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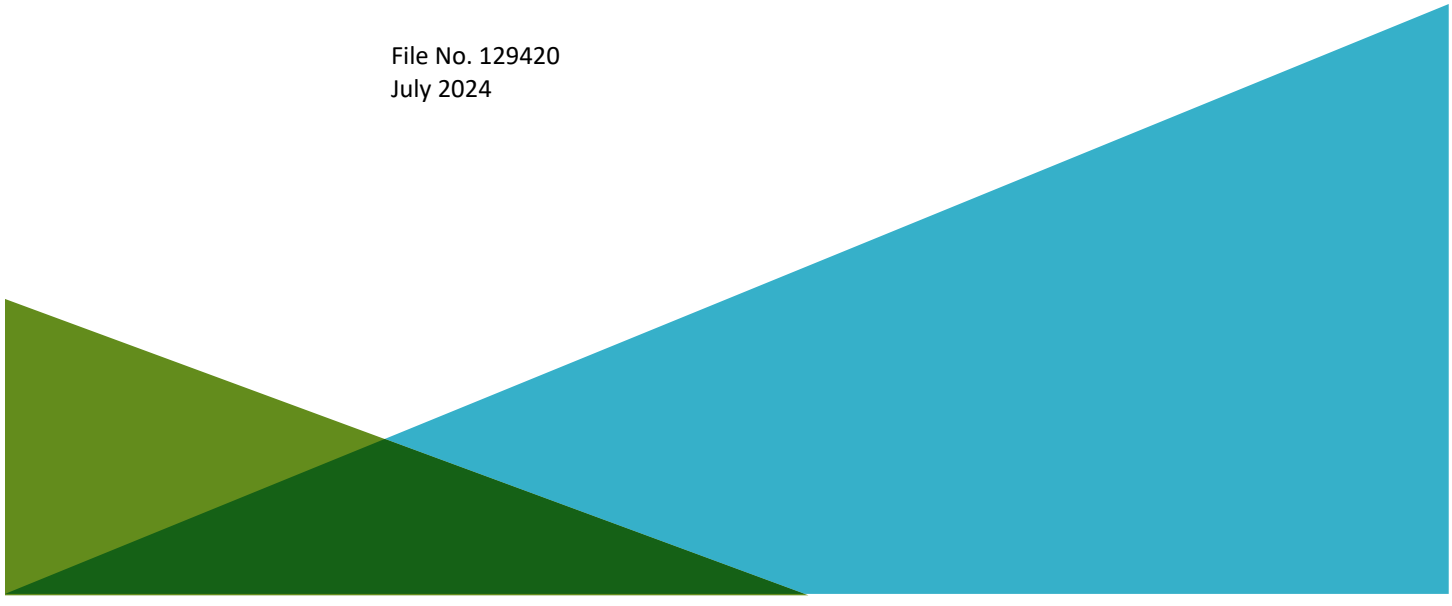
ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT FORMER WEST ASH POND F.B. CULLEY GENERATING STATION WARRICK COUNTY, INDIANA

by
Haley & Aldrich, Inc.
Greenville, South Carolina

for
Southern Indiana Gas and Electric Company
Evansville, Indiana

File No. 129420
July 2024



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1. Annual Groundwater Monitoring Report Summary

1.1 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 CCR [Coal Combustion Residuals] 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, the F.B. Culley (FBC) former West Ash Pond (WAP) was operating under an assessment monitoring program in compliance with the 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, the former WAP 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; and

The former WAP is operating under an assessment monitoring program; therefore, no statistical evaluations were conducted on Appendix III constituents in 2023/2024.

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 7 February 2020 for the former WAP to meet the requirements of 40 CFR § 257.95. The former WAP remained in assessment monitoring during 2023 and 2024.

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 analysis of groundwater analytical results was completed in accordance with 40 CFR § 257.93(h)(2). Analysis of the May 2023 analytical results was completed in September 2023 and statistically significant levels (SSLs) of lithium were identified in monitoring well WAP-3S downgradient of the former WAP, and molybdenum in downgradient wells WAP-3S and WAP-4S. A summary of the statistical analysis is provided in Appendix A.

Statistical analysis of the November 2023 groundwater analytical results was completed in April 2024 and SSLs of lithium were identified in monitoring well WAP-3S downgradient of the former WAP and molybdenum in downgradient wells WAP-3S and WAP-4S.

The statistical software used to analyze groundwater analytical results was transitioned to the R programming package between the May 2023 and November 2023 semi-annual sampling events. More detail about the statistical analysis process and resulting statistical analysis is presented in the November 2023 statistical evaluation technical memorandum, also 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 30 October 2020.

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; and

The public meeting has not been held for the assessment of corrective measures for the former WAP. Evaluation of site-specific aspects, such as the off-site evaluation of the nature and extent of affected groundwater, are necessary to prepare for the public meeting and to inform the selection of remedy are in progress.

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 26 February 2021 and placed into the facility's Operating Record, then subsequently 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; and

The selection of remedy required under 40 CFR § 257.97 is ongoing during 2023/2024 for lithium and molybdenum at the former WAP.

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.

No remedial activities have been initiated during 2023/2024; therefore, no demonstration or certification is applicable for this unit.

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 former WAP is subject to the groundwater monitoring and corrective action requirements described under 40 CFR § 257.90 through § 257.98 (Rule). The former WAP located at FBC was previously classified as an inactive surface impoundment as defined by 40 CFR § 257.53. The Southern Indiana Gas and Electric Company (SIGECO) filed a Notice of Intent (NOI) to initiate the closure of the former WAP and placed the NOI in the facility's Operating Record on 17 December 2015.

However, on 5 August 2016, the United States Environmental Protection Agency issued a "Direct Final Rule," effective on 4 October 2016, constituting a vacatur of 40 CFR § 257.100. The Direct Final Rule applies the requirements of existing surface impoundments that had been previously declared inactive. As a result, the former WAP had to comply with the groundwater monitoring requirements for existing CCR surface impoundments. The CCR Rule changes extended the deadlines to comply with the groundwater monitoring and corrective action requirements with the initial annual groundwater monitoring and corrective action report being placed in the facility's Operating Record by 1 August 2019, and annually thereafter.

SIGECO continued to pursue closure of the former WAP while complying with the requirements described in 40 CFR § 257.90 through § 257.98. The Indiana Department of Environmental Management

(IDEM) issued their approval of the Closure/Post-Closure Plan in December 2019, and closure activities were completed in December 2020. As part of IDEM's approval, IDEM requested that additional wells be installed for post-closure monitoring. The groundwater monitoring network for the former WAP is shown on Figure 1.

This document addresses the requirement for the Owner/Operator to prepare an Annual Groundwater Monitoring and Corrective Action Report (Annual Report) per 40 CFR § 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).***

As required by 40 CFR §257.100(e)(5)(ii), this Annual Report will be completed no later than 1 August 2024 due to the partial vacatur ordered by the District of Columbia Circuit Court on 14 June 2016 and the subsequent Direct Final Rule effective 4 October 2016, and within one year of the previous annual report being placed into the facility's Operating Record. As required, this Annual Report documents the status of the groundwater monitoring and corrective action program for the former WAP at FBC and summarizes key actions completed through the current reporting period. Field forms pertaining to November 2023 and May 2024 sampling events are included in Appendix B and laboratory analytical reports are included in Appendix C.

1.3.1 Status of the Groundwater Monitoring Program

As provided in the notification on 12 July 2019, statistically significant increases of Appendix III constituents were identified downgradient of the former WAP. An evaluation of alternate sources was conducted; however, a successful alternate source demonstration was not achieved at that time. As a result, an Assessment Monitoring Program was initiated as required by 40 CFR § 257.94(e)(2). Annual and semiannual groundwater samples were collected as outlined in 40 CFR § 257.95(b) and § 257.95(d)(1), and groundwater protection standards (GWPS) were established as required by 40 CFR § 257.95(d)(2). Statistical analysis was completed on 2 July 2020 as described in 40 CFR § 257.93(h)(2), and SSLs of Appendix IV constituents above GWPS (lithium and molybdenum) were identified downgradient of the former WAP. As a result, an assessment of corrective measures was initiated as required by 40 CFR § 257.96. A 60-day extension to complete the assessment of corrective measures was required and certified by a professional engineer as required by 40 CFR § 257.96(a). Semiannual assessment

monitoring is ongoing. Baseline sampling for downgradient wells installed to comply with IDEM approval of the Closure/Post-Closure Plan began in December 2020 and was completed in November 2021.

