	0.97	0.82	0.78	0.74	2.97	0.40	0.51	0.71
Temp, °C	19.00	17.50	17.30	17.45	17.42	17.49	17.69	17.76	17.18	18.00	18.76	18.98
ORP	308	314.3	213.7	155.8	150.5	139.9	120.3	100.3	74.5	61.3	50.6	42.7

Remarks: (ie: field filtrations, persons communicated with at site, etc.)

1. Standing Water Depth = Depth of Well - Water Depth

Well Name CCR-AP-5I

Field Parameters (Extra Entries)										
	11	12	13	14	15	16	17	18	19	20
Time	9:57	10:00	10:03	10:06	10:09	10:12	10:15	10:18	10:21	10:24
Temperature (°C)	18.79	18.66	18.56	18.57	18.49	18.52	18.49	18.60	18.59	18.52
pH (su)	6.83	6.84	6.84	6.84	6.84	6.84	6.84	6.84	6.84	6.84
Conductivity (mS/cm)	1246	1246	1247	1249	1248	1245	1242	1242	1241	1241
D.O. (mg/L)	0.81	0.80	0.71	0.75	0.85	0.83	0.75	0.68	0.62	057
Turbidity (NTU)	80	98	66	72	50	75	64	74	47	57
ORP (mV)	37.7	32.1	26.4	21.9	19.6	18.2	16.8	15.1	12.3	9.5
Water Level (DTW)	13.57			13.57			13.57			13.58

Well Name CCR-AP-5I

Field Parameters (Extra Entries)										
	11	12	13	14	15	16	17	18	19	20
Time	10:27	10:30	10:33	10:36	10:39	10:42	10:45	10:48	10:51	
Temperature (°C)	18.59	18.56	18.63	18.57	18.56	18.68	18.85	18.93	18.93	
pH (su)	6.84	6.84	6.84	6.84	6.85	6.84	6.84	6.84	6.85	
Conductivity (mS/cm)	1243	1242	1245	1243	1244	1246	1249	1250	1250	
D.O. (mg/L)	0.53	0.50	0.48	0.48	0.48	0.49	0.48	0.47	0.48	
Turbidity (NTU)	37	46	31	41	25	31	21	29	17	
ORP (mV)	6.5	4.2	1.6	-0.5	-2.6	-4.3	-5.9	-7.3	-8.6	
Water Level (DTW)			13.58			13.58			13.58	

HALEY & ALDRICH

GROUNDWATER SAMPLING RECORD

PROJECT	Cwley EAST	H&A FILE NO.	
LOCATION	Newburgh NY	PROJECT MGR.	
CLIENT	Vectren	FIELD REP	MT
CONTRACTOR	ATLAS	DATE	5-23-23

GROUNDWATER SAMPLING INFORMATION

Well No.	CCR-AP-6						
Water Depth (ft)	39.32						
Time							
Product							
Depth Of Well (ft)	45.5						
Inside Diameter (in)	2						
Standing Water Depth (ft) [1]							
Volume Of Water In Well (gal)							
Purging Device							
Volume of Bailer/Pump Capacity							
Cleaning Procedure							
Bails Removed/ Volume Removed							
Time Purging Started							
Time Purging Stopped							
Sampling Device	H sleeve						
Cleaning Procedure							
TIME SAMPLES TAKEN: VOA							
ABN							
Metals	Sample						
	11:00						

PARAMETERS: Time													
DTW													
pH													
Conductivity													
Turbidity													
Dissolved Oxygen													
Temp, °C													
ORP													

Remarks: (ie: field filtrations, persons communicated with at site, etc.)

1. Standing Water Depth = Depth of Well - Water Depth

HALEY & ALDRICH

GROUNDWATER SAMPLING RECORD

PROJECT	Cwley East	H&A FILE NO.	
LOCATION	Newburgh NY	PROJECT MGR.	
CLIENT	Vectren	FIELD REP	MT
CONTRACTOR	ATLAS	DATE	5-26-23

GROUNDWATER SAMPLING INFORMATION

Well No.	CCR-AP-6I						
Water Depth (ft)	39.41						
Time							
Product							
Depth Of Well (ft)	74.70						
Inside Diameter (in)	2						
Standing Water Depth (ft) [1]							
Volume Of Water In Well (gal)							
Purging Device	Pump						
Volume of Bailer/Pump Capacity							
Cleaning Procedure	dedicated						
Bails Removed/ Volume Removed							
Time Purging Started	9:30						
Time Purging Stopped	10:33						
Sampling Device	pump						
Cleaning Procedure	dedicated						
TIME SAMPLES TAKEN: VOA							
ABN							
Metals	Sample						
	11:00						

PARAMETERS: Time	9:30	9:33	9:36	9:39	9:42	9:45	9:48	9:51	9:54	9:57	10:00	10:03
DTW	39.41			39.41			39.41			39.41		
pH	7.23	7.09	7.04	7.02	7.01	7.01	7.00	7.00	7.00	7.01	7.01	7.01
Conductivity	651	645	646	653	663	667	670	684	691	692	697	698
Turbidity	308	298	278	196	146	115	107	96	90	79	74	60
Dissolved Oxygen	6.27	2.17	1.55	1.14	0.98	0.87	0.80	0.74	0.69	0.67	0.63	0.60
Temp, °C	18.82	17.96	18.04	18.10	18.08	18.15	18.14	18.18	18.20	18.25	18.26	18.28
ORP	194.7	154.1	129.2	115.1	105.1	96.4	88.6	79.2	68.0	57.4	46.5	32.5

Remarks: (ie: field filtrations, persons communicated with at site, etc.)

1. Standing Water Depth = Depth of Well - Water Depth

Well Name CCR-AP-6I

Field Parameters (Extra Entries)										
	11	12	13	14	15	16	17	18	19	20
Time	10:06	10:09	10:12	10:15	10:18	10:21	10:24	10:27	10:30	10:33
Temperature (°C)	18.28	18.34	18.36	18.46	18.49	18.60	18.61	18.34	18.31	18.40
pH (su)	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.01	7.00
Conductivity (mS/cm)	701	703	704	707	708	714	717	716	704	702
D.O. (mg/L)	0.56	0.54	0.52	0.50	0.49	0.48	0.49	0.44	0.48	0.46
Turbidity (NTU)	50	48	41	39	35	33	31	31	35	30
ORP (mV)	19.4	9.8	2.9	-2.0	-5.3	-8.10	-11.4	-14.0	-15.6	-15.1
Water Level (DTW)	39.42			39.42			39.42			39.43

HALEY & ALDRICH

GROUNDWATER SAMPLING RECORD

PROJECT	CW Ray EAST	H&A FILE NO.	
LOCATION	Newburgh IN	PROJECT MGR.	
CLIENT	Vectren	FIELD REP	MT
CONTRACTOR	ATLAS	DATE	5-25-23

GROUNDWATER SAMPLING INFORMATION

Well No.	CCR-AP-8						
Water Depth (ft)	30.89						
Time							
Product							
Depth Of Well (ft)	45.50						
Inside Diameter (in)	2						
Standing Water Depth (ft) [1]							
Volume Of Water In Well (gal)							
Purging Device	pump						
Volume of Bailer/Pump Capacity							
Cleaning Procedure	decon						
Bails Removed/ Volume Removed	9000						
Time Purging Started	15:42						
Time Purging Stopped	17:12						
Sampling Device	pump						
Cleaning Procedure	decon						
TIME SAMPLES TAKEN: VOA							
ABN							
Metals	sample						
	17:40						

PARAMETERS													
Time	15:40	15:45	15:48	15:51	15:54	15:57	16:00	16:03	16:06	16:09	16:12	16:15
DTW	30.89			30.89			30.89			30.90		
pH	7.23	7.21	7.20	7.19	7.19	7.17	7.19	7.16	7.21	7.26	7.27	7.24
Conductivity	681	654	637	630	619	620	617	617	597	593	58	584
Turbidity	107	29	46	64	81	104	123	144	144	161	193	191
Dissolved Oxygen	2.22	3.10	3.89	4.39	4.70	4.80	5.22	4.78	5.21	5.19	7.12	4.76
Temp, °C	20.03	19.44	19.24	19.19	19.13	19.78	20.15	20.69	18.50	18.68	21.23	18.38
ORP	-148.7	-139.2	-131.0	-130.0	-130.3	-130.9	-132.2	-132.2	-131.1	-130.8	-109.2	-130.5

Remarks: (ie: field filtrations, persons communicated with at site, etc.)

1. Standing Water Depth = Depth of Well - Water Depth

Well Name CCR-AP-8

Field Parameters (Extra Entries)

	11	12	13	14	15	16	17	18	19	20
Time	16:18	16:21	16:24	16:27	16:30	16:33	16:36	16:39	16:42	16:45
Temperature (°C)	18.15	17.91	17.97	17.95	18.00	17.86	17.93	17.87	17.93	19.19
pH (su)	7.02	7.08	7.01	7.00	7.00	6.99	6.98	6.96	6.85	6.91
Conductivity (mS/cm)	516	447	228	201	546	521	519	513	514	541
D.O. (mg/L)	4.96	4.52	4.05	367	2.36	2.97	2.57	2.36	2.09	2.59
Turbidity (NTU)	181	142	112	88	64	48	33	21	15	21
ORP (mV)	-131.7	-130.8	-133.7	-135.7	-137.0	-140.2	-144.5	-148.3	-152.8	-145.7
Water Level (DTW)	30.90			30.90			30.90			30.91

Field Parameters (Extra Entries)

	11	12	13	14	15	16	17	18	19	20
Time	[illegible]	16:51	16:54	16:57	17:00	17:03	17:06	17:09	17:12	
Temperature (°C)	20.73	21.43	21.83	22.24	22.41	19.97	19.40	19.17	19.09	
pH (su)	6.90	6.89	6.89	6.84	6.90	6.89	6.87	6.88	6.88	
Conductivity (mS/cm)	536	578	575	577	576	575	564	561	553	
D.O. (mg/L)	2.64	2.80	2.68	2.29	4.52	2.77	1.46	1.17	1.18	
Turbidity (NTU)	41	75	101	120	213	92	46	39	40	
ORP (mV)	-135.1	-129.3	-128.0	-126.8	125.0	-132.9	-142.3	-146.2	-146.1	
Water Level (DTW)			30.91			30.91			30.91	

Field Parameters (Extra Entries)

	11	12	13	14	15	16	17	18	19	20
Time										
Temperature (°C)										
pH (su)										
Conductivity (mS/cm)										
D.O. (mg/L)										
Turbidity (NTU)										
ORP (mV)										
Water Level (DTW)										

Field Parameters (Extra Entries)

	11	12	13	14	15	16	17	18	19	20
Time										
Temperature (°C)										
pH (su)										
Conductivity (mS/cm)										
D.O. (mg/L)										
Turbidity (NTU)										
ORP (mV)										
Water Level (DTW)										

Field Parameters (Extra Entries)

	11	12	13	14	15	16	17	18	19	20
Time										
Temperature (°C)										
pH (su)										
Conductivity (mS/cm)										
D.O. (mg/L)										
Turbidity (NTU)										
ORP (mV)										
Water Level (DTW)										

HALEY & ALDRICH

GROUNDWATER SAMPLING RECORD

Page 1 of 1

PROJECT	Cwley EAST	H&A FILE NO.	
LOCATION	Newburgh IN	PROJECT MGR.	
CLIENT	VeCtren	FIELD REP	HT
CONTRACTOR	ATLAS	DATE	5-25-23

GROUNDWATER SAMPLING INFORMATION

Well No.	CCR-AP-8)						
Water Depth (ft)	35.58						
Time							
Product							
Depth Of Well (ft)	68.70						
Inside Diameter (in)	2						
Standing Water Depth (ft) [1]							
Volume Of Water In Well (gal)							
Purging Device	pump						
Volume of Bailer/Pump Capacity							
Cleaning Procedure	dew						
Bails Removed/ Volume Removed	2480						
Time Purging Started	14:48						
Time Purging Stopped	15:12						
Sampling Device	pump						
Cleaning Procedure	dew						
TIME SAMPLES TAKEN: VOA							
ABN							
Metals	sample						
	15:43						

PARAMETERS												
Time	14:48	14:51	14:54	14:57	15:00	15:03	15:06	15:09	15:12			
DTW	35.58			35.58			35.58					
pH	6.99	6.99	6.99	6.99	7.00	7.00	7.00	7.00	7.00			
Conductivity	1379	1338	1359	1368	1367	1368	1360	1357	1357			
Turbidity	50	30	24	16	15	12	13	13	11			
Dissolved Oxygen	1.05	0.78	0.63	0.54	0.48	0.44	0.40	0.37	0.32			
Temp, °C	18.79	18.60	18.54	18.52	18.55	18.44	18.43	18.30	18.31			
ORP	-99.0	-107.1	-111.3	-113.7	-115.6	-117.0	-118.0	-118.7	-119.4			

Remarks: (ie: field filtrations, persons communicated with at site, etc.)

1. Standing Water Depth = Depth of Well - Water Depth

Form 3005

HALEY & ALDRICH

GROUNDWATER SAMPLING RECORD

Page 1 of 1

PROJECT	Cwley EAST	H&A FILE NO.	
LOCATION	Newburgh NY	PROJECT MGR.	
CLIENT	Vectren	FIELD REP	HT
CONTRACTOR	ATLAS	DATE	5-23-23

GROUNDWATER SAMPLING INFORMATION

Well No.	CCR-AP-9						
Water Depth (ft)	61.35						
Time							
Product							
Depth Of Well (ft)	70						
Inside Diameter (in)	2						
Standing Water Depth (ft) [1]							
Volume Of Water In Well (gal)							
Purging Device							
Volume of Bailer/Pump Capacity							
Cleaning Procedure							
Bails Removed/ Volume Removed							
Time Purging Started							
Time Purging Stopped							
Sampling Device	H-sleeve						
Cleaning Procedure							
TIME SAMPLES TAKEN: VOA							
ABN							
Metals	Sample						
	12:30						

PARAMETERS: Time													
DTW													
pH													
Conductivity													
Turbidity													
Dissolved Oxygen													
Temp, °C													
ORP													

Remarks: (ie: field filtrations, persons communicated with at site, etc.)

1. Standing Water Depth = Depth of Well - Water Depth

Sleeve replaced

Form 3005

HALEY & ALDRICH

GROUNDWATER SAMPLING RECORD

PROJECT	CWLay EAST	H&A FILE NO.	
LOCATION	Newburgh NY	PROJECT MGR.	
CLIENT	Vectren	FIELD REP	HT
CONTRACTOR	ATLAS	DATE	5-26-23

GROUNDWATER SAMPLING INFORMATION

Well No.	CCA-AP-11						
Water Depth (ft)	15.83						
Time							
Product							
Depth Of Well (ft)	54.40						
Inside Diameter (in)	2						
Standing Water Depth (ft) [1]							
Volume Of Water In Well (gal)							
Purging Device	p-pump						
Volume of Bailer/Pump Capacity							
Cleaning Procedure	decon						
Bails Removed/ Volume Removed	1800						
Time Purging Started	11:03						
Time Purging Stopped	11:21						
Sampling Device	p-pump						
Cleaning Procedure	decon						
TIME SAMPLES TAKEN: VOA							
ABN							
Metals	sample						
	12:00						

PARAMETERS: Time	11:03	11:06	11:09	11:12	11:15	11:18	11:21					
DTW	15.83			15.83			15.83					
pH	7.25	7.08	6.97	6.91	6.89	6.88	6.87					
Conductivity	195	159	154	153	154	155	154					
Turbidity	16.42	8	22	31	3	7	9					
Dissolved Oxygen	7.18	7.32	7.34	7.32	7.30	7.23	7.22					
Temp, °C	20.44	19.97	19.88	20.01	20.02	20.13	20.26					
ORP	14.7	56.6	65.5	70.0	73.3	76.8	79.8					

Remarks: (ie: field filtrations, persons communicated with at site, etc.)

1. Standing Water Depth = Depth of Well - Water Depth

VECTREN - FB CULLEY STATION
EAST ASH POND
CCR Groundwater Sampling Event
Gauging Date: November 1, 2023
ATC Project No. 170LF01499

WELL ID	DATE	TIME	DTW FROM TOC
East Ash Pond Wells			
CCR-AP-2	11/1/2023	12:12	34.45
CCR-AP-3R	11/2/2023	10:35	35.50
CCR-AP-4R	11/1/2023	13:18	12.91
CCR-AP-5	11/1/2023	12:14	16.90
CCR-AP-5I	11/1/2023	12:15	18.10
CCR-AP-6	11/1/2023	11:58	38.95
CCR-AP-6I	11/1/2023	12:00	39.10
CCR-AP-8	11/2/2023	11:20	31.73
CCR-AP-8I	11/2/2023	11:01	35.40
CCR-AP-11	11/1/2023	11:52	18.01
Background Wells			
CCR-AP-1R	11/1/2023	11:26	54.41
CCR-AP-7	11/1/2023	11:12	13:12
CCR-AP-9	11/1/2023	11:38	Dry (46 ft)

NOTES
DTW= Depth to Water
TOC= Top of Casing

CCR-AP-3R, CCR-AP-8, and CCR-AP-8I were not accessible for gauging on November 1 due to ongoing construction activities around the East Pond.

Low-Flow Test Report:

Test Date / Time: 11/2/2023 3:17:22 PM
Project: CULLEY EAST (5)
Operator Name: Jon Hill

Location Name: CCR-AP-5 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 33.5 ft** **Total Depth: 43.5 ft** **Initial Depth to Water: 17.05 ft**	**Pump Type: Portable Bladder Pump** **Tubing Type: LDPE** **Pump Intake From TOC: 38.5 ft** **Estimated Total Volume Pumped: 9000 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 300 ml/min** **Final Draw Down: 4.05 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 450197**

Test Notes:
2.4 gallons purged

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
11/2/2023 3:17 PM	00:00	7.59 pH	18.01 °C	763.62 µS/cm	10.08 mg/L	972.21 NTU	-24.3 mV	17.05 ft	300.00 ml/min
11/2/2023 3:20 PM	03:00	7.56 pH	17.82 °C	742.54 µS/cm	10.20 mg/L	872.04 NTU	-16.2 mV	18.10 ft	300.00 ml/min
11/2/2023 3:23 PM	06:00	7.52 pH	17.80 °C	734.36 µS/cm	9.29 mg/L	615.65 NTU	-10.4 mV	18.80 ft	300.00 ml/min
11/2/2023 3:26 PM	09:00	7.46 pH	17.82 °C	730.21 µS/cm	6.80 mg/L	347.65 NTU	-7.0 mV	18.99 ft	300.00 ml/min
11/2/2023 3:29 PM	12:00	7.42 pH	17.82 °C	729.61 µS/cm	5.99 mg/L	327.99 NTU	-4.3 mV	19.25 ft	300.00 ml/min
11/2/2023 3:32 PM	15:00	7.39 pH	17.87 °C	745.00 µS/cm	5.89 mg/L	319.58 NTU	-1.9 mV	19.62 ft	300.00 ml/min
11/2/2023 3:35 PM	18:00	7.37 pH	17.84 °C	747.96 µS/cm	5.57 mg/L	263.30 NTU	0.4 mV	20.01 ft	300.00 ml/min
11/2/2023 3:38 PM	21:00	7.35 pH	17.78 °C	750.72 µS/cm	5.57 mg/L	237.80 NTU	2.3 mV	20.43 ft	300.00 ml/min
11/2/2023 3:41 PM	24:00	7.34 pH	17.85 °C	754.79 µS/cm	5.95 mg/L	210.87 NTU	4.2 mV	20.77 ft	300.00 ml/min
11/2/2023 3:44 PM	27:00	7.37 pH	17.79 °C	756.66 µS/cm		206.01 NTU	6.2 mV	20.91 ft	300.00 ml/min
11/2/2023 3:47 PM	30:00	7.33 pH	17.92 °C	754.53 µS/cm	6.18 mg/L	215.82 NTU	7.9 mV	21.10 ft	300.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/2/2023 2:25:00 PM
Project: CULLEY EAST (4)
Operator Name: Jon Hill

Location Name: CCR-AP-5I **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 75.0 ft** **Total Depth: 85.0 ft** **Initial Depth to Water: 18.06 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 80.0 ft** **Estimated Total Volume Pumped: 8100 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 300 ml/min** **Final Draw Down: 4.56 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 450197**

Test Notes:
2.1 gallons purged

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
11/2/2023 2:25 PM	00:00	6.67 pH	17.74 °C	1,369.1 µS/cm	0.19 mg/L	630.15 NTU	-4.4 mV	18.06 ft	300.00 ml/min
11/2/2023 2:28 PM	03:00	6.67 pH	17.71 °C	1,356.0 µS/cm	0.14 mg/L	652.19 NTU	-7.8 mV	18.72 ft	300.00 ml/min
11/2/2023 2:31 PM	06:00	6.67 pH	17.76 °C	1,352.4 µS/cm	0.11 mg/L	674.94 NTU	-12.1 mV	19.22 ft	300.00 ml/min
11/2/2023 2:34 PM	09:00	6.68 pH	17.69 °C	1,352.6 µS/cm	0.11 mg/L	697.92 NTU	-16.7 mV	19.77 ft	300.00 ml/min
11/2/2023 2:37 PM	12:00	6.69 pH	17.72 °C	1,359.7 µS/cm	0.09 mg/L	653.57 NTU	-21.2 mV	20.44 ft	300.00 ml/min
11/2/2023 2:40 PM	15:00	6.69 pH	17.72 °C	1,367.8 µS/cm	0.08 mg/L	556.36 NTU	-25.4 mV	21.07 ft	300.00 ml/min
11/2/2023 2:43 PM	18:00	6.70 pH	17.72 °C	1,376.3 µS/cm	0.08 mg/L	489.51 NTU	-29.2 mV	21.77 ft	300.00 ml/min
11/2/2023 2:46 PM	21:00	6.71 pH	17.75 °C	1,385.7 µS/cm	0.07 mg/L	428.39 NTU	-32.8 mV	22.15 ft	300.00 ml/min
11/2/2023 2:49 PM	24:00	6.72 pH	17.70 °C	1,391.8 µS/cm	0.08 mg/L	421.88 NTU	-35.9 mV	22.40 ft	300.00 ml/min
11/2/2023 2:52 PM	27:00	6.73 pH	17.65 °C	1,394.0 µS/cm	0.07 mg/L	401.99 NTU	-38.1 mV	22.62 ft	300.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/2/2023 9:51:22 AM
Project: CULLEY EAST
Operator Name: Jon Hill

Location Name: CCR-AP-6I **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 64.4 ft** **Total Depth: 74.4 ft** **Initial Depth to Water: 39.05 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 69.4 ft** **Estimated Total Volume Pumped: 5400 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 300 ml/min** **Final Draw Down: 0.00 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 450197**

Test Notes:
1.4 gallons purged

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
11/2/2023 9:51 AM	00:00	7.68 pH	17.86 °C	3,114.6 µS/cm	0.12 mg/L		-37.4 mV	39.05 ft	300.00 ml/min
11/2/2023 9:54 AM	03:00	7.68 pH	17.69 °C	3,064.4 µS/cm	0.11 mg/L	9.41 NTU	-33.9 mV	39.05 ft	300.00 ml/min
11/2/2023 9:57 AM	06:00	7.69 pH	17.28 °C	3,038.7 µS/cm	0.29 mg/L	11.41 NTU	-31.3 mV	39.05 ft	300.00 ml/min
11/2/2023 10:00 AM	09:00	7.68 pH	17.72 °C	3,118.7 µS/cm	0.27 mg/L	7.47 NTU	-34.3 mV	39.05 ft	300.00 ml/min
11/2/2023 10:03 AM	12:00	7.72 pH	17.78 °C	3,081.2 µS/cm	0.21 mg/L	4.72 NTU	-39.7 mV	39.05 ft	300.00 ml/min
11/2/2023 10:06 AM	15:00	7.73 pH	17.79 °C	3,051.6 µS/cm	0.20 mg/L	3.77 NTU	-44.4 mV	39.05 ft	300.00 ml/min
11/2/2023 10:09 AM	18:00	7.73 pH	17.77 °C	3,031.3 µS/cm	0.20 mg/L	2.83 NTU	-48.0 mV	39.05 ft	300.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/2/2023 12:51:28 PM
Project: CULLEY EAST (3)
Operator Name: Jon Hill

Location Name: CCR-AP-8 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 35.2 ft** **Total Depth: 45.2 ft** **Initial Depth to Water: 31.73 ft**	**Pump Type: Portable Bladder Pump** **Tubing Type: LDPE** **Pump Intake From TOC: 40.2 ft** **Estimated Total Volume Pumped: 9000 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 300 ml/min** **Final Draw Down: 8.54 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 450197**

Test Notes:
2.4 gallons purged. Well went dry after 30 minutes. Let recharge and then sampled

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
11/2/2023 12:51 PM	00:00	7.20 pH	16.86 °C	1,061.0 µS/cm	6.52 mg/L	234.96 NTU	-131.3 mV	31.73 ft	300.00 ml/min
11/2/2023 12:54 PM	03:00	7.31 pH	16.79 °C	996.69 µS/cm	7.32 mg/L	189.00 NTU	-128.9 mV	32.14 ft	300.00 ml/min
11/2/2023 12:57 PM	06:00	7.36 pH	16.82 °C	962.95 µS/cm	7.33 mg/L	185.41 NTU	-129.9 mV	33.19 ft	300.00 ml/min
11/2/2023 1:00 PM	09:00	7.40 pH	17.05 °C	948.72 µS/cm	7.21 mg/L	269.09 NTU	-130.4 mV	33.98 ft	300.00 ml/min
11/2/2023 1:03 PM	12:00	7.47 pH	16.95 °C	921.99 µS/cm	7.04 mg/L	184.06 NTU	-135.9 mV	34.77 ft	300.00 ml/min
11/2/2023 1:06 PM	15:00	7.48 pH	17.07 °C	899.61 µS/cm	6.78 mg/L	106.52 NTU	-135.8 mV	35.50 ft	300.00 ml/min
11/2/2023 1:09 PM	18:00	7.45 pH	17.05 °C	878.27 µS/cm	6.24 mg/L	81.20 NTU	-137.0 mV	36.72 ft	300.00 ml/min
11/2/2023 1:12 PM	21:00	7.33 pH	17.17 °C	873.28 µS/cm	5.59 mg/L	59.49 NTU	-133.6 mV	37.70 ft	300.00 ml/min
11/2/2023 1:15 PM	24:00	7.27 pH	17.86 °C	866.84 µS/cm	4.68 mg/L	76.92 NTU	-128.9 mV	38.99 ft	300.00 ml/min
11/2/2023 1:18 PM	27:00	7.25 pH	18.34 °C	867.44 µS/cm	4.56 mg/L	109.42 NTU	-126.4 mV	39.55 ft	300.00 ml/min
11/2/2023 1:21 PM	30:00	7.24 pH	19.10 °C	871.44 µS/cm	4.63 mg/L	135.87 NTU	-122.8 mV	40.27 ft	300.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/2/2023 12:03:29 PM
Project: CULLEY EAST (2)
Operator Name: Jon Hill

Location Name: CCR-AP-8I **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 58.4 ft** **Total Depth: 68.4 ft** **Initial Depth to Water: 35.4 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 63.4 ft** **Estimated Total Volume Pumped: 9000 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 300 ml/min** **Final Draw Down: 0.00 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 450197**

Test Notes:
2.4 gallons purgec

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
11/2/2023 12:03 PM	00:00	6.70 pH	17.06 °C	2,195.4 µS/cm	0.04 mg/L	31.23 NTU	-74.5 mV	35.40 ft	300.00 ml/min
11/2/2023 12:06 PM	03:00	6.79 pH	17.08 °C	2,207.9 µS/cm	0.01 mg/L	23.03 NTU	-96.8 mV	35.40 ft	300.00 ml/min
11/2/2023 12:09 PM	06:00	6.80 pH	17.09 °C	2,216.4 µS/cm	0.00 mg/L	40.08 NTU	-104.2 mV	35.40 ft	300.00 ml/min
11/2/2023 12:12 PM	09:00	6.80 pH	17.13 °C	2,219.8 µS/cm	0.00 mg/L	51.49 NTU	-108.3 mV	35.40 ft	300.00 ml/min
11/2/2023 12:15 PM	12:00	6.80 pH	17.16 °C	2,220.8 µS/cm	0.00 mg/L	53.92 NTU	-111.0 mV	35.40 ft	300.00 ml/min
11/2/2023 12:18 PM	15:00	6.80 pH	17.18 °C	2,216.8 µS/cm	0.00 mg/L	36.55 NTU	-112.9 mV	35.40 ft	300.00 ml/min
11/2/2023 12:21 PM	18:00	6.80 pH	17.17 °C	2,214.1 µS/cm	0.01 mg/L	41.68 NTU	-114.3 mV	35.40 ft	300.00 ml/min
11/2/2023 12:24 PM	21:00	6.80 pH	17.20 °C	2,206.8 µS/cm	0.01 mg/L	74.28 NTU	-115.4 mV	35.40 ft	300.00 ml/min
11/2/2023 12:27 PM	24:00	6.80 pH	17.22 °C	2,207.3 µS/cm	0.01 mg/L	41.13 NTU	-116.4 mV	35.40 ft	300.00 ml/min
11/2/2023 12:30 PM	27:00	6.80 pH	17.21 °C	2,200.4 µS/cm	0.01 mg/L	32.45 NTU	-117.1 mV	35.40 ft	300.00 ml/min
11/2/2023 12:33 PM	30:00	6.80 pH	17.20 °C	2,212.3 µS/cm	0.02 mg/L	26.57 NTU	-117.6 mV	35.40 ft	300.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/2/2023 4:28:58 PM
Project: CULLEY EAST (7)
Operator Name: Jon Hill

Location Name: CCR-AP-11 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 44.4 ft** **Total Depth: 54.4 ft** **Initial Depth to Water: 18 ft**	**Pump Type: Portable Bladder Pump** **Tubing Type: LDPE** **Pump Intake From TOC: 49.4 ft** **Estimated Total Volume Pumped: 13500 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 300 ml/min** **Final Draw Down: 0.18 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 450197**

Test Notes:
3.5 gallons purged. Turbidity slightly above 10% (11%) for one of the final 3 readings, effectively stable.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10		
11/2/2023 4:28 PM	00:00	6.50 pH	16.86 °C	317.31 µS/cm	7.78 mg/L	169.57 NTU	41.7 mV	18.00 ft	300.00 ml/min
11/2/2023 4:31 PM	03:00	6.52 pH	16.83 °C	310.08 µS/cm	8.91 mg/L	125.87 NTU	41.4 mV	18.03 ft	300.00 ml/min
11/2/2023 4:34 PM	06:00	6.57 pH	16.61 °C	320.69 µS/cm	8.98 mg/L	123.52 NTU	41.0 mV	18.07 ft	300.00 ml/min
11/2/2023 4:37 PM	09:00	6.58 pH	16.48 °C	324.62 µS/cm	11.10 mg/L	116.08 NTU	40.1 mV		300.00 ml/min
11/2/2023 4:40 PM	12:00	6.64 pH	16.37 °C	342.95 µS/cm	11.91 mg/L	111.86 NTU	32.9 mV		300.00 ml/min
11/2/2023 4:43 PM	15:00	6.67 pH	16.33 °C	373.46 µS/cm	11.97 mg/L	134.62 NTU	15.9 mV		300.00 ml/min
11/2/2023 4:46 PM	18:00	6.72 pH	16.27 °C	402.53 µS/cm	11.91 mg/L	133.02 NTU	-1.2 mV		300.00 ml/min
11/2/2023 4:49 PM	21:00	6.75 pH	16.21 °C	418.58 µS/cm	11.70 mg/L	197.64 NTU	-13.8 mV		300.00 ml/min
11/2/2023 4:52 PM	24:00	6.77 pH	16.19 °C	433.07 µS/cm	11.56 mg/L	304.60 NTU	-21.3 mV		300.00 ml/min
11/2/2023 4:55 PM	27:00	6.86 pH	16.09 °C	411.32 µS/cm	11.49 mg/L	75.42 NTU	-30.8 mV		300.00 ml/min
11/2/2023 4:58 PM	30:00	7.01 pH	16.04 °C	357.87 µS/cm	11.96 mg/L	245.84 NTU	-34.4 mV		300.00 ml/min
11/2/2023 5:01 PM	33:00	7.00 pH	16.01 °C	361.28 µS/cm	11.61 mg/L	69.57 NTU	-35.2 mV		300.00 ml/min
11/2/2023 5:04 PM	36:00	6.81 pH	16.01 °C	411.51 µS/cm	10.51 mg/L	92.34 NTU	-30.6 mV		300.00 ml/min
11/2/2023 5:07 PM	39:00	6.70 pH	15.96 °C	459.84 µS/cm	9.36 mg/L	45.02 NTU	-28.7 mV	18.15 ft	300.00 ml/min
11/2/2023 5:10 PM	42:00	6.67 pH	15.95 °C	479.86 µS/cm	8.97 mg/L	40.92 NTU	-29.6 mV	18.18 ft	300.00 ml/min

11/2/2023 5:13 PM	45:00	6.66 pH	15.93 °C	497.72 µS/cm	8.61 mg/L	40.04 NTU	-31.1 mV	18.18 ft	300.00 ml/min

Samples

Sample ID:	Description:

HALEY & ALDRICH

GROUNDWATER SAMPLING RECORD

Page 1 of 1

PROJECT	Cully East	H&A FILE NO.	
LOCATION	Newburgh	PROJECT MGR.	
CLIENT	Vectra	FIELD REP	Jon Hill
CONTRACTOR	Atlas	DATE	11.2.23

GROUNDWATER SAMPLING INFORMATION

Well No.	CCR-AP-1R						
Water Depth (ft)	54.41						
Time	1650						
Product							
Depth Of Well (ft)							
Inside Diameter (in)	2"						
Standing Water Depth (ft) [1]							
Volume Of Water In Well (gal)							
Purging Device	Hydrasleeve						
Volume of Bailer/Pump Capacity							
Cleaning Procedure	Dedicated						
Bails Removed/ Volume Removed							
Time Purging Started	—						
Time Purging Stopped	—						
Sampling Device	Hydrasleeve						
Cleaning Procedure	change	sleeve					
TIME SAMPLES TAKEN: VOA							
TIME SAMPLES TAKEN: ABN	Sample at	1700					
TIME SAMPLES TAKEN: Metals							
TIME SAMPLES TAKEN:	(1) 1 6	only					
TIME SAMPLES TAKEN:							
TIME SAMPLES TAKEN:							

PARAMETERS													
Time	1655												
DTW	54.41												
pH	7.19												
Conductivity	870.7												
Turbidity	475												
Dissolved Oxygen	4.19												
Temp, °C	0.3												
ORP	14.98												

Remarks: (ie: field filtrations, persons communicated with at site, etc.)

1. Standing Water Depth = Depth of Well - Water Depth

Form 3005

HALEY & ALDRICH

GROUNDWATER SAMPLING RECORD

PROJECT	Cullen East	H&A FILE NO.	
LOCATION	Newburgh	PROJECT MGR.	
CLIENT	Vector	FIELD REP	Jm Hill
CONTRACTOR	Atlas	DATE	11.2.23

GROUNDWATER SAMPLING INFORMATION

Well No.	CCR-AP-2						
Water Depth (ft)	34.51						
Time	1258						
Product							
Depth Of Well (ft)							
Inside Diameter (in)	2"						
Standing Water Depth (ft) [1]							
Volume Of Water In Well (gal)							
Purging Device	Hydra sleeve						
Volume of Bailer/Pump Capacity							
Cleaning Procedure	Dedicated						
Bails Removed/ Volume Removed	Ø						
Time Purging Started	–						
Time Purging Stopped	–						
Sampling Device	Hydrasleeve						
Cleaning Procedure	changed	sleeve					
TIME SAMPLES TAKEN: VOA							
ABN	Sample						
Metals	at	1310					
	(1) 1L	only					

PARAMETERS												
Time	1300											
DTW	34.51											
pH	6.90											
Conductivity	1049.9											
Turbidity	325											
Dissolved Oxygen	5.41											
Temp, °C	17.75											
ORP	-11.4											

Remarks: (ie: field filtrations, persons communicated with at site, etc.)

1. Standing Water Depth = Depth of Well - Water Depth

very silty water, high turbidity

HALEY & ALDRICH

GROUNDWATER SAMPLING RECORD

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PROJECT	Cullroy East	H&A FILE NO.	
LOCATION	New Bright	PROJECT MGR.	
CLIENT	Vectra	FIELD REP	Jen Hill
CONTRACTOR	Atlas	DATE	11.2.23

GROUNDWATER SAMPLING INFORMATION

Well No.	CCR-MP-3R						
Water Depth (ft)	35.50						
Time	1035						
Product							
Depth Of Well (ft)							
Inside Diameter (in)	2"						
Standing Water Depth (ft) [1]							
Volume Of Water In Well (gal)							
Purging Device	HydraSleeve						
Volume of Bailer/Pump Capacity							
Cleaning Procedure	Dedicated						
Bails Removed/ Volume Removed	Ø						
Time Purging Started	—						
Time Purging Stopped	—						
Sampling Device	HydraSleeve						
Cleaning Procedure	changed sleeve						
TIME SAMPLES TAKEN: VOA							
ABN	Sample at						
Metals							
	1045						
	(1) 1 Liter	only					

PARAMETERS													
Time	1040												
DTW	35.50												
pH	7.06												
Conductivity	1266.6												
Turbidity	20.35												
Dissolved Oxygen	2.97												
Temp, °C	14.84												
ORP	-134.3												

Remarks: (ie: field filtrations, persons communicated with at site, etc.)

1. Standing Water Depth = Depth of Well - Water Depth

Form 3005

HALEY & ALDRICH

GROUNDWATER SAMPLING RECORD

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PROJECT	Cullen East	H&A FILE NO.	
LOCATION	Newburgh	PROJECT MGR.	
CLIENT	Vectra	FIELD REP	Jon Hall
CONTRACTOR	Atlas	DATE	11.2.23

GROUNDWATER SAMPLING INFORMATION

Well No.	CCR-AP-4R						
Water Depth (ft)	12.90						
Time	953						
Product							
Depth Of Well (ft)							
Inside Diameter (in)	2"						
Standing Water Depth (ft) [1]							
Volume Of Water In Well (gal)							
Purging Device	Hydrasleeve						
Volume of Bailer/Pump Capacity							
Cleaning Procedure	Dedicated						
Bails Removed/ Volume Removed	Ø						
Time Purging Started	—						
Time Purging Stopped	—						
Sampling Device	Hydrasleeve						
Cleaning Procedure	changed	sleeve					
TIME SAMPLES TAKEN: VOA							
ABN							
Metals Sample							
this	1000						
	(1) 1L only						

PARAMETERS: Time	955												
DTW	12.90												
pH	6.61												
Conductivity	1256.5												
Turbidity	182												
Dissolved Oxygen	0.0												
Temp, °C	16.03												
ORP	-103.0												

Remarks: (ie: field filtrations, persons communicated with at site, etc.)

1. Standing Water Depth = Depth of Well - Water Depth

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HALEY & ALDRICH

GROUNDWATER SAMPLING RECORD

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PROJECT	Cully East	H&A FILE NO.	
LOCATION	Newburgh	PROJECT MGR.	
CLIENT	Vectra	FIELD REP	Jon Hall
CONTRACTOR	Atlas	DATE	11.2.23

GROUNDWATER SAMPLING INFORMATION

Well No.		CCR-AP-5									
Water Depth (ft)		17.05									
Time		1415									
Product											
Depth Of Well (ft)		44'									
Inside Diameter (in)		2"									
Standing Water Depth (ft) [1]											
Volume Of Water In Well (gal)											
Purging Device		Portable pump									
Volume of Bailer/Pump Capacity											
Cleaning Procedure		Alconox									
Bails Removed/ Volume Removed		2.0 gallons									
Time Purging Started		1417									
Time Purging Stopped		1447									
Sampling Device		Pump									
Cleaning Procedure		Alconox									
TIME SAMPLES TAKEN: VOA											
TIME SAMPLES TAKEN: ABN		Sample at									
TIME SAMPLES TAKEN: Metals		15:00,									

PARAMETERS: Time	1417	1420	1423	1426	1429	1432	1435	1438	1441	1444	1447	
DTW	17.05	18.10	18.80	18.99	19.25	19.62	20.01	20.43	20.77	20.91	21.10	
pH	7.59	7.56	7.52	7.46	7.42	7.39	7.37	7.35	7.34	7.37	7.33	
Conductivity	763.62	742.54	734.36	730.21	729.61	745.00	747.96	750.72	754.79	756.66	754.53	
Turbidity	977.21	872.64	615.65	347.65	327.99	319.58	267.30	237.80	210.87	206.01	215.82	
Dissolved Oxygen	10.08	10.20	9.29	6.80	5.99	5.89	5.57	5.57	5.95	8.06*	6.18	
Temp, °C	18.01	17.82	17.80	17.82	17.82	17.87	17.84	17.78	17.85	17.79	17.92	
ORP	-24.3	-16.2	-10.4	-7.0	-4.3	-1.9	0.4	2.3	4.2	6.2	7.9	

Remarks: (ie: field filtrations, persons communicated with at site, etc.)

1. Standing Water Depth = Depth of Well - Water Depth

FB-1 @ 1430

Dup-1

*Note 8.06 mg/L Reading at 27 min. not correct, probe fell out

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HALEY & ALDRICH

GROUNDWATER SAMPLING RECORD

PROJECT	Cully East	H&A FILE NO.	
LOCATION	Newburgh	PROJECT MGR.	
CLIENT	Vector	FIELD REP	Jm 1471
CONTRACTOR	Atlas	DATE	11.2.23

GROUNDWATER SAMPLING INFORMATION

Well No.	CCR-AP-52						
Water Depth (ft)	17.85						
Time	1320						
Product							
Depth Of Well (ft)	44'						
Inside Diameter (in)	2"						
Standing Water Depth (ft) [1]							
Volume Of Water In Well (gal)							
Purging Device	Dedicated pump						
Volume of Bailer/Pump Capacity							
Cleaning Procedure	Dedicated						
Bails Removed/ Volume Removed							
Time Purging Started	1325						
Time Purging Stopped	1352						
Sampling Device	pump						
Cleaning Procedure	pump Dedicated						
TIME SAMPLES TAKEN: VOA							
TIME SAMPLES TAKEN: ABN	Sample at	1400					
TIME SAMPLES TAKEN: Metals							

PARAMETERS												
Time	1325	1328	1331	1334	1337	1340	1343	1346	1349	1352		
DTW	18.06	18.72	19.22	19.77	20.44	21.07	21.77	22.15	22.40	22.62		
pH	6.67	6.67	6.67	6.68	6.69	6.69	6.70	6.71	6.72	6.73		
Conductivity	1369.1	1358.0	1352.4	1351.6	1359.7	1362.8	1376.3	1385.7	1391.8	1394.0		
Turbidity	630.15	652.19	674.94	697.92	653.57	556.36	489.51	428.39	421.88	401.99		
Dissolved Oxygen	.19	.14	.11	.11	.09	.08	.08	.07	.08	.07		
Temp, ^{0}C	17.74	17.71	17.76	17.69	17.72	17.72	17.72	17.75	17.70	17.65		
ORP	-4.4	-7.8	-12.1	-16.7	-21.2	-25.4	-29.2	-32.8	-35.9	-38.1		

Remarks: (ie: field filtrations, persons communicated with at site, etc.)

1. Standing Water Depth = Depth of Well - Water Depth

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HALEY & ALDRICH

GROUNDWATER SAMPLING RECORD

PROJECT	Cullman East	H&A FILE NO.	
LOCATION	Newburgh	PROJECT MGR.	
CLIENT	Vector	FIELD REP	Sean Nall
CONTRACTOR	Atlas	DATE	11.2.23

GROUNDWATER SAMPLING INFORMATION

Well No.	CCR-MP-6						
Water Depth (ft)	38.92						
Time	930						
Product							
Depth Of Well (ft)							
Inside Diameter (in)	2"						
Standing Water Depth (ft) [1]							
Volume Of Water In Well (gal)							
Purging Device	new purge						
Volume of Bailer/Pump Capacity							
Cleaning Procedure	Dedicated						
Bails Removed/ Volume Removed	Ø						
Time Purging Started	—						
Time Purging Stopped	—						
Sampling Device	HydraSleeve						
Cleaning Procedure	change sleeve						
TIME SAMPLES TAKEN: VOA							
ABN							
Metals Sample time	935						
	(1) 1L poly						

PARAMETERS													
Time	932												
DTW	38.92												
pH	7.24												
Conductivity	1493.3												
Turbidity	77.21												
Dissolved Oxygen	1.09												
Temp, °C	14.25												
ORP	-122.5												

Remarks: (ie: field filtrations, persons communicated with at site, etc.)

1. Standing Water Depth = Depth of Well - Water Depth

HALEY & ALDRICH

GROUNDWATER SAMPLING RECORD

PROJECT	Culley East	H&A FILE NO.	
LOCATION	Newburgh	PROJECT MGR.	
CLIENT	Vectren	FIELD REP	Jon Hall
CONTRACTOR	Atlas	DATE	11.2.23

GROUNDWATER SAMPLING INFORMATION

Well No.	CCR-AP-6I						
Water Depth (ft)	39.05						
Time	850						
Product							
Depth Of Well (ft)	74.7						
Inside Diameter (in)	2"						
Standing Water Depth (ft) (1)							
Volume Of Water In Well (gal)							
Purging Device	Pump						
Volume of Bailer/Pump Capacity							
Cleaning Procedure	Dedicated						
Bails Removed/ Volume Removed							
Time Purging Started	851						
Time Purging Stopped	909						
Sampling Device	Ded. pump						
Cleaning Procedure							
TIME SAMPLES TAKEN: VOA							
TIME SAMPLES TAKEN: ABN	Sample at	915					
TIME SAMPLES TAKEN: Metals							

PARAMETERS												
Time	851	854	857	900	903	906	909					
DTW	39.05	39.05	39.05	39.05	39.05	39.05	39.05					
pH	7.69	7.68	7.69	7.68	7.72	7.73	7.73					
Conductivity	3114.6	3064.4	3038.7	3118.7	3081.2	3051.6	3043.3					
Turbidity	0	9.41	11.41	7.47	4.72	3.77	2.83					
Dissolved Oxygen	.12	.11	.29	.27	.21	.20	.20					
Temp, °C	17.86	17.69	17.28	17.72	17.78	17.79	17.77					
ORP	-37.4	-33.9	-31.3	-34.3	-39.7	-41.4	-48.0					

Remarks: (ie: field filtrations, persons communicated with at site, etc.)

1. Standing Water Depth = Depth of Well - Water Depth

Form 3005

HALEY & ALDRICH

GROUNDWATER SAMPLING RECORD

Page 1 of 1

PROJECT	Cully East	H&A FILE NO.	
LOCATION	Newburgh	PROJECT MGR.	
CLIENT	Atlas Electric	FIELD REP	Jen Hall
CONTRACTOR	Atlas	DATE	11.2.23

GROUNDWATER SAMPLING INFORMATION

Well No.	CCR-MP-8						
Water Depth (ft)	31.73						
Time	1150						
Product							
Depth Of Well (ft)							
Inside Diameter (in)	2"						
Standing Water Depth (ft) [1]							
Volume Of Water In Well (gal)							
Purging Device	Portable pump						
Volume of Bailer/Pump Capacity							
Cleaning Procedure	alconox						
Bails Removed/ Volume Removed	2.0 gallons						
Time Purging Started	1151						
Time Purging Stopped							
Sampling Device	portable pump						
Cleaning Procedure	alconox						
TIME SAMPLES TAKEN: VOA							
TIME SAMPLES TAKEN: ABN	Sample						
TIME SAMPLES TAKEN: Metals	at	1240					

PARAMETERS: Time	1151	1154	1157	1200	1203	1206	1209	1212	1215	1218	1221	
DTW	31.73	32.14	33.19	33.98	34.77	35.50	36.72	37.70	38.99	39.55	40.27	
pH	7.20	7.31	7.36	7.40	7.47	7.48	7.45	7.33	7.27	7.25	7.24	
Conductivity	1061.10	996.69	962.95	948.76	921.99	899.61	878.67	873.28	866.84	867.44	871.44	
Turbidity	234.96	189.00	185.41	269.09	184.06	106.52	81.20	59.49	76.92	109.42	135.87	
Dissolved Oxygen	6.52	7.32	7.33	7.21	7.04	6.78	6.24	5.59	4.68	4.56	4.63	
Temp, °C	16.86	16.79	16.82	17.05	16.95	17.07	17.05	17.17	17.86	18.34	19.10	
ORP	-131.3	-128.9	-129.9	-130.4	-135.9	-135.8	-137.0	-133.6	-128.9	-126.4	-122.6	

Remarks: (ie: field filtrations, persons communicated with at site, etc.)

1. Standing Water Depth = Depth of Well - Water Depth

Drawn Down = 8.54'

* Not a Low Flow well *

Form 3005

HALEY & ALDRICH

GROUNDWATER SAMPLING RECORD

Page 1 of 1

PROJECT	Cullytv East	H&A FILE NO.	
LOCATION	Newburgh	PROJECT MGR.	
CLIENT	Vectren	FIELD REP	Ian Hill
CONTRACTOR	Atlas	DATE	11.2.23

GROUNDWATER SAMPLING INFORMATION

Well No.	CCR-AP-8I					
Water Depth (ft)	35.40					
Time	1100					
Product						
Depth Of Well (ft)						
Inside Diameter (in)	2"					
Standing Water Depth (ft) (1)						
Volume Of Water In Well (gal)						
Purging Device	Ded. pump					
Volume of Bailer/Pump Capacity						
Cleaning Procedure	Dedicated					
Bails Removed/ Volume Removed	2.0 gallons					
Time Purging Started	1203					
Time Purging Stopped	1233					
Sampling Device	Ded. pump					
Cleaning Procedure						

TIME SAMPLES TAKEN						
VOA						
ABN	Sample at	11:40				
Metals						

PARAMETERS												
Time	1103	1106	1109	1112	1115	1118	1121	1124	1127	1130	1133	
DTW	35.40	35.46	35.46	35.40	35.40	35.40	35.40	35.40	35.40	35.40	35.40	
pH	6.70	6.79	6.80	6.80	6.80	6.80	6.80	6.80	6.80	6.80	6.80	
Conductivity	2195.4	2207.9	2216.4	2219.8	2220.8	2216.8	2214.1	2206.8	2207.3	2200.4	2212.3	
Turbidity	31.23	23.03	40.08	51.49	53.92	36.55	41.68	74.28	41.13	32.45	26.57	
Dissolved Oxygen	.04	.01	0	0	0	0	.01	.01	.01	.01	.02	
Temp, °C	17.06	17.08	17.09	17.13	17.16	17.18	17.17	17.20	17.22	17.21	17.20	
ORP	-94.5	-56.8	-104.2	-108.3	-111.0	-112.9	-114.3	-115.4	-116.4	-117.1	-117.6	

Remarks: (ie: field filtrations, persons communicated with at site, etc.)

1. Standing Water Depth = Depth of Well - Water Depth

cross-checked turbidity with Hach unit consistently Read 22-20 ntu.

Form 3005

HALEY & ALDRICH

GROUNDWATER SAMPLING RECORD

PROJECT	Cultus East	H&A FILE NO.	
LOCATION	Newburgh	PROJECT MGR.	
CLIENT	vector	FIELD REP	Jon Hill
CONTRACTOR	Atlas	DATE	11.2.23

GROUNDWATER SAMPLING INFORMATION

Well No.	CCR-AP-11						
Water Depth (ft)	18.00						
Time	1525						
Product							
Depth Of Well (ft)	54.4						
Inside Diameter (in)	2"						
Standing Water Depth (ft) [1]							
Volume Of Water In Well (gal)							
Purging Device	port. pump						
Volume of Bailer/Pump Capacity							
Cleaning Procedure	ALCONOX						
Bails Removed/ Volume Removed	2.5 gallons						
Time Purging Started	1529						
Time Purging Stopped	1614						
Sampling Device	port. pump						
Cleaning Procedure	ALCONOX						
TIME SAMPLES TAKEN: VOA							
TIME SAMPLES TAKEN: ABN	Sample at	1630					
TIME SAMPLES TAKEN: Metals							

PARAMETERS												
Time	1529	1532	1535							1609	1611	1614
DTW	18.00	18.03	18.07							18.15	18.13	18.18
pH	6.50	6.52	6.57							6.70	6.67	6.66
Conductivity	317.31	310.03	320.69							459.34	478.86	497.72
Turbidity	169.57	125.57	123.52							45.02	40.92	40.04
Dissolved Oxygen	7.78	8.91	8.98							9.36	8.97	8.61
Temp, °C	16.86	16.83	16.61							15.96	15.95	15.93
ORP	41.7	41.4	41.0							-28.7	-29.6	-31.1

Remarks: (ie: field filtrations, persons communicated with at site, etc.)

1. Standing Water Depth = Depth of Well - Water Depth

APPENDIX C
Laboratory Analytical Reports

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mark Miesfeldt
Haley & Aldrich, Inc.
400 Augusta Street
Suite 100
Greenville, South Carolina 29601

Generated 10/2/2023 12:05:07 PM Revision 1

JOB DESCRIPTION

CCR Groundwater Monitoring
SDG NUMBER FB Culley East

JOB NUMBER

180-157162-1

Eurofins Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh PA 15238

See page two for job notes and contact information.

myEOL

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.

PA Lab ID: 02-00416

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 Pittsburgh Project Manager.

Authorization

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Revision 1

Authorized for release by
Ken Hayes, Project Manager II
Ken.Hayes@et.eurofinsus.com
(615)301-5035

Table of Contents

Job ID: 180-157162-1

Laboratory: Eurofins Pittsburgh

Narrative

Job Narrative
180-157162-1

Revision
The report being provided is a revision of the original report sent on 7/7/2023. The report (revision 1) is being revised due to: Client has requested data by 901.1 be removed as it is outside their certified sampling analysis methods.

Receipt
The samples were received on 5/26/2023 9:35 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 5.8°C

Gamma Spectroscopy

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

Gas Flow Proportional Counter
Method 9315_Ra226: Radium-226 Prep Batch 160-614559The following samples were prepared at a reduced aliquot due to Matrix: CCR-AP-3 (180-157162-3) and CCR-AP-4 (180-157162-4). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method 9315_Ra226: Radium-226 160-614559Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.CCR-AP-3 (180-157162-3), CCR-AP-4 (180-157162-4), (LCS 160-614559/2-A), (LCSD 160-614559/3-A) and (MB 160-614559/1-A)

Method 9320_Ra228: Radium-228 Prep Batch 160-614560The following samples were prepared at a reduced aliquot due to Matrix: CCR-AP-3 (180-157162-3) and CCR-AP-4 (180-157162-4). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method 9320_Ra228: Radium-228 batch 614560The LCS recovered at (133%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required (LCSD 160-614560/3-A)

Method 9320_Ra228: Radium-228 batch 614560The detection goal was not met for the following sample(s). Samples were prepped at a reduced volume due to the presence of matrix interferences: CCR-AP-3 (180-157162-3) and CCR-AP-4 (180-157162-4). Analytical results are reported with the detection limit achieved.

Method 9320_Ra228: Radium-228 batch 614560Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.CCR-AP-3 (180-157162-3), CCR-AP-4 (180-157162-4), (LCS 160-614560/2-A), (LCSD 160-614560/3-A) and (MB 160-614560/1-A)

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

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

Narrative

Job Narrative
180-157162-2

Receipt

Job ID: 180-157162-1 (Continued)

Laboratory: Eurofins Pittsburgh (Continued)

The samples were received on 5/26/2023 9:35 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 5.8°C

HPLC/IC
Method 9056A_ORGFM_28D: Due to the high concentration of sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 180-436380 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method 9056A_ORGFM_28D: Due to the high concentration of sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 180-436477 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method 9056A_ORGFM_28D: The matrix spike duplicate (MSD) recoveries for analytical batch 180-436477 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

Metals
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.

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-157162-1
SDG: FB Culley East

Qualifiers

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

Metals

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

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

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

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-157162-1
SDG: FB Culley East

Laboratory: Eurofins Pittsburgh

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

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-23
California	State	2891	04-30-24
Connecticut	State	PH-0688	09-30-24
Florida	NELAP	E871008	06-30-23
Georgia	State	PA 02-00416	04-30-24
Illinois	NELAP	004375	06-30-24
Kansas	NELAP	E-10350	01-31-24
Kentucky (UST)	State	162013	04-30-23 *
Kentucky (WW)	State	KY98043	12-31-23
Louisiana	NELAP	04041	06-30-22 *
Louisiana (All)	NELAP	04041	06-30-23
Maine	State	PA00164	03-06-24
Minnesota	NELAP	042-999-482	12-31-23
New Hampshire	NELAP	2030	04-04-24
New Jersey	NELAP	PA005	06-30-23
New York	NELAP	11182	04-01-24
North Carolina (WW/SW)	State	434	12-31-23
North Dakota	State	R-227	04-30-23 *
Oregon	NELAP	PA-2151	02-06-24
Pennsylvania	NELAP	02-00416	04-30-24
Rhode Island	State	LAO00362	12-31-22 *
South Carolina	State	89014	04-30-23 *
Texas	NELAP	T104704528	03-31-24
US Fish & Wildlife	US Federal Programs	058448	03-31-24
USDA	US Federal Programs	P330-16-00211	06-21-24
Utah	NELAP	PA001462019-8	05-31-23 *
Virginia	NELAP	10043	09-14-23
West Virginia DEP	State	142	03-31-24
Wisconsin	State	998027800	08-31-23

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-24
Connecticut	State	PH-0590	06-29-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-28-24
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-27-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-157162-1
SDG: FB Culley East

Laboratory: Eurofins Cleveland (Continued)

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

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	09-26-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	08-08-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New Mexico	State	MO00054	06-30-23
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	06-30-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-15-25
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-157162-1
SDG: FB Culley East

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-157162-1	CCR-AP-1	Water	05/23/23 12:10	05/26/23 09:35
180-157162-2	CCR-AP-2	Water	05/23/23 13:45	05/26/23 09:35
180-157162-3	CCR-AP-3	Water	05/23/23 14:15	05/26/23 09:35
180-157162-4	CCR-AP-4	Water	05/23/23 10:30	05/26/23 09:35

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-157162-1
SDG: FB Culley East

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-157162-1
SDG: FB Culley East

Client Sample ID: CCR-AP-1

Date Collected: 05/23/23 12:10
Date Received: 05/26/23 09:35

Lab Sample ID: 180-157162-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			436477	05/30/23 17:18	SNL	EET PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	436380	05/27/23 17:42	SNL	EET PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	575937	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6010D		1			576212	06/06/23 22:27	AJC	EET CLE
	Instrument ID: I9									
Total Recoverable	Prep	3005A			50 mL	50 mL	575937	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6020B		1			576385	06/07/23 20:14	RKT	EET CLE
	Instrument ID: I14									
Total/NA	Prep	7470A			50 mL	50 mL	575938	06/05/23 14:00	MRL	EET CLE
Total/NA	Analysis	7470A		1			576387	06/07/23 17:17	DSH	EET CLE
	Instrument ID: H2									
Total/NA	Analysis	EPA 9040C		1			436894	06/02/23 18:20	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	436529	05/30/23 20:01	LWM	EET PIT
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-AP-2

Date Collected: 05/23/23 13:45
Date Received: 05/26/23 09:35

Lab Sample ID: 180-157162-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			436477	05/30/23 18:00	SNL	EET PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	436380	05/27/23 16:58	SNL	EET PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	575937	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6010D		1			576212	06/06/23 22:32	AJC	EET CLE
	Instrument ID: I9									
Total Recoverable	Prep	3005A			50 mL	50 mL	575937	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6020B		1			576385	06/07/23 20:16	RKT	EET CLE
	Instrument ID: I14									
Total/NA	Prep	7470A			50 mL	50 mL	575938	06/05/23 14:00	MRL	EET CLE
Total/NA	Analysis	7470A		1			576387	06/07/23 17:19	DSH	EET CLE
	Instrument ID: H2									
Total/NA	Analysis	EPA 9040C		1			436894	06/02/23 18:23	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	436529	05/30/23 20:01	LWM	EET PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-157162-1
SDG: FB Culley East

Client Sample ID: CCR-AP-3

Date Collected: 05/23/23 14:15
Date Received: 05/26/23 09:35

Lab Sample ID: 180-157162-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			436477	05/30/23 18:14	SNL	EET PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	436380	05/27/23 17:12	SNL	EET PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	575937	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6010D		1			576212	06/06/23 22:36	AJC	EET CLE
	Instrument ID: I9									
Total Recoverable	Prep	3005A			50 mL	50 mL	575937	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6020B		1			576385	06/07/23 20:19	RKT	EET CLE
	Instrument ID: I14									
Total/NA	Prep	7470A			50 mL	50 mL	575938	06/05/23 14:00	MRL	EET CLE
Total/NA	Analysis	7470A		1			576387	06/07/23 17:21	DSH	EET CLE
	Instrument ID: H2									
Total/NA	Analysis	EPA 9040C		1			436894	06/02/23 18:26	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	436529	05/30/23 20:01	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			495.65 mL	1.0 g	614559	06/06/23 10:40	KAC	EET SL
Total/NA	Analysis	9315		1			618335	06/29/23 21:25	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			495.65 mL	1.0 g	614560	06/06/23 10:45	KAC	EET SL
Total/NA	Analysis	9320		1			617604	06/26/23 14:49	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Analysis	Ra226_Ra228		1			618450	06/30/23 12:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-AP-4

Date Collected: 05/23/23 10:30
Date Received: 05/26/23 09:35

Lab Sample ID: 180-157162-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			436477	05/30/23 18:56	SNL	EET PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	436380	05/27/23 17:27	SNL	EET PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	575937	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6010D		1			576212	06/06/23 22:40	AJC	EET CLE
	Instrument ID: I9									
Total Recoverable	Prep	3005A			50 mL	50 mL	575937	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6020B		1			576385	06/07/23 20:22	RKT	EET CLE
	Instrument ID: I14									
Total/NA	Prep	7470A			50 mL	50 mL	575938	06/05/23 14:00	MRL	EET CLE
Total/NA	Analysis	7470A		1			576387	06/07/23 17:24	DSH	EET CLE
	Instrument ID: H2									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-157162-1
SDG: FB Culley East

Client Sample ID: CCR-AP-4

Date Collected: 05/23/23 10:30
Date Received: 05/26/23 09:35

Lab Sample ID: 180-157162-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9040C		1			436894	06/02/23 18:29	BAB	EET PIT
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	436529	05/30/23 20:01	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			499.06 mL	1.0 g	614559	06/06/23 10:40	KAC	EET SL
Total/NA	Analysis	9315		1			618335	06/29/23 21:25	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			499.06 mL	1.0 g	614560	06/06/23 10:45	KAC	EET SL
Total/NA	Analysis	9320		1			617604	06/26/23 14:49	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Analysis	Ra226_Ra228		1			618450	06/30/23 12:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Analyst References:

Lab: EET CLE
- Batch Type: Prep
  - MRL = Matthew Loeb
- Batch Type: Analysis
  - AJC = Alexander Colosi
  - DSH = David Heakin
  - RKT = Roger Toth

Lab: EET PIT
- Batch Type: Analysis
  - BAB = Brooke Batyi
  - LWM = Leslie McIntire
  - SNL = Sean Lordo

Lab: EET SL
- Batch Type: Prep
  - KAC = Kevin Cox
- Batch Type: Analysis
  - FLC = Fernando Cruz
  - SCB = Sarah Bernsen

Client Sample ID: CCR-AP-1

Lab Sample ID: 180-157162-1

Date Collected: 05/23/23 12:10
Matrix: Water
Date Received: 05/26/23 09:35

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	18		1.0	0.71	mg/L			05/27/23 17:42	1
Fluoride	0.43	F1	0.10	0.026	mg/L			05/30/23 17:18	1
Sulfate	250		1.0	0.76	mg/L			05/27/23 17:42	1

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	730		100	57	ug/L		06/05/23 14:00	06/06/23 22:27	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.012		0.0050	0.00075	mg/L		06/05/23 14:00	06/07/23 20:14	1
Barium	0.14		0.0050	0.0022	mg/L		06/05/23 14:00	06/07/23 20:14	1
Beryllium	0.0020		0.0010	0.00062	mg/L		06/05/23 14:00	06/07/23 20:14	1
Cadmium	0.00022	J	0.0010	0.00020	mg/L		06/05/23 14:00	06/07/23 20:14	1
Calcium	65		1.0	0.25	mg/L		06/05/23 14:00	06/07/23 20:14	1
Chromium	0.036		0.0050	0.0012	mg/L		06/05/23 14:00	06/07/23 20:14	1
Cobalt	0.019		0.0010	0.00019	mg/L		06/05/23 14:00	06/07/23 20:14	1
Molybdenum	0.0092		0.0050	0.0011	mg/L		06/05/23 14:00	06/07/23 20:14	1
Lead	0.019		0.0010	0.00045	mg/L		06/05/23 14:00	06/07/23 20:14	1
Antimony	0.0015	J	0.0020	0.00057	mg/L		06/05/23 14:00	06/07/23 20:14	1
Selenium	0.0015	J	0.0050	0.00089	mg/L		06/05/23 14:00	06/07/23 20:14	1
Thallium	0.00086	J	0.0010	0.00020	mg/L		06/05/23 14:00	06/07/23 20:14	1
Lithium	0.076		0.0080	0.0017	mg/L		06/05/23 14:00	06/07/23 20:14	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.13	ug/L		06/05/23 14:00	06/07/23 17:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	910		10	10	mg/L			05/30/23 20:01	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.4	HF	0.1	0.1	SU			06/02/23 18:20	1

Client Sample ID: CCR-AP-2

Lab Sample ID: 180-157162-2

Date Collected: 05/23/23 13:45
Matrix: Water
Date Received: 05/26/23 09:35

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	200		1.0	0.71	mg/L			05/27/23 16:58	1
Fluoride	0.47		0.10	0.026	mg/L			05/30/23 18:00	1
Sulfate	250		1.0	0.76	mg/L			05/27/23 16:58	1

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	5800		100	57	ug/L		06/05/23 14:00	06/06/23 22:32	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.030		0.0050	0.00075	mg/L		06/05/23 14:00	06/07/23 20:16	1

Client Sample ID: CCR-AP-2

Lab Sample ID: 180-157162-2

Date Collected: 05/23/23 13:45
Matrix: Water
Date Received: 05/26/23 09:35

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.40		0.0050	0.0022	mg/L		06/05/23 14:00	06/07/23 20:16	1
Beryllium	0.0031		0.0010	0.00062	mg/L		06/05/23 14:00	06/07/23 20:16	1
Cadmium	0.0012		0.0010	0.00020	mg/L		06/05/23 14:00	06/07/23 20:16	1
Calcium	170		1.0	0.25	mg/L		06/05/23 14:00	06/07/23 20:16	1
Chromium	0.079		0.0050	0.0012	mg/L		06/05/23 14:00	06/07/23 20:16	1
Cobalt	0.040		0.0010	0.00019	mg/L		06/05/23 14:00	06/07/23 20:16	1
Molybdenum	0.0078		0.0050	0.0011	mg/L		06/05/23 14:00	06/07/23 20:16	1
Lead	0.049		0.0010	0.00045	mg/L		06/05/23 14:00	06/07/23 20:16	1
Antimony	0.0041		0.0020	0.00057	mg/L		06/05/23 14:00	06/07/23 20:16	1
Selenium	0.0042	J	0.0050	0.00089	mg/L		06/05/23 14:00	06/07/23 20:16	1
Thallium	0.0013		0.0010	0.00020	mg/L		06/05/23 14:00	06/07/23 20:16	1
Lithium	0.064		0.0080	0.0017	mg/L		06/05/23 14:00	06/07/23 20:16	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.71		0.20	0.13	ug/L		06/05/23 14:00	06/07/23 17:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	790		10	10	mg/L			05/30/23 20:01	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	6.9	HF	0.1	0.1	SU			06/02/23 18:23	1

Client Sample ID: CCR-AP-3

Lab Sample ID: 180-157162-3

Date Collected: 05/23/23 14:15
Matrix: Water
Date Received: 05/26/23 09:35

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	27		1.0	0.71	mg/L			05/27/23 17:12	1
Fluoride	0.25		0.10	0.026	mg/L			05/30/23 18:14	1
Sulfate	3.2		1.0	0.76	mg/L			05/27/23 17:12	1

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	160		100	57	ug/L		06/05/23 14:00	06/06/23 22:36	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.080		0.0050	0.00075	mg/L		06/05/23 14:00	06/07/23 20:19	1
Barium	0.42		0.0050	0.0022	mg/L		06/05/23 14:00	06/07/23 20:19	1
Beryllium	ND		0.0010	0.00062	mg/L		06/05/23 14:00	06/07/23 20:19	1
Cadmium	ND		0.0010	0.00020	mg/L		06/05/23 14:00	06/07/23 20:19	1
Calcium	180		1.0	0.25	mg/L		06/05/23 14:00	06/07/23 20:19	1
Chromium	0.0021	J	0.0050	0.0012	mg/L		06/05/23 14:00	06/07/23 20:19	1
Cobalt	0.0047		0.0010	0.00019	mg/L		06/05/23 14:00	06/07/23 20:19	1
Molybdenum	0.0086		0.0050	0.0011	mg/L		06/05/23 14:00	06/07/23 20:19	1
Lead	0.00055	J	0.0010	0.00045	mg/L		06/05/23 14:00	06/07/23 20:19	1
Antimony	0.00086	J	0.0020	0.00057	mg/L		06/05/23 14:00	06/07/23 20:19	1
Selenium	0.0019	J	0.0050	0.00089	mg/L		06/05/23 14:00	06/07/23 20:19	1
Thallium	ND		0.0010	0.00020	mg/L		06/05/23 14:00	06/07/23 20:19	1

Client Sample ID: CCR-AP-3

Date Collected: 05/23/23 14:15
Date Received: 05/26/23 09:35

Lab Sample ID: 180-157162-3

Matrix: Water

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0021	J	0.0080	0.0017	mg/L		06/05/23 14:00	06/07/23 20:19	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.13	ug/L		06/05/23 14:00	06/07/23 17:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	990		10	10	mg/L			05/30/23 20:01	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.1	HF	0.1	0.1	SU			06/02/23 18:26	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.777		0.360	0.367	1.00	0.430	pCi/L	06/06/23 10:40	06/29/23 21:25	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*67.8*		*30 - 110*	*06/06/23 10:40*	*06/29/23 21:25*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.20	G	1.10	1.12	1.00	1.49	pCi/L	06/06/23 10:45	06/26/23 14:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*67.8*		*30 - 110*	*06/06/23 10:45*	*06/26/23 14:49*	*1*
Y Carrier	*82.2*		*30 - 110*	*06/06/23 10:45*	*06/26/23 14:49*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.98		1.16	1.18	5.00	1.49	pCi/L		06/30/23 12:03	1

Client Sample ID: CCR-AP-4

Date Collected: 05/23/23 10:30
Date Received: 05/26/23 09:35

Lab Sample ID: 180-157162-4

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	43		1.0	0.71	mg/L			05/27/23 17:27	1
Fluoride	0.43		0.10	0.026	mg/L			05/30/23 18:56	1
Sulfate	39		1.0	0.76	mg/L			05/27/23 17:27	1

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1400		100	57	ug/L		06/05/23 14:00	06/06/23 22:40	1