1.3.2 Key Actions Completed

The following key actions were completed during the 2023/2024 reporting period (from 1 July 2023 through 30 June 2024):

- Statistical analysis of assessment monitoring results for the May 2023 groundwater monitoring event was completed on 27 September 2023 to evaluate the potential for SSLs of Appendix IV constituents in groundwater downgradient of the former WAP (Appendix A).
- Statistical analysis of assessment monitoring results for the November 2023 groundwater monitoring event was completed on 8 April 2024 to evaluate potential for SSLs of Appendix IV constituents in groundwater downgradient of the former WAP (Appendix A).
- Preparation of the 2022/2023 Annual Report which included the following activities:
  - The 2022/2023 Annual Report was placed in the facility's Operating Record pursuant to 40 CFR § 257.105(h)(1);
  - Pursuant to 40 CFR § 257.107(h)(1), the 2022/2023 Annual Report was posted to the CCR Website within 30 days of the 2022/2023 Annual Report being placed in the facility's Operating Record [§ 257.107(d)] and 257.107(h)(1)]; and
  - Pursuant to 40 CFR § 257.106(h)(1), the notification was sent to the relevant State Director and/or Tribal authority within 30 days of the 2022/2023 Annual Report being placed in the facility's Operating Record [§ 257.106(d)].
- Collected and analyzed assessment monitoring groundwater samples in accordance with 40 CFR § 257.95(b) and § 257.95(d)(1). Groundwater elevations were measured during each sampling event in accordance with 40 CFR § 257.93(c). Groundwater configuration maps showing the direction of groundwater flow and the groundwater flow rates are provided on Figures 2 and 3.
- Continued evaluation of the nature and extent of Appendix IV SSLs as required by 40 CFR § 257.95(g)(1).
- Completed the Surface Water Sampling Work Plan to further evaluate the nature and extent of affected groundwater downgradient from the former WAP.
- Developed a Groundwater Flow Evaluation Work Plan to further refine understanding of groundwater flow direction, effects of Ohio River elevation on groundwater flow, and influence of nearby pumping wells. The Groundwater Flow Evaluation Work Plan was submitted to IDEM for review and approval.
- Developed a Bedrock Characterization Work Plan to assess bedrock lithology, extent, competency, fracture occurrence, and hydraulic conductivity beneath the former WAP to confirm the presence of a no-flow boundary. The Bedrock Characterization Work Plan was submitted to IDEM for review and received approval. The bedrock characterization work is scheduled to be completed in July 2024.

1.3.3 Problems Encountered

Problems were encountered during the May 2024 sampling event where issues with severe weather and temporary site access restrictions for safety caused substantial delays. Additionally, some of the samples were delayed during shipment to the laboratory resulting in loss of preservation.

1.3.4 Actions to Resolve Problems

Actions taken to resolve problems encountered were to conduct re-sampling of monitoring wells where samples were delayed in shipment, and to delay sampling until on-site conditions were deemed safe for work. However, because of the delays, laboratory analytical results from May 2024 were not yet available during the 2023/2024 reporting period and will therefore be included in the 2024/2025 annual report.

1.3.5 Project Key Activities for Upcoming Year

Key activities planned to be completed through June 2025 include the following:

- Further define the nature and extent of lithium and molybdenum in groundwater downgradient of the former WAP.
- Continue semiannual groundwater monitoring in accordance with 40 CFR § 257.95.
- Complete statistical analysis of the semiannual groundwater sampling results as required by 40 CFR § 257.93(h)(2).
- Prepare semiannual progress reports, as necessary, describing the progress in selecting and designing the remedy as outlined in 40 CFR § 257.97(a).
- Hold a public meeting at least 30 days prior to the selection of remedy with interested and affected parties in accordance with 40 CFR § 257.96(e) to discuss the results of the corrective measures assessment.
- As soon as feasible following the public meeting, select a remedy that, at a minimum, meets the standards outlined in 40 CFR § 257.97(b). As part of the selected remedy, SIGECO will develop a schedule for implementing and completing remedial activities as defined in 40 CFR § 257.97(d) and develop a Corrective Action Groundwater Monitoring Program per 40 CFR § 257.98(a)(1).

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 40 CFR § 257.90(e)(1), a map showing the location of the former WAP, associated upgradient and downgradient wells installed to comply with the CCR Rule, wells installed to assess the nature and extent of Appendix IV SSLs, and monitoring wells required by IDEM as part of the agency's

approval of the closure/post-closure plan are presented on Figure 1. A groundwater flow map for the November 2023 sampling event is included on Figure 2 and for the May 2024 sampling event 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;

No monitoring wells were installed or decommissioned during the preceding year. Location and construction details of the existing monitoring well network for the former WAP is provided for reference in Table I.

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 40 CFR § 257.95(b) and § 257.95(d)(1), two independent samples from each background and downgradient monitoring well were collected and analyzed for the CCR monitoring well network (WAP-1, CCR-AP-7, WAP-2RR, WAP-3S, WAP-4S, and WAP-5S) under the assessment monitoring program.

Summary tables including the sample names, dates of sample collection, reason for sample collection (detection, assessment, or baseline), and monitoring data obtained for the groundwater monitoring program for the former WAP are presented in Tables II, III, and IV of this report. Table II summarizes the assessment monitoring results for the original CCR monitoring network. Table III provides the results obtained to characterize the nature and extent of Appendix IV SSLs, and Table IV includes the state-required baseline and detection sampling results at monitoring locations required by IDEM. Field sampling and groundwater gauging forms are provided in Appendix B, and laboratory analytical data report for the November 2023 sampling event is provided in Appendix C of this report.

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); and

Statistical analysis was completed in September 2023 for the May 2023 sampling event and in April 2024 for the November 2023 sampling as described in 40 CFR § 257.93(h)(2), and the SSLs of lithium and molybdenum continue to be observed downgradient of the former WAP, consistent with previous results. As a result, the monitoring program did not change and the former WAP remained in assessment monitoring.

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 the development of groundwater protection standards, recording groundwater monitoring results in the Operating Record, and an evaluation of alternate sources was included in previous annual reports.

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TABLES

TABLE I

GROUNDWATER MONITORING WELL LOCATION AND CONSTRUCTION DETAILS

F.B. CULLEY GENERATING STATION - FORMER WEST ASH POND

WARRICK COUNTY, INDIANA

Well ID	Easting	Northing	Top of Pad Elevation (ft NAVD88)	Top of Casing Elevation (ft NAVD88)	Surface Grout (ft bgs)	Bentonite (ft bgs)	Sand Pack (ft bgs)	Screen Zone (ft bgs)	Screen Length (ft)	Well Diameter (in)
Upgradient Wells										
WAP-1	2882824.18	971214.17	403.77	403.39	0 - 22	22 - 24	24 - 36	26 - 36	10	2
CCR-AP-7	2883090.34	970774.64	429.50	434.11	0 - 16	16 - 18	18 - 30	20 - 30	10	2
Downgradient Wells										
(CCR Monitoring Network)										
WAP-2RR	2881499.20	971367.50	391.70	391.74	0 - 42.5	42 - 44.5	44.5 - 56	46 - 56	10	2
WAP-3S	2881252.80	970978.10	388.20	388.47	0 - 55	55 - 57	57 - 70	60 - 70	10	2
WAP-4S	2881333.40	970405.60	384.60	384.61	0 - 31	31 - 33	33 - 45	35 - 45	10	2
WAP-5S	2881521.50	970236.00	384.60	384.68	0 - 26	26 - 28	28 - 40	30 - 40	10	2
(Assessment of Nature & Extent)										
WAP-3D	2881253.20	970975.00	388.20	388.41	0 - 65.5	65.5 - 68	68 - 82.5	72.5 - 82.5	10	2
WAP-4I	2881329.10	970409.20	384.50	384.58	0 - 71	71- 73	73 - 85	65 - 75	10	2
WAP-4D	2881325.40	970412.50	384.50	384.48	0 - 112	112 - 114	114 - 126	106 - 116	10	2
WAP-5I	2881525.00	970232.80	384.70	384.71	0 - 71	71 - 73	73 - 85	65 - 75	10	2
WAP-5D	2881528.80	970229.90	384.60	384.71	0 - 109	109 - 111	111 - 123	103 - 113	10	2
WAP-9S	2881063.86	970693.11	393.00	392.69	0 - 51	51 - 53	53 - 65	55 - 65	10	2
WAP-9I	2881066.94	970697.89	393.20	392.88	0 - 76	76 - 78	78 - 90	80 - 90	10	2
WAP-9D	2881069.75	970701.94	393.10	392.74	0 - 112.5	112.5 - 114.5	114.5 - 126.5	116.5 - 126.5	10	2
(IDEM Approval of Closure/Post-Closure Plan)										
WAP-6S	2881090.90	970688.30	385.90	385.95	0 - 36	36 - 38	38 - 50	40 - 50	10	2
WAP-6I	2881088.20	970683.30	386.10	386.11	0 - 65.5	65.5 - 67.5	67.5 - 80	70 - 80	10	2
WAP-6D	2881092.60	970693.10	386.00	386.06	0 - 101	101 - 103	103 - 117	105.5 - 115.5	10	2
WAP-7S	2881363.50	971158.10	389.40	389.55	0 - 45	45 - 47	47 - 60	50 - 60	10	2
WAP-7D	2881365.20	971161.50	389.20	389.25	0 - 64	64 - 66	66 - 80	68.5 - 78.6	10	2
WAP-8S	2881317.80	970630.00	384.80	384.90	0 - 35	35 - 37.5	37.5 - 50	40 - 50	10	2
WAP-8I	2881313.40	970633.60	384.70	384.78	0 - 65.5	65.5 - 67.5	67.5 - 80	70 - 80	10	2
WAP-8D	2881309.50	970636.70	384.70	384.72	0 - 92.5	92.5 - 94.5	94.5 - 107	97 - 107	10	2