Client Sample ID: CCR-AP-4

Date Collected: 05/23/23 10:30
Date Received: 05/26/23 09:35

Lab Sample ID: 180-157162-4

Matrix: Water

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.088**		0.0050	0.00075	mg/L		06/05/23 14:00	06/07/23 20:22	1
Barium	**0.53**		0.0050	0.0022	mg/L		06/05/23 14:00	06/07/23 20:22	1
Beryllium	ND		0.0010	0.00062	mg/L		06/05/23 14:00	06/07/23 20:22	1
Cadmium	ND		0.0010	0.00020	mg/L		06/05/23 14:00	06/07/23 20:22	1
Calcium	**160**		1.0	0.25	mg/L		06/05/23 14:00	06/07/23 20:22	1
Chromium	**0.0033**	**J**	0.0050	0.0012	mg/L		06/05/23 14:00	06/07/23 20:22	1
Cobalt	**0.0017**		0.0010	0.00019	mg/L		06/05/23 14:00	06/07/23 20:22	1
Molybdenum	ND		0.0050	0.0011	mg/L		06/05/23 14:00	06/07/23 20:22	1
Lead	**0.0019**		0.0010	0.00045	mg/L		06/05/23 14:00	06/07/23 20:22	1
Antimony	**0.00074**	**J**	0.0020	0.00057	mg/L		06/05/23 14:00	06/07/23 20:22	1
Selenium	ND		0.0050	0.00089	mg/L		06/05/23 14:00	06/07/23 20:22	1
Thallium	ND		0.0010	0.00020	mg/L		06/05/23 14:00	06/07/23 20:22	1
Lithium	**0.0056**	**J**	0.0080	0.0017	mg/L		06/05/23 14:00	06/07/23 20:22	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.13	ug/L		06/05/23 14:00	06/07/23 17:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**870**		10	10	mg/L			05/30/23 20:01	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	**6.8**	**HF**	0.1	0.1	SU			06/02/23 18:29	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**1.09**		0.485	0.495	1.00	0.564	pCi/L	06/06/23 10:40	06/29/23 21:25	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*48.1*		*30 - 110*	*06/06/23 10:40*	*06/29/23 21:25*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.53	U G	1.42	1.43	1.00	2.26	pCi/L	06/06/23 10:45	06/26/23 14:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*48.1*		*30 - 110*	*06/06/23 10:45*	*06/26/23 14:49*	*1*
Y Carrier	*81.1*		*30 - 110*	*06/06/23 10:45*	*06/26/23 14:49*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**2.62**		1.50	1.51	5.00	2.26	pCi/L		06/30/23 12:03	1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-436380/6
Matrix: Water
Analysis Batch: 436380

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.71	mg/L			05/27/23 11:55	1
Fluoride	ND		0.10	0.026	mg/L			05/27/23 11:55	1
Sulfate	ND		1.0	0.76	mg/L			05/27/23 11:55	1

Lab Sample ID: LCS 180-436380/7
Matrix: Water
Analysis Batch: 436380

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	50.2		mg/L		100	80 - 120
Fluoride	2.50	2.61		mg/L		104	80 - 120
Sulfate	50.0	50.6		mg/L		101	80 - 120

Lab Sample ID: 180-157162-1 MS
Matrix: Water
Analysis Batch: 436380

Client Sample ID: CCR-AP-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	18		50.0	65.9		mg/L		96	80 - 120
Fluoride	0.46		2.50	3.11		mg/L		106	80 - 120
Sulfate	250		50.0	286	4	mg/L		66	80 - 120

Lab Sample ID: 180-157162-1 MSD
Matrix: Water
Analysis Batch: 436380

Client Sample ID: CCR-AP-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	18		50.0	65.1		mg/L		95	80 - 120	1	15
Fluoride	0.46		2.50	3.06		mg/L		104	80 - 120	2	15
Sulfate	250		50.0	282	4	mg/L		58	80 - 120	1	15

Lab Sample ID: MB 180-436477/6
Matrix: Water
Analysis Batch: 436477

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.71	mg/L			05/30/23 13:18	1
Fluoride	ND		0.10	0.026	mg/L			05/30/23 13:18	1
Sulfate	ND		1.0	0.76	mg/L			05/30/23 13:18	1

Lab Sample ID: LCS 180-436477/7
Matrix: Water
Analysis Batch: 436477

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	80 - 120
Fluoride	2.50	2.72		mg/L		109	80 - 120
Sulfate	50.0	50.9		mg/L		102	80 - 120

Method: EPA 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 180-157162-1 MS
Matrix: Water
Analysis Batch: 436477

Client Sample ID: CCR-AP-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	18	F1	50.0	71.2		mg/L		107	80 - 120
Fluoride	0.43	F1	2.50	3.33		mg/L		116	80 - 120
Sulfate	260		50.0	302	4	mg/L		84	80 - 120

Lab Sample ID: 180-157162-1 MSD
Matrix: Water
Analysis Batch: 436477

Client Sample ID: CCR-AP-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	18	F1	50.0	77.9	F1	mg/L		121	80 - 120	9	15
Fluoride	0.43	F1	2.50	3.65	F1	mg/L		129	80 - 120	9	15
Sulfate	260		50.0	333	4	mg/L		146	80 - 120	10	15

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-575937/1-A
Matrix: Water
Analysis Batch: 576212

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 575937

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		100	57	ug/L		06/05/23 14:00	06/06/23 21:49	1

Lab Sample ID: LCS 240-575937/2-A
Matrix: Water
Analysis Batch: 576212

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 575937

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	1000	995		ug/L		100	80 - 120

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 240-575937/1-A
Matrix: Water
Analysis Batch: 576385

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 575937

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0050	0.00075	mg/L		06/05/23 14:00	06/07/23 19:51	1
Barium	ND		0.0050	0.0022	mg/L		06/05/23 14:00	06/07/23 19:51	1
Beryllium	ND		0.0010	0.00062	mg/L		06/05/23 14:00	06/07/23 19:51	1
Cadmium	ND		0.0010	0.00020	mg/L		06/05/23 14:00	06/07/23 19:51	1
Calcium	ND		1.0	0.25	mg/L		06/05/23 14:00	06/07/23 19:51	1
Chromium	ND		0.0050	0.0012	mg/L		06/05/23 14:00	06/07/23 19:51	1
Cobalt	ND		0.0010	0.00019	mg/L		06/05/23 14:00	06/07/23 19:51	1
Molybdenum	ND		0.0050	0.0011	mg/L		06/05/23 14:00	06/07/23 19:51	1
Lead	ND		0.0010	0.00045	mg/L		06/05/23 14:00	06/07/23 19:51	1
Antimony	ND		0.0020	0.00057	mg/L		06/05/23 14:00	06/07/23 19:51	1
Selenium	ND		0.0050	0.00089	mg/L		06/05/23 14:00	06/07/23 19:51	1
Thallium	ND		0.0010	0.00020	mg/L		06/05/23 14:00	06/07/23 19:51	1
Lithium	ND		0.0080	0.0017	mg/L		06/05/23 14:00	06/07/23 19:51	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 240-575937/3-A
Matrix: Water
Analysis Batch: 576385

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 575937

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	0.985		mg/L		98	80 - 120
Barium	1.00	0.951		mg/L		95	80 - 120
Beryllium	0.500	0.501		mg/L		100	80 - 120
Cadmium	0.500	0.475		mg/L		95	80 - 120
Calcium	25.0	24.9		mg/L		100	80 - 120
Chromium	0.500	0.483		mg/L		97	80 - 120
Cobalt	0.500	0.497		mg/L		99	80 - 120
Molybdenum	0.500	0.487		mg/L		97	80 - 120
Lead	0.500	0.487		mg/L		97	80 - 120
Antimony	0.100	0.104		mg/L		104	80 - 120
Selenium	1.00	0.947		mg/L		95	80 - 120
Thallium	1.00	0.957		mg/L		96	80 - 120
Lithium	0.500	0.476		mg/L		95	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-575938/1-A
Matrix: Water
Analysis Batch: 576387

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 575938

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.13	ug/L		06/05/23 14:00	06/07/23 17:06	1

Lab Sample ID: LCS 240-575938/2-A
Matrix: Water
Analysis Batch: 576387

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 575938

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	5.00	5.14		ug/L		103	80 - 120

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-436894/24
Matrix: Water
Analysis Batch: 436894

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		SU		100	99 - 101

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 180-436529/1
Matrix: Water
Analysis Batch: 436529

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			05/30/23 20:01	1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 180-436529/2
Matrix: Water
Analysis Batch: 436529

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			580	582		mg/L		100	85 - 115		

Lab Sample ID: 180-157162-1 DU
Matrix: Water
Analysis Batch: 436529

Client Sample ID: CCR-AP-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	910			910		mg/L				NC	10

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-614559/1-A
Matrix: Water
Analysis Batch: 618336

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 614559

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.01111	U	0.0663	0.0663	1.00	0.148	pCi/L	06/06/23 10:40	06/29/23 18:00	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.8*		*30 - 110*	*06/06/23 10:40*	*06/29/23 18:00*	*1*

Lab Sample ID: LCS 160-614559/2-A
Matrix: Water
Analysis Batch: 618335

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 614559

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.99		1.22	1.00	0.176	pCi/L	97	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*88.0*		*30 - 110*

Lab Sample ID: LCSD 160-614559/3-A
Matrix: Water
Analysis Batch: 618335

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 614559

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	11.12		1.24	1.00	0.188	pCi/L	98	75 - 125	0.06	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*80.3*		*30 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-614560/1-A
Matrix: Water
Analysis Batch: 617604

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 614560

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.6638		0.403	0.408	1.00	0.588	pCi/L	06/06/23 10:45	06/26/23 14:47	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.8*		*30 - 110*	*06/06/23 10:45*	*06/26/23 14:47*	*1*
Y Carrier	*84.1*		*30 - 110*	*06/06/23 10:45*	*06/26/23 14:47*	*1*

Lab Sample ID: LCS 160-614560/2-A
Matrix: Water
Analysis Batch: 617604

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 614560

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.09	9.482		1.37	1.00	0.630	pCi/L	117	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*88.0*		*30 - 110*
Y Carrier	*79.3*		*30 - 110*

Lab Sample ID: LCSD 160-614560/3-A
Matrix: Water
Analysis Batch: 617604

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 614560

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.09	10.72		1.51	1.00	0.672	pCi/L	133	75 - 125	0.43	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*80.3*		*30 - 110*
Y Carrier	*83.7*		*30 - 110*

HPLC/IC

Analysis Batch: 436380

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-157162-1	CCR-AP-1	Total/NA	Water	EPA 9056A	
180-157162-2	CCR-AP-2	Total/NA	Water	EPA 9056A	
180-157162-3	CCR-AP-3	Total/NA	Water	EPA 9056A	
180-157162-4	CCR-AP-4	Total/NA	Water	EPA 9056A	
MB 180-436380/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-436380/7	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-157162-1 MS	CCR-AP-1	Total/NA	Water	EPA 9056A	
180-157162-1 MSD	CCR-AP-1	Total/NA	Water	EPA 9056A	

Analysis Batch: 436477

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-157162-1	CCR-AP-1	Total/NA	Water	EPA 9056A	
180-157162-2	CCR-AP-2	Total/NA	Water	EPA 9056A	
180-157162-3	CCR-AP-3	Total/NA	Water	EPA 9056A	
180-157162-4	CCR-AP-4	Total/NA	Water	EPA 9056A	
MB 180-436477/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-436477/7	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-157162-1 MS	CCR-AP-1	Total/NA	Water	EPA 9056A	
180-157162-1 MSD	CCR-AP-1	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 575937

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-157162-1	CCR-AP-1	Total Recoverable	Water	3005A	
180-157162-2	CCR-AP-2	Total Recoverable	Water	3005A	
180-157162-3	CCR-AP-3	Total Recoverable	Water	3005A	
180-157162-4	CCR-AP-4	Total Recoverable	Water	3005A	
MB 240-575937/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-575937/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-575937/3-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 575938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-157162-1	CCR-AP-1	Total/NA	Water	7470A	
180-157162-2	CCR-AP-2	Total/NA	Water	7470A	
180-157162-3	CCR-AP-3	Total/NA	Water	7470A	
180-157162-4	CCR-AP-4	Total/NA	Water	7470A	
MB 240-575938/1-A	Method Blank	Total/NA	Water	7470A	
LCS 240-575938/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 576212

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-157162-1	CCR-AP-1	Total Recoverable	Water	6010D	575937
180-157162-2	CCR-AP-2	Total Recoverable	Water	6010D	575937
180-157162-3	CCR-AP-3	Total Recoverable	Water	6010D	575937
180-157162-4	CCR-AP-4	Total Recoverable	Water	6010D	575937
MB 240-575937/1-A	Method Blank	Total Recoverable	Water	6010D	575937
LCS 240-575937/2-A	Lab Control Sample	Total Recoverable	Water	6010D	575937

Metals

Analysis Batch: 576385

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-157162-1	CCR-AP-1	Total Recoverable	Water	6020B	575937
180-157162-2	CCR-AP-2	Total Recoverable	Water	6020B	575937
180-157162-3	CCR-AP-3	Total Recoverable	Water	6020B	575937
180-157162-4	CCR-AP-4	Total Recoverable	Water	6020B	575937
MB 240-575937/1-A	Method Blank	Total Recoverable	Water	6020B	575937
LCS 240-575937/3-A	Lab Control Sample	Total Recoverable	Water	6020B	575937

Analysis Batch: 576387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-157162-1	CCR-AP-1	Total/NA	Water	7470A	575938
180-157162-2	CCR-AP-2	Total/NA	Water	7470A	575938
180-157162-3	CCR-AP-3	Total/NA	Water	7470A	575938
180-157162-4	CCR-AP-4	Total/NA	Water	7470A	575938
MB 240-575938/1-A	Method Blank	Total/NA	Water	7470A	575938
LCS 240-575938/2-A	Lab Control Sample	Total/NA	Water	7470A	575938

General Chemistry

Analysis Batch: 436529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-157162-1	CCR-AP-1	Total/NA	Water	SM 2540C	
180-157162-2	CCR-AP-2	Total/NA	Water	SM 2540C	
180-157162-3	CCR-AP-3	Total/NA	Water	SM 2540C	
180-157162-4	CCR-AP-4	Total/NA	Water	SM 2540C	
MB 180-436529/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-436529/2	Lab Control Sample	Total/NA	Water	SM 2540C	
180-157162-1 DU	CCR-AP-1	Total/NA	Water	SM 2540C	

Analysis Batch: 436894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-157162-1	CCR-AP-1	Total/NA	Water	EPA 9040C	
180-157162-2	CCR-AP-2	Total/NA	Water	EPA 9040C	
180-157162-3	CCR-AP-3	Total/NA	Water	EPA 9040C	
180-157162-4	CCR-AP-4	Total/NA	Water	EPA 9040C	
LCS 180-436894/24	Lab Control Sample	Total/NA	Water	EPA 9040C	

Rad

Prep Batch: 614559

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-157162-3	CCR-AP-3	Total/NA	Water	PrecSep-21	
180-157162-4	CCR-AP-4	Total/NA	Water	PrecSep-21	
MB 160-614559/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-614559/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-614559/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 614560

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-157162-3	CCR-AP-3	Total/NA	Water	PrecSep_0	
180-157162-4	CCR-AP-4	Total/NA	Water	PrecSep_0	
MB 160-614560/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-614560/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Rad (Continued)

Prep Batch: 614560 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 160-614560/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

3/04/2
HARRISBURG PA

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Client Information	Sampler:	Lab PM: Hayes, Ken	Carrier Tracking No(s):	COC No: 180-91635-14505.2
Client Contact: Mark Breting	Phone:	E-Mail: Ken.Hayes@et.eurofinsus.com	State of Origin:	Page: Page 1 of 1
Company: Atlas Technical Consultants LLC	PWSID:			Job #:
Address: 7988 Centerpoint Drive Suite 100	Due Date Requested:			
City: Indianapolis	TAT Requested (days):			
State, Zip: IN, 46256	Compliance Project: Δ Yes Δ No			
Phone: 864-214-8750(Tel)	PO #: FB-242026. AB-241410			
Email: mark.breting@atcassociates.com	WO #:			
Project Name: CCR Groundwater Monitoring FB Culley EAST	Project #: 18016014			
Site:	SSOW#:			

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9040C, 9056A_ORGFM_28D	6020A, 7470A	2540C_Calcd - TDS	9315_Ra226, 9320_Ra228	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	N	D	N	D	X	
CCA-AP-1	5-23-23	12:10	G	W			X	X	X	X		
CCA-AP-2	↓	13:45	↓	↓			↓	↓	↓	↓		
CCA-AP-3	↓	14:15	↓	↓			↓	↓	↓	↓		
CCA-AP-4	↓	10:30	↓	↓			↓	↓	↓	↓		

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Y - Trizma
	Z - other (specify)

Other:

180-157162 Chain of Custody

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

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ______ Months

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Hayley Tolles	Date/Time: 5-24-23/16:00	Company: ATLAS	Received by: FedEx	Date/Time: 5-24-23/16:00	Company
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 5-25-23 0950	Company: EA, THVE
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Ver: 06/08/2021

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hayes, Ken	Carrier Tracking No(s):	COC No: 180-487999.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ken.Hayes@et.eurofinsus.com	State of Origin: Indiana	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-157162-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 6/5/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR Groundwater Monitoring	Project #: 18016014			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
CCR-AP-1 (180-157162-1)	5/23/23	12:10 Eastern		Water			X	X	X	2	
CCR-AP-2 (180-157162-2)	5/23/23	13:45 Eastern		Water			X	X	X	2	
CCR-AP-3 (180-157162-3)	5/23/23	14:15 Eastern		Water			X	X	X	2	
CCR-AP-4 (180-157162-4)	5/23/23	10:30 Eastern		Water			X	X	X	2	
										(8)	

Note: Since laboratory accreditations are subject to change, Eurofins Pittsburgh 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 Pittsburgh laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Pittsburgh attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Pittsburgh.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	5/31/23 17:00	EA Pitt	fedex		
2	fedex		Company	Oriana Sharkey-Gonzalez	6/1/23 0850	ETA STL
3						

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

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-157162-1
SDG Number: FB Culley East

Login Number: 157162
List Number: 1
Creator: Abernathy, Eric L

List Source: Eurofins Pittsburgh

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	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-157162-1
SDG Number: FB Culley East

Login Number: 157162
List Number: 2
Creator: Sharkey-Gonzalez, Briana L

List Source: Eurofins St. Louis
List Creation: 06/01/23 12:44 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
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.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Todd Plating
Haley & Aldrich, Inc.
400 Augusta Street
Suite 100
Greenville, South Carolina 29601

Generated 10/5/2023 11:02:35 AM

JOB DESCRIPTION

CCR Groundwater Monitoring FB Culley
SDG NUMBER FB Culley

JOB NUMBER

180-160084-1

Eurofins Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh PA 15238

See page two for job notes and contact information.

Job Notes

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

PA Lab ID: 02-00416

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 Pittsburgh Project Manager.

Authorization

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10/5/2023 11:02:35 AM

Authorized for release by
Ken Hayes, Project Manager II
Ken.Hayes@et.eurofinsus.com
(615)301-5035

Table of Contents

Job ID: 180-160084-1

Laboratory: Eurofins Pittsburgh

Narrative

Job Narrative
180-160084-1

Receipt
The samples were received on 7/29/2023 9:14 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 2.6°C

Gas Flow Proportional Counter
Method 9315_Ra226: Radium-226 batch 622531Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.CCR-AP-1 (180-160084-1), CCR-AP-2 (180-160084-2), (LCS 160-622531/2-A), (MB 160-622531/1-A), (400-241239-C-1-A) and (400-241239-C-1-B DU)

Method 9320_Ra228: Radium-228 batch 622533The detection goal was not met for the following sample(s). Samples were prepped at a reduced volume due to the presence of matrix interferences: CCR-AP-1 (180-160084-1) and CCR-AP-2 (180-160084-2). Analytical results are reported with the detection limit achieved.

Method 9320_Ra228: Radium-228 batch 622533Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.CCR-AP-1 (180-160084-1), CCR-AP-2 (180-160084-2), (LCS 160-622533/2-A), (MB 160-622533/1-A), (400-241239-C-1-C) and (400-241239-C-1-D DU)

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

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

Narrative

Job Narrative
180-160084-2

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 are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample 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 7/29/2023 9:14 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 2.6°C

HPLC/IC
Method 9056A_ORGFM_28D: Due to the high concentration of sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 180-441933 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

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

Job ID: 180-160084-1 (Continued)

Laboratory: Eurofins Pittsburgh (Continued)

Metals

Method 6020A: The linear range check (LRC) standard recovery associated with batch 180-447690 is outside the acceptance criteria for the following analytes: Beryllium and Lithium. The concentration of these analytes in the samples is less than that of the continuing calibration verification (CCV) and/or the laboratory control sample (LCS); therefore, the data have been reported.

Method 6020A: The following sample was diluted due to the nature of the sample matrix: CCR-AP-2 (180-160084-2). 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.

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 180-160084-1
Project/Site: CCR Groundwater Monitoring FB Culley
SDG: FB Culley

Qualifiers

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.

Metals

Qualifier	Qualifier Description
^5-	Linear Range Check (LRC) is outside acceptance limits, low biased.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

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

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 180-160084-1
Project/Site: CCR Groundwater Monitoring FB Culley
SDG: FB Culley

Laboratory: Eurofins Pittsburgh

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

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-24
California	State	2891	04-30-24
Connecticut	State	PH-0688	09-30-24
Florida	NELAP	E871008	06-30-24
Georgia	State	PA 02-00416	04-30-24
Illinois	NELAP	004375	06-30-24
Kansas	NELAP	E-10350	01-31-24
Kentucky (UST)	State	162013	04-30-23 *
Kentucky (WW)	State	KY98043	12-31-23
Louisiana	NELAP	04041	06-30-22 *
Louisiana (All)	NELAP	04041	06-30-24
Maine	State	PA00164	03-06-24
Minnesota	NELAP	042-999-482	12-31-23
New Hampshire	NELAP	2030	04-04-24
New Jersey	NELAP	PA005	06-30-24
New York	NELAP	11182	04-01-24
North Carolina (WW/SW)	State	434	12-31-23
North Dakota	State	R-227	04-30-24
Oregon	NELAP	PA-2151	02-06-24
Pennsylvania	NELAP	02-00416	04-30-24
Rhode Island	State	LAO00362	12-31-22 *
South Carolina	State	89014	04-30-23 *
Texas	NELAP	T104704528	03-31-24
US Fish & Wildlife	US Federal Programs	058448	03-31-24
USDA	US Federal Programs	P330-16-00211	04-11-26
Utah	NELAP	PA001462019-8	05-31-24
Virginia	NELAP	10043	09-14-23 *
West Virginia DEP	State	142	01-31-24
Wisconsin	State	998027800	08-31-24

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-24
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-24
HI - RadChem Recognition	State	n/a	06-30-24
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 180-160084-1
Project/Site: CCR Groundwater Monitoring FB Culley
SDG: FB Culley

Laboratory: Eurofins St. Louis (Continued)

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

Authority	Program	Identification Number	Expiration Date
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-24
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-24
Massachusetts	State	M-MO054	06-30-24
MI - RadChem Recognition	State	9005	06-30-24
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-24
New Jersey	NELAP	MO002	06-30-24
New Mexico	State	MO00054	06-30-24
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-24
North Dakota	State	R-207	06-30-23 *
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23 *
Texas	NELAP	T104704193	07-31-24
US Fish & Wildlife	US Federal Programs	058448	07-31-24
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO000542021-14	07-31-23 *
Virginia	NELAP	10310	06-15-25
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring FB Culley

Job ID: 180-160084-1
SDG: FB Culley

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-160084-1	CCR-AP-1	Water	07/28/23 14:20	07/29/23 09:14
180-160084-2	CCR-AP-2	Water	07/28/23 13:45	07/29/23 09:14

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring FB Culley

Job ID: 180-160084-1
SDG: FB Culley

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring FB Culley

Job ID: 180-160084-1
SDG: FB Culley

Client Sample ID: CCR-AP-1

Date Collected: 07/28/23 14:20
Date Received: 07/29/23 09:14

Lab Sample ID: 180-160084-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	441933	07/31/23 18:49	SNL	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			25 mL	25 mL	443610	08/16/23 10:05	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020A		1			447690	09/26/23 18:03	KED	EET PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			25 mL	25 mL	443610	08/16/23 10:05	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020A		1			447853	09/28/23 19:25	KED	EET PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			25 mL	25 mL	443610	08/16/23 10:05	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020A		1			448227	10/02/23 16:42	KED	EET PIT
	Instrument ID: NEMO									
Total/NA	Prep	7470A			25 mL	25 mL	442697	08/08/23 07:56	RJR	EET PIT
Total/NA	Analysis	EPA 7470A		1			442917	08/09/23 09:23	RJR	EET PIT
	Instrument ID: HGY									
Total/NA	Analysis	EPA 9040C		1			442544	08/05/23 13:50	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	442507	08/04/23 18:12	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			495.08 mL	1.0 g	622531	08/02/23 09:37	KAC	EET SL
Total/NA	Analysis	9315		1			625440	08/24/23 07:53	SCB	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			495.08 mL	1.0 g	622533	08/02/23 09:47	KAC	EET SL
Total/NA	Analysis	9320		1			624444	08/16/23 13:07	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			625293	08/24/23 14:42	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-AP-2

Date Collected: 07/28/23 13:45
Date Received: 07/29/23 09:14

Lab Sample ID: 180-160084-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	441933	07/31/23 20:03	SNL	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			25 mL	25 mL	443610	08/16/23 10:05	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020A		1			447690	09/26/23 18:06	KED	EET PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			25 mL	25 mL	443610	08/16/23 10:05	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020A		1			447853	09/28/23 19:28	KED	EET PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			25 mL	25 mL	443610	08/16/23 10:05	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020A		20			448227	10/02/23 16:45	KED	EET PIT
	Instrument ID: NEMO									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring FB Culley

Job ID: 180-160084-1
SDG: FB Culley

Client Sample ID: CCR-AP-2

Date Collected: 07/28/23 13:45
Date Received: 07/29/23 09:14

Lab Sample ID: 180-160084-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			25 mL	25 mL	442697	08/08/23 07:56	RJR	EET PIT
Total/NA	Analysis	EPA 7470A		1			442917	08/09/23 09:24	RJR	EET PIT
	Instrument ID: HGY									
Total/NA	Analysis	EPA 9040C		1			442544	08/05/23 13:55	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	442507	08/04/23 18:12	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			497.69 mL	1.0 g	622531	08/02/23 09:37	KAC	EET SL
Total/NA	Analysis	9315		1			625440	08/24/23 07:53	SCB	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			497.69 mL	1.0 g	622533	08/02/23 09:47	KAC	EET SL
Total/NA	Analysis	9320		1			624444	08/16/23 13:07	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			625293	08/24/23 14:42	SCB	EET SL
	Instrument ID: NOEQUIP									

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Analyst References:

Lab: EET PIT
- Batch Type: Prep
  - RJR = Ron Rosenbaum
  - S1Z = Sage Ziviello
- Batch Type: Analysis
  - BAB = Brooke Batyi
  - KED = Katie Dacko
  - LWM = Leslie McIntire
  - RJR = Ron Rosenbaum
  - SNL = Sean Lordo

Lab: EET SL
- Batch Type: Prep
  - KAC = Kevin Cox
- Batch Type: Analysis
  - FLC = Fernando Cruz
  - SCB = Sarah Bernsen

Client Sample ID: CCR-AP-1
Lab Sample ID: 180-160084-1

Date Collected: 07/28/23 14:20
Matrix: Water
Date Received: 07/29/23 09:14

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	17		1.0	0.71	mg/L			07/31/23 18:49	1
Fluoride	0.40		0.10	0.026	mg/L			07/31/23 18:49	1
Sulfate	300		1.0	0.76	mg/L			07/31/23 18:49	1

Method: SW846 EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0011	J	0.0020	0.00097	mg/L		08/16/23 10:05	09/26/23 18:03	1
Arsenic	0.016		0.0010	0.00028	mg/L		08/16/23 10:05	09/26/23 18:03	1
Barium	0.20	B	0.010	0.0031	mg/L		08/16/23 10:05	09/26/23 18:03	1
Beryllium	0.0022	^5-	0.0010	0.00027	mg/L		08/16/23 10:05	09/26/23 18:03	1
Boron	0.69		0.080	0.060	mg/L		08/16/23 10:05	10/02/23 16:42	1
Cadmium	0.00031	J	0.0010	0.00022	mg/L		08/16/23 10:05	09/26/23 18:03	1
Calcium	87		0.50	0.13	mg/L		08/16/23 10:05	09/26/23 18:03	1
Chromium	0.055		0.0020	0.0015	mg/L		08/16/23 10:05	09/26/23 18:03	1
Cobalt	0.036		0.00050	0.00026	mg/L		08/16/23 10:05	09/26/23 18:03	1
Lead	0.036		0.0010	0.00038	mg/L		08/16/23 10:05	09/26/23 18:03	1
Lithium	0.085	^5-	0.0050	0.0013	mg/L		08/16/23 10:05	09/26/23 18:03	1
Molybdenum	0.0067		0.0050	0.00061	mg/L		08/16/23 10:05	09/28/23 19:25	1
Selenium	0.0013	J	0.0050	0.00074	mg/L		08/16/23 10:05	09/26/23 18:03	1
Thallium	ND		0.0010	0.00047	mg/L		08/16/23 10:05	09/26/23 18:03	1

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		08/08/23 07:56	08/09/23 09:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	980		10	10	mg/L			08/04/23 18:12	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.5	HF	0.1	0.1	SU			08/05/23 13:50	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.08		0.290	0.306	1.00	0.264	pCi/L	08/02/23 09:37	08/24/23 07:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.4*		*30 - 110*	*08/02/23 09:37*	*08/24/23 07:53*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.361	U G	0.713	0.714	1.00	1.23	pCi/L	08/02/23 09:47	08/16/23 13:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.4*		*30 - 110*	*08/02/23 09:47*	*08/16/23 13:07*	*1*
Y Carrier	*81.5*		*30 - 110*	*08/02/23 09:47*	*08/16/23 13:07*	*1*

Client Sample ID: CCR-AP-1
Lab Sample ID: 180-160084-1
Date Collected: 07/28/23 14:20
Matrix: Water
Date Received: 07/29/23 09:14

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.44		0.770	0.777	5.00	1.23	pCi/L		08/24/23 14:42	1

Client Sample ID: CCR-AP-2
Lab Sample ID: 180-160084-2
Date Collected: 07/28/23 13:45
Matrix: Water
Date Received: 07/29/23 09:14

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	220		1.0	0.71	mg/L			07/31/23 20:03	1
Fluoride	0.50		0.10	0.026	mg/L			07/31/23 20:03	1
Sulfate	260		1.0	0.76	mg/L			07/31/23 20:03	1

Method: SW846 EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0013	J	0.0020	0.00097	mg/L		08/16/23 10:05	09/26/23 18:06	1
Arsenic	0.048		0.0010	0.00028	mg/L		08/16/23 10:05	09/26/23 18:06	1
Barium	0.56	B	0.010	0.0031	mg/L		08/16/23 10:05	09/26/23 18:06	1
Beryllium	0.0049	^5-	0.0010	0.00027	mg/L		08/16/23 10:05	09/26/23 18:06	1
Boron	10		1.6	1.2	mg/L		08/16/23 10:05	10/02/23 16:45	20
Cadmium	0.0014		0.0010	0.00022	mg/L		08/16/23 10:05	09/26/23 18:06	1
Calcium	240		0.50	0.13	mg/L		08/16/23 10:05	09/26/23 18:06	1
Chromium	0.10		0.0020	0.0015	mg/L		08/16/23 10:05	09/26/23 18:06	1
Cobalt	0.072		0.00050	0.00026	mg/L		08/16/23 10:05	09/26/23 18:06	1
Lead	0.074		0.0010	0.00038	mg/L		08/16/23 10:05	09/26/23 18:06	1
Lithium	0.083	^5-	0.0050	0.0013	mg/L		08/16/23 10:05	09/26/23 18:06	1
Molybdenum	0.010		0.0050	0.00061	mg/L		08/16/23 10:05	09/28/23 19:28	1
Selenium	0.0035	J	0.0050	0.00074	mg/L		08/16/23 10:05	09/26/23 18:06	1
Thallium	0.0013		0.0010	0.00047	mg/L		08/16/23 10:05	09/26/23 18:06	1

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00033		0.00020	0.00013	mg/L		08/08/23 07:56	08/09/23 09:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1100		10	10	mg/L			08/04/23 18:12	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.0	HF	0.1	0.1	SU			08/05/23 13:55	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.265	U	0.192	0.193	1.00	0.275	pCi/L	08/02/23 09:37	08/24/23 07:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.4*		*30 - 110*	*08/02/23 09:37*	*08/24/23 07:53*	*1*

Client Sample ID: CCR-AP-2
Lab Sample ID: 180-160084-2

Date Collected: 07/28/23 13:45
Matrix: Water
Date Received: 07/29/23 09:14

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.179	U G	0.565	0.566	1.00	1.03	pCi/L	08/02/23 09:47	08/16/23 13:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.4*		*30 - 110*	*08/02/23 09:47*	*08/16/23 13:07*	*1*
Y Carrier	*82.6*		*30 - 110*	*08/02/23 09:47*	*08/16/23 13:07*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.444	U	0.597	0.598	5.00	1.03	pCi/L		08/24/23 14:42	1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-441933/37
Matrix: Water
Analysis Batch: 441933

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.71	mg/L			07/31/23 18:20	1
Fluoride	ND		0.10	0.026	mg/L			07/31/23 18:20	1
Sulfate	ND		1.0	0.76	mg/L			07/31/23 18:20	1

Lab Sample ID: LCS 180-441933/38
Matrix: Water
Analysis Batch: 441933

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	50.5		mg/L		101	80 - 120
Fluoride	2.50	2.73		mg/L		109	80 - 120
Sulfate	50.0	50.0		mg/L		100	80 - 120

Lab Sample ID: 180-160084-1 MS
Matrix: Water
Analysis Batch: 441933

Client Sample ID: CCR-AP-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	17		50.0	64.2		mg/L		95	80 - 120
Fluoride	0.40		2.50	2.97		mg/L		103	80 - 120
Sulfate	300		50.0	329	4	mg/L		50	80 - 120

Lab Sample ID: 180-160084-1 MSD
Matrix: Water
Analysis Batch: 441933

Client Sample ID: CCR-AP-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	17		50.0	65.4		mg/L		97	80 - 120	2	15
Fluoride	0.40		2.50	3.04		mg/L		106	80 - 120	2	15
Sulfate	300		50.0	336	4	mg/L		64	80 - 120	2	15

Method: EPA 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-443610/1-A
Matrix: Water
Analysis Batch: 447690

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 443610

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00097	mg/L		08/16/23 10:05	09/26/23 17:17	1
Arsenic	ND		0.0010	0.00028	mg/L		08/16/23 10:05	09/26/23 17:17	1
Barium	0.00865	J	0.010	0.0031	mg/L		08/16/23 10:05	09/26/23 17:17	1
Beryllium	ND	^5-	0.0010	0.00027	mg/L		08/16/23 10:05	09/26/23 17:17	1
Cadmium	ND		0.0010	0.00022	mg/L		08/16/23 10:05	09/26/23 17:17	1
Calcium	ND		0.50	0.13	mg/L		08/16/23 10:05	09/26/23 17:17	1
Chromium	ND		0.0020	0.0015	mg/L		08/16/23 10:05	09/26/23 17:17	1
Cobalt	ND		0.00050	0.00026	mg/L		08/16/23 10:05	09/26/23 17:17	1
Lead	ND		0.0010	0.00038	mg/L		08/16/23 10:05	09/26/23 17:17	1
Lithium	ND	^5-	0.0050	0.0013	mg/L		08/16/23 10:05	09/26/23 17:17	1
Selenium	ND		0.0050	0.00074	mg/L		08/16/23 10:05	09/26/23 17:17	1
Thallium	ND		0.0010	0.00047	mg/L		08/16/23 10:05	09/26/23 17:17	1

Method: EPA 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-443610/1-A
Matrix: Water
Analysis Batch: 447853

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 443610

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Molybdenum	ND		0.0050	0.00061	mg/L		08/16/23 10:05	09/28/23 19:02	1

Lab Sample ID: MB 180-443610/1-A
Matrix: Water
Analysis Batch: 448227

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 443610

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.080	0.060	mg/L		08/16/23 10:05	10/02/23 16:36	1

Lab Sample ID: LCS 180-443610/2-A
Matrix: Water
Analysis Batch: 447690

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 443610

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.250	0.258		mg/L		103	80 - 120
Arsenic	1.00	1.01		mg/L		101	80 - 120
Barium	1.00	1.01		mg/L		101	80 - 120
Beryllium	0.500	0.484	^5-	mg/L		97	80 - 120
Cadmium	0.500	0.498		mg/L		100	80 - 120
Calcium	25.0	28.8		mg/L		115	80 - 120
Chromium	0.500	0.507		mg/L		101	80 - 120
Cobalt	0.500	0.509		mg/L		102	80 - 120
Lead	0.500	0.494		mg/L		99	80 - 120
Lithium	0.500	0.494	^5-	mg/L		99	80 - 120
Selenium	1.00	0.999		mg/L		100	80 - 120
Thallium	1.00	1.00		mg/L		100	80 - 120

Lab Sample ID: LCS 180-443610/2-A
Matrix: Water
Analysis Batch: 447853

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 443610

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Molybdenum	0.500	0.503		mg/L		101	80 - 120

Lab Sample ID: LCS 180-443610/2-A
Matrix: Water
Analysis Batch: 448227

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 443610

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	1.25	1.22		mg/L		98	80 - 120

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-442697/1-A
Matrix: Water
Analysis Batch: 442917

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 442697

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		08/08/23 07:56	08/09/23 09:09	1

Method: EPA 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 180-442697/2-A
Matrix: Water
Analysis Batch: 442917

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 442697

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00250	0.00230		mg/L		92	80 - 120

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-442544/1
Matrix: Water
Analysis Batch: 442544

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		SU		100	99 - 101

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 180-442507/1
Matrix: Water
Analysis Batch: 442507

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			08/04/23 18:12	1

Lab Sample ID: LCS 180-442507/2
Matrix: Water
Analysis Batch: 442507

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	242	222		mg/L		92	85 - 115

Lab Sample ID: 180-160084-2 DU
Matrix: Water
Analysis Batch: 442507

Client Sample ID: CCR-AP-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1100		1090		mg/L		0.4	10

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-622531/1-A
Matrix: Water
Analysis Batch: 625440

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 622531

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.01122	U	0.0682	0.0682	1.00	0.130	pCi/L	08/02/23 09:37	08/24/23 07:52	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.7*		*30 - 110*	*08/02/23 09:37*	*08/24/23 07:52*	*1*

Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-622531/2-A
Matrix: Water
Analysis Batch: 625440

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 622531

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	9.403		1.00	1.00	0.127	pCi/L	83	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*93.4*		*30 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-622533/1-A
Matrix: Water
Analysis Batch: 624441

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 622533

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2551	U	0.329	0.330	1.00	0.549	pCi/L	08/02/23 09:47	08/16/23 13:06	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.7*		*30 - 110*	*08/02/23 09:47*	*08/16/23 13:06*	*1*
Y Carrier	*80.7*		*30 - 110*	*08/02/23 09:47*	*08/16/23 13:06*	*1*

Lab Sample ID: LCS 160-622533/2-A
Matrix: Water
Analysis Batch: 624441

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 622533

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			7.95	8.812		1.24	1.00	0.544	pCi/L	111	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*93.4*		*30 - 110*
Y Carrier	*82.2*		*30 - 110*

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring FB Culley

Job ID: 180-160084-1
SDG: FB Culley

HPLC/IC

Analysis Batch: 441933

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-160084-1	CCR-AP-1	Total/NA	Water	EPA 9056A	
180-160084-2	CCR-AP-2	Total/NA	Water	EPA 9056A	
MB 180-441933/37	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-441933/38	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-160084-1 MS	CCR-AP-1	Total/NA	Water	EPA 9056A	
180-160084-1 MSD	CCR-AP-1	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 442697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-160084-1	CCR-AP-1	Total/NA	Water	7470A	
180-160084-2	CCR-AP-2	Total/NA	Water	7470A	
MB 180-442697/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-442697/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 442917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-160084-1	CCR-AP-1	Total/NA	Water	EPA 7470A	442697
180-160084-2	CCR-AP-2	Total/NA	Water	EPA 7470A	442697
MB 180-442697/1-A	Method Blank	Total/NA	Water	EPA 7470A	442697
LCS 180-442697/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	442697

Prep Batch: 443610

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-160084-1	CCR-AP-1	Total Recoverable	Water	3005A	
180-160084-2	CCR-AP-2	Total Recoverable	Water	3005A	
MB 180-443610/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-443610/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 447690

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-160084-1	CCR-AP-1	Total Recoverable	Water	EPA 6020A	443610
180-160084-2	CCR-AP-2	Total Recoverable	Water	EPA 6020A	443610
MB 180-443610/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	443610
LCS 180-443610/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	443610

Analysis Batch: 447853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-160084-1	CCR-AP-1	Total Recoverable	Water	EPA 6020A	443610
180-160084-2	CCR-AP-2	Total Recoverable	Water	EPA 6020A	443610
MB 180-443610/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	443610
LCS 180-443610/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	443610

Analysis Batch: 448227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-160084-1	CCR-AP-1	Total Recoverable	Water	EPA 6020A	443610
180-160084-2	CCR-AP-2	Total Recoverable	Water	EPA 6020A	443610
MB 180-443610/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	443610
LCS 180-443610/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	443610

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring FB Culley

Job ID: 180-160084-1
SDG: FB Culley

General Chemistry

Analysis Batch: 442507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-160084-1	CCR-AP-1	Total/NA	Water	SM 2540C	
180-160084-2	CCR-AP-2	Total/NA	Water	SM 2540C	
MB 180-442507/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-442507/2	Lab Control Sample	Total/NA	Water	SM 2540C	
180-160084-2 DU	CCR-AP-2	Total/NA	Water	SM 2540C	

Analysis Batch: 442544

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-160084-1	CCR-AP-1	Total/NA	Water	EPA 9040C	
180-160084-2	CCR-AP-2	Total/NA	Water	EPA 9040C	
LCS 180-442544/1	Lab Control Sample	Total/NA	Water	EPA 9040C	

Rad

Prep Batch: 622531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-160084-1	CCR-AP-1	Total/NA	Water	PrecSep-21	
180-160084-2	CCR-AP-2	Total/NA	Water	PrecSep-21	
MB 160-622531/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-622531/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 622533

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-160084-1	CCR-AP-1	Total/NA	Water	PrecSep_0	
180-160084-2	CCR-AP-2	Total/NA	Water	PrecSep_0	
MB 160-622533/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-622533/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone 412-963-7058 Fax 412-963-2468

Chain of Custody Record

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Client Information	Sampler: Hayley Toles	Lab PM: Hayes, Ken	Carrier Tracking No(s):	COC No: 180-93683-17191 1
Client Contact: Mark Breting	Phone:	E-Mail: Ken.Hayes@et.eurofinsus com	State of Origin:	Page: Page 1 of 1
Company: Atlas Technical Consultants LLC	PWSID:	Analysis Requested		Job #: 170LFO1499

Address: 7988 Centerpoint Drive Suite 100	Due Date Requested:	Preservation Codes: A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Y - Trizma; Z - other (specify); Other:
City: Indianapolis	TAT Requested (days):	
State, Zip: IN, 46256	Compliance Project: Δ Yes Δ No	
Phone:	PO #: 0129420-032-001-01	
Email: mark breting@atcassociates.com	WO #: See Chain	
Project Name: CCR Groundwater Monitoring FB Culley	Project #: 18016014	
Site	SSOW#:	

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9040C, 9056A_ORGFM_28D	6020A, 7470A	2540C_Calcd - TDS	9315_Ra226, 9320_Ra228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	N	D		
CCR-AP-1	7/28/23	14:20	G	W			X	X	X	X	4	
CCR-AP-2	7/28/23	13:45	G	W			X	X	X	X	4	

180-160084 Chain of Custody

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:

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

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Hayley Toles	7/28/23 / 16:00	ATLAS	Fedex	7/28/23 / 16:00	
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
				7-29-23 0914	EPITAVE
Relinquished by	Date/Time	Company	Received by	Date/Time	Company

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

Ver: 06 08/2021

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hayes, Ken	Carrier Tracking No(s):	COC No: 180-492099.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ken.Hayes@et.eurofinsus.com	State of Origin: Indiana	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-160084-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 8/31/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR Groundwater Monitoring FB Culley	Project #: 18016014			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
CCR-AP-1 (180-160084-1)	7/28/23	14:20 Eastern		Water			X	X	X	1	
CCR-AP-2 (180-160084-2)	7/28/23	13:45 Eastern		Water			X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Pittsburgh 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 Pittsburgh laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Pittsburgh attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Pittsburgh.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

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

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	[signature]	8-1-23 [illegible]	[illegible]	FED EX		
2	FED EX			Sierra Worthington	AUG 01 2023 0855	GTAT2
3						

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

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-160084-1
SDG Number: FB Culley

Login Number: 160084
List Number: 1
Creator: Abernathy, Eric L

List Source: Eurofins Pittsburgh

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	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-160084-1
SDG Number: FB Culley

Login Number: 160084
List Number: 2
Creator: Worthington, Sierra M

List Source: Eurofins St. Louis
List Creation: 08/01/23 11:33 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Todd Plating
Haley & Aldrich, Inc.
400 Augusta Street
Suite 100
Greenville, South Carolina 29601

Generated 6/30/2023 1:24:14 PM

JOB DESCRIPTION

CCR Groundwater Monitoring
SDG NUMBER FB Culley East

JOB NUMBER

180-157227-1

Eurofins Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh PA 15238

See page two for job notes and contact information.

Job Notes

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

PA Lab ID: 02-00416

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 Pittsburgh Project Manager.

Authorization

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6/30/2023 1:24:14 PM

Authorized for release by
Ken Hayes, Project Manager II
Ken.Hayes@et.eurofinsus.com
(615)301-5035

Table of Contents

Job ID: 180-157227-1

Laboratory: Eurofins Pittsburgh

Narrative

Job Narrative
180-157227-1

Receipt
The samples were received on 5/27/2023 9:05 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.9°C and 3.1°C

Gas Flow Proportional Counter
Method 9315_Ra226: Radium-226 Prep Batch 160-614559Insufficient sample volume was available to perform a sample duplicate for the following samples: FIELD BLANK 1 (180-157227-10). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method 9315_Ra226: Radium-226 Prep Batch 160-614559The following samples were prepared at a reduced aliquot due to Matrix: CCR-AP-5 (180-157227-1), CCR-AP-5I (180-157227-2), CCR-AP-6 (180-157227-3), CCR-AP-6I (180-157227-4), CCR-AP-8 (180-157227-5), CCR-AP-8I (180-157227-6), CCR-AP-9 (180-157227-7), CCR-AP-11 (180-157227-8) and BLIND DUP 1 (180-157227-9). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method 9315_Ra226: Radium-226 160-614559Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.CCR-AP-5 (180-157227-1), CCR-AP-5I (180-157227-2), CCR-AP-6 (180-157227-3), CCR-AP-6I (180-157227-4), CCR-AP-8 (180-157227-5), CCR-AP-8I (180-157227-6), CCR-AP-9 (180-157227-7), CCR-AP-11 (180-157227-8), BLIND DUP 1 (180-157227-9), FIELD BLANK 1 (180-157227-10), (LCS 160-614559/2-A), (LCSD 160-614559/3-A) and (MB 160-614559/1-A)

Method 9320_Ra228: Radium-228 Prep Batch 160-614560The following samples were prepared at a reduced aliquot due to Matrix: CCR-AP-5 (180-157227-1), CCR-AP-5I (180-157227-2), CCR-AP-6 (180-157227-3), CCR-AP-6I (180-157227-4), CCR-AP-8 (180-157227-5), CCR-AP-8I (180-157227-6), CCR-AP-9 (180-157227-7), CCR-AP-11 (180-157227-8) and BLIND DUP 1 (180-157227-9). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method 9320_Ra228: Radium-228 Prep Batch 160-614560Insufficient sample volume was available to perform a sample duplicate for the following samples: FIELD BLANK 1 (180-157227-10). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method 9320_Ra228: Radium-228 batch 614560The LCS recovered at (133%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required (LCSD 160-614560/3-A)

Method 9320_Ra228: Radium-228 batch 614560The detection goal was not met for the following sample(s). Samples were prepped at a reduced volume due to the presence of matrix interferences: CCR-AP-5 (180-157227-1), CCR-AP-5I (180-157227-2), CCR-AP-6 (180-157227-3), CCR-AP-8 (180-157227-5), CCR-AP-9 (180-157227-7) and BLIND DUP 1 (180-157227-9). Analytical results are reported with the detection limit achieved.

Method 9320_Ra228: Radium-228 batch 614560Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.CCR-AP-5 (180-157227-1), CCR-AP-5I (180-157227-2), CCR-AP-6 (180-157227-3), CCR-AP-6I (180-157227-4), CCR-AP-8 (180-157227-5), CCR-AP-8I (180-157227-6), CCR-AP-9 (180-157227-7), CCR-AP-11 (180-157227-8), BLIND DUP 1 (180-157227-9), FIELD BLANK 1 (180-157227-10), (LCS 160-614560/2-A), (LCSD 160-614560/3-A) and (MB 160-614560/1-A)

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

Job ID: 180-157227-1 (Continued)

Laboratory: Eurofins Pittsburgh (Continued)

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

Narrative

Job Narrative
180-157227-2

Receipt
The samples were received on 5/27/2023 9:05 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.9°C and 3.1°C

HPLC/IC
Method 9056A_ORGFM_28D: The following sample was diluted due to the nature of the sample matrix: CCR-AP-8I (180-157227-6). Elevated reporting limits (RLs) are provided.

Method 9056A_ORGFM_28D: The following sample was diluted to bring the concentration of target analytes within the calibration range: CCR-AP-6I (180-157227-4). 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.

Metals
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.

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-157227-1
SDG: FB Culley East

Qualifiers

HPLC/IC

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

Metals

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

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

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

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-157227-1
SDG: FB Culley East

Laboratory: Eurofins Pittsburgh

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

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-23
California	State	2891	04-30-24
Connecticut	State	PH-0688	09-30-24
Florida	NELAP	E871008	06-30-23
Georgia	State	PA 02-00416	04-30-24
Illinois	NELAP	004375	06-30-24
Kansas	NELAP	E-10350	01-31-24
Kentucky (UST)	State	162013	04-30-23 *
Kentucky (WW)	State	KY98043	12-31-23
Louisiana	NELAP	04041	06-30-22 *
Louisiana (All)	NELAP	04041	06-30-23
Maine	State	PA00164	03-06-24
Minnesota	NELAP	042-999-482	12-31-23
New Hampshire	NELAP	2030	04-04-24
New Jersey	NELAP	PA005	06-30-23
New York	NELAP	11182	04-01-24
North Carolina (WW/SW)	State	434	12-31-23
North Dakota	State	R-227	04-30-24
Oregon	NELAP	PA-2151	02-06-24
Pennsylvania	NELAP	02-00416	04-30-24
Rhode Island	State	LAO00362	12-31-22 *
South Carolina	State	89014	04-30-23 *
Texas	NELAP	T104704528	03-31-24
US Fish & Wildlife	US Federal Programs	058448	03-31-24
USDA	US Federal Programs	P330-16-00211	06-21-24
Utah	NELAP	PA001462019-8	05-31-23 *
Virginia	NELAP	10043	09-14-23
West Virginia DEP	State	142	03-31-24
Wisconsin	State	998027800	08-31-23

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-24
Connecticut	State	PH-0590	06-29-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-28-24
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	06-12-23
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-27-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-157227-1
SDG: FB Culley East

Laboratory: Eurofins Cleveland (Continued)

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

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	68-00340	06-13-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	12-31-23

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-15-25
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-157227-1
SDG: FB Culley East

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-157227-1	CCR-AP-5	Water	05/25/23 14:00	05/27/23 09:05
180-157227-2	CCR-AP-5I	Water	05/25/23 11:30	05/27/23 09:05
180-157227-3	CCR-AP-6	Water	05/23/23 11:00	05/27/23 09:05
180-157227-4	CCR-AP-6I	Water	05/26/23 11:00	05/27/23 09:05
180-157227-5	CCR-AP-8	Water	05/25/23 17:40	05/27/23 09:05
180-157227-6	CCR-AP-8I	Water	05/25/23 15:45	05/27/23 09:05
180-157227-7	CCR-AP-9	Water	05/23/23 12:30	05/27/23 09:05
180-157227-8	CCR-AP-11	Water	05/26/23 12:00	05/27/23 09:05
180-157227-9	BLIND DUP 1	Water	05/25/23 00:00	05/27/23 09:05
180-157227-10	FIELD BLANK 1	Water	05/26/23 11:00	05/27/23 09:05

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-157227-1
SDG: FB Culley East

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-157227-1
SDG: FB Culley East

Client Sample ID: CCR-AP-5

Date Collected: 05/25/23 14:00
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	436625	05/31/23 15:34	M1D	EET PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	575939	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6010D		5			576271	06/07/23 19:22	AJC	EET CLE
	Instrument ID: I9									
Total Recoverable	Prep	3005A			50 mL	50 mL	575939	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6020B		1			576217	06/06/23 20:03	RKT	EET CLE
	Instrument ID: I14									
Total/NA	Prep	7470A			50 mL	50 mL	575940	06/05/23 14:00	MRL	EET CLE
Total/NA	Analysis	7470A		1			576387	06/07/23 21:08	DSH	EET CLE
	Instrument ID: H2									
Total/NA	Analysis	EPA 9040C		1			438600	06/21/23 16:42	SNR	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	436780	06/01/23 15:36	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			497.86 mL	1.0 g	614559	06/06/23 10:40	KAC	EET SL
Total/NA	Analysis	9315		1			618334	06/29/23 21:27	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			497.86 mL	1.0 g	614560	06/06/23 10:45	KAC	EET SL
Total/NA	Analysis	9320		1			617604	06/26/23 14:50	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Analysis	Ra226_Ra228		1			618450	06/30/23 12:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-AP-5I

Date Collected: 05/25/23 11:30
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	436625	05/31/23 15:53	M1D	EET PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	575939	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6010D		5			576271	06/07/23 19:27	AJC	EET CLE
	Instrument ID: I9									
Total Recoverable	Prep	3005A			50 mL	50 mL	575939	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6020B		1			576217	06/06/23 20:06	RKT	EET CLE
	Instrument ID: I14									
Total/NA	Prep	7470A			50 mL	50 mL	575940	06/05/23 14:00	MRL	EET CLE
Total/NA	Analysis	7470A		1			576387	06/07/23 21:10	DSH	EET CLE
	Instrument ID: H2									
Total/NA	Analysis	EPA 9040C		1			437292	06/07/23 13:16	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	436780	06/01/23 15:36	LWM	EET PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-157227-1
SDG: FB Culley East

Client Sample ID: CCR-AP-5I
Date Collected: 05/25/23 11:30
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			493.13 mL	1.0 g	614559	06/06/23 10:40	KAC	EET SL
Total/NA	Analysis	9315		1			618334	06/29/23 21:27	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			493.13 mL	1.0 g	614560	06/06/23 10:45	KAC	EET SL
Total/NA	Analysis	9320		1			617732	06/26/23 14:51	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			618450	06/30/23 12:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-AP-6
Date Collected: 05/23/23 11:00
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	436625	05/31/23 16:48	M1D	EET PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	575939	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6010D		1			576212	06/06/23 18:39	AJC	EET CLE
	Instrument ID: I9									
Total Recoverable	Prep	3005A			50 mL	50 mL	575939	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6020B		1			576217	06/06/23 20:09	RKT	EET CLE
	Instrument ID: I14									
Total/NA	Prep	7470A			50 mL	50 mL	575940	06/05/23 14:00	MRL	EET CLE
Total/NA	Analysis	7470A		1			576387	06/07/23 21:12	DSH	EET CLE
	Instrument ID: H2									
Total/NA	Analysis	EPA 9040C		1			437292	06/07/23 13:49	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	436530	05/30/23 20:54	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			496.74 mL	1.0 g	614559	06/06/23 10:40	KAC	EET SL
Total/NA	Analysis	9315		1			618334	06/29/23 21:27	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			496.74 mL	1.0 g	614560	06/06/23 10:45	KAC	EET SL
Total/NA	Analysis	9320		1			617732	06/26/23 14:51	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			618450	06/30/23 12:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-AP-6I
Date Collected: 05/26/23 11:00
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	436625	05/31/23 17:07	M1D	EET PIT
	Instrument ID: INTEGRION									

Client Sample ID: CCR-AP-6I

Date Collected: 05/26/23 11:00
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		5	1 mL	1 mL	436748	06/01/23 13:40	M1D	EET PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	575939	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6010D		5			576271	06/07/23 19:31	AJC	EET CLE
	Instrument ID: I9									
Total Recoverable	Prep	3005A			50 mL	50 mL	575939	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6020B		1			576217	06/06/23 20:12	RKT	EET CLE
	Instrument ID: I14									
Total/NA	Prep	7470A			50 mL	50 mL	575940	06/05/23 14:00	MRL	EET CLE
Total/NA	Analysis	7470A		1			576387	06/07/23 21:14	DSH	EET CLE
	Instrument ID: H2									
Total/NA	Analysis	EPA 9040C		1			437292	06/07/23 13:38	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	436780	06/01/23 15:36	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			740.34 mL	1.0 g	614559	06/06/23 10:40	KAC	EET SL
Total/NA	Analysis	9315		1			618334	06/29/23 21:27	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			740.34 mL	1.0 g	614560	06/06/23 10:45	KAC	EET SL
Total/NA	Analysis	9320		1			617732	06/26/23 14:52	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			618450	06/30/23 12:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-AP-8

Date Collected: 05/25/23 17:40
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	436625	05/31/23 17:25	M1D	EET PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	575939	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6010D		1			576212	06/06/23 18:56	AJC	EET CLE
	Instrument ID: I9									
Total Recoverable	Prep	3005A			50 mL	50 mL	575939	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6020B		1			576217	06/06/23 20:14	RKT	EET CLE
	Instrument ID: I14									
Total/NA	Prep	7470A			50 mL	50 mL	575940	06/05/23 14:00	MRL	EET CLE
Total/NA	Analysis	7470A		1			576387	06/07/23 21:16	DSH	EET CLE
	Instrument ID: H2									
Total/NA	Analysis	EPA 9040C		1			437292	06/07/23 13:34	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	436780	06/01/23 15:36	LWM	EET PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-157227-1
SDG: FB Culley East

Client Sample ID: CCR-AP-8

Date Collected: 05/25/23 17:40
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			490.56 mL	1.0 g	614559	06/06/23 10:40	KAC	EET SL
Total/NA	Analysis	9315		1			618334	06/29/23 21:27	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			490.56 mL	1.0 g	614560	06/06/23 10:45	KAC	EET SL
Total/NA	Analysis	9320		1			617732	06/26/23 14:52	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			618450	06/30/23 12:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-AP-8I

Date Collected: 05/25/23 15:45
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		2.5	1 mL	1 mL	436625	05/31/23 17:44	M1D	EET PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	575939	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6010D		5			576271	06/07/23 19:35	AJC	EET CLE
	Instrument ID: I9									
Total Recoverable	Prep	3005A			50 mL	50 mL	575939	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6020B		1			576217	06/06/23 20:17	RKT	EET CLE
	Instrument ID: I14									
Total/NA	Prep	7470A			50 mL	50 mL	575940	06/05/23 14:00	MRL	EET CLE
Total/NA	Analysis	7470A		1			576387	06/07/23 21:23	DSH	EET CLE
	Instrument ID: H2									
Total/NA	Analysis	EPA 9040C		1			437292	06/07/23 13:31	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	436780	06/01/23 15:36	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			739.75 mL	1.0 g	614559	06/06/23 10:40	KAC	EET SL
Total/NA	Analysis	9315		1			618334	06/29/23 21:29	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			739.75 mL	1.0 g	614560	06/06/23 10:45	KAC	EET SL
Total/NA	Analysis	9320		1			617732	06/26/23 14:52	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			618450	06/30/23 12:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-AP-9

Date Collected: 05/23/23 12:30
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	436625	05/31/23 18:02	M1D	EET PIT
	Instrument ID: INTEGRION									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-157227-1
SDG: FB Culley East

Client Sample ID: CCR-AP-9

Date Collected: 05/23/23 12:30
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	575939	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6010D		1			576212	06/06/23 19:09	AJC	EET CLE
	Instrument ID: I9									
Total Recoverable	Prep	3005A			50 mL	50 mL	575939	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6020B		1			576217	06/06/23 20:22	RKT	EET CLE
	Instrument ID: I14									
Total/NA	Prep	7470A			50 mL	50 mL	575940	06/05/23 14:00	MRL	EET CLE
Total/NA	Analysis	7470A		1			576387	06/07/23 21:27	DSH	EET CLE
	Instrument ID: H2									
Total/NA	Analysis	EPA 9040C		1			437292	06/07/23 13:28	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	436530	05/30/23 20:54	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			501.38 mL	1.0 g	614559	06/06/23 10:40	KAC	EET SL
Total/NA	Analysis	9315		1			618334	06/29/23 21:29	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			501.38 mL	1.0 g	614560	06/06/23 10:45	KAC	EET SL
Total/NA	Analysis	9320		1			617732	06/26/23 14:52	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			618450	06/30/23 12:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-AP-11

Date Collected: 05/26/23 12:00
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	436625	05/31/23 18:57	M1D	EET PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	575939	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6010D		1			576212	06/06/23 19:05	AJC	EET CLE
	Instrument ID: I9									
Total Recoverable	Prep	3005A			50 mL	50 mL	575939	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6020B		1			576217	06/06/23 20:20	RKT	EET CLE
	Instrument ID: I14									
Total/NA	Prep	7470A			50 mL	50 mL	575940	06/05/23 14:00	MRL	EET CLE
Total/NA	Analysis	7470A		1			576387	06/07/23 21:25	DSH	EET CLE
	Instrument ID: H2									
Total/NA	Analysis	EPA 9040C		1			437292	06/07/23 13:52	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	436780	06/01/23 15:36	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			743.45 mL	1.0 g	614559	06/06/23 10:40	KAC	EET SL
Total/NA	Analysis	9315		1			618334	06/29/23 21:29	FLC	EET SL
	Instrument ID: GFPCRED									

Client Sample ID: CCR-AP-11

Lab Sample ID: 180-157227-8

Date Collected: 05/26/23 12:00

Matrix: Water

Date Received: 05/27/23 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep_0			743.45 mL	1.0 g	614560	06/06/23 10:45	KAC	EET SL
Total/NA	Analysis	9320		1			617733	06/26/23 14:53	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			618450	06/30/23 12:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: BLIND DUP 1

Lab Sample ID: 180-157227-9

Date Collected: 05/25/23 00:00

Matrix: Water

Date Received: 05/27/23 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	436625	05/31/23 19:16	M1D	EET PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	575939	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6010D		5			576271	06/07/23 19:40	AJC	EET CLE
	Instrument ID: I9									
Total Recoverable	Prep	3005A			50 mL	50 mL	575939	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6020B		1			576217	06/06/23 20:30	RKT	EET CLE
	Instrument ID: I14									
Total/NA	Prep	7470A			50 mL	50 mL	575940	06/05/23 14:00	MRL	EET CLE
Total/NA	Analysis	7470A		1			576387	06/07/23 21:29	DSH	EET CLE
	Instrument ID: H2									
Total/NA	Analysis	EPA 9040C		1			437292	06/07/23 13:22	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	436780	06/01/23 15:36	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			505.65 mL	1.0 g	614559	06/06/23 10:40	KAC	EET SL
Total/NA	Analysis	9315		1			618334	06/29/23 21:29	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			505.65 mL	1.0 g	614560	06/06/23 10:45	KAC	EET SL
Total/NA	Analysis	9320		1			617733	06/26/23 14:53	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			618450	06/30/23 12:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: FIELD BLANK 1

Lab Sample ID: 180-157227-10

Date Collected: 05/26/23 11:00

Matrix: Water

Date Received: 05/27/23 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	436625	05/31/23 19:34	M1D	EET PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	575939	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6010D		1			576212	06/06/23 19:18	AJC	EET CLE
	Instrument ID: I9									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring

Job ID: 180-157227-1
SDG: FB Culley East

Client Sample ID: FIELD BLANK 1

Date Collected: 05/26/23 11:00
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	575939	06/05/23 14:00	MRL	EET CLE
Total Recoverable	Analysis	6020B		1			576217	06/06/23 20:33	RKT	EET CLE
	Instrument ID: I14									
Total/NA	Prep	7470A			50 mL	50 mL	575940	06/05/23 14:00	MRL	EET CLE
Total/NA	Analysis	7470A		1			576387	06/07/23 21:31	DSH	EET CLE
	Instrument ID: H2									
Total/NA	Analysis	EPA 9040C		1			438600	06/21/23 16:45	SNR	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	436780	06/01/23 15:36	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			994.79 mL	1.0 g	614559	06/06/23 10:40	KAC	EET SL
Total/NA	Analysis	9315		1			618334	06/29/23 21:29	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			994.79 mL	1.0 g	614560	06/06/23 10:45	KAC	EET SL
Total/NA	Analysis	9320		1			617733	06/26/23 14:53	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			618450	06/30/23 12:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Analyst References:

Lab: EET CLE
- Batch Type: Prep
  - MRL = Matthew Loeb
- Batch Type: Analysis
  - AJC = Alexander Colosi
  - DSH = David Heakin
  - RKT = Roger Toth

Lab: EET PIT
- Batch Type: Analysis
  - BAB = Brooke Batyi
  - LWM = Leslie McIntire
  - M1D = Maureen Donlin
  - SNR = Sabra Richart

Lab: EET SL
- Batch Type: Prep
  - KAC = Kevin Cox
- Batch Type: Analysis
  - FLC = Fernando Cruz
  - SCB = Sarah Bernsen

Client Sample ID: CCR-AP-5

Date Collected: 05/25/23 14:00
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-1

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	220		1.0	0.71	mg/L			05/31/23 15:34	1
Fluoride	0.91		0.10	0.026	mg/L			05/31/23 15:34	1
Sulfate	650		1.0	0.76	mg/L			05/31/23 15:34	1

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	16000		500	290	ug/L		06/05/23 14:00	06/07/23 19:22	5

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0011	J	0.0020	0.00057	mg/L		06/05/23 14:00	06/06/23 20:03	1
Arsenic	0.0091		0.0050	0.00075	mg/L		06/05/23 14:00	06/06/23 20:03	1
Barium	0.12		0.0050	0.0022	mg/L		06/05/23 14:00	06/06/23 20:03	1
Beryllium	ND		0.0010	0.00062	mg/L		06/05/23 14:00	06/06/23 20:03	1
Cadmium	0.00038	J	0.0010	0.00020	mg/L		06/05/23 14:00	06/06/23 20:03	1
Calcium	290		1.0	0.25	mg/L		06/05/23 14:00	06/06/23 20:03	1
Chromium	0.0091		0.0050	0.0012	mg/L		06/05/23 14:00	06/06/23 20:03	1
Cobalt	0.0032		0.0010	0.00019	mg/L		06/05/23 14:00	06/06/23 20:03	1
Lead	0.0030		0.0010	0.00045	mg/L		06/05/23 14:00	06/06/23 20:03	1
Lithium	0.072		0.0080	0.0017	mg/L		06/05/23 14:00	06/06/23 20:03	1
Molybdenum	0.21		0.0050	0.0011	mg/L		06/05/23 14:00	06/06/23 20:03	1
Selenium	0.0034	J	0.0050	0.00089	mg/L		06/05/23 14:00	06/06/23 20:03	1
Thallium	ND		0.0010	0.00020	mg/L		06/05/23 14:00	06/06/23 20:03	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.32		0.20	0.13	ug/L		06/05/23 14:00	06/07/23 21:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1800		20	20	mg/L			06/01/23 15:36	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.6	HF	0.1	0.1	SU			06/21/23 16:42	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.38		0.453	0.470	1.00	0.402	pCi/L	06/06/23 10:40	06/29/23 21:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*59.3*		*30 - 110*	*06/06/23 10:40*	*06/29/23 21:27*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.33	G	1.23	1.25	1.00	1.70	pCi/L	06/06/23 10:45	06/26/23 14:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*59.3*		*30 - 110*	*06/06/23 10:45*	*06/26/23 14:50*	*1*

Client Sample ID: CCR-AP-5

Date Collected: 05/25/23 14:00
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-1

Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	85.2		30 - 110	06/06/23 10:45	06/26/23 14:50	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	3.71		1.31	1.34	5.00	1.70	pCi/L		06/30/23 12:03	1

Client Sample ID: CCR-AP-5I

Date Collected: 05/25/23 11:30
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-2

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	440		1.0	0.71	mg/L			05/31/23 15:53	1
Fluoride	0.28		0.10	0.026	mg/L			05/31/23 15:53	1
Sulfate	790		1.0	0.76	mg/L			05/31/23 15:53	1

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	22000		500	290	ug/L		06/05/23 14:00	06/07/23 19:27	5

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		06/05/23 14:00	06/06/23 20:06	1
Arsenic	0.0016	J	0.0050	0.00075	mg/L		06/05/23 14:00	06/06/23 20:06	1
Barium	0.038		0.0050	0.0022	mg/L		06/05/23 14:00	06/06/23 20:06	1
Beryllium	ND		0.0010	0.00062	mg/L		06/05/23 14:00	06/06/23 20:06	1
Cadmium	0.00030	J	0.0010	0.00020	mg/L		06/05/23 14:00	06/06/23 20:06	1
Calcium	390		1.0	0.25	mg/L		06/05/23 14:00	06/06/23 20:06	1
Chromium	ND		0.0050	0.0012	mg/L		06/05/23 14:00	06/06/23 20:06	1
Cobalt	0.0028		0.0010	0.00019	mg/L		06/05/23 14:00	06/06/23 20:06	1
Lead	0.00050	J	0.0010	0.00045	mg/L		06/05/23 14:00	06/06/23 20:06	1
Lithium	0.029		0.0080	0.0017	mg/L		06/05/23 14:00	06/06/23 20:06	1
Molybdenum	0.0052		0.0050	0.0011	mg/L		06/05/23 14:00	06/06/23 20:06	1
Selenium	ND		0.0050	0.00089	mg/L		06/05/23 14:00	06/06/23 20:06	1
Thallium	ND		0.0010	0.00020	mg/L		06/05/23 14:00	06/06/23 20:06	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.13	ug/L		06/05/23 14:00	06/07/23 21:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	2300		20	20	mg/L			06/01/23 15:36	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.5	HF	0.1	0.1	SU			06/07/23 13:16	1

Client Sample ID: CCR-AP-5I

Date Collected: 05/25/23 11:30
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-2

Matrix: Water

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.391		0.240	0.242	1.00	0.310	pCi/L	06/06/23 10:40	06/29/23 21:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.7*		*30 - 110*	*06/06/23 10:40*	*06/29/23 21:27*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0568	U G	0.668	0.668	1.00	1.27	pCi/L	06/06/23 10:45	06/26/23 14:51	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.7*		*30 - 110*	*06/06/23 10:45*	*06/26/23 14:51*	*1*
Y Carrier	*85.2*		*30 - 110*	*06/06/23 10:45*	*06/26/23 14:51*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.334	U	0.710	0.710	5.00	1.27	pCi/L		06/30/23 12:03	1

Client Sample ID: CCR-AP-6

Date Collected: 05/23/23 11:00
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-3

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	42		1.0	0.71	mg/L			05/31/23 16:48	1
Fluoride	0.27		0.10	0.026	mg/L			05/31/23 16:48	1
Sulfate	10		1.0	0.76	mg/L			05/31/23 16:48	1

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	590		100	57	ug/L		06/05/23 14:00	06/06/23 18:39	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0017	J	0.0020	0.00057	mg/L		06/05/23 14:00	06/06/23 20:09	1
Arsenic	0.11		0.0050	0.00075	mg/L		06/05/23 14:00	06/06/23 20:09	1
Barium	0.51		0.0050	0.0022	mg/L		06/05/23 14:00	06/06/23 20:09	1
Beryllium	ND		0.0010	0.00062	mg/L		06/05/23 14:00	06/06/23 20:09	1
Cadmium	ND		0.0010	0.00020	mg/L		06/05/23 14:00	06/06/23 20:09	1
Calcium	210		1.0	0.25	mg/L		06/05/23 14:00	06/06/23 20:09	1
Chromium	0.0067		0.0050	0.0012	mg/L		06/05/23 14:00	06/06/23 20:09	1
Cobalt	0.0055		0.0010	0.00019	mg/L		06/05/23 14:00	06/06/23 20:09	1
Lead	0.0066		0.0010	0.00045	mg/L		06/05/23 14:00	06/06/23 20:09	1
Lithium	ND		0.0080	0.0017	mg/L		06/05/23 14:00	06/06/23 20:09	1
Molybdenum	0.022		0.0050	0.0011	mg/L		06/05/23 14:00	06/06/23 20:09	1
Selenium	0.0014	J	0.0050	0.00089	mg/L		06/05/23 14:00	06/06/23 20:09	1