NOTES:

bgs = below ground surface

ft = feet

in = inches

Datum of Elevations in North American Vertical Datum of 1988 (NAVD88)

TABLE II
SUMMARY OF GROUNDWATER QUALITY DATA FROM THE ORIGINAL CCR MONITORING NETWORK
F.B. CULLEY GENERATING STATION - FORMER WEST ASH POND
WARRICK COUNTY, INDIANA

Location Group	Action Level	Up-Gradient		Down-Gradient			
Location Name	GWPS	CCR-AP-7	WAP-1	WAP-2RR	WAP-3S	WAP-4S	WAP-5S
Sample Name		CCR-AP-7-20231106	WAP-1-20231106	WAP-2R-20231108	WAP-3S-20231108	WAP-4S-20231107	WAP-5S-20231107
Sample Date		11/06/2023	11/06/2023	11/08/2023	11/08/2023	11/07/2023	11/07/2023
Lab Sample ID		180-165178-25	180-165178-1	180-165178-2	180-165178-3	180-165178-5	180-165178-8
Detection Monitoring - EPA Appendix III Constituents (mg/L)							
Boron, Total	4	0.05 U	0.05 U	**2.8**	**3.7**	**12**	**5.6**
Calcium, Total	NA	**110**	**180**	**120**	**83**	**310**	**270**
Chloride	NA	**42**	**58 J+**	**40 J+**	**28 J+**	**130 J+**	**93 J+**
Fluoride	4	**0.29**	**0.37 J+**	**0.28 J+**	**0.45 J+**	**0.19 J+**	**0.085 J+**
pH (lab) (pH units)	NA	**7.5 J**	**7.4 J**	**7.1 J**	**7.9 J**	**7.5 J**	**7.1 J**
Sulfate	NA	**84**	**290 J+**	**91 J+**	**88 J+**	**460 J+**	**470 J+**
Total Dissolved Solids (TDS)	NA	**590**	**930**	**550**	**370**	**1200**	**1200 J**
Assessment Monitoring - EPA Appendix IV Constituents (mg/L)							
Antimony, Total	0.006	0.005 U	**0.00077 J**	0.005 U	0.005 U	0.005 U	0.005 U
Arsenic, Total	0.025	**0.0019 J**	**0.0074 J**	**0.0029 J**	0.01 U	**0.012**	0.01 U
Barium, Total	2	**0.1**	**0.46**	**0.071**	**0.032**	**0.049**	**0.046**
Beryllium, Total	0.004	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Cadmium, Total	0.005	0.0005 U	**0.00023 J**	**0.00035 J**	**0.00011 J**	**0.000062 J**	**0.000092 J**
Chromium, Total	0.1	0.01 U	**0.0045 J**	**0.002 J**	0.01 U	0.01 U	0.01 U
Cobalt, Total	0.019	0.002 U	**0.0014 J**	**0.0045**	**0.00062 J**	**0.0018 J**	**0.0075**
Lead, Total	0.035	0.003 U	**0.0072**	**0.0017 J**	0.003 U	0.003 U	0.003 U
Lithium, Total	0.04	**0.011**	**0.007**	**0.022**	**0.091**	**0.0025 J**	**0.0023 J**
Mercury, Total	0.002	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Molybdenum, Total	0.1	0.005 U	0.005 U	**0.1**	**0.57**	**0.46**	0.005 U
Selenium, Total	0.05	0.005 U	0.005 U	**0.0014 J**	0.005 U	0.005 U	0.005 U
Thallium, Total	0.002	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Radiological (pCi/L)							
Radium-226	NA	0.217 U ± 0.233	**1.46 ± 0.681**	0.452 U ± 0.356	**0.365 ± 0.225**	**1.05 ± 0.372**	0.203 U ± 0.214
Radium-228	NA	1.22 U ± 0.422	1.01 U ± 1.06	0.345 U ± 0.574	**0.534 ± 0.352**	**0.808 ± 0.36**	0.174 U ± 0.259
Radium-226 & 228	5	1.44 UJ ± 0.482	**2.47 J ± 1.26**	0.797 U ± 0.675	**0.899 ± 0.418**	**1.86 ± 0.518**	0.377 U ± 0.336
Field Parameters							
Temperature (Deg C)	NA	**17.68**	**19.95**	**17.04**	**17.14**	**16.36**	**23.59**
Dissolved Oxygen, Field (mg/L)	NA	**0.05**	**3.77**	**0.06**	**0.13**	**0.06**	**0.02**
Conductivity, Field (mS/cm)	NA	**0.6171**	**0.85824**	**0.39797**	**0.29112**	**0.64562**	**1.2555**
Oxidation Reduction Potential (ORP), Field (mv)	NA	**-111.4**	**-84.3**	**0.6**	**-28.4**	**-21.8**	**23.7**
Turbidity, Field (NTU)	NA	**28.94**	**137.18**	**34.3**	**3.3**	**43.31**	**0**
pH, Field (pH units)	NA	**7.26**	**7.19**	**6.72**	**7.72**	**7.22**	**6.29**

Abbreviations and Notes:
CCR: Coal Combustion Residuals.
mg/L: milligram per liter.
mS/cm: millSiemen per centimeter.
mv: millivolts.
NTU: Nephelometric Turbidity Units.
pCi/L: picoCurie per liter.
GWPS: Groundwater Protection Standard.
MCL: Maximum Contaminant Level.
RSL: Regional Screening Level.
USEPA: United States Environmental Protection Agency.
*Results in **bold** are detected.*

Qualifiers:
J: value is estimated
J+: value is estimated with a potential high bias
U: not detected, value is the laboratory reporting limit
U: activity level below the Minimum Detectable Concentration (Radiological)

- USEPA. 2020. Final Rule: Disposal of Coal Combustion Residuals from Electric Utilities. July 26. 40 CFR Part 257.
https://www.epa.gov/coalash/coal-ash-rule
- GWPS is the maximum of the MCL or RSL where no MCL is available or the Upper Tolerance Limit.

TABLE III
SUMMARY OF GROUNDWATER QUALITY DATA FOR MONITORING WELLS
INSTALLED TO ASSESS THE NATURE AND EXTENT OF APPENDIX IV SSLs
F.B. CULLEY GENERATING STATION - FORMER WEST ASH POND
WARRICK COUNTY, INDIANA

Location Group	Action Level	Assessment of Nature & Extent							
Location Name	GWPS	WAP-3D	WAP-4D	WAP-4I	WAP-5D	WAP-5I	WAP-9D	WAP-9I	WAP-9S
Sample Name		WAP-3D-20231108	WAP-4D-20231107	WAP-4I-20231107	WAP-5D-20231107	WAP-5I-20231107	WAP-9D-20231107	WAP-9I-20231107	WAP-9S-20231107
Sample Date		11/08/2023	11/07/2023	11/07/2023	11/07/2023	11/07/2023	11/07/2023	11/07/2023	11/07/2023
Lab Sample ID		180-165178-4	180-165178-7	180-165178-6	180-165178-10	180-165178-9	180-165178-21	180-165178-20	180-165178-19
Detection Monitoring - EPA Appendix III Constituents (mg/L)									
Boron, Total	4	**2.9**	0.05 U	**0.11 J+**	0.051 U	**0.089 J+**	0.05 U	**0.11 J+**	**0.54**
Calcium, Total	NA	**130**	**47**	**49**	**48**	**45**	**42**	**51**	**54**
Chloride	NA	**42 J+**	**25**	**30 J+**	**20 J+**	**27 J+**	**25 J+**	**29 J+**	**21 J+**
Fluoride	4	**0.21 J+**	**0.1**	**0.12 J+**	**0.12 J+**	**0.12 J+**	**0.096 J+**	**0.097 J+**	**0.49 J+**
pH (lab) (pH units)	NA	**7.8 J**	**7.8 J**	**7.5 J**	**7.7 J**	**7.6 J**	**7.7 J**	**7.7 J**	**7.8 J**
Sulfate	NA	**230 J+**	**33**	**54 J+**	**40 J+**	**56 J+**	**41 J+**	**40**	**28 J+**
Total Dissolved Solids (TDS)	NA	**620**	**230**	**260**	**230**	**250**	**220**	**260**	**280 J**
Assessment Monitoring - EPA Appendix IV Constituents (mg/L)									
Antimony, Total	0.006	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Arsenic, Total	0.025	0.01 U	**0.0087 J**	**0.16**	**0.01**	**0.0071 J**	**0.0055 J**	**0.011**	0.01 U
Barium, Total	2	**0.016**	**0.28**	**0.36**	**0.2**	**0.13**	**0.18**	**0.16**	**0.072**
Beryllium, Total	0.004	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Cadmium, Total	0.005	**0.0034**	0.0005 U	**0.000088 J**	0.0005 U	0.0005 U	**0.00016 J**	0.0005 U	0.0005 U
Chromium, Total	0.1	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	**0.0014 J**	0.01 U
Cobalt, Total	0.019	**0.0011 J**	0.002 U	**0.0053**	0.002 U	0.002 U	0.002 U	**0.0014 J**	0.002 U
Lead, Total	0.035	0.003 U	0.003 U	**0.0025 J**	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Lithium, Total	0.04	**0.086**	**0.0025 J**	**0.0058**	0.005 U	**0.004 J**	**0.004 J**	**0.005**	**0.007**
Mercury, Total	0.002	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Molybdenum, Total	0.1	**0.3**	**0.0047 J**	**0.0037 J**	**0.004 J**	0.005 U	**0.0023 J**	**0.008**	**0.092**
Selenium, Total	0.05	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Thallium, Total	0.002	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Radiological (pCi/L)									
Radium-226	NA	**1.01 ± 0.337**	**0.326 ± 0.106**	**2.76 ± 0.715**	**0.707 ± 0.296**	0.319 U ± 0.242	**0.524 ± 0.274**	**0.444 ± 0.261**	0.191 U ± 0.212
Radium-228	NA	0.419 U ± 0.383	**0.624 ± 0.402**	**2.17 ± 0.736**	0.164 U ± 0.276	0.732 U ± 0.341	0.562 U ± 0.345	0.348 U ± 0.335	0.318 U ± 0.263
Radium-226 & 228	5	**1.43 J ± 0.51**	**0.95 ± 0.416**	**4.93 ± 1.03**	**0.871 J ± 0.405**	1.05 UJ ± 0.418	**1.09 J ± 0.441**	**0.793 J ± 0.425**	**0.509 ± 0.338**
Field Parameters									
Temperature (Deg C)	NA	**17.15**	**18.34**	**19.56**	**25.73**	**26.17**	**19.35**	**17.3**	**16.14**
Dissolved Oxygen, Field (mg/L)	NA	**0.122**	**0.09**	**0.12**	**0.1**	**0.05**	**3.93**	**6.08**	**2.8**
Conductivity, Field (mS/cm)	NA	**0.40577**	**0.23047**	**0.26714**	**0.30638**	**0.33602**	**0.24595**	**0.23733**	**0.26973**
Oxidation Reduction Potential (ORP), Field (mv)	NA	**-18.2**	**-126.1**	**-18.2**	**-116.5**	**-32.2**	**-64.4**	**2.4**	**50.5**
Turbidity, Field (NTU)	NA	**2.45**	**0.43**	**71.86**	**0**	**0.75**	**0.32**	**1.94**	**0.32**
pH, Field (pH units)	NA	**7.58**	**7.63**	**7.33**	**7.06**	**6.93**	**7.38**	**7.51**	**7.69**

Abbreviations and Notes:

CCR: Coal Combustion Residuals.
mg/L: milligram per liter.
mS/cm: milliSiemen per centimeter.
mv: millivolts.
NTU: Nephelometric Turbidity Units.
pCi/L: picoCurie per liter.
GWPS: Groundwater Protection Standard.
MCL: Maximum Contaminant Level.
RSL: Regional Screening Level.
USEPA: United States Environmental Protection Agency.
*Results in **bold** are detected.*

- USEPA. 2020. Final Rule: Disposal of Coal Combustion Residuals from Electric Utilities. July 26. 40 CFR Part 257. https://www.epa.gov/coalash/coal-ash-rule
- GWPS is the maximum of the MCL or RSL where no MCL is available or the Upper Tolerance Limit.

Qualifiers:

J: value is estimated
J+: value is estimated with a potential high bias
U: not detected, value is the laboratory reporting limit
U: activity level below the Minimum Detectable Concentration (Radiological)

TABLE IV
SUMMARY OF GROUNDWATER QUALITY DATA FOR MONITORING WELLS
INSTALLED TO COMPLY WITH IDEM APPROVAL OF CLOSURE/POST-CLOSURE PLAN
F.B. CULLEY GENERATING STATION - FORMER WEST ASH POND
WARRICK COUNTY, INDIANA