Client Sample ID: CCR-AP-6

Date Collected: 05/23/23 11:00
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-3

Matrix: Water

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	ND		0.0010	0.00020	mg/L		06/05/23 14:00	06/06/23 20:09	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.41**		0.20	0.13	ug/L		06/05/23 14:00	06/07/23 21:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1000**		10	10	mg/L			05/30/23 20:54	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	**7.6**	**HF**	0.1	0.1	SU			06/07/23 13:49	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.605**		0.312	0.317	1.00	0.415	pCi/L	06/06/23 10:40	06/29/23 21:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.8*		*30 - 110*	*06/06/23 10:40*	*06/29/23 21:27*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.758	U G	0.705	0.708	1.00	1.12	pCi/L	06/06/23 10:45	06/26/23 14:51	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.8*		*30 - 110*	*06/06/23 10:45*	*06/26/23 14:51*	*1*
Y Carrier	*83.4*		*30 - 110*	*06/06/23 10:45*	*06/26/23 14:51*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.36**		0.771	0.776	5.00	1.12	pCi/L		06/30/23 12:03	1

Client Sample ID: CCR-AP-6I

Date Collected: 05/26/23 11:00
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-4

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**230**		1.0	0.71	mg/L			05/31/23 17:07	1
Fluoride	**0.11**		0.10	0.026	mg/L			05/31/23 17:07	1
Sulfate	**1400**		5.0	3.8	mg/L			06/01/23 13:40	5

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**21000**		500	290	ug/L		06/05/23 14:00	06/07/23 19:31	5

Client Sample ID: CCR-AP-6I

Date Collected: 05/26/23 11:00
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-4

Matrix: Water

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		06/05/23 14:00	06/06/23 20:12	1
Arsenic	**0.0038**	**J**	0.0050	0.00075	mg/L		06/05/23 14:00	06/06/23 20:12	1
Barium	**0.039**		0.0050	0.0022	mg/L		06/05/23 14:00	06/06/23 20:12	1
Beryllium	ND		0.0010	0.00062	mg/L		06/05/23 14:00	06/06/23 20:12	1
Cadmium	ND		0.0010	0.00020	mg/L		06/05/23 14:00	06/06/23 20:12	1
Calcium	**580**		1.0	0.25	mg/L		06/05/23 14:00	06/06/23 20:12	1
Chromium	ND		0.0050	0.0012	mg/L		06/05/23 14:00	06/06/23 20:12	1
Cobalt	**0.0023**		0.0010	0.00019	mg/L		06/05/23 14:00	06/06/23 20:12	1
Lead	**0.00053**	**J**	0.0010	0.00045	mg/L		06/05/23 14:00	06/06/23 20:12	1
Lithium	**0.061**		0.0080	0.0017	mg/L		06/05/23 14:00	06/06/23 20:12	1
Molybdenum	**0.52**		0.0050	0.0011	mg/L		06/05/23 14:00	06/06/23 20:12	1
Selenium	ND		0.0050	0.00089	mg/L		06/05/23 14:00	06/06/23 20:12	1
Thallium	ND		0.0010	0.00020	mg/L		06/05/23 14:00	06/06/23 20:12	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.13	ug/L		06/05/23 14:00	06/07/23 21:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**2700**		20	20	mg/L			06/01/23 15:36	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	**7.5**	**HF**	0.1	0.1	SU			06/07/23 13:38	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0560	U	0.126	0.126	1.00	0.229	pCi/L	06/06/23 10:40	06/29/23 21:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.2*		*30 - 110*	*06/06/23 10:40*	*06/29/23 21:27*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.252	U	0.456	0.457	1.00	0.785	pCi/L	06/06/23 10:45	06/26/23 14:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.2*		*30 - 110*	*06/06/23 10:45*	*06/26/23 14:52*	*1*
Y Carrier	*88.2*		*30 - 110*	*06/06/23 10:45*	*06/26/23 14:52*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.308	U	0.473	0.474	5.00	0.785	pCi/L		06/30/23 12:03	1

Client Sample ID: CCR-AP-8

Date Collected: 05/25/23 17:40
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-5

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**17**		1.0	0.71	mg/L			05/31/23 17:25	1
Fluoride	**0.19**		0.10	0.026	mg/L			05/31/23 17:25	1
Sulfate	**1.5**		1.0	0.76	mg/L			05/31/23 17:25	1

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		100	57	ug/L		06/05/23 14:00	06/06/23 18:56	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.00066**	**J**	0.0020	0.00057	mg/L		06/05/23 14:00	06/06/23 20:14	1
Arsenic	**0.11**		0.0050	0.00075	mg/L		06/05/23 14:00	06/06/23 20:14	1
Barium	**0.43**		0.0050	0.0022	mg/L		06/05/23 14:00	06/06/23 20:14	1
Beryllium	ND		0.0010	0.00062	mg/L		06/05/23 14:00	06/06/23 20:14	1
Cadmium	ND		0.0010	0.00020	mg/L		06/05/23 14:00	06/06/23 20:14	1
Calcium	**250**		1.0	0.25	mg/L		06/05/23 14:00	06/06/23 20:14	1
Chromium	**0.0014**	**J**	0.0050	0.0012	mg/L		06/05/23 14:00	06/06/23 20:14	1
Cobalt	**0.0026**		0.0010	0.00019	mg/L		06/05/23 14:00	06/06/23 20:14	1
Lead	**0.00052**	**J**	0.0010	0.00045	mg/L		06/05/23 14:00	06/06/23 20:14	1
Lithium	ND		0.0080	0.0017	mg/L		06/05/23 14:00	06/06/23 20:14	1
Molybdenum	**0.0078**		0.0050	0.0011	mg/L		06/05/23 14:00	06/06/23 20:14	1
Selenium	**0.0019**	**J**	0.0050	0.00089	mg/L		06/05/23 14:00	06/06/23 20:14	1
Thallium	ND		0.0010	0.00020	mg/L		06/05/23 14:00	06/06/23 20:14	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.13	ug/L		06/05/23 14:00	06/07/23 21:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1100**		10	10	mg/L			06/01/23 15:36	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	**7.4**	**HF**	0.1	0.1	SU			06/07/23 13:34	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.230	U	0.210	0.211	1.00	0.316	pCi/L	06/06/23 10:40	06/29/23 21:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.1*		*30 - 110*	*06/06/23 10:40*	*06/29/23 21:27*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.21**	**G**	0.790	0.798	1.00	1.15	pCi/L	06/06/23 10:45	06/26/23 14:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.1*		*30 - 110*	*06/06/23 10:45*	*06/26/23 14:52*	*1*

Client Sample ID: CCR-AP-8

Date Collected: 05/25/23 17:40
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-5

Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	83.0		30 - 110	06/06/23 10:45	06/26/23 14:52	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.43		0.817	0.825	5.00	1.15	pCi/L		06/30/23 12:03	1

Client Sample ID: CCR-AP-8I

Date Collected: 05/25/23 15:45
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-6

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	500		2.5	1.8	mg/L			05/31/23 17:44	2.5
Fluoride	0.21	J	0.25	0.065	mg/L			05/31/23 17:44	2.5
Sulfate	950		2.5	1.9	mg/L			05/31/23 17:44	2.5

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	13000		500	290	ug/L		06/05/23 14:00	06/07/23 19:35	5

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		06/05/23 14:00	06/06/23 20:17	1
Arsenic	0.0020	J	0.0050	0.00075	mg/L		06/05/23 14:00	06/06/23 20:17	1
Barium	0.22		0.0050	0.0022	mg/L		06/05/23 14:00	06/06/23 20:17	1
Beryllium	ND		0.0010	0.00062	mg/L		06/05/23 14:00	06/06/23 20:17	1
Cadmium	ND		0.0010	0.00020	mg/L		06/05/23 14:00	06/06/23 20:17	1
Calcium	470		1.0	0.25	mg/L		06/05/23 14:00	06/06/23 20:17	1
Chromium	ND		0.0050	0.0012	mg/L		06/05/23 14:00	06/06/23 20:17	1
Cobalt	0.00030	J	0.0010	0.00019	mg/L		06/05/23 14:00	06/06/23 20:17	1
Lead	ND		0.0010	0.00045	mg/L		06/05/23 14:00	06/06/23 20:17	1
Lithium	0.37		0.0080	0.0017	mg/L		06/05/23 14:00	06/06/23 20:17	1
Molybdenum	0.29		0.0050	0.0011	mg/L		06/05/23 14:00	06/06/23 20:17	1
Selenium	ND		0.0050	0.00089	mg/L		06/05/23 14:00	06/06/23 20:17	1
Thallium	ND		0.0010	0.00020	mg/L		06/05/23 14:00	06/06/23 20:17	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.23		0.20	0.13	ug/L		06/05/23 14:00	06/07/23 21:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	2700		20	20	mg/L			06/01/23 15:36	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.3	HF	0.1	0.1	SU			06/07/23 13:31	1

Client Sample ID: CCR-AP-8I

Date Collected: 05/25/23 15:45
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-6

Matrix: Water

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.48		0.311	0.339	1.00	0.180	pCi/L	06/06/23 10:40	06/29/23 21:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.9*		*30 - 110*	*06/06/23 10:40*	*06/29/23 21:29*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.75		0.712	0.730	1.00	0.943	pCi/L	06/06/23 10:45	06/26/23 14:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.9*		*30 - 110*	*06/06/23 10:45*	*06/26/23 14:52*	*1*
Y Carrier	*82.2*		*30 - 110*	*06/06/23 10:45*	*06/26/23 14:52*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	3.24		0.777	0.805	5.00	0.943	pCi/L		06/30/23 12:03	1

Client Sample ID: CCR-AP-9

Date Collected: 05/23/23 12:30
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-7

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11		1.0	0.71	mg/L			05/31/23 18:02	1
Fluoride	0.35		0.10	0.026	mg/L			05/31/23 18:02	1
Sulfate	140		1.0	0.76	mg/L			05/31/23 18:02	1

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	380		100	57	ug/L		06/05/23 14:00	06/06/23 19:09	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00083	J	0.0020	0.00057	mg/L		06/05/23 14:00	06/06/23 20:22	1
Arsenic	0.0073		0.0050	0.00075	mg/L		06/05/23 14:00	06/06/23 20:22	1
Barium	0.23		0.0050	0.0022	mg/L		06/05/23 14:00	06/06/23 20:22	1
Beryllium	0.00074	J	0.0010	0.00062	mg/L		06/05/23 14:00	06/06/23 20:22	1
Cadmium	ND		0.0010	0.00020	mg/L		06/05/23 14:00	06/06/23 20:22	1
Calcium	140		1.0	0.25	mg/L		06/05/23 14:00	06/06/23 20:22	1
Chromium	0.018		0.0050	0.0012	mg/L		06/05/23 14:00	06/06/23 20:22	1
Cobalt	0.014		0.0010	0.00019	mg/L		06/05/23 14:00	06/06/23 20:22	1
Lead	0.0092		0.0010	0.00045	mg/L		06/05/23 14:00	06/06/23 20:22	1
Lithium	0.040		0.0080	0.0017	mg/L		06/05/23 14:00	06/06/23 20:22	1
Molybdenum	ND		0.0050	0.0011	mg/L		06/05/23 14:00	06/06/23 20:22	1
Selenium	ND		0.0050	0.00089	mg/L		06/05/23 14:00	06/06/23 20:22	1

Client Sample ID: CCR-AP-9

Lab Sample ID: 180-157227-7

Date Collected: 05/23/23 12:30
Matrix: Water
Date Received: 05/27/23 09:05

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	ND		0.0010	0.00020	mg/L		06/05/23 14:00	06/06/23 20:22	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.13	ug/L		06/05/23 14:00	06/07/23 21:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	710		10	10	mg/L			05/30/23 20:54	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.6	HF	0.1	0.1	SU			06/07/23 13:28	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	2.08		0.456	0.493	1.00	0.274	pCi/L	06/06/23 10:40	06/29/23 21:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.6*		*30 - 110*	*06/06/23 10:40*	*06/29/23 21:29*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	3.96	G	1.30	1.35	1.00	1.65	pCi/L	06/06/23 10:45	06/26/23 14:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.6*		*30 - 110*	*06/06/23 10:45*	*06/26/23 14:52*	*1*
Y Carrier	*83.0*		*30 - 110*	*06/06/23 10:45*	*06/26/23 14:52*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	6.04		1.38	1.44	5.00	1.65	pCi/L		06/30/23 12:03	1

Client Sample ID: CCR-AP-11

Lab Sample ID: 180-157227-8

Date Collected: 05/26/23 12:00
Matrix: Water
Date Received: 05/27/23 09:05

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.2		1.0	0.71	mg/L			05/31/23 18:57	1
Fluoride	0.57		0.10	0.026	mg/L			05/31/23 18:57	1
Sulfate	100		1.0	0.76	mg/L			05/31/23 18:57	1

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	410		100	57	ug/L		06/05/23 14:00	06/06/23 19:05	1

Client Sample ID: CCR-AP-11

Date Collected: 05/26/23 12:00
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-8

Matrix: Water

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		06/05/23 14:00	06/06/23 20:20	1
Arsenic	ND		0.0050	0.00075	mg/L		06/05/23 14:00	06/06/23 20:20	1
Barium	**0.021**		0.0050	0.0022	mg/L		06/05/23 14:00	06/06/23 20:20	1
Beryllium	ND		0.0010	0.00062	mg/L		06/05/23 14:00	06/06/23 20:20	1
Cadmium	ND		0.0010	0.00020	mg/L		06/05/23 14:00	06/06/23 20:20	1
Calcium	**56**		1.0	0.25	mg/L		06/05/23 14:00	06/06/23 20:20	1
Chromium	ND		0.0050	0.0012	mg/L		06/05/23 14:00	06/06/23 20:20	1
Cobalt	**0.00033**	**J**	0.0010	0.00019	mg/L		06/05/23 14:00	06/06/23 20:20	1
Lead	ND		0.0010	0.00045	mg/L		06/05/23 14:00	06/06/23 20:20	1
Lithium	**0.0029**	**J**	0.0080	0.0017	mg/L		06/05/23 14:00	06/06/23 20:20	1
Molybdenum	**0.0018**	**J**	0.0050	0.0011	mg/L		06/05/23 14:00	06/06/23 20:20	1
Selenium	**0.0021**	**J**	0.0050	0.00089	mg/L		06/05/23 14:00	06/06/23 20:20	1
Thallium	ND		0.0010	0.00020	mg/L		06/05/23 14:00	06/06/23 20:20	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.13	ug/L		06/05/23 14:00	06/07/23 21:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**240**		10	10	mg/L			06/01/23 15:36	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	**7.3**	**HF**	0.1	0.1	SU			06/07/23 13:52	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0208	U	0.0978	0.0978	1.00	0.195	pCi/L	06/06/23 10:40	06/29/23 21:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.0*		*30 - 110*	*06/06/23 10:40*	*06/29/23 21:29*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.104	U	0.434	0.435	1.00	0.838	pCi/L	06/06/23 10:45	06/26/23 14:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.0*		*30 - 110*	*06/06/23 10:45*	*06/26/23 14:53*	*1*
Y Carrier	*84.9*		*30 - 110*	*06/06/23 10:45*	*06/26/23 14:53*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.0836	U	0.445	0.446	5.00	0.838	pCi/L		06/30/23 12:03	1

Client Sample ID: BLIND DUP 1

Date Collected: 05/25/23 00:00
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-9

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	220		1.0	0.71	mg/L			05/31/23 19:16	1
Fluoride	0.92		0.10	0.026	mg/L			05/31/23 19:16	1
Sulfate	650		1.0	0.76	mg/L			05/31/23 19:16	1

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	16000		500	290	ug/L		06/05/23 14:00	06/07/23 19:40	5

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0013	J	0.0020	0.00057	mg/L		06/05/23 14:00	06/06/23 20:30	1
Arsenic	0.0095		0.0050	0.00075	mg/L		06/05/23 14:00	06/06/23 20:30	1
Barium	0.13		0.0050	0.0022	mg/L		06/05/23 14:00	06/06/23 20:30	1
Beryllium	ND		0.0010	0.00062	mg/L		06/05/23 14:00	06/06/23 20:30	1
Cadmium	0.00046	J	0.0010	0.00020	mg/L		06/05/23 14:00	06/06/23 20:30	1
Calcium	290		1.0	0.25	mg/L		06/05/23 14:00	06/06/23 20:30	1
Chromium	0.010		0.0050	0.0012	mg/L		06/05/23 14:00	06/06/23 20:30	1
Cobalt	0.0035		0.0010	0.00019	mg/L		06/05/23 14:00	06/06/23 20:30	1
Lead	0.0034		0.0010	0.00045	mg/L		06/05/23 14:00	06/06/23 20:30	1
Lithium	0.072		0.0080	0.0017	mg/L		06/05/23 14:00	06/06/23 20:30	1
Molybdenum	0.21		0.0050	0.0011	mg/L		06/05/23 14:00	06/06/23 20:30	1
Selenium	0.0034	J	0.0050	0.00089	mg/L		06/05/23 14:00	06/06/23 20:30	1
Thallium	ND		0.0010	0.00020	mg/L		06/05/23 14:00	06/06/23 20:30	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.34		0.20	0.13	ug/L		06/05/23 14:00	06/07/23 21:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1800		20	20	mg/L			06/01/23 15:36	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.5	HF	0.1	0.1	SU			06/07/23 13:22	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.11		0.340	0.355	1.00	0.295	pCi/L	06/06/23 10:40	06/29/23 21:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.0*		*30 - 110*	*06/06/23 10:40*	*06/29/23 21:29*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.197	U G	0.601	0.601	1.00	1.18	pCi/L	06/06/23 10:45	06/26/23 14:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.0*		*30 - 110*	*06/06/23 10:45*	*06/26/23 14:53*	*1*

Client Sample ID: BLIND DUP 1

Lab Sample ID: 180-157227-9
Matrix: Water
Date Collected: 05/25/23 00:00
Date Received: 05/27/23 09:05

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	84.9		30 - 110	06/06/23 10:45	06/26/23 14:53	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.915	U	0.691	0.698	5.00	1.18	pCi/L		06/30/23 12:03	1

Client Sample ID: FIELD BLANK 1

Lab Sample ID: 180-157227-10
Matrix: Water
Date Collected: 05/26/23 11:00
Date Received: 05/27/23 09:05

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.71	mg/L			05/31/23 19:34	1
Fluoride	**0.037**	**J**	0.10	0.026	mg/L			05/31/23 19:34	1
Sulfate	ND		1.0	0.76	mg/L			05/31/23 19:34	1

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		100	57	ug/L		06/05/23 14:00	06/06/23 19:18	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		06/05/23 14:00	06/06/23 20:33	1
Arsenic	ND		0.0050	0.00075	mg/L		06/05/23 14:00	06/06/23 20:33	1
Barium	ND		0.0050	0.0022	mg/L		06/05/23 14:00	06/06/23 20:33	1
Beryllium	ND		0.0010	0.00062	mg/L		06/05/23 14:00	06/06/23 20:33	1
Cadmium	ND		0.0010	0.00020	mg/L		06/05/23 14:00	06/06/23 20:33	1
Calcium	ND		1.0	0.25	mg/L		06/05/23 14:00	06/06/23 20:33	1
Chromium	ND		0.0050	0.0012	mg/L		06/05/23 14:00	06/06/23 20:33	1
Cobalt	ND		0.0010	0.00019	mg/L		06/05/23 14:00	06/06/23 20:33	1
Lead	ND		0.0010	0.00045	mg/L		06/05/23 14:00	06/06/23 20:33	1
Lithium	ND		0.0080	0.0017	mg/L		06/05/23 14:00	06/06/23 20:33	1
Molybdenum	ND		0.0050	0.0011	mg/L		06/05/23 14:00	06/06/23 20:33	1
Selenium	ND		0.0050	0.00089	mg/L		06/05/23 14:00	06/06/23 20:33	1
Thallium	ND		0.0010	0.00020	mg/L		06/05/23 14:00	06/06/23 20:33	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.13	ug/L		06/05/23 14:00	06/07/23 21:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	ND		10	10	mg/L			06/01/23 15:36	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	**6.4**	**HF**	0.1	0.1	SU			06/21/23 16:45	1

Client Sample ID: FIELD BLANK 1

Date Collected: 05/26/23 11:00
Date Received: 05/27/23 09:05

Lab Sample ID: 180-157227-10

Matrix: Water

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0727	U	0.0555	0.0559	1.00	0.165	pCi/L	06/06/23 10:40	06/29/23 21:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.2*		*30 - 110*	*06/06/23 10:40*	*06/29/23 21:29*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.461	U	0.363	0.366	1.00	0.558	pCi/L	06/06/23 10:45	06/26/23 14:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.2*		*30 - 110*	*06/06/23 10:45*	*06/26/23 14:53*	*1*
Y Carrier	*85.6*		*30 - 110*	*06/06/23 10:45*	*06/26/23 14:53*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.389	U	0.367	0.370	5.00	0.558	pCi/L		06/30/23 12:03	1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-436625/6
Matrix: Water
Analysis Batch: 436625

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.71	mg/L			05/31/23 13:07	1
Fluoride	ND		0.10	0.026	mg/L			05/31/23 13:07	1
Sulfate	ND		1.0	0.76	mg/L			05/31/23 13:07	1

Lab Sample ID: LCS 180-436625/7
Matrix: Water
Analysis Batch: 436625

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	50.1		mg/L		100	80 - 120
Fluoride	2.50	2.50		mg/L		100	80 - 120
Sulfate	50.0	50.6		mg/L		101	80 - 120

Lab Sample ID: 180-157227-7 MS
Matrix: Water
Analysis Batch: 436625

Client Sample ID: CCR-AP-9
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	11		50.0	60.7		mg/L		100	80 - 120
Fluoride	0.35		2.50	2.81		mg/L		98	80 - 120
Sulfate	140		50.0	184		mg/L		89	80 - 120

Lab Sample ID: 180-157227-7 MSD
Matrix: Water
Analysis Batch: 436625

Client Sample ID: CCR-AP-9
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	11		50.0	61.1		mg/L		101	80 - 120	1	15
Fluoride	0.35		2.50	2.83		mg/L		99	80 - 120	1	15
Sulfate	140		50.0	185		mg/L		90	80 - 120	0	15

Lab Sample ID: MB 180-436748/6
Matrix: Water
Analysis Batch: 436748

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.71	mg/L			06/01/23 13:03	1
Fluoride	ND		0.10	0.026	mg/L			06/01/23 13:03	1
Sulfate	ND		1.0	0.76	mg/L			06/01/23 13:03	1

Lab Sample ID: LCS 180-436748/7
Matrix: Water
Analysis Batch: 436748

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	50.5		mg/L		101	80 - 120
Fluoride	2.50	2.61		mg/L		104	80 - 120
Sulfate	50.0	51.4		mg/L		103	80 - 120

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 240-575939/1-A
Matrix: Water
Analysis Batch: 576212

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 575939

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		100	57	ug/L		06/05/23 14:00	06/06/23 17:22	1

Lab Sample ID: LCS 240-575939/2-A
Matrix: Water
Analysis Batch: 576212

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 575939

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	1000	1040		ug/L		104	80 - 120

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 240-575939/1-A
Matrix: Water
Analysis Batch: 576217

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 575939

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00057	mg/L		06/05/23 14:00	06/06/23 19:16	1
Arsenic	ND		0.0050	0.00075	mg/L		06/05/23 14:00	06/06/23 19:16	1
Barium	ND		0.0050	0.0022	mg/L		06/05/23 14:00	06/06/23 19:16	1
Beryllium	ND		0.0010	0.00062	mg/L		06/05/23 14:00	06/06/23 19:16	1
Cadmium	ND		0.0010	0.00020	mg/L		06/05/23 14:00	06/06/23 19:16	1
Calcium	ND		1.0	0.25	mg/L		06/05/23 14:00	06/06/23 19:16	1
Chromium	ND		0.0050	0.0012	mg/L		06/05/23 14:00	06/06/23 19:16	1
Cobalt	ND		0.0010	0.00019	mg/L		06/05/23 14:00	06/06/23 19:16	1
Lead	ND		0.0010	0.00045	mg/L		06/05/23 14:00	06/06/23 19:16	1
Lithium	ND		0.0080	0.0017	mg/L		06/05/23 14:00	06/06/23 19:16	1
Molybdenum	ND		0.0050	0.0011	mg/L		06/05/23 14:00	06/06/23 19:16	1
Selenium	ND		0.0050	0.00089	mg/L		06/05/23 14:00	06/06/23 19:16	1
Thallium	ND		0.0010	0.00020	mg/L		06/05/23 14:00	06/06/23 19:16	1

Lab Sample ID: LCS 240-575939/3-A
Matrix: Water
Analysis Batch: 576217

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 575939

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.100	0.103		mg/L		103	80 - 120
Arsenic	1.00	0.944		mg/L		94	80 - 120
Barium	1.00	0.950		mg/L		95	80 - 120
Beryllium	0.500	0.459		mg/L		92	80 - 120
Cadmium	0.500	0.479		mg/L		96	80 - 120
Calcium	25.0	24.3		mg/L		97	80 - 120
Chromium	0.500	0.480		mg/L		96	80 - 120
Cobalt	0.500	0.487		mg/L		97	80 - 120
Lead	0.500	0.488		mg/L		98	80 - 120
Lithium	0.500	0.481		mg/L		96	80 - 120
Molybdenum	0.500	0.467		mg/L		93	80 - 120
Selenium	1.00	0.933		mg/L		93	80 - 120
Thallium	1.00	0.936		mg/L		94	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-575940/1-A
Matrix: Water
Analysis Batch: 576387

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 575940

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.13	ug/L		06/05/23 14:00	06/07/23 20:38	1

Lab Sample ID: LCS 240-575940/2-A
Matrix: Water
Analysis Batch: 576387

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 575940

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	5.00	5.06		ug/L		101	80 - 120

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-437292/1
Matrix: Water
Analysis Batch: 437292

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		SU		100	99 - 101

Lab Sample ID: LCS 180-438600/1
Matrix: Water
Analysis Batch: 438600

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		SU		100	99 - 101

Lab Sample ID: 180-157227-10 DU
Matrix: Water
Analysis Batch: 438600

Client Sample ID: FIELD BLANK 1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	6.4	HF	6.3		SU		0.6	2

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 180-436530/1
Matrix: Water
Analysis Batch: 436530

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			05/30/23 20:54	1

Lab Sample ID: LCS 180-436530/2
Matrix: Water
Analysis Batch: 436530

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	580	584		mg/L		101	85 - 115

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: MB 180-436780/1
Matrix: Water
Analysis Batch: 436780

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			06/01/23 15:36	1

Lab Sample ID: LCS 180-436780/2
Matrix: Water
Analysis Batch: 436780

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			580	596		mg/L		103	85 - 115		

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-614559/1-A
Matrix: Water
Analysis Batch: 618336

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 614559

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.01111	U	0.0663	0.0663	1.00	0.148	pCi/L	06/06/23 10:40	06/29/23 18:00	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.8*		*30 - 110*	*06/06/23 10:40*	*06/29/23 18:00*	*1*

Lab Sample ID: LCS 160-614559/2-A
Matrix: Water
Analysis Batch: 618335

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 614559

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.99		1.22	1.00	0.176	pCi/L	97	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*88.0*		*30 - 110*

Lab Sample ID: LCSD 160-614559/3-A
Matrix: Water
Analysis Batch: 618335

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 614559

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	11.12		1.24	1.00	0.188	pCi/L	98	75 - 125	0.06	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*80.3*		*30 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-614560/1-A
Matrix: Water
Analysis Batch: 617604

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 614560

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.6638		0.403	0.408	1.00	0.588	pCi/L	06/06/23 10:45	06/26/23 14:47	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.8*		*30 - 110*	*06/06/23 10:45*	*06/26/23 14:47*	*1*
Y Carrier	*84.1*		*30 - 110*	*06/06/23 10:45*	*06/26/23 14:47*	*1*

Lab Sample ID: LCS 160-614560/2-A
Matrix: Water
Analysis Batch: 617604

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 614560

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.09	9.482		1.37	1.00	0.630	pCi/L	117	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*88.0*		*30 - 110*
Y Carrier	*79.3*		*30 - 110*

Lab Sample ID: LCSD 160-614560/3-A
Matrix: Water
Analysis Batch: 617604

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 614560

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.09	10.72		1.51	1.00	0.672	pCi/L	133	75 - 125	0.43	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*80.3*		*30 - 110*
Y Carrier	*83.7*		*30 - 110*

HPLC/IC

Analysis Batch: 436625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-157227-1	CCR-AP-5	Total/NA	Water	EPA 9056A	
180-157227-2	CCR-AP-5I	Total/NA	Water	EPA 9056A	
180-157227-3	CCR-AP-6	Total/NA	Water	EPA 9056A	
180-157227-4	CCR-AP-6I	Total/NA	Water	EPA 9056A	
180-157227-5	CCR-AP-8	Total/NA	Water	EPA 9056A	
180-157227-6	CCR-AP-8I	Total/NA	Water	EPA 9056A	
180-157227-7	CCR-AP-9	Total/NA	Water	EPA 9056A	
180-157227-8	CCR-AP-11	Total/NA	Water	EPA 9056A	
180-157227-9	BLIND DUP 1	Total/NA	Water	EPA 9056A	
180-157227-10	FIELD BLANK 1	Total/NA	Water	EPA 9056A	
MB 180-436625/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-436625/7	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-157227-7 MS	CCR-AP-9	Total/NA	Water	EPA 9056A	
180-157227-7 MSD	CCR-AP-9	Total/NA	Water	EPA 9056A	

Analysis Batch: 436748

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-157227-4	CCR-AP-6I	Total/NA	Water	EPA 9056A	
MB 180-436748/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-436748/7	Lab Control Sample	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 575939

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-157227-1	CCR-AP-5	Total Recoverable	Water	3005A	
180-157227-2	CCR-AP-5I	Total Recoverable	Water	3005A	
180-157227-3	CCR-AP-6	Total Recoverable	Water	3005A	
180-157227-4	CCR-AP-6I	Total Recoverable	Water	3005A	
180-157227-5	CCR-AP-8	Total Recoverable	Water	3005A	
180-157227-6	CCR-AP-8I	Total Recoverable	Water	3005A	
180-157227-7	CCR-AP-9	Total Recoverable	Water	3005A	
180-157227-8	CCR-AP-11	Total Recoverable	Water	3005A	
180-157227-9	BLIND DUP 1	Total Recoverable	Water	3005A	
180-157227-10	FIELD BLANK 1	Total Recoverable	Water	3005A	
MB 240-575939/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-575939/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-575939/3-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 575940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-157227-1	CCR-AP-5	Total/NA	Water	7470A	
180-157227-2	CCR-AP-5I	Total/NA	Water	7470A	
180-157227-3	CCR-AP-6	Total/NA	Water	7470A	
180-157227-4	CCR-AP-6I	Total/NA	Water	7470A	
180-157227-5	CCR-AP-8	Total/NA	Water	7470A	
180-157227-6	CCR-AP-8I	Total/NA	Water	7470A	
180-157227-7	CCR-AP-9	Total/NA	Water	7470A	
180-157227-8	CCR-AP-11	Total/NA	Water	7470A	
180-157227-9	BLIND DUP 1	Total/NA	Water	7470A	
180-157227-10	FIELD BLANK 1	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 575940 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-575940/1-A	Method Blank	Total/NA	Water	7470A	
LCS 240-575940/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 576212

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-157227-3	CCR-AP-6	Total Recoverable	Water	6010D	575939
180-157227-5	CCR-AP-8	Total Recoverable	Water	6010D	575939
180-157227-7	CCR-AP-9	Total Recoverable	Water	6010D	575939
180-157227-8	CCR-AP-11	Total Recoverable	Water	6010D	575939
180-157227-10	FIELD BLANK 1	Total Recoverable	Water	6010D	575939
MB 240-575939/1-A	Method Blank	Total Recoverable	Water	6010D	575939
LCS 240-575939/2-A	Lab Control Sample	Total Recoverable	Water	6010D	575939

Analysis Batch: 576217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-157227-1	CCR-AP-5	Total Recoverable	Water	6020B	575939
180-157227-2	CCR-AP-5I	Total Recoverable	Water	6020B	575939
180-157227-3	CCR-AP-6	Total Recoverable	Water	6020B	575939
180-157227-4	CCR-AP-6I	Total Recoverable	Water	6020B	575939
180-157227-5	CCR-AP-8	Total Recoverable	Water	6020B	575939
180-157227-6	CCR-AP-8I	Total Recoverable	Water	6020B	575939
180-157227-7	CCR-AP-9	Total Recoverable	Water	6020B	575939
180-157227-8	CCR-AP-11	Total Recoverable	Water	6020B	575939
180-157227-9	BLIND DUP 1	Total Recoverable	Water	6020B	575939
180-157227-10	FIELD BLANK 1	Total Recoverable	Water	6020B	575939
MB 240-575939/1-A	Method Blank	Total Recoverable	Water	6020B	575939
LCS 240-575939/3-A	Lab Control Sample	Total Recoverable	Water	6020B	575939

Analysis Batch: 576271

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-157227-1	CCR-AP-5	Total Recoverable	Water	6010D	575939
180-157227-2	CCR-AP-5I	Total Recoverable	Water	6010D	575939
180-157227-4	CCR-AP-6I	Total Recoverable	Water	6010D	575939
180-157227-6	CCR-AP-8I	Total Recoverable	Water	6010D	575939
180-157227-9	BLIND DUP 1	Total Recoverable	Water	6010D	575939

Analysis Batch: 576387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-157227-1	CCR-AP-5	Total/NA	Water	7470A	575940
180-157227-2	CCR-AP-5I	Total/NA	Water	7470A	575940
180-157227-3	CCR-AP-6	Total/NA	Water	7470A	575940
180-157227-4	CCR-AP-6I	Total/NA	Water	7470A	575940
180-157227-5	CCR-AP-8	Total/NA	Water	7470A	575940
180-157227-6	CCR-AP-8I	Total/NA	Water	7470A	575940
180-157227-7	CCR-AP-9	Total/NA	Water	7470A	575940
180-157227-8	CCR-AP-11	Total/NA	Water	7470A	575940
180-157227-9	BLIND DUP 1	Total/NA	Water	7470A	575940
180-157227-10	FIELD BLANK 1	Total/NA	Water	7470A	575940
MB 240-575940/1-A	Method Blank	Total/NA	Water	7470A	575940
LCS 240-575940/2-A	Lab Control Sample	Total/NA	Water	7470A	575940

General Chemistry

Analysis Batch: 436530

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-157227-3	CCR-AP-6	Total/NA	Water	SM 2540C	
180-157227-7	CCR-AP-9	Total/NA	Water	SM 2540C	
MB 180-436530/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-436530/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 436780

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-157227-1	CCR-AP-5	Total/NA	Water	SM 2540C	
180-157227-2	CCR-AP-5I	Total/NA	Water	SM 2540C	
180-157227-4	CCR-AP-6I	Total/NA	Water	SM 2540C	
180-157227-5	CCR-AP-8	Total/NA	Water	SM 2540C	
180-157227-6	CCR-AP-8I	Total/NA	Water	SM 2540C	
180-157227-8	CCR-AP-11	Total/NA	Water	SM 2540C	
180-157227-9	BLIND DUP 1	Total/NA	Water	SM 2540C	
180-157227-10	FIELD BLANK 1	Total/NA	Water	SM 2540C	
MB 180-436780/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-436780/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 437292

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-157227-2	CCR-AP-5I	Total/NA	Water	EPA 9040C	
180-157227-3	CCR-AP-6	Total/NA	Water	EPA 9040C	
180-157227-4	CCR-AP-6I	Total/NA	Water	EPA 9040C	
180-157227-5	CCR-AP-8	Total/NA	Water	EPA 9040C	
180-157227-6	CCR-AP-8I	Total/NA	Water	EPA 9040C	
180-157227-7	CCR-AP-9	Total/NA	Water	EPA 9040C	
180-157227-8	CCR-AP-11	Total/NA	Water	EPA 9040C	
180-157227-9	BLIND DUP 1	Total/NA	Water	EPA 9040C	
LCS 180-437292/1	Lab Control Sample	Total/NA	Water	EPA 9040C	