Location Group	Action Level	Up-Gradient	IDEM Approval of Closure/Post-Closure Plan						
Location Name		CCR-AP-7	WAP-6D	WAP-6I	WAP-6S	WAP-7D	WAP-7D	WAP-7S	WAP-8D
Sample Name	GWPS	CCR-AP-7-20231106	WAP-6D-20231107	WAP-6I-20231107	WAP-6S-20231107	WAP-7D-20231108	DUP-2-20231108	WAP-7S-20231108	WAP-8D-20231108
Sample Date		11/06/2023	11/07/2023	11/07/2023	11/07/2023	11/08/2023	11/08/2023	11/08/2023	11/08/2023
Lab Sample ID		180-165178-25	180-165178-13	180-165178-12	180-165178-11	180-165178-15	180-165178-23	180-165178-14	180-165178-18
Detection Monitoring - EPA Appendix III Constituents (mg/L)									
Boron, Total	4	0.05 U	0.057 U	**0.094 J+**	**1.8**	**9.4**	**9.2**	**10**	0.059 U
Calcium, Total	NA	**110**	**43**	**49**	**85**	**390**	**410**	**160**	**39**
Chloride	NA	**42**	**22 J+**	**28 J+**	**31 J+**	**130 J+**	**120 J+**	**69 J+**	**24 J+**
Fluoride	4	**0.29**	**0.13 J+**	**0.12 J+**	**0.35 J+**	**0.31 J+**	**0.3 J+**	**0.1 J+**	**0.11 J+**
pH (lab) (pH units)	NA	**7.5 J**	**7.8 J**	**7.8 J**	**7.6 J**	**7.6 J**	**7.4 J**	**10 J**	**7.6 J**
Sulfate	NA	**84**	**42 J+**	**46 J+**	**93 J+**	**930 J+**	**920 J+**	**330 J+**	**45 J+**
Total Dissolved Solids (TDS)	NA	**590**	**230**	**260**	**440**	**1700**	**1700**	**720**	**210**
Assessment Monitoring - EPA Appendix IV Constituents (mg/L)									
Antimony, Total	0.006	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	**0.0012 J**	0.005 U
Arsenic, Total	0.025	**0.0019 J**	**0.0054 J**	**0.0067 J**	0.01 U	0.01 U	0.01 U	**0.0076 J**	**0.0028 J**
Barium, Total	2	**0.1**	**0.2**	**0.21**	**0.043**	**0.03**	**0.03**	**0.037**	**0.066**
Beryllium, Total	0.004	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Cadmium, Total	0.005	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	**0.000082 J**	0.0005 U	0.0005 U
Chromium, Total	0.1	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Cobalt, Total	0.019	0.002 U	0.002 U	0.002 U	**0.00084 J**	**0.0036**	**0.0037**	0.002 U	0.002 U
Lead, Total	0.035	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Lithium, Total	0.04	**0.011**	**0.0034 J**	**0.0048 J**	**0.0021 J**	**0.063**	**0.064**	**0.22**	**0.0023 J**
Mercury, Total	0.002	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Molybdenum, Total	0.1	0.005 U	**0.0022 J**	**0.0044 J**	**0.14**	**0.21**	**0.21**	**0.14**	0.005 U
Selenium, Total	0.05	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	**0.0011 J**	0.005 U
Thallium, Total	0.002	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Radiological (pCi/L)									
Radium-226	NA	0.217 U ± 0.233	**0.485 ± 0.239**	0.272 U ± 0.202	0.133 U ± 0.271	**0.695 ± 0.285**	**0.685 ± 0.324**	**0.288 ± 0.199**	**0.682 ± 0.329**
Radium-228	NA	1.22 U ± 0.422	0.239 U ± 0.314	0.0795 U ± 0.247	0.147 U ± 0.27	0.382 U ± 0.345	0.244 U ± 0.25	0.0231 U ± 0.278	0.408 U ± 0.361
Radium-226 & 228	5	1.44 UJ ± 0.482	**0.724 J ± 0.395**	0.352 U ± 0.319	0.28 U ± 0.383	**1.08 J ± 0.447**	**0.929 J ± 0.409**	0.311 UJ ± 0.342	**1.09 J ± 0.488**
Field Parameters									
Temperature (Deg C)	NA	**17.68**	**24.48**	**24.15**	**21.96**	**17.29**	**17.29**	**17.39**	**15.92**
Dissolved Oxygen, Field (mg/L)	NA	**0.05**	**0.1**	**0.08**	**0.06**	**0.05**	**0.05**	**0.09**	**0.04**
Conductivity, Field (mS/cm)	NA	**0.6171**	**0.29732**	**0.34701**	**0.50578**	**0.78685**	**0.78685**	**0.62929**	**0.18931**
Oxidation Reduction Potential (ORP), Field (mv)	NA	**-111.4**	**-141.8**	**-110**	**-31.7**	**-51.4**	**-51.4**	**-66.4**	**-112.7**
Turbidity, Field (NTU)	NA	**28.94**	**0**	**0**	**12.06**	**0.15**	**0.15**	**0.15**	**2.31**
pH, Field (SU)	NA	**7.26**	**7.23**	**7.1**	**6.93**	**1.22**	**1.22**	**10.53**	**7.6**

Abbreviations and Notes:

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pCi/L: picoCurie per liter.
GWPS: Groundwater Protection Standard.
MCL: Maximum Contaminant Level.
RSL: Regional Screening Level.
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- GWPS is the maximum of the MCL or RSL where no MCL is available or the Upper Tolerance Limit.

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J+: value is estimated with a potential high bias
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U: activity level below the Minimum Detectable Concentration (Radiological)

TABLE IV
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INSTALLED TO COMPLY WITH IDEM APPROVAL OF CLOSURE/POST-CLOSURE PLAN
F.B. CULLEY GENERATING STATION - FORMER WEST ASH POND
WARRICK COUNTY, INDIANA

Location Group	Action Level	IDEM Approval of Closure/Post-Closure Plan		
Location Name		WAP-8I	WAP-8S	WAP-8S
Sample Name	GWPS	WAP-8I-20231108	WAP-8S-20231108	DUP-1-20231108
Sample Date		11/08/2023	11/08/2023	11/08/2023
Lab Sample ID		180-165178-17	180-165178-16	180-165178-22
Detection Monitoring - EPA Appendix III Constituents (mg/L)				
Boron, Total	4	**0.1 J+**	**3.2**	**3.5**
Calcium, Total	NA	**46**	**150**	**160**
Chloride	NA	**30 J+**	**97 J+**	**86 J+**
Fluoride	4	**0.12 J+**	**0.095 J+**	**0.098 J+**
pH (lab) (pH units)	NA	**7.5 J**	**7.4 J**	**7.5 J**
Sulfate	NA	**44 J+**	**310 J+**	**310 J+**
Total Dissolved Solids (TDS)	NA	**240**	**820**	**820**
Assessment Monitoring - EPA Appendix IV Constituents (mg/L)				
Antimony, Total	0.006	0.005 U	0.005 U	0.005 U
Arsenic, Total	0.025	**0.035**	**0.015**	**0.017**
Barium, Total	2	**0.089**	**0.15**	**0.16**
Beryllium, Total	0.004	0.0005 U	0.0005 U	0.0005 U
Cadmium, Total	0.005	0.0005 U	0.0005 U	**0.000096 J**
Chromium, Total	0.1	0.01 U	0.01 U	0.01 U
Cobalt, Total	0.019	**0.00082 J**	**0.002**	**0.0023**
Lead, Total	0.035	0.003 U	0.003 U	0.003 U
Lithium, Total	0.04	**0.0033 J**	**0.023**	**0.022**
Mercury, Total	0.002	0.0005 U	0.0005 U	0.0005 U
Molybdenum, Total	0.1	**0.03**	**0.24**	**0.26**
Selenium, Total	0.05	0.005 U	0.005 U	0.005 U
Thallium, Total	0.002	0.002 U	0.002 U	0.002 U
Radiological (pCi/L)				
Radium-226	NA	0.138 U ± 0.282	**0.711 ± 0.308**	**0.519 ± 0.257**
Radium-228	NA	0.197 U ± 0.471	0.554 U ± 0.345	0.38 U ± 0.32
Radium-226 & 228	5	0.334 U ± 0.549	**1.27 J ± 0.462**	**0.899 J ± 0.41**
Field Parameters				
Temperature (Deg C)	NA	**15.6**	**15.93**	**15.93**
Dissolved Oxygen, Field (mg/L)	NA	**0.09**	**0.07**	**0.07**
Conductivity, Field (mS/cm)	NA	**0.21312**	**0.48541**	**0.48541**
Oxidation Reduction Potential (ORP), Field (mv)	NA	**-66.9**	**-133.4**	**-133.4**
Turbidity, Field (NTU)	NA	**27.77**	**1.82**	**1.82**
pH, Field (SU)	NA	**7.45**	**7.5**	**7.5**

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U: activity level below the Minimum Detectable Concentration (Radiological)

- USEPA. 2020. Final Rule: Disposal of Coal Combustion Residuals from Electric Utilities. July 26. 40 CFR Part 257. https://www.epa.gov/coalash/coal-ash-rule
- GWPS is the maximum of the MCL or RSL where no MCL is available or the Upper Tolerance Limit.

FIGURES

LEGEND

- UPGRADIENT CCR COMPLIANCE MONITORING WELL
- DOWNGRADIENT CCR COMPLIANCE MONITORING WELL
- DOWNGRADIENT WELL TO ASSESS NATURE AND EXTENT OF APPENDIX IV SSLs
- DOWNGRADIENT WELL TO COMPLY WITH IDEM APPROVAL OF CLOSURE/POST CLOSURE PLAN
- APPROXIMATE LIMITS OF WEST ASH POND FINAL COVER
- APPROXIMATE LIMITS OF WEST ASH POND CCR REMOVAL
- WEST ASH POND
- APPROXIMATE F.B. CULLEY PROPERTY BOUNDARY

NOTES

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

N

0 200 400
SCALE IN FEET

HALEY ALDRICH

SOUTHERN INDIANA GAS AND ELECTRIC COMPANY
F.B. CULLEY GENERATING STATION - FORMER WEST ASH POND
NEWBURGH, INDIANA

GROUNDWATER MONITORING WELL NETWORK

JULY 2024

FIGURE 1

WARRICK POWER PLANT

APPROXIMATE LOCATION OF FORMER WEST ASH POND

WAP-2RR 352.14

WAP-7S 351.90

WAP-7D

WAP-3S 351.33

WAP-3D

WAP-9S 351.69

WAP-9I

WAP-6D

WAP-9D

WAP-6I

WAP-6S 352.46

WAP-8S 352.90

WAP-8D

WAP-8I

WAP-4D

WAP-4I

WAP-4S 353.96

WAP-5S 355.33

WAP-5I

WAP-5D

PZ-3 383.08

PZ-4 383.61

PZ-5 384.25

PZ-6 386.42

PZ-7 384.41

WAP-1 386.92

CCR-AP-7 416.56

1428 FT/YR

413 FT/YR

0.34 FT/YR

352 353 354 355 360 365 370 375 380 385 390 395 400 405 410 415

OHIO RIVER 357.65 FT NAVD88

COAL PILE

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LEGEND

- UPGRADIENT GROUNDWATER MONITORING WELL
- DOWNGRADIENT GROUNDWATER MONITORING WELL
- PIEZOMETER
- GROUNDWATER FLOW DIRECTION
- GROUNDWATER ELEVATION CONTOUR, 1-FT INTERVAL
- GROUNDWATER ELEVATION CONTOUR, 5-FT INTERVAL, DASHED WHERE INFERRED
- APPROXIMATE UNIT BOUNDARY
- APPROXIMATE LIMITS OF WEST ASH POND CCR REMOVAL
- 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. $V = \frac{k(i)}{n_e}$

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

N

0 200 400
SCALE IN FEET

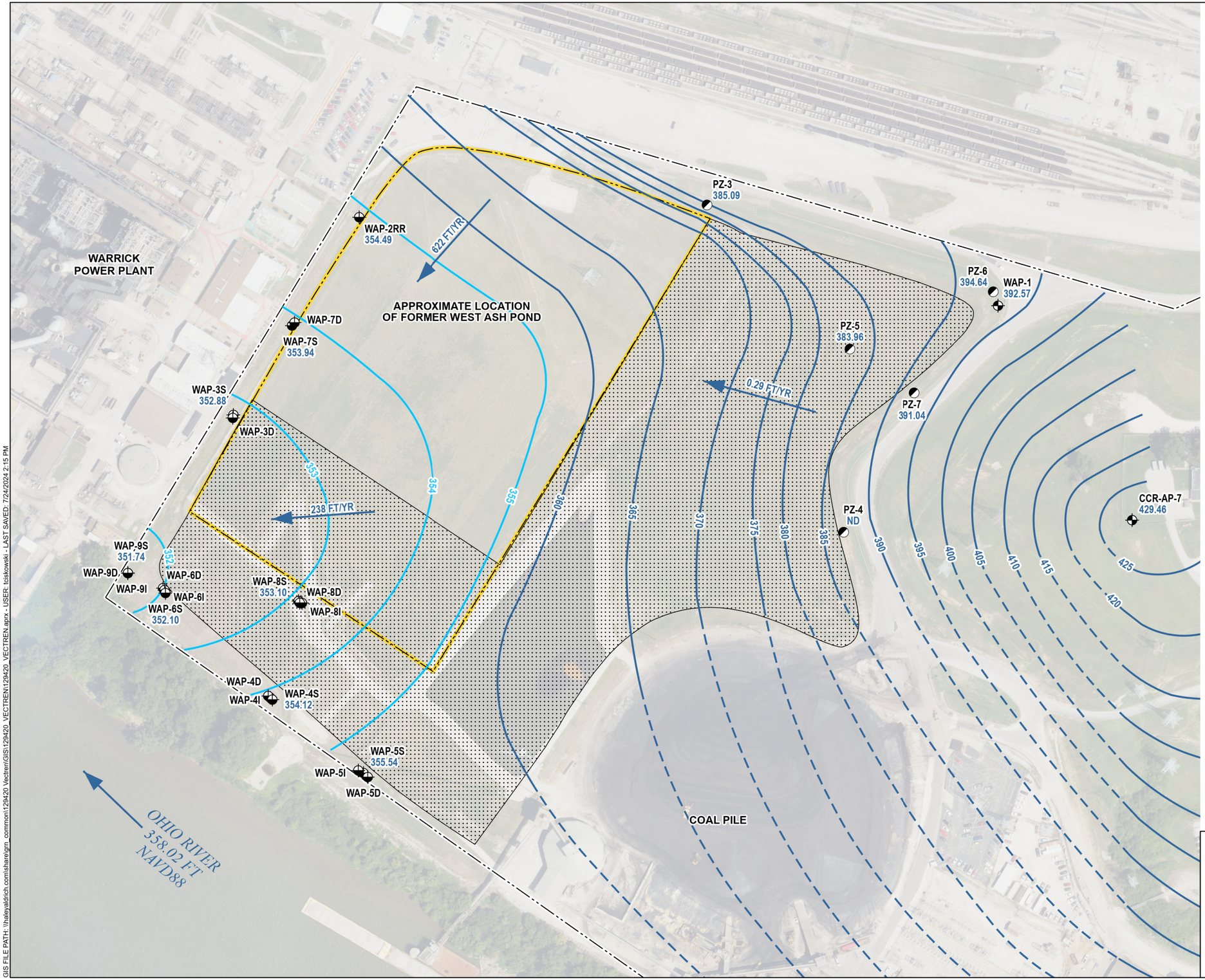
HALEY ALDRICH

SOUTHERN INDIANA GAS AND ELECTRIC COMPANY
F.B. CULLEY GENERATING STATION - FORMER WEST ASH POND
NEWBURGH, INDIANA

SHALLOW GROUNDWATER CONFIGURATION - NOVEMBER 2023

JULY 2024

FIGURE 2



LEGEND

- UPGRADIENT GROUNDWATER MONITORING WELL
- DOWNGRADIENT GROUNDWATER MONITORING WELL
- PIEZOMETER
- GROUNDWATER FLOW DIRECTION
- GROUNDWATER ELEVATION CONTOUR, 1-FT INTERVAL
- GROUNDWATER ELEVATION CONTOUR, 5-FT INTERVAL, DASHED WHERE INFERRED
- APPROXIMATE UNIT BOUNDARY
- APPROXIMATE LIMITS OF WEST ASH POND CCR REMOVAL
- 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 6 MAY 2024

4. OHIO RIVER LEVEL COLLECTED BY USGS OWENSBORO GAGE #03303502 ON 6 MAY 2024 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

N

0 200 400
SCALE IN FEET

HALEY ALDRICH

SOUTHERN INDIANA GAS AND ELECTRIC COMPANY
F.B. CULLEY GENERATING STATION - FORMER WEST ASH POND
NEWBURGH, INDIANA

SHALLOW GROUNDWATER CONFIGURATION - MAY 2024

JULY 2024

FIGURE 3

APPENDIX A
Summary of Statistical Analysis

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

TECHNICAL MEMORANDUM

27 September 2023
File No. 0129420-032

TO: Southern Indiana Gas and Electric Company

FROM: Haley & Aldrich, Inc.
Todd Plating, Senior 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
West 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 West Ash Pond (WAP). 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 the Groundwater Protection Standards (GWPS), consistent with the requirements in 40 CFR § 257.95.

Methods used during this statistical analysis are described in Haley & Aldrich's 2017 *Statistical Data Analysis Plan for the F.B. Culley Generating Station*. A summary of how applicable performance standards described in 40 CFR § 257.93 (g) were achieved include:

- 40 CFR § 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.
- 40 CFR § 257.93 (g) (2) – Not applicable
- 40 CFR § 257.93 (g) (3) – Not applicable

- 40 CFR § 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.
- 40 CFR § 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.
- 40 CFR § 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 (WAP-2RR, WAP-3S, WAP-4S and WAP-5S) were compared to the GWPS established from the background dataset for the upgradient monitoring wells (WAP-1 and CCR-AP-7) 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 (MCL), regional screening level (RSL), or background concentration. The results of the assessment monitoring statistical evaluation are discussed below and provided in Attachment A.

Development of Groundwater Protection Standard

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 MCL, RSL, 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*.

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. In summary, 91 percent of trends analyzed for wells are identified as stable or decreasing, excluding background wells and wells with no trend. Increasing trends were identified for lithium at WAP-3S, for molybdenum at WAP-2RR and WAP-4S and for arsenic at WAP-4S.