Analysis Batch: 438600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-157227-1	CCR-AP-5	Total/NA	Water	EPA 9040C	
180-157227-10	FIELD BLANK 1	Total/NA	Water	EPA 9040C	
LCS 180-438600/1	Lab Control Sample	Total/NA	Water	EPA 9040C	
180-157227-10 DU	FIELD BLANK 1	Total/NA	Water	EPA 9040C	

Rad

Prep Batch: 614559

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-157227-1	CCR-AP-5	Total/NA	Water	PrecSep-21	
180-157227-2	CCR-AP-5I	Total/NA	Water	PrecSep-21	
180-157227-3	CCR-AP-6	Total/NA	Water	PrecSep-21	
180-157227-4	CCR-AP-6I	Total/NA	Water	PrecSep-21	
180-157227-5	CCR-AP-8	Total/NA	Water	PrecSep-21	
180-157227-6	CCR-AP-8I	Total/NA	Water	PrecSep-21	
180-157227-7	CCR-AP-9	Total/NA	Water	PrecSep-21	
180-157227-8	CCR-AP-11	Total/NA	Water	PrecSep-21	
180-157227-9	BLIND DUP 1	Total/NA	Water	PrecSep-21	
180-157227-10	FIELD BLANK 1	Total/NA	Water	PrecSep-21	

Rad (Continued)

Prep Batch: 614559 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 160-614559/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-614559/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-614559/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 614560

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-157227-1	CCR-AP-5	Total/NA	Water	PrecSep_0	
180-157227-2	CCR-AP-5I	Total/NA	Water	PrecSep_0	
180-157227-3	CCR-AP-6	Total/NA	Water	PrecSep_0	
180-157227-4	CCR-AP-6I	Total/NA	Water	PrecSep_0	
180-157227-5	CCR-AP-8	Total/NA	Water	PrecSep_0	
180-157227-6	CCR-AP-8I	Total/NA	Water	PrecSep_0	
180-157227-7	CCR-AP-9	Total/NA	Water	PrecSep_0	
180-157227-8	CCR-AP-11	Total/NA	Water	PrecSep_0	
180-157227-9	BLIND DUP 1	Total/NA	Water	PrecSep_0	
180-157227-10	FIELD BLANK 1	Total/NA	Water	PrecSep_0	
MB 160-614560/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-614560/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-614560/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

3/04/12
HARRISBURG PA

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Client Information	Sampler: Hayley Toler	Lab PM: Hayes, Ken	Carrier Tracking No(s):	COC No: 180-91635-14505.2
Client Contact: Mark Breting	Phone:	E-Mail: Ken.Hayes@et.eurofinsus.com	State of Origin	Page: Page 1 of 1
Company: Atlas Technical Consultants LLC	PWSID:			Job #:
Address: 7988 Centerpoint Drive Suite 100	Due Date Requested:			
City: Indianapolis	TAT Requested (days):			
State, Zip: IN, 46256	Compliance Project: Δ Yes Δ No			
Phone: 864-214-8750(Tel)	PO #: FB-242026. AB-241410			
Email: mark.breting@atcassociates.com	WO #:			
Project Name: CCR Groundwater Monitoring FB Culley East	Project #: 18016014			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification	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)	9040C, 9066A_ORGFM_28D	6020A, 7470A	2540C_Calcd - TDS	9315_Ra226, 9320_Ra228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	N	D		
CCR-AP-5	5-25-23	1400	G	W			X	X	X	X		
CCR-AP-5I	5-25-23	17:30										
CCR-AP-6	5-23-23	11.00										
CCR-AP-6I	5-26-23	11:00										
CCR-AP-8	5-25-23	17.40										
CCR-AP-8I	5-25-23	15:45										
CCA-AP-9	5-23-23	12:30										
CCR-AP-11	5-26-23	12.00										
Blind Dup 1	5-25-23											
Field Blank 1	5-26-23	11:00										

180-157227 Chain of Custody

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

Sample Disposal (A fee may be assessed if samples are retained longer)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

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

Special Instructions/QC Requirements:

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

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Hayley Toler	5-26-23 / 15:30	ATLAS	Fedex	5-26-23 / 15:30	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 5-27-23 0905	Company EPI Hone
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hayes, Ken	Carrier Tracking No(s):	COC No: 180-487999.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ken.Hayes@et.eurofinsus.com	State of Origin: Indiana	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-157227-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 7/3/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR Groundwater Monitoring	Project #: 18016014			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
CCR-AP-5 (180-157227-1)	5/25/23	14:00 Eastern		Water			X	X	X	2	
CCR-AP-5I (180-157227-2)	5/25/23	11:30 Eastern		Water			X	X	X	2	
CCR-AP-6 (180-157227-3)	5/23/23	11:00 Eastern		Water			X	X	X	2	
CCR-AP-6I (180-157227-4)	5/26/23	11:00 Eastern		Water			X	X	X	2	
CCR-AP-8 (180-157227-5)	5/25/23	17:40 Eastern		Water			X	X	X	2	
CCR-AP-8I (180-157227-6)	5/25/23	15:45 Eastern		Water			X	X	X	2	
CCR-AP-9 (180-157227-7)	5/23/23	12:30 Eastern		Water			X	X	X	2	
CCR-AP-11 (180-157227-8)	5/26/23	12:00 Eastern		Water			X	X	X	2	
BLIND DUP 1 (180-157227-9)	5/25/23	Eastern		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Pittsburgh 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 Pittsburgh laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Pittsburgh attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Pittsburgh.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time: 5/31/23 12:00	Company EPMT	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: Briana Sharkey-Hazaleu	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Ver: 06/08/2021

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hayes, Ken	Carrier Tracking No(s):	COC No: 180-487999.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Ken.Hayes@et.eurofinsus.com	State of Origin: Indiana	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-157227-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 7/3/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR Groundwater Monitoring	Project #: 18016014			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
FIELD BLANK 1 (180-157227-10)	5/26/23	11:00 Eastern		Water			X	X	X	2	

(20)

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Note: Since laboratory accreditations are subject to change, Eurofins Pittsburgh 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 Pittsburgh laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Pittsburgh attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Pittsburgh.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ______ *Months*

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 5/31/23 1700	Company: EQ.TING	Received by: Fedex	Date/Time:	Company:
Relinquished by: Fedex	Date/Time:	Company:	Received by: Briana Sharkey-Gonzales	Date/Time: 6/1/23 0850	Company: ETASTL
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

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

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-157227-1
SDG Number: FB Culley East

Login Number: 157227
List Number: 1
Creator: Abernathy, Eric L

List Source: Eurofins Pittsburgh

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	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-157227-1
SDG Number: FB Culley East

Login Number: 157227
List Number: 2
Creator: Sharkey-Gonzalez, Briana L

List Source: Eurofins St. Louis
List Creation: 06/01/23 12:37 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
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.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Todd Plating
Haley & Aldrich, Inc.
400 Augusta Street
Suite 100
Greenville, South Carolina 29601

Generated 12/13/2023 8:07:50 AM

JOB DESCRIPTION

CCR Groundwater Monitoring FB Culley East
FB Culley East

JOB NUMBER

180-164860-1

Eurofins Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh PA 15238

See page two for job notes and contact information.

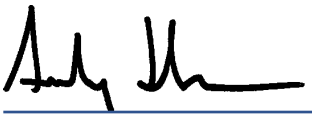
Job Notes

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

PA Lab ID: 02-00416

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 Pittsburgh Project Manager.

Authorization



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Authorized for release by
Andy Johnson, Senior Project Manager
Andy.Johnson@et.eurofinsus.com
(615)818-9567

Table of Contents

Job ID: 180-164860-1

Laboratory: Eurofins Pittsburgh

Narrative

Job Narrative
180-164860-1

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 are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample 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 11/4/2023 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.6°C, 2.0°C and 2.2°C

Receipt Exceptions
The container labels for the following sample did not match the information listed on the Chain-of-Custody (COC): CCR-AP-1R (180-164860-10). The container labels list CCR-AP-1: however the COC lists CCR-AP-1R. The id on the COC was used.

HPLC/IC
Method 9056A_ORGFM_28D: The following samples were diluted due to the nature of the sample matrix: CCR-AP-2 (180-164860-2), (180-164908-C-1), (180-164908-C-1 MS) and (180-164908-C-1 MSD) at 2.5, 25.0, 25.0 and 25.0. Elevated reporting limits (RLs) are provided.

Method 9056A_ORGFM_28D: The following samples were diluted due to the nature of the sample matrix: CCR-AP-8I (180-164860-3), CCR-AP-5I (180-164860-4) and CCR-AP-6I (180-164860-8) at 2.5, 2.5 and 2.5. 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.

Metals
Method 6010D: preparation batch 160-636845 and analytical batch 160-638326 The following samples were diluted to bring the concentration of target analytes within the calibration range: CCR-AP-2 (180-164860-2), CCR-AP-5I (180-164860-4), CCR-AP-6I (180-164860-8), CCR-AP-5 (180-164860-11) and DUP-1 (180-164860-13). Elevated reporting limits (RLs) are provided.

Method 6010D: analytical batch 160-638722 The low level check (CRI) was outside upper QC limits for boron. The concentration of this analyte in the sample was at such a high level as to make the CRI unnecessary. (CRI 160-638722/19)

Method 6010D: preparation batch 160-636845 and analytical batch 160-638722 The following sample was diluted to bring the concentration of target analytes within the calibration range: CCR-AP-8I (180-164860-3). Elevated reporting limits (RLs) are provided.

Method 6020B: preparation batch 160-636844 and analytical batch 160-639211 The following samples were diluted to bring the concentration of target analytes within the calibration range: CCR-AP-8 (180-164860-1), CCR-AP-5I (180-164860-4), CCR-AP-3R (180-164860-7), CCR-AP-6I (180-164860-8), CCR-AP-5 (180-164860-11), DUP-1 (180-164860-13), (180-164860-E-1-B MS), (180-164860-E-1-C MSD), (180-164860-E-1-A PDS) and (180-164860-E-1-A SD). Elevated reporting limits (RLs) are provided.

Method 6020B: Due to the high concentration of calcium, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 160-636844 and analytical batch 160-639211 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria. (180-164860-E-1-B MS) and (180-164860-E-1-C MSD)

Method 6020B: The post digestion spike % recovery for calcium associated with batch 160-639211 was outside not calculated due to a

Job ID: 180-164860-1 (Continued)

Laboratory: Eurofins Pittsburgh (Continued)

high concentration of this analyte in the original sample. The associated sample is: (180-164860-E-1-A PDS).

Method 6020B: preparation batch 160-636844 and analytical batch 160-639557 The following sample was diluted to bring the concentration of target analytes within the calibration range: CCR-AP-8I (180-164860-3). Elevated reporting limits (RLs) are provided.

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

General Chemistry
Method 2540C_Calcd: The sample did not reach a stable weight following 3 cycles of heating, cooling, and desiccation. The cycle 3 weight was used to calculate the Total Dissolved Solids (TDS) for the sample result. CCR-AP-8 (180-164860-1), CCR-AP-8I (180-164860-3), CCR-AP-4R (180-164860-5), CCR-AP-3R (180-164860-7) and (MB 180-451526/1)

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

Gas Flow Proportional Counter
Method 9320_Ra228: Radium-228 batch 636341
The LCS recovered at (135%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (63-150%) per method requirements. The LCS passes, no further action is required (LCS 160-636341/2-A)

Method 9320_Ra228: Radium-228 batch 636341
The detection goal was not met for the following sample(s). Samples were prepped at a reduced volume due to the presence of matrix interferences: CCR-AP-2 (180-164860-2), CCR-AP-5I (180-164860-4), CCR-AP-4R (180-164860-5), CCR-AP-6 (180-164860-6), CCR-AP-3R (180-164860-7), CCR-AP-1R (180-164860-10) and DUP-1 (180-164860-13). Analytical results are reported with the detection limit achieved.

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

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

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring FB Culley East

Job ID: 180-164860-1
SDG: FB Culley East

Qualifiers

HPLC/IC

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

Metals

Qualifier	Qualifier Description
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
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.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

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

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 180-164860-1
Project/Site: CCR Groundwater Monitoring FB Culley East
SDG: FB Culley East

Laboratory: Eurofins Pittsburgh

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

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-24
California	State	2891	04-30-24
Connecticut	State	PH-0688	09-30-24
Florida	NELAP	E871008	06-30-24
Georgia	State	PA 02-00416	04-30-24
Illinois	NELAP	004375	06-30-24
Kansas	NELAP	E-10350	01-31-24
Kentucky (UST)	State	162013	04-30-23 *
Kentucky (WW)	State	KY98043	12-31-23
Louisiana	NELAP	04041	06-30-22 *
Louisiana (All)	NELAP	04041	06-30-24
Maine	State	PA00164	03-06-24
Minnesota	NELAP	042-999-482	12-31-23
New Hampshire	NELAP	2030	04-04-24
New Jersey	NELAP	PA005	06-30-24
New York	NELAP	11182	04-01-24
North Carolina (WW/SW)	State	434	12-31-23
North Dakota	State	R-227	04-30-24
Oregon	NELAP	PA-2151	02-06-24
Pennsylvania	NELAP	02-00416	04-30-24
Rhode Island	State	LAO00362	12-31-22 *
South Carolina	State	89014	04-30-23 *
Texas	NELAP	T104704528	03-31-24
US Fish & Wildlife	US Federal Programs	058448	03-31-24
USDA	US Federal Programs	P330-16-00211	04-11-26
Utah	NELAP	PA001462019-8	05-31-24
Virginia	NELAP	10043	07-14-24
West Virginia DEP	State	142	01-31-24
Wisconsin	State	998027800	08-31-24

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-24
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-24
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-24
HI - RadChem Recognition	State	n/a	06-30-24
Illinois	NELAP	200023	11-30-24
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-24
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 180-164860-1
Project/Site: CCR Groundwater Monitoring FB Culley East
SDG: FB Culley East

Laboratory: Eurofins St. Louis (Continued)

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

Authority	Program	Identification Number	Expiration Date
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-24
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-24
Massachusetts	State	M-MO054	06-30-24
MI - RadChem Recognition	State	9005	06-30-24
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-24
New Jersey	NELAP	MO002	06-30-24
New Mexico	State	MO00054	06-30-24
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-24
North Dakota	State	R-207	06-30-24
Oklahoma	NELAP	9997	08-31-24
Oregon	NELAP	4157	09-01-24
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-24
Texas	NELAP	T104704193	07-31-24
US Fish & Wildlife	US Federal Programs	058448	07-31-24
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO000542021-14	07-31-24
Virginia	NELAP	10310	06-15-25
Washington	State	C592	08-30-24
West Virginia DEP	State	381	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring FB Culley East

Job ID: 180-164860-1
SDG: FB Culley East

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-164860-1	CCR-AP-8	Water	11/02/23 12:40	11/04/23 09:30
180-164860-2	CCR-AP-2	Water	11/02/23 13:10	11/04/23 09:30
180-164860-3	CCR-AP-8I	Water	11/02/23 11:40	11/04/23 09:30
180-164860-4	CCR-AP-5I	Water	11/02/23 14:00	11/04/23 09:30
180-164860-5	CCR-AP-4R	Water	11/02/23 10:00	11/04/23 09:30
180-164860-6	CCR-AP-6	Water	11/02/23 09:35	11/04/23 09:30
180-164860-7	CCR-AP-3R	Water	11/02/23 10:45	11/04/23 09:30
180-164860-8	CCR-AP-6I	Water	11/02/23 09:05	11/04/23 09:30
180-164860-9	FB-1	Water	11/02/23 14:30	11/04/23 09:30
180-164860-10	CCR-AP-1R	Water	11/02/23 17:00	11/04/23 09:30
180-164860-11	CCR-AP-5	Water	11/02/23 15:00	11/04/23 09:30
180-164860-12	CCR-AP-11	Water	11/02/23 16:30	11/04/23 09:30
180-164860-13	DUP-1	Water	11/02/23 00:00	11/04/23 09:30

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring FB Culley East

Job ID: 180-164860-1
SDG: FB Culley East

Method	Method Description	Protocol	Laboratory
EPA 9056A	Anions, Ion Chromatography	SW846	EET PIT
6010D	Metals (ICP)	SW846	EET SL
6020B	Metals (ICP/MS)	SW846	EET SL
7470A	Mercury (CVAA)	SW846	EET SL
EPA 9040C	pH	SW846	EET PIT
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET PIT
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET SL
7470A	Preparation, Mercury	SW846	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

EET PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring FB Culley East

Job ID: 180-164860-1
SDG: FB Culley East

Client Sample ID: CCR-AP-8

Date Collected: 11/02/23 12:40
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	451201	11/07/23 14:21	AM	EET PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	636845	11/14/23 11:43	LKP	EET SL
Total Recoverable	Analysis	6010D		1			638326	11/22/23 16:03	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	636844	11/14/23 11:40	LKP	EET SL
Total Recoverable	Analysis	6020B		2			638432	11/27/23 19:26	CGB	EET SL
	Instrument ID: ICPMS7700									
Total Recoverable	Prep	3005A			50 mL	50 mL	636844	11/14/23 11:40	LKP	EET SL
Total Recoverable	Analysis	6020B		5			639211	12/01/23 15:14	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	636994	11/15/23 09:01	LKP	EET SL
Total/NA	Analysis	7470A		1			637210	11/15/23 14:31	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			451495	11/09/23 11:58	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	451526	11/09/23 18:00	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			757.01 mL	1.0 g	636340	11/10/23 11:07	KAC	EET SL
Total/NA	Analysis	9315		1			640214	12/11/23 21:50	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			757.01 mL	1.0 g	636341	11/10/23 11:11	KAC	EET SL
Total/NA	Analysis	9320		1			639735	12/07/23 11:48	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Analysis	Ra226_Ra228		1			640269	12/11/23 18:00	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-AP-2

Date Collected: 11/02/23 13:10
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		2.5	1 mL	1 mL	451201	11/07/23 19:44	AM	EET PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	636845	11/14/23 11:43	LKP	EET SL
Total Recoverable	Analysis	6010D		5			638326	11/22/23 16:34	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	636844	11/14/23 11:40	LKP	EET SL
Total Recoverable	Analysis	6020B		2			638432	11/27/23 19:54	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	636994	11/15/23 09:01	LKP	EET SL
Total/NA	Analysis	7470A		1			637210	11/15/23 14:33	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			451495	11/09/23 12:32	BAB	EET PIT
	Instrument ID: OZ									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring FB Culley East

Job ID: 180-164860-1
SDG: FB Culley East

Client Sample ID: CCR-AP-2

Date Collected: 11/02/23 13:10
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	451526	11/09/23 18:00	LWM	EET PIT
Total/NA	Prep	PrecSep-21			495.53 mL	1.0 g	636340	11/10/23 11:07	KAC	EET SL
Total/NA	Analysis	9315		1			640214	12/11/23 21:50	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			495.53 mL	1.0 g	636341	11/10/23 11:11	KAC	EET SL
Total/NA	Analysis	9320		1			639854	12/07/23 11:58	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			640269	12/11/23 18:00	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-AP-8I

Date Collected: 11/02/23 11:40
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		2.5	1 mL	1 mL	451227	11/07/23 18:36	AM	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	636845	11/14/23 11:43	LKP	EET SL
Total Recoverable	Analysis	6010D		10			638722	11/28/23 09:36	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	636844	11/14/23 11:40	LKP	EET SL
Total Recoverable	Analysis	6020B		2			638432	11/27/23 19:57	CGB	EET SL
	Instrument ID: ICPMS7700									
Total Recoverable	Prep	3005A			50 mL	50 mL	636844	11/14/23 11:40	LKP	EET SL
Total Recoverable	Analysis	6020B		10			639557	12/05/23 17:34	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	636994	11/15/23 09:01	LKP	EET SL
Total/NA	Analysis	7470A		1			637210	11/15/23 14:35	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			451495	11/09/23 10:23	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	451526	11/09/23 18:00	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			747.24 mL	1.0 g	636340	11/10/23 11:07	KAC	EET SL
Total/NA	Analysis	9315		1			640214	12/11/23 21:51	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			747.24 mL	1.0 g	636341	11/10/23 11:11	KAC	EET SL
Total/NA	Analysis	9320		1			639854	12/07/23 11:58	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			640269	12/11/23 18:00	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-AP-5I
Lab Sample ID: 180-164860-4
Date Collected: 11/02/23 14:00
Matrix: Water
Date Received: 11/04/23 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		2.5	1 mL	1 mL	451227	11/07/23 19:03	AM	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	636845	11/14/23 11:43	LKP	EET SL
Total Recoverable	Analysis	6010D		10			638326	11/22/23 16:43	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	636844	11/14/23 11:40	LKP	EET SL
Total Recoverable	Analysis	6020B		2			638432	11/27/23 20:01	CGB	EET SL
	Instrument ID: ICPMS7700									
Total Recoverable	Prep	3005A			50 mL	50 mL	636844	11/14/23 11:40	LKP	EET SL
Total Recoverable	Analysis	6020B		5			639211	12/01/23 15:45	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	636994	11/15/23 09:01	LKP	EET SL
Total/NA	Analysis	7470A		1			637210	11/15/23 14:37	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			451495	11/09/23 12:08	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	451526	11/09/23 18:00	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			504.35 mL	1.0 g	636340	11/10/23 11:07	KAC	EET SL
Total/NA	Analysis	9315		1			640214	12/11/23 21:51	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			504.35 mL	1.0 g	636341	11/10/23 11:11	KAC	EET SL
Total/NA	Analysis	9320		1			639854	12/07/23 11:58	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			640269	12/11/23 18:00	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-AP-4R
Lab Sample ID: 180-164860-5
Date Collected: 11/02/23 10:00
Matrix: Water
Date Received: 11/04/23 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	451227	11/07/23 20:47	AM	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	636845	11/14/23 11:43	LKP	EET SL
Total Recoverable	Analysis	6010D		1			638326	11/22/23 16:48	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	636844	11/14/23 11:40	LKP	EET SL
Total Recoverable	Analysis	6020B		2			638432	11/27/23 20:04	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	636994	11/15/23 09:01	LKP	EET SL
Total/NA	Analysis	7470A		1			637210	11/15/23 14:44	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			451619	11/10/23 11:20	BAB	EET PIT
	Instrument ID: OZ									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring FB Culley East

Job ID: 180-164860-1
SDG: FB Culley East

Client Sample ID: CCR-AP-4R

Lab Sample ID: 180-164860-5

Date Collected: 11/02/23 10:00
Matrix: Water
Date Received: 11/04/23 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	451526	11/09/23 18:00	LWM	EET PIT
Total/NA	Prep	PrecSep-21			499.14 mL	1.0 g	636340	11/10/23 11:07	KAC	EET SL
Total/NA	Analysis	9315		1			640214	12/11/23 21:51	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			499.14 mL	1.0 g	636341	11/10/23 11:11	KAC	EET SL
Total/NA	Analysis	9320		1			639854	12/07/23 11:58	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			640269	12/11/23 18:00	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-AP-6

Lab Sample ID: 180-164860-6

Date Collected: 11/02/23 09:35
Matrix: Water
Date Received: 11/04/23 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	451227	11/07/23 21:02	AM	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	636845	11/14/23 11:43	LKP	EET SL
Total Recoverable	Analysis	6010D		1			638326	11/22/23 16:52	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	636844	11/14/23 11:40	LKP	EET SL
Total Recoverable	Analysis	6020B		2			638432	11/27/23 20:07	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	636994	11/15/23 09:01	LKP	EET SL
Total/NA	Analysis	7470A		1			637210	11/15/23 14:46	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			451619	11/10/23 10:54	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	451526	11/09/23 18:00	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			515.06 mL	1.0 g	636340	11/10/23 11:07	KAC	EET SL
Total/NA	Analysis	9315		1			640214	12/11/23 21:51	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			515.06 mL	1.0 g	636341	11/10/23 11:11	KAC	EET SL
Total/NA	Analysis	9320		1			639854	12/07/23 11:58	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			640269	12/11/23 18:00	SCB	EET SL
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring FB Culley East

Job ID: 180-164860-1
SDG: FB Culley East

Client Sample ID: CCR-AP-3R

Date Collected: 11/02/23 10:45
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	451227	11/07/23 19:18	AM	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	636845	11/14/23 11:43	LKP	EET SL
Total Recoverable	Analysis	6010D		1			638326	11/22/23 16:57	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	636844	11/14/23 11:40	LKP	EET SL
Total Recoverable	Analysis	6020B		2			638432	11/27/23 20:11	CGB	EET SL
	Instrument ID: ICPMS7700									
Total Recoverable	Prep	3005A			50 mL	50 mL	636844	11/14/23 11:40	LKP	EET SL
Total Recoverable	Analysis	6020B		5			639211	12/01/23 15:48	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	636994	11/15/23 09:01	LKP	EET SL
Total/NA	Analysis	7470A		1			637210	11/15/23 14:48	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			451619	11/10/23 11:15	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	451526	11/09/23 18:00	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			748.35 mL	1.0 g	636340	11/10/23 11:07	KAC	EET SL
Total/NA	Analysis	9315		1			640214	12/11/23 21:51	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			748.35 mL	1.0 g	636341	11/10/23 11:11	KAC	EET SL
Total/NA	Analysis	9320		1			639854	12/07/23 11:58	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			640269	12/11/23 18:00	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-AP-6I

Date Collected: 11/02/23 09:05
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		2.5	1 mL	1 mL	451227	11/07/23 18:49	AM	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	636845	11/14/23 11:43	LKP	EET SL
Total Recoverable	Analysis	6010D		20			638326	11/22/23 17:01	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	636844	11/14/23 11:40	LKP	EET SL
Total Recoverable	Analysis	6020B		2			638432	11/27/23 20:14	CGB	EET SL
	Instrument ID: ICPMS7700									
Total Recoverable	Prep	3005A			50 mL	50 mL	636844	11/14/23 11:40	LKP	EET SL
Total Recoverable	Analysis	6020B		5			639211	12/01/23 15:52	CGB	EET SL
	Instrument ID: ICPMS7700									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring FB Culley East

Job ID: 180-164860-1
SDG: FB Culley East

Client Sample ID: CCR-AP-6I

Date Collected: 11/02/23 09:05
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			30 mL	30 mL	636994	11/15/23 09:01	LKP	EET SL
Total/NA	Analysis	7470A		1			637210	11/15/23 14:50	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			451495	11/09/23 12:22	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	451526	11/09/23 18:00	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			999.00 mL	1.0 g	636340	11/10/23 11:07	KAC	EET SL
Total/NA	Analysis	9315		1			640214	12/11/23 21:51	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.00 mL	1.0 g	636341	11/10/23 11:11	KAC	EET SL
Total/NA	Analysis	9320		1			639854	12/07/23 11:58	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			640269	12/11/23 18:00	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: FB-1

Date Collected: 11/02/23 14:30
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	451201	11/07/23 17:31	AM	EET PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	636845	11/14/23 11:43	LKP	EET SL
Total Recoverable	Analysis	6010D		1			638326	11/22/23 17:06	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	636844	11/14/23 11:40	LKP	EET SL
Total Recoverable	Analysis	6020B		2			638432	11/27/23 20:18	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	636994	11/15/23 09:01	LKP	EET SL
Total/NA	Analysis	7470A		1			637210	11/15/23 14:52	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			451495	11/09/23 12:13	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	451526	11/09/23 18:00	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			995.61 mL	1.0 g	636340	11/10/23 11:07	KAC	EET SL
Total/NA	Analysis	9315		1			640214	12/11/23 21:51	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			995.61 mL	1.0 g	636341	11/10/23 11:11	KAC	EET SL
Total/NA	Analysis	9320		1			639854	12/07/23 11:58	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			640269	12/11/23 18:00	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-AP-1R
Lab Sample ID: 180-164860-10

Date Collected: 11/02/23 17:00
Matrix: Water
Date Received: 11/04/23 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	451313	11/08/23 17:44	AM	EET PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	451201	11/07/23 22:27	AM	EET PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	636845	11/14/23 11:43	LKP	EET SL
Total Recoverable	Analysis	6010D		1			638326	11/22/23 17:11	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	636844	11/14/23 11:40	LKP	EET SL
Total Recoverable	Analysis	6020B		2			638432	11/27/23 20:21	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	636994	11/15/23 09:01	LKP	EET SL
Total/NA	Analysis	7470A		1			637210	11/15/23 14:54	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			451619	11/10/23 10:59	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	451526	11/09/23 18:00	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			497.64 mL	1.0 g	636340	11/10/23 11:07	KAC	EET SL
Total/NA	Analysis	9315		1			640214	12/11/23 21:52	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			497.64 mL	1.0 g	636341	11/10/23 11:11	KAC	EET SL
Total/NA	Analysis	9320		1			639854	12/07/23 11:58	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			640269	12/11/23 18:00	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-AP-5
Lab Sample ID: 180-164860-11

Date Collected: 11/02/23 15:00
Matrix: Water
Date Received: 11/04/23 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	451227	11/07/23 23:15	AM	EET PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	451450	11/09/23 22:08	AM	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	636845	11/14/23 11:43	LKP	EET SL
Total Recoverable	Analysis	6010D		5			638326	11/22/23 17:29	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	636844	11/14/23 11:40	LKP	EET SL
Total Recoverable	Analysis	6020B		2			638432	11/27/23 20:25	CGB	EET SL
	Instrument ID: ICPMS7700									
Total Recoverable	Prep	3005A			50 mL	50 mL	636844	11/14/23 11:40	LKP	EET SL
Total Recoverable	Analysis	6020B		5			639211	12/01/23 15:55	CGB	EET SL
	Instrument ID: ICPMS7700									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring FB Culley East

Job ID: 180-164860-1
SDG: FB Culley East

Client Sample ID: CCR-AP-5

Date Collected: 11/02/23 15:00
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			30 mL	30 mL	636994	11/15/23 09:01	LKP	EET SL
Total/NA	Analysis	7470A		1			637210	11/15/23 14:55	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			451495	11/09/23 11:20	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	451526	11/09/23 18:00	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			500.17 mL	1.0 g	636340	11/10/23 11:07	KAC	EET SL
Total/NA	Analysis	9315		1			640225	12/11/23 22:00	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			500.17 mL	1.0 g	636341	11/10/23 11:11	KAC	EET SL
Total/NA	Analysis	9320		1			639854	12/07/23 11:58	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			640269	12/12/23 17:36	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-AP-11

Date Collected: 11/02/23 16:30
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	451201	11/07/23 14:36	AM	EET PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	636845	11/14/23 11:43	LKP	EET SL
Total Recoverable	Analysis	6010D		1			638326	11/22/23 17:33	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	636844	11/14/23 11:40	LKP	EET SL
Total Recoverable	Analysis	6020B		2			638432	11/27/23 20:38	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	636995	11/15/23 09:02	LKP	EET SL
Total/NA	Analysis	7470A		1			637210	11/15/23 15:01	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			451495	11/09/23 12:03	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	451526	11/09/23 18:00	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			752.16 mL	1.0 g	636340	11/10/23 11:07	KAC	EET SL
Total/NA	Analysis	9315		1			640225	12/11/23 22:00	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			752.16 mL	1.0 g	636341	11/10/23 11:11	KAC	EET SL
Total/NA	Analysis	9320		1			639854	12/07/23 11:58	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			640269	12/12/23 17:36	SCB	EET SL
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: CCR Groundwater Monitoring FB Culley East

Job ID: 180-164860-1
SDG: FB Culley East

Client Sample ID: DUP-1

Date Collected: 11/02/23 00:00
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	451227	11/07/23 20:32	AM	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	636845	11/14/23 11:43	LKP	EET SL
Total Recoverable	Analysis	6010D		5			638326	11/22/23 17:38	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	636844	11/14/23 11:40	LKP	EET SL
Total Recoverable	Analysis	6020B		2			638432	11/27/23 20:42	CGB	EET SL
	Instrument ID: ICPMS7700									
Total Recoverable	Prep	3005A			50 mL	50 mL	636844	11/14/23 11:40	LKP	EET SL
Total Recoverable	Analysis	6020B		5			639211	12/01/23 15:59	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	636995	11/15/23 09:02	LKP	EET SL
Total/NA	Analysis	7470A		1			637210	11/15/23 15:18	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			451619	11/10/23 11:04	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	451526	11/09/23 18:00	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			501.70 mL	1.0 g	636340	11/10/23 11:07	KAC	EET SL
Total/NA	Analysis	9315		1			640225	12/11/23 22:00	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			501.70 mL	1.0 g	636341	11/10/23 11:11	KAC	EET SL
Total/NA	Analysis	9320		1			639854	12/07/23 11:57	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			640269	12/12/23 17:36	SCB	EET SL
	Instrument ID: NOEQUIP									

Laboratory References:

EET PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Analyst References:

Lab: EET PIT
- Batch Type: Analysis
  - AM = Adzuira Musule
  - BAB = Brooke Batyi
  - LWM = Leslie McIntire

Lab: EET SL
- Batch Type: Prep
  - KAC = Kevin Cox
  - LKP = Laura Pemberton
- Batch Type: Analysis
  - CGB = Cory Buffington
  - FLC = Fernando Cruz
  - SCB = Sarah Bernsen

Client Sample ID: CCR-AP-8

Date Collected: 11/02/23 12:40
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-1

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	17		1.0	0.71	mg/L			11/07/23 14:21	1
Fluoride	1.1		0.10	0.026	mg/L			11/07/23 14:21	1
Sulfate	3.8		1.0	0.76	mg/L			11/07/23 14:21	1

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	35	J	50	19	ug/L		11/14/23 11:43	11/22/23 16:03	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.065		0.010	0.0016	mg/L		11/14/23 11:40	11/27/23 19:26	2
Barium	0.31		0.0020	0.00069	mg/L		11/14/23 11:40	11/27/23 19:26	2
Beryllium	ND		0.00050	0.00020	mg/L		11/14/23 11:40	11/27/23 19:26	2
Calcium	220		0.50	0.24	mg/L		11/14/23 11:40	12/01/23 15:14	5
Cadmium	0.00016	J	0.00050	0.000060	mg/L		11/14/23 11:40	11/27/23 19:26	2
Cobalt	0.0032		0.0020	0.00060	mg/L		11/14/23 11:40	11/27/23 19:26	2
Chromium	0.0016	J	0.010	0.0013	mg/L		11/14/23 11:40	11/27/23 19:26	2
Lithium	ND		0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 19:26	2
Molybdenum	0.019		0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 19:26	2
Lead	ND		0.0030	0.0010	mg/L		11/14/23 11:40	11/27/23 19:26	2
Antimony	0.00057	J	0.0050	0.00029	mg/L		11/14/23 11:40	11/27/23 19:26	2
Selenium	0.0016	J	0.0050	0.00067	mg/L		11/14/23 11:40	11/27/23 19:26	2
Thallium	ND		0.0020	0.00038	mg/L		11/14/23 11:40	11/27/23 19:26	2

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/15/23 09:01	11/15/23 14:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1000		10	10	mg/L			11/09/23 18:00	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.4	HF	0.1	0.1	SU			11/09/23 11:58	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.318		0.150	0.153	1.00	0.172	pCi/L	11/10/23 11:07	12/11/23 21:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.5*		*30 - 110*	*11/10/23 11:07*	*12/11/23 21:50*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.78		0.606	0.628	1.00	0.724	pCi/L	11/10/23 11:11	12/07/23 11:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.5*		*30 - 110*	*11/10/23 11:11*	*12/07/23 11:48*	*1*

Client Sample ID: CCR-AP-8
Lab Sample ID: 180-164860-1

Date Collected: 11/02/23 12:40
Matrix: Water
Date Received: 11/04/23 09:30

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*82.6*		*30 - 110*	*11/10/23 11:11*	*12/07/23 11:48*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**2.10**		0.624	0.646	5.00	0.724	pCi/L		12/11/23 18:00	1

Client Sample ID: CCR-AP-2

Date Collected: 11/02/23 13:10
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-2

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	240		2.5	1.8	mg/L			11/07/23 19:44	2.5
Fluoride	0.55		0.25	0.065	mg/L			11/07/23 19:44	2.5
Sulfate	450		2.5	1.9	mg/L			11/07/23 19:44	2.5