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 below in Table 1. Based on previous compliance sampling events and statistical evaluations, interwell comparisons were utilized for all downgradient wells and constituents. Based on this statistical evaluation, lithium, and molybdenum remain as the only Appendix IV constituent SSLs greater than a GWPS downgradient of the WAP. This information is provided for Southern Indiana Gas and Electric Company's records. Because no new constituents were identified as SSLs greater than the GWPS, additional notification pertaining to the statistical analysis of the May 2023 groundwater analytical results are not required at this time.

Table 1: Statistically Significant Level Summary – Appendix IV Constituents				
Location ID	**Trend**	**Constituent**	**Newly Identified SSL**	**Concentration (mg/L)**
WAP-3S	Increase	Lithium	No	0.120
WAP-3S	Stable	Molybdenum	No	0.520
WAP-4S	Increase	Molybdenum	No	0.580
Notes: *mg/L= milligrams per liter*				

Enclosure

Attachment A – Assessment Monitoring Statistical Analysis Summary

ATTACHMENT A
Assessment Monitoring Statistical Analysis Summary

ATTACHMENT A
ASSESSMENT MONITORING STATISTICAL ANALYSIS SUMMARY
F.B. CULLEY GENERATING STATION - FORMER WEST ASH POND
WARRICK COUNTY, INDIANA

																		Interwell Analysis							
Location ID	**Frequency of Detection**	**Percent Non-Detects**	**Range of Non-Detect**	**Mean**	**50th Percentile (Median)**	**95th Percentile**	**Maximum Detect (mg/L)**	**Variance**	**Standard Deviation**	**Coefficient of Variance**	**CCR MCL/RSL (mg/L)**	**Report Result Unit**	**Detection Exceedances (Y/N)**	**Number of Detection Exceedances**	**Number of Non-Detection Exceedances**	**Outlier Presence**	**Outlier Removed**	**Trend**	**Distribution Well***	**May 2023 Concentration (mg/L)**	**Detect?**	**Upper Tolerance Limit (mg/L)**	**SSI**	**GWPS (Higher of MCL/RSL or Upper Tolerance Limit) (mg/L)**	**Lower Confidence Level (LCL) (mg/L)**	**Exceedance above Background at Individual Well**	**SSL**
CCR Appendix-IV: Antimony, Total (mg/L)																											
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	No	No	NA	Non-parametric			0.002		0.006			
WAP-1	9/18	50%	0.002-0.002	0.00154	0.002	0.002	0.002	3.578E-07	0.0005981	0.3876	0.006	mg/L	N	0	0	No	No	Stable									
WAP-2RR	1/18	94%	0.002-0.002	0.00195	0.002	0.002	0.0011	0.000000045	0.0002121	0.1088	0.006	mg/L	N	0	0	NA	NA	NA		0.001	Y		N			N	No
WAP-3S	1/18	94%	0.002-0.002	0.00191	0.002	0.002	0.00043	1.369E-07	0.0003701	0.1935	0.006	mg/L	N	0	0	No	No	NA		0.002	N		N			N	No
WAP-4S	0/18	100%	0.002-0.02	0.003	0.002	0.0047		0.000018	0.004243	1.414	0.006	mg/L	N	0	1	NA	NA	NA		0.002	N		N			N	No
WAP-5S	0/18	100%	0.002-0.0021	0.00201	0.002	0.002015		5.556E-10	0.00002357	0.01175	0.006	mg/L	N	0	0	NA	NA	NA		0.002	N		N			N	No
CCR Appendix-IV: Arsenic, Total (mg/L)																											
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	Yes	No	Decrease	Non-parametric			0.025		0.025			
WAP-1	18/18	0%	-	0.00823	0.00585	0.0216	0.025	0.00003832	0.00619	0.7518	0.01	mg/L	Y	4	0	Yes	No	Stable									
WAP-2RR	17/18	6%	0.001-0.001	0.0016	0.000975	0.006185	0.0078	0.000003885	0.001971	1.23	0.01	mg/L	N	0	0	Yes	No	Stable		0.00110	Y		N			N	No
WAP-3S	17/18	6%	0.005-0.005	0.00241	0.00225	0.00521	0.0064	0.000002535	0.001592	0.6609	0.01	mg/L	N	0	0	No	No	Decrease		0.00062	Y		N			N	No
WAP-4S	18/18	0%	-	0.00583	0.00445	0.01425	0.027	0.00003298	0.005743	0.9852	0.01	mg/L	Y	2	0	Yes	No	Increase		0.027	Y		Y		0.004	N	No
WAP-5S	15/18	17%	0.001-0.005	0.00122	0.00073	0.00432	0.0042	0.000001625	0.001275	1.043	0.01	mg/L	N	0	0	Yes	No	Stable		0.001	Y		N			N	No
CCR Appendix-IV: Barium, Total (mg/L)																											
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	No	No	Decrease	Non-parametric			0.990		2.000			
WAP-1	18/18	0%	-	0.523	0.46	0.8965	0.99	0.03139	0.1772	0.3385	2	mg/L	N	0	0	Yes	No	Stable									
WAP-2RR	18/18	0%	-	0.0412	0.041	0.0656	0.086	0.0002508	0.01584	0.3842	2	mg/L	N	0	0	No	No	Stable		0.043	Y		N			N	No
WAP-3S	18/18	0%	-	0.17	0.165	0.356	0.39	0.01521	0.1233	0.7262	2	mg/L	N	0	0	No	No	Decrease		0.068	Y		N			N	No
WAP-4S	18/18	0%	-	0.0565	0.056	0.07065	0.08	0.00006909	0.008312	0.1471	2	mg/L	N	0	0	Yes	No	Decrease		0.069	Y		N			N	No
WAP-5S	18/18	0%	-	0.0515	0.0525	0.0613	0.063	0.00005379	0.007334	0.1424	2	mg/L	N	0	0	No	No	Decrease		0.037	Y		N			N	No
CCR Appendix-IV: Beryllium, Total (mg/L)																											
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	No	No	Stable	Non-parametric			0.001		0.004			
WAP-1	13/18	28%	0.001-0.001	0.000623	0.00054	0.00103	0.0012	1.443E-07	0.0003799	0.61	0.004	mg/L	N	0	0	No	No	Stable									
WAP-2RR	2/18	89%	0.001-0.001	0.000923	0.001	0.001	0.00037	5.101E-08	0.0002259	0.2448	0.004	mg/L	N	0	0	No	No	NA		0.001	N		N			N	No
WAP-3S	1/18	94%	0.001-0.001	0.000948	0.001	0.001	0.000068	4.826E-08	0.0002197	0.2317	0.004	mg/L	N	0	0	No	No	NA		0.001	N		N			N	No
WAP-4S	0/18	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.004	mg/L	N	0	0	NA	NA	NA		0.001	N		N			N	No
WAP-5S	1/18	94%	0.001-0.001	0.000949	0.001	0.001	0.000084	4.661E-08	0.0002159	0.2275	0.004	mg/L	N	0	0	No	No	NA		0.001	N		N			N	No
CCR Appendix-IV: Cadmium, Total (mg/L)																											
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	No	No	NA	Non-parametric			0.0010		0.005			
WAP-1	7/18	61%	0.001-0.001	0.000722	0.001	0.001	0.00049	0.000000135	0.0003675	0.5088	0.005	mg/L	N	0	0	No	No	Stable									
WAP-2RR	16/18	11%	0.001-0.001	0.000508	0.000435	0.001	0.001	5.671E-08	0.0002381	0.4685	0.005	mg/L	N	0	0	No	No	Stable		0.0004	Y		N			N	No
WAP-3S	9/18	50%	0.001-0.001	0.000608	0.00065	0.001	0.0003	1.632E-07	0.000404	0.6641	0.005	mg/L	N	0	0	No	No	Stable		0.0010	N		N			N	No
WAP-4S	2/18	89%	0.001-0.001	0.000913	0.001	0.001	0.00025	6.459E-08	0.0002541	0.2784	0.005	mg/L	N	0	0	No	No	NA		0.001	N		N			N	No
WAP-5S	1/18	94%	0.001-0.001	0.000953	0.001	0.001	0.00015	4.014E-08	0.0002003	0.2103	0.005	mg/L	N	0	0	No	No	NA		0.001	N		N			N	No
CCR Appendix-IV: Chromium, Total (mg/L)																											
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	Yes	No	Stable	Non-parametric			0.046		0.100			
WAP-1	17/18	6%	0.0022-0.0022	0.014	0.0105	0.04345	0.046	0.000163	0.01277	0.9147	0.1	mg/L	N	0	0	No	No	Stable									
WAP-2RR	2/18	89%	0.002-0.005	0.00266	0.002	0.005105	0.0057	0.000001668	0.001292	0.4864	0.1	mg/L	N	0	0	No	No	NA		0.0050	N		N			N	No
WAP-3S	3/18	83%	0.002-0.005	0.00224	0.002	0.0033	0.003	6.429E-07	0.0008018	0.3573	0.1	mg/L	N	0	0	Yes	No	NA		0.0020	N		N			N	No
WAP-4S	1/18	94%	0.002-0.005	0.0021	0.002	0.00245	0.00088	5.916E-07	0.0007692	0.3655	0.1	mg/L	N	0	0	No	No	NA		0.002	N		N			N	No
WAP-5S	0/18	100%	0.002-0.005	0.00217	0.002	0.00245		0.0000005	0.0007071	0.3264	0.1	mg/L	N	0	0	No	No	NA		0.002	N		N			N	No
CCR Appendix-IV: Cobalt, Total (mg/L)																											
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	Yes	No	Decrease	Non-parametric			0.019		0.019			
WAP-1	18/18	0%	-	0.0057	0.0046	0.0173	0.019	0.0000281	0.005301	0.9296	0.006	mg/L	Y	5	0	No	No	Stable									
WAP-2RR	18/18	0%	-	0.00261	0.0022	0.006725	0.0097	0.000004579	0.00214	0.8211	0.006	mg/L	Y	2	0	Yes	No	Stable		0.00200	Y		N			N	No
WAP-3S	18/18	0%	-	0.000892	0.00078	0.00163	0.0018	2.062E-07	0.0004541	0.5093	0.006	mg/L	N	0	0	No	No	Stable		0.00110	Y		N			N	No
WAP-4S	18/18	0%	-	0.00224	0.0018	0.003605	0.0093	0.000003223	0.001795	0.7998	0.006	mg/L	Y	1	0	Yes	No	Stable		0.002	Y		N			N	No
WAP-5S	18/18	0%	-	0.0072	0.0077	0.009315	0.0094	0.000003996	0.001999	0.2777	0.006	mg/L	Y	16	0	Yes	No	Decrease		0.004	Y		N			N	No
CCR Appendix-III/IV: Fluoride (mg/L)																											
CCR-AP-7	22/22	0%	-	1.304	1.18	2.28	2.88	0.07728	0.556	1.706	4	mg/L	N	0	0	Yes	No	Increase	Normal			2.000		4.000			
WAP-1	18/18	0%	-	1.876	1.12	5.6	8	0.8936	1.8908	4.028	4	mg/L	N	0	0	Yes	No	Stable									
WAP-2RR	18/18	0%	-	0.952	0.94	1.48	1.6	0.02718	0.32972	1.3868	4	mg/L	N	0	0	No	No	Increase		0.290	Y		N			N	No
WAP-3S	18/18	0%	-	2.176	2.22	3.05	3.08	0.09936	0.6304	1.1592	4	mg/L	N	0	0	No	No	Stable		0.290	Y		N			N	No
WAP-4S	18/18	0%	-	0.824	0.9	1.06	1.12	0.008468	0.18404	0.8952	4	mg/L	N	0	0	No	No	Stable		0.230	Y		N			N	No
WAP-5S	17/18	6%	0.1-0.1	0.416	0.4	0.66	0.84	0.005416	0.14716	1.416	4	mg/L	N	0	0	Yes	No	Stable		0.120	Y		N			N	No