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	6600		250	96	ug/L		11/14/23 11:43	11/22/23 16:34	5

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.040		0.010	0.0016	mg/L		11/14/23 11:40	11/27/23 19:54	2
Barium	0.64		0.0020	0.00069	mg/L		11/14/23 11:40	11/27/23 19:54	2
Beryllium	0.0072		0.00050	0.00020	mg/L		11/14/23 11:40	11/27/23 19:54	2
Calcium	180		0.20	0.096	mg/L		11/14/23 11:40	11/27/23 19:54	2
Cadmium	0.0023		0.00050	0.000060	mg/L		11/14/23 11:40	11/27/23 19:54	2
Cobalt	0.091		0.0020	0.00060	mg/L		11/14/23 11:40	11/27/23 19:54	2
Chromium	0.14		0.010	0.0013	mg/L		11/14/23 11:40	11/27/23 19:54	2
Lithium	0.11		0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 19:54	2
Molybdenum	0.0083		0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 19:54	2
Lead	0.10		0.0030	0.0010	mg/L		11/14/23 11:40	11/27/23 19:54	2
Antimony	0.0013	J	0.0050	0.00029	mg/L		11/14/23 11:40	11/27/23 19:54	2
Selenium	0.013		0.0050	0.00067	mg/L		11/14/23 11:40	11/27/23 19:54	2
Thallium	0.0012	J	0.0020	0.00038	mg/L		11/14/23 11:40	11/27/23 19:54	2

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.42	J	0.50	0.21	ug/L		11/15/23 09:01	11/15/23 14:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1300		10	10	mg/L			11/09/23 18:00	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	6.7	HF	0.1	0.1	SU			11/09/23 12:32	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.18		0.347	0.362	1.00	0.303	pCi/L	11/10/23 11:07	12/11/23 21:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.5*		*30 - 110*	*11/10/23 11:07*	*12/11/23 21:50*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.06	G	1.00	1.02	1.00	1.39	pCi/L	11/10/23 11:11	12/07/23 11:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.5*		*30 - 110*	*11/10/23 11:11*	*12/07/23 11:58*	*1*

Client Sample ID: CCR-AP-2
Lab Sample ID: 180-164860-2

Date Collected: 11/02/23 13:10
Matrix: Water
Date Received: 11/04/23 09:30

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*78.5*		*30 - 110*	*11/10/23 11:11*	*12/07/23 11:58*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**3.23**		1.06	1.08	5.00	1.39	pCi/L		12/11/23 18:00	1

Client Sample ID: CCR-AP-8I

Date Collected: 11/02/23 11:40
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-3

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	570		2.5	1.8	mg/L			11/07/23 18:36	2.5
Fluoride	0.20	J	0.25	0.065	mg/L			11/07/23 18:36	2.5
Sulfate	1000		2.5	1.9	mg/L			11/07/23 18:36	2.5

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	12000	^3+	500	190	ug/L		11/14/23 11:43	11/28/23 09:36	10

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0028	J	0.010	0.0016	mg/L		11/14/23 11:40	11/27/23 19:57	2
Barium	0.22		0.0020	0.00069	mg/L		11/14/23 11:40	11/27/23 19:57	2
Beryllium	ND		0.00050	0.00020	mg/L		11/14/23 11:40	11/27/23 19:57	2
Calcium	440		1.0	0.48	mg/L		11/14/23 11:40	12/05/23 17:34	10
Cadmium	0.00015	J	0.00050	0.000060	mg/L		11/14/23 11:40	11/27/23 19:57	2
Cobalt	ND		0.0020	0.00060	mg/L		11/14/23 11:40	11/27/23 19:57	2
Chromium	0.0027	J	0.010	0.0013	mg/L		11/14/23 11:40	11/27/23 19:57	2
Lithium	0.43		0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 19:57	2
Molybdenum	0.34		0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 19:57	2
Lead	0.0010	J	0.0030	0.0010	mg/L		11/14/23 11:40	11/27/23 19:57	2
Antimony	0.00038	J	0.0050	0.00029	mg/L		11/14/23 11:40	11/27/23 19:57	2
Selenium	0.00091	J	0.0050	0.00067	mg/L		11/14/23 11:40	11/27/23 19:57	2
Thallium	ND		0.0020	0.00038	mg/L		11/14/23 11:40	11/27/23 19:57	2

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/15/23 09:01	11/15/23 14:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	2600		20	20	mg/L			11/09/23 18:00	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.0	HF	0.1	0.1	SU			11/09/23 10:23	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.53		0.295	0.326	1.00	0.162	pCi/L	11/10/23 11:07	12/11/23 21:51	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.3*		*30 - 110*	*11/10/23 11:07*	*12/11/23 21:51*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.94		0.794	0.839	1.00	0.887	pCi/L	11/10/23 11:11	12/07/23 11:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.3*		*30 - 110*	*11/10/23 11:11*	*12/07/23 11:58*	*1*

Client Sample ID: CCR-AP-8I
Date Collected: 11/02/23 11:40
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-3
Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	79.6		30 - 110	11/10/23 11:11	12/07/23 11:58	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	4.47		0.847	0.900	5.00	0.887	pCi/L		12/11/23 18:00	1

Client Sample ID: CCR-AP-5I

Date Collected: 11/02/23 14:00
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-4

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	430		2.5	1.8	mg/L			11/07/23 19:03	2.5
Fluoride	0.26		0.25	0.065	mg/L			11/07/23 19:03	2.5
Sulfate	730		2.5	1.9	mg/L			11/07/23 19:03	2.5

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	19000		500	190	ug/L		11/14/23 11:43	11/22/23 16:43	10

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0041	J	0.010	0.0016	mg/L		11/14/23 11:40	11/27/23 20:01	2
Barium	0.059		0.0020	0.00069	mg/L		11/14/23 11:40	11/27/23 20:01	2
Beryllium	0.00032	J	0.00050	0.00020	mg/L		11/14/23 11:40	11/27/23 20:01	2
Calcium	360		0.50	0.24	mg/L		11/14/23 11:40	12/01/23 15:45	5
Cadmium	0.00062		0.00050	0.000060	mg/L		11/14/23 11:40	11/27/23 20:01	2
Cobalt	0.0046		0.0020	0.00060	mg/L		11/14/23 11:40	11/27/23 20:01	2
Chromium	0.0084	J	0.010	0.0013	mg/L		11/14/23 11:40	11/27/23 20:01	2
Lithium	0.039		0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 20:01	2
Molybdenum	0.0060		0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 20:01	2
Lead	0.0031		0.0030	0.0010	mg/L		11/14/23 11:40	11/27/23 20:01	2
Antimony	ND		0.0050	0.00029	mg/L		11/14/23 11:40	11/27/23 20:01	2
Selenium	ND		0.0050	0.00067	mg/L		11/14/23 11:40	11/27/23 20:01	2
Thallium	ND		0.0020	0.00038	mg/L		11/14/23 11:40	11/27/23 20:01	2

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/15/23 09:01	11/15/23 14:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	2100		20	20	mg/L			11/09/23 18:00	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.2	HF	0.1	0.1	SU			11/09/23 12:08	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.422		0.259	0.262	1.00	0.339	pCi/L	11/10/23 11:07	12/11/23 21:51	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*65.3*		*30 - 110*	*11/10/23 11:07*	*12/11/23 21:51*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.645	U G	1.06	1.07	1.00	1.81	pCi/L	11/10/23 11:11	12/07/23 11:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*65.3*		*30 - 110*	*11/10/23 11:11*	*12/07/23 11:58*	*1*

Client Sample ID: CCR-AP-5I
Lab Sample ID: 180-164860-4

Date Collected: 11/02/23 14:00
Matrix: Water
Date Received: 11/04/23 09:30

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*79.3*		*30 - 110*	*11/10/23 11:11*	*12/07/23 11:58*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.07	U	1.09	1.10	5.00	1.81	pCi/L		12/11/23 18:00	1

Client Sample ID: CCR-AP-4R

Date Collected: 11/02/23 10:00
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-5

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	55		1.0	0.71	mg/L			11/07/23 20:47	1
Fluoride	0.48		0.10	0.026	mg/L			11/07/23 20:47	1
Sulfate	24		1.0	0.76	mg/L			11/07/23 20:47	1

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1600		50	19	ug/L		11/14/23 11:43	11/22/23 16:48	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.19		0.010	0.0016	mg/L		11/14/23 11:40	11/27/23 20:04	2
Barium	0.92		0.0020	0.00069	mg/L		11/14/23 11:40	11/27/23 20:04	2
Beryllium	0.00047	J	0.00050	0.00020	mg/L		11/14/23 11:40	11/27/23 20:04	2
Calcium	160		0.20	0.096	mg/L		11/14/23 11:40	11/27/23 20:04	2
Cadmium	0.00030	J	0.00050	0.000060	mg/L		11/14/23 11:40	11/27/23 20:04	2
Cobalt	0.0049		0.0020	0.00060	mg/L		11/14/23 11:40	11/27/23 20:04	2
Chromium	0.012		0.010	0.0013	mg/L		11/14/23 11:40	11/27/23 20:04	2
Lithium	0.0067		0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 20:04	2
Molybdenum	0.0046	J	0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 20:04	2
Lead	0.011		0.0030	0.0010	mg/L		11/14/23 11:40	11/27/23 20:04	2
Antimony	0.0031	J	0.0050	0.00029	mg/L		11/14/23 11:40	11/27/23 20:04	2
Selenium	0.0036	J	0.0050	0.00067	mg/L		11/14/23 11:40	11/27/23 20:04	2
Thallium	ND		0.0020	0.00038	mg/L		11/14/23 11:40	11/27/23 20:04	2

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/15/23 09:01	11/15/23 14:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	890		10	10	mg/L			11/09/23 18:00	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	6.7	HF	0.1	0.1	SU			11/10/23 11:20	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.44		0.480	0.497	1.00	0.397	pCi/L	11/10/23 11:07	12/11/23 21:51	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*46.5*		*30 - 110*	*11/10/23 11:07*	*12/11/23 21:51*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	3.82	G	1.73	1.77	1.00	2.35	pCi/L	11/10/23 11:11	12/07/23 11:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*46.5*		*30 - 110*	*11/10/23 11:11*	*12/07/23 11:58*	*1*

Client Sample ID: CCR-AP-4R
Lab Sample ID: 180-164860-5

Date Collected: 11/02/23 10:00
Matrix: Water
Date Received: 11/04/23 09:30

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*82.6*		*30 - 110*	*11/10/23 11:11*	*12/07/23 11:58*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**5.26**		1.80	1.84	5.00	2.35	pCi/L		12/11/23 18:00	1

Client Sample ID: CCR-AP-6

Date Collected: 11/02/23 09:35
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-6

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	50		1.0	0.71	mg/L			11/07/23 21:02	1
Fluoride	0.51		0.10	0.026	mg/L			11/07/23 21:02	1
Sulfate	4.3		1.0	0.76	mg/L			11/07/23 21:02	1

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	620		50	19	ug/L		11/14/23 11:43	11/22/23 16:52	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.096		0.010	0.0016	mg/L		11/14/23 11:40	11/27/23 20:07	2
Barium	0.48		0.0020	0.00069	mg/L		11/14/23 11:40	11/27/23 20:07	2
Beryllium	ND		0.00050	0.00020	mg/L		11/14/23 11:40	11/27/23 20:07	2
Calcium	180		0.20	0.096	mg/L		11/14/23 11:40	11/27/23 20:07	2
Cadmium	0.000094	J	0.00050	0.000060	mg/L		11/14/23 11:40	11/27/23 20:07	2
Cobalt	0.0047		0.0020	0.00060	mg/L		11/14/23 11:40	11/27/23 20:07	2
Chromium	0.0047	J	0.010	0.0013	mg/L		11/14/23 11:40	11/27/23 20:07	2
Lithium	0.0020	J	0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 20:07	2
Molybdenum	0.015		0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 20:07	2
Lead	0.0027	J	0.0030	0.0010	mg/L		11/14/23 11:40	11/27/23 20:07	2
Antimony	0.00066	J	0.0050	0.00029	mg/L		11/14/23 11:40	11/27/23 20:07	2
Selenium	0.0012	J	0.0050	0.00067	mg/L		11/14/23 11:40	11/27/23 20:07	2
Thallium	ND		0.0020	0.00038	mg/L		11/14/23 11:40	11/27/23 20:07	2

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/15/23 09:01	11/15/23 14:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	980		10	10	mg/L			11/09/23 18:00	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.3	HF	0.1	0.1	SU			11/10/23 10:54	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.863		0.279	0.289	1.00	0.233	pCi/L	11/10/23 11:07	12/11/23 21:51	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.9*		*30 - 110*	*11/10/23 11:07*	*12/11/23 21:51*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.86	G	0.960	0.975	1.00	1.34	pCi/L	11/10/23 11:11	12/07/23 11:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.9*		*30 - 110*	*11/10/23 11:11*	*12/07/23 11:58*	*1*

Client Sample ID: CCR-AP-6
Lab Sample ID: 180-164860-6

Date Collected: 11/02/23 09:35
Matrix: Water
Date Received: 11/04/23 09:30

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	71.0		30 - 110	11/10/23 11:11	12/07/23 11:58	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.72		1.00	1.02	5.00	1.34	pCi/L		12/11/23 18:00	1

Client Sample ID: CCR-AP-3R

Date Collected: 11/02/23 10:45
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-7

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	29		1.0	0.71	mg/L			11/07/23 19:18	1
Fluoride	0.23		0.10	0.026	mg/L			11/07/23 19:18	1
Sulfate	6.3		1.0	0.76	mg/L			11/07/23 19:18	1

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	210		50	19	ug/L		11/14/23 11:43	11/22/23 16:57	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.089		0.010	0.0016	mg/L		11/14/23 11:40	11/27/23 20:11	2
Barium	0.48		0.0020	0.00069	mg/L		11/14/23 11:40	11/27/23 20:11	2
Beryllium	0.00056		0.00050	0.00020	mg/L		11/14/23 11:40	11/27/23 20:11	2
Calcium	250		0.50	0.24	mg/L		11/14/23 11:40	12/01/23 15:48	5
Cadmium	0.00038	J	0.00050	0.000060	mg/L		11/14/23 11:40	11/27/23 20:11	2
Cobalt	0.0092		0.0020	0.00060	mg/L		11/14/23 11:40	11/27/23 20:11	2
Chromium	0.014		0.010	0.0013	mg/L		11/14/23 11:40	11/27/23 20:11	2
Lithium	0.0043	J	0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 20:11	2
Molybdenum	0.025		0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 20:11	2
Lead	0.010		0.0030	0.0010	mg/L		11/14/23 11:40	11/27/23 20:11	2
Antimony	0.0050		0.0050	0.00029	mg/L		11/14/23 11:40	11/27/23 20:11	2
Selenium	0.0030	J	0.0050	0.00067	mg/L		11/14/23 11:40	11/27/23 20:11	2
Thallium	ND		0.0020	0.00038	mg/L		11/14/23 11:40	11/27/23 20:11	2

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/15/23 09:01	11/15/23 14:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	960		10	10	mg/L			11/09/23 18:00	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.2	HF	0.1	0.1	SU			11/10/23 11:15	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.363		0.187	0.190	1.00	0.227	pCi/L	11/10/23 11:07	12/11/23 21:51	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*69.9*		*30 - 110*	*11/10/23 11:07*	*12/11/23 21:51*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.28	G	0.843	0.868	1.00	1.04	pCi/L	11/10/23 11:11	12/07/23 11:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*69.9*		*30 - 110*	*11/10/23 11:11*	*12/07/23 11:58*	*1*

Client Sample ID: CCR-AP-3R

Date Collected: 11/02/23 10:45
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-7

Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*74.8*		*30 - 110*	*11/10/23 11:11*	*12/07/23 11:58*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**2.64**		0.863	0.889	5.00	1.04	pCi/L		12/11/23 18:00	1

Client Sample ID: CCR-AP-6I

Date Collected: 11/02/23 09:05
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-8

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	460		2.5	1.8	mg/L			11/07/23 18:49	2.5
Fluoride	0.098	J	0.25	0.065	mg/L			11/07/23 18:49	2.5
Sulfate	1300		2.5	1.9	mg/L			11/07/23 18:49	2.5

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	24000		1000	380	ug/L		11/14/23 11:43	11/22/23 17:01	20

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0047	J	0.010	0.0016	mg/L		11/14/23 11:40	11/27/23 20:14	2
Barium	0.029		0.0020	0.00069	mg/L		11/14/23 11:40	11/27/23 20:14	2
Beryllium	ND		0.00050	0.00020	mg/L		11/14/23 11:40	11/27/23 20:14	2
Calcium	340		0.50	0.24	mg/L		11/14/23 11:40	12/01/23 15:52	5
Cadmium	0.00027	J	0.00050	0.000060	mg/L		11/14/23 11:40	11/27/23 20:14	2
Cobalt	ND		0.0020	0.00060	mg/L		11/14/23 11:40	11/27/23 20:14	2
Chromium	ND		0.010	0.0013	mg/L		11/14/23 11:40	11/27/23 20:14	2
Lithium	0.15		0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 20:14	2
Molybdenum	1.3		0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 20:14	2
Lead	ND		0.0030	0.0010	mg/L		11/14/23 11:40	11/27/23 20:14	2
Antimony	ND		0.0050	0.00029	mg/L		11/14/23 11:40	11/27/23 20:14	2
Selenium	ND		0.0050	0.00067	mg/L		11/14/23 11:40	11/27/23 20:14	2
Thallium	ND		0.0020	0.00038	mg/L		11/14/23 11:40	11/27/23 20:14	2

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/15/23 09:01	11/15/23 14:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	2900		20	20	mg/L			11/09/23 18:00	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.8	HF	0.1	0.1	SU			11/09/23 12:22	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0824	U	0.0973	0.0975	1.00	0.159	pCi/L	11/10/23 11:07	12/11/23 21:51	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.8*		*30 - 110*	*11/10/23 11:07*	*12/11/23 21:51*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.536	U	0.466	0.468	1.00	0.734	pCi/L	11/10/23 11:11	12/07/23 11:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.8*		*30 - 110*	*11/10/23 11:11*	*12/07/23 11:58*	*1*

Client Sample ID: CCR-AP-6I
Date Collected: 11/02/23 09:05
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-8
Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*73.3*		*30 - 110*	*11/10/23 11:11*	*12/07/23 11:58*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.618	U	0.476	0.478	5.00	0.734	pCi/L		12/11/23 18:00	1

Client Sample ID: FB-1

Date Collected: 11/02/23 14:30
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-9

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.71	mg/L			11/07/23 17:31	1
Fluoride	ND		0.10	0.026	mg/L			11/07/23 17:31	1
Sulfate	ND		1.0	0.76	mg/L			11/07/23 17:31	1

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		50	19	ug/L		11/14/23 11:43	11/22/23 17:06	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.010	0.0016	mg/L		11/14/23 11:40	11/27/23 20:18	2
Barium	ND		0.0020	0.00069	mg/L		11/14/23 11:40	11/27/23 20:18	2
Beryllium	ND		0.00050	0.00020	mg/L		11/14/23 11:40	11/27/23 20:18	2
Calcium	ND		0.20	0.096	mg/L		11/14/23 11:40	11/27/23 20:18	2
Cadmium	ND		0.00050	0.000060	mg/L		11/14/23 11:40	11/27/23 20:18	2
Cobalt	ND		0.0020	0.00060	mg/L		11/14/23 11:40	11/27/23 20:18	2
Chromium	ND		0.010	0.0013	mg/L		11/14/23 11:40	11/27/23 20:18	2
Lithium	ND		0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 20:18	2
Molybdenum	ND		0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 20:18	2
Lead	ND		0.0030	0.0010	mg/L		11/14/23 11:40	11/27/23 20:18	2
Antimony	ND		0.0050	0.00029	mg/L		11/14/23 11:40	11/27/23 20:18	2
Selenium	ND		0.0050	0.00067	mg/L		11/14/23 11:40	11/27/23 20:18	2
Thallium	ND		0.0020	0.00038	mg/L		11/14/23 11:40	11/27/23 20:18	2

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/15/23 09:01	11/15/23 14:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	ND		10	10	mg/L			11/09/23 18:00	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	**5.6**	**HF**	0.1	0.1	SU			11/09/23 12:13	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.000	U	0.0710	0.0710	1.00	0.151	pCi/L	11/10/23 11:07	12/11/23 21:51	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*74.8*		*30 - 110*	*11/10/23 11:07*	*12/11/23 21:51*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.849**		0.488	0.494	1.00	0.691	pCi/L	11/10/23 11:11	12/07/23 11:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*74.8*		*30 - 110*	*11/10/23 11:11*	*12/07/23 11:58*	*1*

Client Sample ID: FB-1
Date Collected: 11/02/23 14:30
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-9
Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*74.8*		*30 - 110*	*11/10/23 11:11*	*12/07/23 11:58*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.849**		0.493	0.499	5.00	0.691	pCi/L		12/11/23 18:00	1

Client Sample ID: CCR-AP-1R

Date Collected: 11/02/23 17:00
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-10

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	17		1.0	0.71	mg/L			11/07/23 22:27	1
Fluoride	0.38		0.10	0.026	mg/L			11/08/23 17:44	1
Sulfate	340		1.0	0.76	mg/L			11/07/23 22:27	1

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	740		50	19	ug/L		11/14/23 11:43	11/22/23 17:11	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.015		0.010	0.0016	mg/L		11/14/23 11:40	11/27/23 20:21	2
Barium	0.21		0.0020	0.00069	mg/L		11/14/23 11:40	11/27/23 20:21	2
Beryllium	0.0031		0.00050	0.00020	mg/L		11/14/23 11:40	11/27/23 20:21	2
Calcium	85		0.20	0.096	mg/L		11/14/23 11:40	11/27/23 20:21	2
Cadmium	0.00024	J	0.00050	0.000060	mg/L		11/14/23 11:40	11/27/23 20:21	2
Cobalt	0.035		0.0020	0.00060	mg/L		11/14/23 11:40	11/27/23 20:21	2
Chromium	0.065		0.010	0.0013	mg/L		11/14/23 11:40	11/27/23 20:21	2
Lithium	0.12		0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 20:21	2
Molybdenum	0.0050		0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 20:21	2
Lead	0.037		0.0030	0.0010	mg/L		11/14/23 11:40	11/27/23 20:21	2
Antimony	0.00087	J	0.0050	0.00029	mg/L		11/14/23 11:40	11/27/23 20:21	2
Selenium	0.0046	J	0.0050	0.00067	mg/L		11/14/23 11:40	11/27/23 20:21	2
Thallium	ND		0.0020	0.00038	mg/L		11/14/23 11:40	11/27/23 20:21	2

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/15/23 09:01	11/15/23 14:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	990		10	10	mg/L			11/09/23 18:00	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.4	HF	0.1	0.1	SU			11/10/23 10:59	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	14.5		1.25	1.81	1.00	0.312	pCi/L	11/10/23 11:07	12/11/23 21:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*63.2*		*30 - 110*	*11/10/23 11:07*	*12/11/23 21:52*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.91	G	1.15	1.17	1.00	1.68	pCi/L	11/10/23 11:11	12/07/23 11:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*63.2*		*30 - 110*	*11/10/23 11:11*	*12/07/23 11:58*	*1*

Client Sample ID: CCR-AP-1R
Lab Sample ID: 180-164860-10

Date Collected: 11/02/23 17:00
Matrix: Water
Date Received: 11/04/23 09:30

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*80.4*		*30 - 110*	*11/10/23 11:11*	*12/07/23 11:58*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**16.4**		1.70	2.16	5.00	1.68	pCi/L		12/11/23 18:00	1

Client Sample ID: CCR-AP-5

Date Collected: 11/02/23 15:00
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-11

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	86		1.0	0.71	mg/L			11/09/23 22:08	1
Fluoride	2.3		0.10	0.026	mg/L			11/07/23 23:15	1
Sulfate	580		1.0	0.76	mg/L			11/07/23 23:15	1

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	6600		250	96	ug/L		11/14/23 11:43	11/22/23 17:29	5

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.024		0.010	0.0016	mg/L		11/14/23 11:40	11/27/23 20:25	2
Barium	0.20		0.0020	0.00069	mg/L		11/14/23 11:40	11/27/23 20:25	2
Beryllium	0.0016		0.00050	0.00020	mg/L		11/14/23 11:40	11/27/23 20:25	2
Calcium	310		0.50	0.24	mg/L		11/14/23 11:40	12/01/23 15:55	5
Cadmium	0.0014		0.00050	0.000060	mg/L		11/14/23 11:40	11/27/23 20:25	2
Cobalt	0.010		0.0020	0.00060	mg/L		11/14/23 11:40	11/27/23 20:25	2
Chromium	0.056		0.010	0.0013	mg/L		11/14/23 11:40	11/27/23 20:25	2
Lithium	0.059		0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 20:25	2
Molybdenum	0.14		0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 20:25	2
Lead	0.020		0.0030	0.0010	mg/L		11/14/23 11:40	11/27/23 20:25	2
Antimony	0.0024	J	0.0050	0.00029	mg/L		11/14/23 11:40	11/27/23 20:25	2
Selenium	0.020		0.0050	0.00067	mg/L		11/14/23 11:40	11/27/23 20:25	2
Thallium	0.00096	J	0.0020	0.00038	mg/L		11/14/23 11:40	11/27/23 20:25	2

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	1.6		0.50	0.21	ug/L		11/15/23 09:01	11/15/23 14:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1200		10	10	mg/L			11/09/23 18:00	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.5	HF	0.1	0.1	SU			11/09/23 11:20	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	2.95		0.472	0.542	1.00	0.254	pCi/L	11/10/23 11:07	12/11/23 22:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*30 - 110*	*11/10/23 11:07*	*12/11/23 22:00*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.59		0.859	0.891	1.00	0.979	pCi/L	11/10/23 11:11	12/07/23 11:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*30 - 110*	*11/10/23 11:11*	*12/07/23 11:58*	*1*

Client Sample ID: CCR-AP-5
Lab Sample ID: 180-164860-11

Date Collected: 11/02/23 15:00
Matrix: Water
Date Received: 11/04/23 09:30

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*74.8*		*30 - 110*	*11/10/23 11:11*	*12/07/23 11:58*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**5.54**		0.980	1.04	5.00	0.979	pCi/L		12/12/23 17:36	1

Client Sample ID: CCR-AP-11

Date Collected: 11/02/23 16:30
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-12

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	16		1.0	0.71	mg/L			11/07/23 14:36	1
Fluoride	0.80		0.10	0.026	mg/L			11/07/23 14:36	1
Sulfate	370		1.0	0.76	mg/L			11/07/23 14:36	1

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	370		50	19	ug/L		11/14/23 11:43	11/22/23 17:33	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.024		0.010	0.0016	mg/L		11/14/23 11:40	11/27/23 20:38	2
Barium	0.13		0.0020	0.00069	mg/L		11/14/23 11:40	11/27/23 20:38	2
Beryllium	ND		0.00050	0.00020	mg/L		11/14/23 11:40	11/27/23 20:38	2
Calcium	110		0.20	0.096	mg/L		11/14/23 11:40	11/27/23 20:38	2
Cadmium	ND		0.00050	0.000060	mg/L		11/14/23 11:40	11/27/23 20:38	2
Cobalt	0.037		0.0020	0.00060	mg/L		11/14/23 11:40	11/27/23 20:38	2
Chromium	0.0014	J	0.010	0.0013	mg/L		11/14/23 11:40	11/27/23 20:38	2
Lithium	0.0028	J	0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 20:38	2
Molybdenum	ND		0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 20:38	2
Lead	ND		0.0030	0.0010	mg/L		11/14/23 11:40	11/27/23 20:38	2
Antimony	ND		0.0050	0.00029	mg/L		11/14/23 11:40	11/27/23 20:38	2
Selenium	0.0014	J	0.0050	0.00067	mg/L		11/14/23 11:40	11/27/23 20:38	2
Thallium	ND		0.0020	0.00038	mg/L		11/14/23 11:40	11/27/23 20:38	2

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/15/23 09:02	11/15/23 15:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	660		10	10	mg/L			11/09/23 18:00	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	6.7	HF	0.1	0.1	SU			11/09/23 12:03	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.213	U	0.166	0.168	1.00	0.245	pCi/L	11/10/23 11:07	12/11/23 22:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*73.0*		*30 - 110*	*11/10/23 11:07*	*12/11/23 22:00*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.315	U	0.565	0.565	1.00	0.974	pCi/L	11/10/23 11:11	12/07/23 11:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*73.0*		*30 - 110*	*11/10/23 11:11*	*12/07/23 11:58*	*1*

Client Sample ID: CCR-AP-11
Lab Sample ID: 180-164860-12

Date Collected: 11/02/23 16:30
Matrix: Water
Date Received: 11/04/23 09:30

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*75.9*		*30 - 110*	*11/10/23 11:11*	*12/07/23 11:58*	*1*

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.528	U	0.589	0.589	5.00	0.974	pCi/L		12/12/23 17:36	1

Client Sample ID: DUP-1

Date Collected: 11/02/23 00:00
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-13

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	100		1.0	0.71	mg/L			11/07/23 20:32	1
Fluoride	2.2		0.10	0.026	mg/L			11/07/23 20:32	1
Sulfate	590		1.0	0.76	mg/L			11/07/23 20:32	1

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	7500		250	96	ug/L		11/14/23 11:43	11/22/23 17:38	5

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.022		0.010	0.0016	mg/L		11/14/23 11:40	11/27/23 20:42	2
Barium	0.21		0.0020	0.00069	mg/L		11/14/23 11:40	11/27/23 20:42	2
Beryllium	0.0016		0.00050	0.00020	mg/L		11/14/23 11:40	11/27/23 20:42	2
Calcium	270		0.50	0.24	mg/L		11/14/23 11:40	12/01/23 15:59	5
Cadmium	0.0015		0.00050	0.000060	mg/L		11/14/23 11:40	11/27/23 20:42	2
Cobalt	0.0099		0.0020	0.00060	mg/L		11/14/23 11:40	11/27/23 20:42	2
Chromium	0.057		0.010	0.0013	mg/L		11/14/23 11:40	11/27/23 20:42	2
Lithium	0.066		0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 20:42	2
Molybdenum	0.17		0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 20:42	2
Lead	0.019		0.0030	0.0010	mg/L		11/14/23 11:40	11/27/23 20:42	2
Antimony	0.0024	J	0.0050	0.00029	mg/L		11/14/23 11:40	11/27/23 20:42	2
Selenium	0.022		0.0050	0.00067	mg/L		11/14/23 11:40	11/27/23 20:42	2
Thallium	0.0010	J	0.0020	0.00038	mg/L		11/14/23 11:40	11/27/23 20:42	2

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	1.5		0.50	0.21	ug/L		11/15/23 09:02	11/15/23 15:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1300		10	10	mg/L			11/09/23 18:00	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.6	HF	0.1	0.1	SU			11/10/23 11:04	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	2.41		0.535	0.577	1.00	0.403	pCi/L	11/10/23 11:07	12/11/23 22:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*64.3*		*30 - 110*	*11/10/23 11:07*	*12/11/23 22:00*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.637	U G	0.965	0.966	1.00	1.64	pCi/L	11/10/23 11:11	12/07/23 11:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*64.3*		*30 - 110*	*11/10/23 11:11*	*12/07/23 11:57*	*1*

Client Sample ID: DUP-1
Date Collected: 11/02/23 00:00
Date Received: 11/04/23 09:30

Lab Sample ID: 180-164860-13
Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	80.0		30 - 110	11/10/23 11:11	12/07/23 11:57	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	3.05		1.10	1.13	5.00	1.64	pCi/L		12/12/23 17:36	1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-451201/6
Matrix: Water
Analysis Batch: 451201

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.71	mg/L			11/07/23 12:52	1
Fluoride	ND		0.10	0.026	mg/L			11/07/23 12:52	1
Sulfate	ND		1.0	0.76	mg/L			11/07/23 12:52	1

Lab Sample ID: LCS 180-451201/7
Matrix: Water
Analysis Batch: 451201

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	51.5		mg/L		103	80 - 120
Fluoride	2.50	2.72		mg/L		109	80 - 120
Sulfate	50.0	53.0		mg/L		106	80 - 120

Lab Sample ID: MB 180-451227/6
Matrix: Water
Analysis Batch: 451227

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.71	mg/L			11/07/23 17:26	1
Fluoride	ND		0.10	0.026	mg/L			11/07/23 17:26	1
Sulfate	ND		1.0	0.76	mg/L			11/07/23 17:26	1

Lab Sample ID: LCS 180-451227/7
Matrix: Water
Analysis Batch: 451227

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	54.9		mg/L		110	80 - 120
Fluoride	2.50	2.66		mg/L		106	80 - 120
Sulfate	50.0	50.8		mg/L		102	80 - 120

Lab Sample ID: MB 180-451313/6
Matrix: Water
Analysis Batch: 451313

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.71	mg/L			11/08/23 12:28	1
Fluoride	ND		0.10	0.026	mg/L			11/08/23 12:28	1
Sulfate	ND		1.0	0.76	mg/L			11/08/23 12:28	1

Lab Sample ID: LCS 180-451313/7
Matrix: Water
Analysis Batch: 451313

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	52.1		mg/L		104	80 - 120
Fluoride	2.50	2.43		mg/L		97	80 - 120
Sulfate	50.0	48.3		mg/L		97	80 - 120

Method: EPA 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 180-451450/6
Matrix: Water
Analysis Batch: 451450

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.71	mg/L			11/09/23 11:49	1
Fluoride	ND		0.10	0.026	mg/L			11/09/23 11:49	1
Sulfate	ND		1.0	0.76	mg/L			11/09/23 11:49	1

Lab Sample ID: LCS 180-451450/7
Matrix: Water
Analysis Batch: 451450

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	54.1		mg/L		108	80 - 120
Fluoride	2.50	2.53		mg/L		101	80 - 120
Sulfate	50.0	51.1		mg/L		102	80 - 120

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 160-636845/1-A
Matrix: Water
Analysis Batch: 638326

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 636845

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		50	19	ug/L		11/14/23 11:43	11/22/23 15:54	1

Lab Sample ID: LCS 160-636845/2-A
Matrix: Water
Analysis Batch: 638326

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 636845

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	200	194		ug/L		97	80 - 120

Lab Sample ID: 180-164860-1 MS
Matrix: Water
Analysis Batch: 638326

Client Sample ID: CCR-AP-8
Prep Type: Total Recoverable
Prep Batch: 636845

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	35	J	200	236		ug/L		101	75 - 125

Lab Sample ID: 180-164860-1 MSD
Matrix: Water
Analysis Batch: 638326

Client Sample ID: CCR-AP-8
Prep Type: Total Recoverable
Prep Batch: 636845

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	35	J	200	235		ug/L		100	75 - 125	0	20

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 160-636844/1-A
Matrix: Water
Analysis Batch: 638432

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 636844

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.010	0.0016	mg/L		11/14/23 11:40	11/27/23 19:19	2
Barium	ND		0.0020	0.00069	mg/L		11/14/23 11:40	11/27/23 19:19	2
Beryllium	ND		0.00050	0.00020	mg/L		11/14/23 11:40	11/27/23 19:19	2
Calcium	ND		0.20	0.096	mg/L		11/14/23 11:40	11/27/23 19:19	2
Cadmium	ND		0.00050	0.000060	mg/L		11/14/23 11:40	11/27/23 19:19	2
Cobalt	ND		0.0020	0.00060	mg/L		11/14/23 11:40	11/27/23 19:19	2
Chromium	ND		0.010	0.0013	mg/L		11/14/23 11:40	11/27/23 19:19	2
Lithium	ND		0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 19:19	2
Molybdenum	ND		0.0050	0.0020	mg/L		11/14/23 11:40	11/27/23 19:19	2
Lead	ND		0.0030	0.0010	mg/L		11/14/23 11:40	11/27/23 19:19	2
Antimony	ND		0.0050	0.00029	mg/L		11/14/23 11:40	11/27/23 19:19	2
Selenium	ND		0.0050	0.00067	mg/L		11/14/23 11:40	11/27/23 19:19	2
Thallium	ND		0.0020	0.00038	mg/L		11/14/23 11:40	11/27/23 19:19	2

Lab Sample ID: LCS 160-636844/2-A
Matrix: Water
Analysis Batch: 638432

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 636844

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	0.964		mg/L		96	80 - 120
Barium	1.00	0.871		mg/L		87	80 - 120
Beryllium	0.100	0.0943		mg/L		94	80 - 120
Calcium	10.0	9.78		mg/L		98	80 - 120
Cadmium	1.00	0.920		mg/L		92	80 - 120
Cobalt	1.00	0.981		mg/L		98	80 - 120
Chromium	1.00	0.983		mg/L		98	80 - 120
Lithium	0.100	0.0937		mg/L		94	80 - 120
Molybdenum	0.495	0.467		mg/L		94	80 - 120
Lead	1.00	0.944		mg/L		94	80 - 120
Antimony	0.500	0.485		mg/L		97	80 - 120
Selenium	0.500	0.461		mg/L		92	80 - 120
Thallium	0.200	0.190		mg/L		95	80 - 120

Lab Sample ID: 180-164860-1 MS
Matrix: Water
Analysis Batch: 638432

Client Sample ID: CCR-AP-8
Prep Type: Total Recoverable
Prep Batch: 636844

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.065		1.00	1.02		mg/L		95	75 - 125
Barium	0.31		1.00	1.20		mg/L		89	75 - 125
Beryllium	ND		0.100	0.0935		mg/L		94	75 - 125
Cadmium	0.00016	J	1.00	0.921		mg/L		92	75 - 125
Cobalt	0.0032		1.00	0.966		mg/L		96	75 - 125
Chromium	0.0016	J	1.00	0.971		mg/L		97	75 - 125
Lithium	ND		0.100	0.0946		mg/L		95	75 - 125
Molybdenum	0.019		0.495	0.488		mg/L		95	75 - 125
Lead	ND		1.00	0.941		mg/L		94	75 - 125
Antimony	0.00057	J	0.500	0.490		mg/L		98	75 - 125
Selenium	0.0016	J	0.500	0.465		mg/L		93	75 - 125

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 180-164860-1 MS
Matrix: Water
Analysis Batch: 638432

Client Sample ID: CCR-AP-8
Prep Type: Total Recoverable
Prep Batch: 636844

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Thallium	ND		0.200	0.191		mg/L		96	75 - 125

Lab Sample ID: 180-164860-1 MS
Matrix: Water
Analysis Batch: 639211

Client Sample ID: CCR-AP-8
Prep Type: Total Recoverable
Prep Batch: 636844

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	220		10.0	229	4	mg/L		142	75 - 125

Lab Sample ID: 180-164860-1 MSD
Matrix: Water
Analysis Batch: 638432

Client Sample ID: CCR-AP-8
Prep Type: Total Recoverable
Prep Batch: 636844

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.065		1.00	0.973		mg/L		91	75 - 125	4	20
Barium	0.31		1.00	1.19		mg/L		89	75 - 125	1	20
Beryllium	ND		0.100	0.0961		mg/L		96	75 - 125	3	20
Cadmium	0.00016	J	1.00	0.890		mg/L		89	75 - 125	3	20
Cobalt	0.0032		1.00	0.950		mg/L		95	75 - 125	2	20
Chromium	0.0016	J	1.00	0.986		mg/L		98	75 - 125	2	20
Lithium	ND		0.100	0.0953		mg/L		95	75 - 125	1	20
Molybdenum	0.019		0.495	0.488		mg/L		95	75 - 125	0	20
Lead	ND		1.00	0.917		mg/L		92	75 - 125	3	20
Antimony	0.00057	J	0.500	0.467		mg/L		93	75 - 125	5	20
Selenium	0.0016	J	0.500	0.459		mg/L		92	75 - 125	1	20
Thallium	ND		0.200	0.186		mg/L		93	75 - 125	3	20

Lab Sample ID: 180-164860-1 MSD
Matrix: Water
Analysis Batch: 639211

Client Sample ID: CCR-AP-8
Prep Type: Total Recoverable
Prep Batch: 636844

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	220		10.0	233	4	mg/L		172	75 - 125	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 160-636994/1-A
Matrix: Water
Analysis Batch: 637210

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 636994

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/15/23 09:01	11/15/23 13:43	1

Lab Sample ID: LCS 160-636994/2-A
Matrix: Water
Analysis Batch: 637210

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 636994

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	5.00	5.17		ug/L		103	80 - 120

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: MB 160-636995/1-A
Matrix: Water
Analysis Batch: 637210

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 636995

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/15/23 09:02	11/15/23 14:57	1

Lab Sample ID: LCS 160-636995/2-A
Matrix: Water
Analysis Batch: 637210

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 636995

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	5.00	5.07		ug/L		101	80 - 120

Lab Sample ID: 180-164860-12 MS
Matrix: Water
Analysis Batch: 637210

Client Sample ID: CCR-AP-11
Prep Type: Total/NA
Prep Batch: 636995

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		5.00	4.88		ug/L		98	80 - 120

Lab Sample ID: 180-164860-12 MSD
Matrix: Water
Analysis Batch: 637210

Client Sample ID: CCR-AP-11
Prep Type: Total/NA
Prep Batch: 636995

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		5.00	4.80		ug/L		96	80 - 120	2	20

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-451495/1
Matrix: Water
Analysis Batch: 451495

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		SU		100	99 - 101

Lab Sample ID: LCS 180-451495/24
Matrix: Water
Analysis Batch: 451495

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		SU		100	99 - 101

Lab Sample ID: LCS 180-451619/1
Matrix: Water
Analysis Batch: 451619

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		SU		100	99 - 101

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 180-451526/1
Matrix: Water
Analysis Batch: 451526

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			11/09/23 18:00	1

Lab Sample ID: LCS 180-451526/2
Matrix: Water
Analysis Batch: 451526

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	336	302		mg/L		90	85 - 115

Lab Sample ID: 180-164860-10 DU
Matrix: Water
Analysis Batch: 451526

Client Sample ID: CCR-AP-1R
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	990		994		mg/L		0.1	10

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-636340/1-A
Matrix: Water
Analysis Batch: 640214

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 636340

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.05226	U	0.0424	0.0426	1.00	0.124	pCi/L	11/10/23 11:07	12/11/23 21:48	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*103*		*30 - 110*	*11/10/23 11:07*	*12/11/23 21:48*	*1*

Lab Sample ID: LCS 160-636340/2-A
Matrix: Water
Analysis Batch: 640214

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 636340

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	10.64		1.17	1.00	0.148	pCi/L	94	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*80.2*		*30 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-636341/1-A
Matrix: Water
Analysis Batch: 639735

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 636341

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1353	U	0.265	0.266	1.00	0.461	pCi/L	11/10/23 11:11	12/07/23 11:47	1

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: MB 160-636341/1-A
Matrix: Water
Analysis Batch: 639735

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 636341

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	103		30 - 110	11/10/23 11:11	12/07/23 11:47	1
Y Carrier	84.9		30 - 110	11/10/23 11:11	12/07/23 11:47	1

Lab Sample ID: LCS 160-636341/2-A
Matrix: Water
Analysis Batch: 639735

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 636341

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			7.66	10.32		1.47	1.00	0.636	pCi/L	135	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	80.2		30 - 110
Y Carrier	76.6		30 - 110

HPLC/IC

Analysis Batch: 451201

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-164860-1	CCR-AP-8	Total/NA	Water	EPA 9056A	
180-164860-2	CCR-AP-2	Total/NA	Water	EPA 9056A	
180-164860-9	FB-1	Total/NA	Water	EPA 9056A	
180-164860-10	CCR-AP-1R	Total/NA	Water	EPA 9056A	
180-164860-12	CCR-AP-11	Total/NA	Water	EPA 9056A	
MB 180-451201/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-451201/7	Lab Control Sample	Total/NA	Water	EPA 9056A	

Analysis Batch: 451227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-164860-3	CCR-AP-8I	Total/NA	Water	EPA 9056A	
180-164860-4	CCR-AP-5I	Total/NA	Water	EPA 9056A	
180-164860-5	CCR-AP-4R	Total/NA	Water	EPA 9056A	
180-164860-6	CCR-AP-6	Total/NA	Water	EPA 9056A	
180-164860-7	CCR-AP-3R	Total/NA	Water	EPA 9056A	
180-164860-8	CCR-AP-6I	Total/NA	Water	EPA 9056A	
180-164860-11	CCR-AP-5	Total/NA	Water	EPA 9056A	
180-164860-13	DUP-1	Total/NA	Water	EPA 9056A	
MB 180-451227/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-451227/7	Lab Control Sample	Total/NA	Water	EPA 9056A	

Analysis Batch: 451313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-164860-10	CCR-AP-1R	Total/NA	Water	EPA 9056A	
MB 180-451313/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-451313/7	Lab Control Sample	Total/NA	Water	EPA 9056A	

Analysis Batch: 451450

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-164860-11	CCR-AP-5	Total/NA	Water	EPA 9056A	
MB 180-451450/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-451450/7	Lab Control Sample	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 636844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-164860-1	CCR-AP-8	Total Recoverable	Water	3005A	
180-164860-2	CCR-AP-2	Total Recoverable	Water	3005A	
180-164860-3	CCR-AP-8I	Total Recoverable	Water	3005A	
180-164860-4	CCR-AP-5I	Total Recoverable	Water	3005A	
180-164860-5	CCR-AP-4R	Total Recoverable	Water	3005A	
180-164860-6	CCR-AP-6	Total Recoverable	Water	3005A	
180-164860-7	CCR-AP-3R	Total Recoverable	Water	3005A	
180-164860-8	CCR-AP-6I	Total Recoverable	Water	3005A	
180-164860-9	FB-1	Total Recoverable	Water	3005A	
180-164860-10	CCR-AP-1R	Total Recoverable	Water	3005A	
180-164860-11	CCR-AP-5	Total Recoverable	Water	3005A	
180-164860-12	CCR-AP-11	Total Recoverable	Water	3005A	
180-164860-13	DUP-1	Total Recoverable	Water	3005A	
MB 160-636844/1-A	Method Blank	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 636844 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 160-636844/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-164860-1 MS	CCR-AP-8	Total Recoverable	Water	3005A	
180-164860-1 MSD	CCR-AP-8	Total Recoverable	Water	3005A	

Prep Batch: 636845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-164860-1	CCR-AP-8	Total Recoverable	Water	3005A	
180-164860-2	CCR-AP-2	Total Recoverable	Water	3005A	
180-164860-3	CCR-AP-8I	Total Recoverable	Water	3005A	
180-164860-4	CCR-AP-5I	Total Recoverable	Water	3005A	
180-164860-5	CCR-AP-4R	Total Recoverable	Water	3005A	
180-164860-6	CCR-AP-6	Total Recoverable	Water	3005A	
180-164860-7	CCR-AP-3R	Total Recoverable	Water	3005A	
180-164860-8	CCR-AP-6I	Total Recoverable	Water	3005A	
180-164860-9	FB-1	Total Recoverable	Water	3005A	
180-164860-10	CCR-AP-1R	Total Recoverable	Water	3005A	
180-164860-11	CCR-AP-5	Total Recoverable	Water	3005A	
180-164860-12	CCR-AP-11	Total Recoverable	Water	3005A	
180-164860-13	DUP-1	Total Recoverable	Water	3005A	
MB 160-636845/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 160-636845/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-164860-1 MS	CCR-AP-8	Total Recoverable	Water	3005A	
180-164860-1 MSD	CCR-AP-8	Total Recoverable	Water	3005A	

Prep Batch: 636994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-164860-1	CCR-AP-8	Total/NA	Water	7470A	
180-164860-2	CCR-AP-2	Total/NA	Water	7470A	
180-164860-3	CCR-AP-8I	Total/NA	Water	7470A	
180-164860-4	CCR-AP-5I	Total/NA	Water	7470A	
180-164860-5	CCR-AP-4R	Total/NA	Water	7470A	
180-164860-6	CCR-AP-6	Total/NA	Water	7470A	
180-164860-7	CCR-AP-3R	Total/NA	Water	7470A	
180-164860-8	CCR-AP-6I	Total/NA	Water	7470A	
180-164860-9	FB-1	Total/NA	Water	7470A	
180-164860-10	CCR-AP-1R	Total/NA	Water	7470A	
180-164860-11	CCR-AP-5	Total/NA	Water	7470A	
MB 160-636994/1-A	Method Blank	Total/NA	Water	7470A	
LCS 160-636994/2-A	Lab Control Sample	Total/NA	Water	7470A	

Prep Batch: 636995

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-164860-12	CCR-AP-11	Total/NA	Water	7470A	
180-164860-13	DUP-1	Total/NA	Water	7470A	
MB 160-636995/1-A	Method Blank	Total/NA	Water	7470A	
LCS 160-636995/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-164860-12 MS	CCR-AP-11	Total/NA	Water	7470A	
180-164860-12 MSD	CCR-AP-11	Total/NA	Water	7470A	

Metals

Analysis Batch: 637210

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-164860-1	CCR-AP-8	Total/NA	Water	7470A	636994
180-164860-2	CCR-AP-2	Total/NA	Water	7470A	636994
180-164860-3	CCR-AP-8I	Total/NA	Water	7470A	636994
180-164860-4	CCR-AP-5I	Total/NA	Water	7470A	636994
180-164860-5	CCR-AP-4R	Total/NA	Water	7470A	636994
180-164860-6	CCR-AP-6	Total/NA	Water	7470A	636994
180-164860-7	CCR-AP-3R	Total/NA	Water	7470A	636994
180-164860-8	CCR-AP-6I	Total/NA	Water	7470A	636994
180-164860-9	FB-1	Total/NA	Water	7470A	636994
180-164860-10	CCR-AP-1R	Total/NA	Water	7470A	636994
180-164860-11	CCR-AP-5	Total/NA	Water	7470A	636994
180-164860-12	CCR-AP-11	Total/NA	Water	7470A	636995
180-164860-13	DUP-1	Total/NA	Water	7470A	636995
MB 160-636994/1-A	Method Blank	Total/NA	Water	7470A	636994
MB 160-636995/1-A	Method Blank	Total/NA	Water	7470A	636995
LCS 160-636994/2-A	Lab Control Sample	Total/NA	Water	7470A	636994
LCS 160-636995/2-A	Lab Control Sample	Total/NA	Water	7470A	636995
180-164860-12 MS	CCR-AP-11	Total/NA	Water	7470A	636995
180-164860-12 MSD	CCR-AP-11	Total/NA	Water	7470A	636995

Analysis Batch: 638326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-164860-1	CCR-AP-8	Total Recoverable	Water	6010D	636845
180-164860-2	CCR-AP-2	Total Recoverable	Water	6010D	636845
180-164860-4	CCR-AP-5I	Total Recoverable	Water	6010D	636845
180-164860-5	CCR-AP-4R	Total Recoverable	Water	6010D	636845
180-164860-6	CCR-AP-6	Total Recoverable	Water	6010D	636845
180-164860-7	CCR-AP-3R	Total Recoverable	Water	6010D	636845
180-164860-8	CCR-AP-6I	Total Recoverable	Water	6010D	636845
180-164860-9	FB-1	Total Recoverable	Water	6010D	636845
180-164860-10	CCR-AP-1R	Total Recoverable	Water	6010D	636845
180-164860-11	CCR-AP-5	Total Recoverable	Water	6010D	636845
180-164860-12	CCR-AP-11	Total Recoverable	Water	6010D	636845
180-164860-13	DUP-1	Total Recoverable	Water	6010D	636845
MB 160-636845/1-A	Method Blank	Total Recoverable	Water	6010D	636845
LCS 160-636845/2-A	Lab Control Sample	Total Recoverable	Water	6010D	636845
180-164860-1 MS	CCR-AP-8	Total Recoverable	Water	6010D	636845
180-164860-1 MSD	CCR-AP-8	Total Recoverable	Water	6010D	636845

Analysis Batch: 638432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-164860-1	CCR-AP-8	Total Recoverable	Water	6020B	636844
180-164860-2	CCR-AP-2	Total Recoverable	Water	6020B	636844
180-164860-3	CCR-AP-8I	Total Recoverable	Water	6020B	636844
180-164860-4	CCR-AP-5I	Total Recoverable	Water	6020B	636844
180-164860-5	CCR-AP-4R	Total Recoverable	Water	6020B	636844
180-164860-6	CCR-AP-6	Total Recoverable	Water	6020B	636844
180-164860-7	CCR-AP-3R	Total Recoverable	Water	6020B	636844
180-164860-8	CCR-AP-6I	Total Recoverable	Water	6020B	636844
180-164860-9	FB-1	Total Recoverable	Water	6020B	636844
180-164860-10	CCR-AP-1R	Total Recoverable	Water	6020B	636844

Metals (Continued)

Analysis Batch: 638432 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-164860-11	CCR-AP-5	Total Recoverable	Water	6020B	636844
180-164860-12	CCR-AP-11	Total Recoverable	Water	6020B	636844
180-164860-13	DUP-1	Total Recoverable	Water	6020B	636844
MB 160-636844/1-A	Method Blank	Total Recoverable	Water	6020B	636844
LCS 160-636844/2-A	Lab Control Sample	Total Recoverable	Water	6020B	636844
180-164860-1 MS	CCR-AP-8	Total Recoverable	Water	6020B	636844
180-164860-1 MSD	CCR-AP-8	Total Recoverable	Water	6020B	636844

Analysis Batch: 638722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-164860-3	CCR-AP-8I	Total Recoverable	Water	6010D	636845

Analysis Batch: 639211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-164860-1	CCR-AP-8	Total Recoverable	Water	6020B	636844
180-164860-4	CCR-AP-5I	Total Recoverable	Water	6020B	636844
180-164860-7	CCR-AP-3R	Total Recoverable	Water	6020B	636844
180-164860-8	CCR-AP-6I	Total Recoverable	Water	6020B	636844
180-164860-11	CCR-AP-5	Total Recoverable	Water	6020B	636844
180-164860-13	DUP-1	Total Recoverable	Water	6020B	636844
180-164860-1 MS	CCR-AP-8	Total Recoverable	Water	6020B	636844
180-164860-1 MSD	CCR-AP-8	Total Recoverable	Water	6020B	636844

Analysis Batch: 639557

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-164860-3	CCR-AP-8I	Total Recoverable	Water	6020B	636844

General Chemistry

Analysis Batch: 451495

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-164860-1	CCR-AP-8	Total/NA	Water	EPA 9040C	
180-164860-2	CCR-AP-2	Total/NA	Water	EPA 9040C	
180-164860-3	CCR-AP-8I	Total/NA	Water	EPA 9040C	
180-164860-4	CCR-AP-5I	Total/NA	Water	EPA 9040C	
180-164860-8	CCR-AP-6I	Total/NA	Water	EPA 9040C	
180-164860-9	FB-1	Total/NA	Water	EPA 9040C	
180-164860-11	CCR-AP-5	Total/NA	Water	EPA 9040C	
180-164860-12	CCR-AP-11	Total/NA	Water	EPA 9040C	
LCS 180-451495/1	Lab Control Sample	Total/NA	Water	EPA 9040C	
LCS 180-451495/24	Lab Control Sample	Total/NA	Water	EPA 9040C	

Analysis Batch: 451526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-164860-1	CCR-AP-8	Total/NA	Water	SM 2540C	
180-164860-2	CCR-AP-2	Total/NA	Water	SM 2540C	
180-164860-3	CCR-AP-8I	Total/NA	Water	SM 2540C	
180-164860-4	CCR-AP-5I	Total/NA	Water	SM 2540C	
180-164860-5	CCR-AP-4R	Total/NA	Water	SM 2540C	
180-164860-6	CCR-AP-6	Total/NA	Water	SM 2540C	
180-164860-7	CCR-AP-3R	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 451526 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-164860-8	CCR-AP-6I	Total/NA	Water	SM 2540C	
180-164860-9	FB-1	Total/NA	Water	SM 2540C	
180-164860-10	CCR-AP-1R	Total/NA	Water	SM 2540C	
180-164860-11	CCR-AP-5	Total/NA	Water	SM 2540C	
180-164860-12	CCR-AP-11	Total/NA	Water	SM 2540C	
180-164860-13	DUP-1	Total/NA	Water	SM 2540C	
MB 180-451526/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-451526/2	Lab Control Sample	Total/NA	Water	SM 2540C	
180-164860-10 DU	CCR-AP-1R	Total/NA	Water	SM 2540C	

Analysis Batch: 451619

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-164860-5	CCR-AP-4R	Total/NA	Water	EPA 9040C	
180-164860-6	CCR-AP-6	Total/NA	Water	EPA 9040C	
180-164860-7	CCR-AP-3R	Total/NA	Water	EPA 9040C	
180-164860-10	CCR-AP-1R	Total/NA	Water	EPA 9040C	
180-164860-13	DUP-1	Total/NA	Water	EPA 9040C	
LCS 180-451619/1	Lab Control Sample	Total/NA	Water	EPA 9040C	

Rad

Prep Batch: 636340

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-164860-1	CCR-AP-8	Total/NA	Water	PrecSep-21	
180-164860-2	CCR-AP-2	Total/NA	Water	PrecSep-21	
180-164860-3	CCR-AP-8I	Total/NA	Water	PrecSep-21	
180-164860-4	CCR-AP-5I	Total/NA	Water	PrecSep-21	
180-164860-5	CCR-AP-4R	Total/NA	Water	PrecSep-21	
180-164860-6	CCR-AP-6	Total/NA	Water	PrecSep-21	
180-164860-7	CCR-AP-3R	Total/NA	Water	PrecSep-21	
180-164860-8	CCR-AP-6I	Total/NA	Water	PrecSep-21	
180-164860-9	FB-1	Total/NA	Water	PrecSep-21	
180-164860-10	CCR-AP-1R	Total/NA	Water	PrecSep-21	
180-164860-11	CCR-AP-5	Total/NA	Water	PrecSep-21	
180-164860-12	CCR-AP-11	Total/NA	Water	PrecSep-21	
180-164860-13	DUP-1	Total/NA	Water	PrecSep-21	
MB 160-636340/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-636340/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 636341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-164860-1	CCR-AP-8	Total/NA	Water	PrecSep_0	
180-164860-2	CCR-AP-2	Total/NA	Water	PrecSep_0	
180-164860-3	CCR-AP-8I	Total/NA	Water	PrecSep_0	
180-164860-4	CCR-AP-5I	Total/NA	Water	PrecSep_0	
180-164860-5	CCR-AP-4R	Total/NA	Water	PrecSep_0	
180-164860-6	CCR-AP-6	Total/NA	Water	PrecSep_0	
180-164860-7	CCR-AP-3R	Total/NA	Water	PrecSep_0	
180-164860-8	CCR-AP-6I	Total/NA	Water	PrecSep_0	
180-164860-9	FB-1	Total/NA	Water	PrecSep_0	
180-164860-10	CCR-AP-1R	Total/NA	Water	PrecSep_0	

Rad (Continued)

Prep Batch: 636341 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-164860-11	CCR-AP-5	Total/NA	Water	PrecSep_0	
180-164860-12	CCR-AP-11	Total/NA	Water	PrecSep_0	
180-164860-13	DUP-1	Total/NA	Water	PrecSep_0	
MB 160-636341/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-636341/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

370472
HARRISBURG

eurofins
Environment Testing

Client Information	Sampler: Jon Hill	Lab PM: Hayes, Ken	Carrier Tracking No(s):	COC No: 180-96233-14505.1
Client Contact: Mark Breting	Phone: 317-473-1325	E-Mail: Ken.Hayes@et.eurofinsus.com	State of Origin: IN	Page: Page 1 of 2
Company: Atlas Technical Consultants LLC	PWSID:			Job #:
Address: 7988 Centerpoint Drive Suite 100	Due Date Requested:			
City: Indianapolis	TAT Requested (days):			
State, Zip: IN, 46256	Compliance Project: Δ Yes Δ No			
Phone: 317-473-1325	PO #: 0129420-032-001-01			
Email: mark.breting@atcassociates.com	WO #: See Chain			
Project Name: CCR Groundwater Monitoring FB Culley	Project #: 18016014			
Site: Culley East	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, SO4, Dodecahydrate, tone, A, 4-5, na, (specify)

180-164860 Chain of Custody

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	9040C, 9056A_ORGFM_28D	6020A, 7470A	2540C_Calcd - TDS	9315_Ra226, 9320_Ra228	Special Instructions/Note:
CCR-AP-1R	11.2.23	1700	G	W					*
CCR-AP-2		1310							*
CCR-AP-3R		1045							*
CCR-AP-4R		1000							*
CCR-AP-5		1500							
CCR-AP-5I		1400							
CCR-AP-6		935							*
CCR-AP-6I		915							
CCR-AP-8		1240							
CCR-AP-8I		1140							
CCR-AP-11		1630							

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

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

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

Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	J Hill	11.3.23 / 806 AM	ATLAS		11/04/23 0930	FEDEX
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Ver: 06/08/2021

* = (1) 1L only

12/13/2023

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

370472 eurofins Environment Testing

HARRISBURG PA

Client Information	Sampler: Jon Hill	Lab PM: Hayes, Ken	Carrier Tracking No(s):
Client Contact: Mark Breting	Phone: 317-473-1325	E-Mail: Ken.Hayes@et.eurofinsus.com	State of Origin: IN
Company: Atlas Technical Consultants LLC	PWSID:		
Address: 7988 Centerpoint Drive Suite 100	Due Date Requested:		
City: Indianapolis	TAT Requested (days):		
State, Zip: IN, 46256	Compliance Project: Δ Yes Δ No		
Phone: 317-473-1325	PO #: 0129420-032-001-01		
Email: mark.breting@atcassociates.com	WO #: See Chain		
Project Name: CCR Groundwater Monitoring FB Culley	Project #: 18016014		
Site:	SSOW#:		

COC No: 180-96233-14505.2
Page: Page 2 of 2
Job #:

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	9040C, 9056A_ORGFM_28D	6020A, 7470A	2540C_Calcd - TDS	9315_Ra226, 9320_Ra228	Special Instructions/Note:
Dup-1	11.2.23	–	G	W	↓	↓	↓	↓	
FB-1	↓	1430	↓	↓					

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Possible Hazard Identification
☑ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☑ *Disposal By Lab* ☐ *Archive For* ______ *Months*

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

Special Instructions/QC Requirements:

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

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
J Hill	11.3.23 / 800 A	ATLAS	[signature]	11/04/23 0930	EATHAE

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

NO COC
D. Watson
EPittNE
11-4-23
DW

180-164860 Waybill

Do not lift using this tag.

Part # 159469-434 MTW EXP 03/24

RT 639 1 12:00 A
FZ 2538 11.04

ORIGIN ID:GTYA (317) 579-4082
MARK BRETING
FB CULLEY VECTREN
3711 DARLINGTON ROAD

NEWBURGH, IN 47630
UNITED STATES US

SHIP DATE: 25OCT23
ACTWGT: 55.00 LB MAN
CAD: 0129689/CAFE3511

TO **SAMPLE RECEIVING**
EUROFINS ENVIRONMENT TESTING NE
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 152382907
(412) 963-7058 REF:
INV:
PO: DEPT:

2.6 #21
-0.6

RMA:

570C1/BCBB/6F4D

FedEx Express
E

J211020121101uv

FedEx
TRK# 0221 **6772 2899 2538**

SATURDAY 12:00P
PRIORITY OVERNIGHT

XO AGCA

15238
PA-US PIT

Part # 156297-435 RRDB EXP 07/24

#264535 11/03 583J4/C5BD/9AE3

Part # 159469-43

RT 639 1 12:00 A
FZ 2560 11.04

ORIGIN ID:GTYA (317) 579-4082
MARK BRETING
FB CULLEY VECTREN
3711 DARLINGTON ROAD

NEWBURGH, IN 47630
UNITED STATES US

SHIP DATE: 25OCT23
ACTWGT: 55.00 LB MAN
CAD: 0129689/CAFE3511

TO **SAMPLE RECEIVING**
EUROFINS ENVIRONMENT TESTING NE
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 152382907
(412) 963-7058 REF:
INV:
PO: DEPT:

RMA:

Uncorrected temp 2.8 °C
Thermometer ID 21
CF -0.6 Initials RO
PT-WI-SR-001 effective 11/8/18

570C1/BCBB/6F4D

FedEx Express
E

J211020121101uv

FedEx
TRK# 0221 **6772 2899 2560**

SATURDAY 12:00P
PRIORITY OVERNIGHT

XO AGCA

15238
PA-US PIT

Part # 156297-435 RRDB EXP 07/24

#264535 11/03 583J4/C5BD/9AE3

1 2 3 4 5 6 7 8 9 10 11 12 13

'' .04

ORIGIN ID:GTYA (317) 579-4082
MARK BRETING
FB CULLEY VECTREN
3711 DARLINGTON ROAD

NEWBURGH, IN 47630
UNITED STATES US

SHIP DATE: 25OCT23
ACTWGT: 55.00 LB MAN
CAD: 0129689/CAFE3511

TO SAMPLE RECEIVING
EURIFINS ENVIRONMENT TESTING NE
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 152382907
(412) 963-7058 REF:
INV:
PO: DEPT:

RMA:

Uncorrected temp 2.0 °C
Thermometer ID 22
CF -0.4 Initials PM
PT-WI-SR-001 effective 11/8/18

FedEx
Express
E

570C1/BCB8/6F4D

J211020121101uv

FedEx
TRK# 0221 6772 2899 2527

SATURDAY 12:00P
PRIORITY OVERNIGHT

XO AGCA

ORIGIN ID:GTYA (317) 578-4082
MARK BRETING
FB CULLEY VECTREN
3711 DARLINGTON ROAD

NEWBURGH, IN 47630
UNITED STATES US

SHIP DATE: 25OCT23
ACTWGT: 55.00 LB MAN
CAD: 0129689/CAFE3511

TO **SAMPLE RECEIVING**
EUROFINS ENVIRONMENT TESTING NE
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 152382907
(412) 963-7058 REF:
INV:
PO: DEPT:

RMA:

Uncorrected temp 2.0 °C
Thermometer ID 22
CF -0.4 Initials PM
PT-WI-SR-001 effective 11/8/18

FedEx Express

E

FedEx
TRK# 0221 6772 2899 2527

SATURDAY 12:00P
PRIORITY OVERNIGHT

XO AGCA

Missing cooler

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Johnson, Andy	Carrier Tracking No(s):	COC No: 180-499139.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Andy.Johnson@et.eurofinsus.com	State of Origin: Indiana	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-164860-2
Address: 13715 Rider Trail North, ,	Due Date Requested: 11/20/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR Groundwater Monitoring FB Culley	Project #: 18016014			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B/3005A (MOD) Custom Sublist	6010D/3005A (MOD) Boron	7470A/7470A_Prep	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
CCR-AP-8 (180-164860-1)	11/2/23	12:40 Eastern		Water			X	X	X	3	
CCR-AP-2 (180-164860-2)	11/2/23	13:10 Eastern		Water			X	X	X	2	
CCR-AP-8I (180-164860-3)	11/2/23	11:40 Eastern		Water			X	X	X	3	
CCR-AP-5I (180-164860-4)	11/2/23	14:00 Eastern		Water			X	X	X	3	
CCR-AP-4R (180-164860-5)	11/2/23	10:00 Eastern		Water			X	X	X	2	
CCR-AP-6 (180-164860-6)	11/2/23	09:35 Eastern		Water			X	X	X	2	
CCR-AP-3 (180-164860-7)	11/2/23	10:45 Eastern		Water			X	X	X	2	
CCR-AP-6I (180-164860-8)	11/2/23	09:05 Eastern		Water			X	X	X	3	
FB-1 1 (180-164860-9)	11/2/23	14:30 Eastern		Water			X	X	X	3	

Note: Since laboratory accreditations are subject to change, Eurofins Pittsburgh 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 Pittsburgh laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Pittsburgh attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Pittsburgh.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	FED EX	11-8-23 1700	EPI Pittsburgh	FED EX		
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
				M Pinette	NOV 09 2023 0400	
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Ver: 06/08/2021

12/13/2023

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Johnson, Andy	Carrier Tracking No(s):	COC No: 180-499139.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Andy.Johnson@et.eurofinsus.com	State of Origin: Indiana	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-164860-2
Address: 13715 Rider Trail North, ,	Due Date Requested: 11/20/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR Groundwater Monitoring FB Culley	Project #: 18016014			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B/3005A (MOD) Custom Subset	6010D/3005A (MOD) Boron	7470A/7470A_Prep	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
CCR-AP-1R (180-164860-10)	11/2/23	17:00 Eastern		Water			X	X	X	3	
CCR-AP-5 (180-164860-11)	11/2/23	15:00 Eastern		Water			X	X	X	3	
CCR-AP-11 (180-164860-12)	11/2/23	16:30 Eastern		Water			X	X	X	3	
DUP-1 (180-164860-13)	11/2/23	Eastern		Water			X	X	X	3	

Note: Since laboratory accreditations are subject to change, Eurofins Pittsburgh 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 Pittsburgh laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Pittsburgh attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Pittsburgh.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

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

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
	FED EX	11-8-23 1700	[illegible]	FED EX		
	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
				M Pinette	NOV 09 2023 0900	
	Relinquished by	Date/Time	Company	Received by	Date/Time	Company

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

Ver: 06/08/2021

12/13/2023

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Johnson, Andy	Carrier Tracking No(s):	COC No: 180-499139.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Andy.Johnson@et.eurofinsus.com	State of Origin: Indiana	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-164860-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 11/16/2023	Analysis Requested		Preservation Codes:
City: Earth City	TAT Requested (days):			A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
State, Zip: MO, 63045				Other:
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR Groundwater Monitoring FB Culley	Project #: 18016014			
Site:	SSOW#:			

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)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
CCR-AP-8 (180-164860-1)	11/2/23	12:40 Eastern		Water			X	X	X	3	
CCR-AP-2 (180-164860-2)	11/2/23	13:10 Eastern		Water			X	X	X	2	
CCR-AP-8I (180-164860-3)	11/2/23	11:40 Eastern		Water			X	X	X	3	
CCR-AP-5I (180-164860-4)	11/2/23	14:00 Eastern		Water			X	X	X	3	
CCR-AP-4R (180-164860-5)	11/2/23	10:00 Eastern		Water			X	X	X	2	
CCR-AP-6 (180-164860-6)	11/2/23	09:35 Eastern		Water			X	X	X	2	
CCR-AP-3 (180-164860-7)	11/2/23	10:45 Eastern		Water			X	X	X	2	
CCR-AP-6I (180-164860-8)	11/2/23	09:05 Eastern		Water			X	X	X	3	
FB-1 1 (180-164860-9)	11/2/23	14:30 Eastern		Water			X	X	X	3	

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Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	FED EX	11-8-23 1700	FEDEX	FED EX		
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: NOV 09 2023 0900	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

12/13/2023

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Johnson, Andy	Carrier Tracking No(s):	COC No: 180-499139.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Andy.Johnson@et.eurofinsus.com	State of Origin: Indiana	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-164860-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 11/16/2023	Analysis Requested		Preservation Codes:
City: Earth City	TAT Requested (days):			A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			Other:
Email:	WO #:			
Project Name: CCR Groundwater Monitoring FB Culley	Project #: 18016014			
Site:	SSOW#:			

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)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
CCR-AP-1R (180-164860-10)	11/2/23	17:00 Eastern		Water			X	X	X	3	
CCR-AP-5 (180-164860-11)	11/2/23	15:00 Eastern		Water			X	X	X	3	
CCR-AP-11 (180-164860-12)	11/2/23	16:30 Eastern		Water			X	X	X	3	
DUP-1 (180-164860-13)	11/2/23	Eastern		Water			X	X	X	3	

Note: Since laboratory accreditations are subject to change, Eurofins Pittsburgh 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 Pittsburgh laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Pittsburgh attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Pittsburgh.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: FED EX	Date/Time: 11-8-23 1700	Company: EUPitt	Received by: FED EX
Relinquished by:	Date/Time:	Company	Received by: M Pinette
Relinquished by:	Date/Time:	Company	Received by:

Date/Time	Company
NOV 09 2023 0900	
Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-164860-1
SDG Number: FB Culley East

Login Number: 164860
List Number: 1
Creator: Watson, Debbie

List Source: Eurofins Pittsburgh

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	
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.	False	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-164860-1
SDG Number: FB Culley East

Login Number: 164860
List Number: 2
Creator: Pinette, Meadow L

List Source: Eurofins St. Louis
List Creation: 11/09/23 03:13 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	