ATTACHMENT A
ASSESSMENT MONITORING STATISTICAL ANALYSIS SUMMARY
F.B. CULLEY GENERATING STATION - FORMER WEST ASH POND
WARRICK COUNTY, INDIANA

																		Interwell Analysis						
Location ID	**Frequency of Detection**	**Percent Non-Detects**	**Range of Non-Detect**	**Mean**	**50th Percentile (Median)**	**95th Percentile**	**Maximum Detect (mg/L)**	**Variance**	**Standard Deviation**	**Coefficient of Variance**	**CCR MCL/RSL (mg/L)**	**Report Result Unit**	**Detection Exceedances (Y/N)**	**Number of Detection Exceedances**	**Number of Non-Detection Exceedances**	**Outlier Presence**	**Outlier Removed**	**Trend**	**Distribution Well***	**May 2023 Concentration (mg/L)**	**Detect?**	**Upper Tolerance Limit (mg/L)**	**SSI**	**GWPS (Higher of MCL/RSL or Upper Tolerance Limit) (mg/L)**	**Lower Confidence Level (LCL) (mg/L)**	**Exceedance above Background at Individual Well**	**SSL**
CCR Appendix-IV: Lead, Total (mg/L)																										
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	Yes	No	Stable	Non-parametric			0.035		0.035			
WAP-1	18/18	0%	-	0.0109	0.00915	0.03415	0.035	0.000102	0.0101	0.9255	0.015	mg/L	Y	3	0	No	No	Stable									
WAP-2RR	7/18	61%	0.001-0.001	0.00142	0.001	0.00572	0.0064	0.0000029	0.001703	1.201	0.015	mg/L	N	0	0	Yes	No	Stable		0.00100	N		N			N	No
WAP-3S	14/18	22%	0.001-0.001	0.000852	0.00084	0.001935	0.0027	3.782E-07	0.000615	0.7221	0.015	mg/L	N	0	0	Yes	No	Stable		0.00100	N		N			N	No
WAP-4S	4/18	78%	0.001-0.001	0.000849	0.001	0.001	0.0007	9.632E-08	0.0003104	0.3654	0.015	mg/L	N	0	0	No	No	NA		0.001	N		N			N	No
WAP-5S	2/18	89%	0.001-0.001	0.00092	0.001	0.001	0.00036	5.496E-08	0.0002344	0.2548	0.015	mg/L	N	0	0	No	No	NA		0.001	N		N			N	No
CCR Appendix-IV: Lithium, Total (mg/L)																										
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	Yes	No	Decrease	Non-parametric			0.039		0.040			
WAP-1	18/18	0%	-	0.0124	0.01	0.02445	0.027	0.00003746	0.00612	0.4942	0.04	mg/L	N	0	0	No	No	Stable									
WAP-2RR	18/18	0%	-	0.0317	0.0275	0.05915	0.06	0.0002132	0.0146	0.4611	0.04	mg/L	Y	5	0	No	No	Decrease		0.0250	Y		N			N	No
WAP-3S	18/18	0%	-	0.0699	0.0735	0.103	0.12	0.0005373	0.02318	0.3314	0.04	mg/L	Y	15	0	No	No	Increase		0.1200	Y		Y			Y	Yes
WAP-4S	11/18	39%	0.005-0.008	0.00747	0.005	0.01615	0.017	0.00002307	0.004803	0.6428	0.04	mg/L	N	0	0	No	No	Decrease		0.002	Y		N			N	No
WAP-5S	6/18	67%	0.005-0.05	0.00783	0.005	0.0211	0.016	0.0001196	0.01093	1.396	0.04	mg/L	N	0	1	Yes	No	NA		0.002	Y		N			N	No
CCR Appendix-IV: Mercury, Total (mg/L)																										
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			0.0002		0.002			
WAP-1	0/16	100%	0.0002-0.0002	0.0002	0.0002	0.0002		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA									
WAP-2RR	0/16	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
WAP-3S	0/16	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
WAP-4S	0/17	100%	0.0002-0.0002	0.0002	0.0002	0.0002		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA		0.000	N		N			N	No
WAP-5S	0/16	100%	0.0002-0.0002	0.0002	0.0002	0.0002		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA		0.000	N		N			N	No
CCR Appendix-IV: Molybdenum, Total (mg/L)																										
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	No	No	Decrease	Non-parametric			0.013		0.100			
WAP-1	16/18	11%	0.005-0.005	0.00181	0.00125	0.005	0.0028	0.000001807	0.001344	0.7445	0.1	mg/L	N	0	0	Yes	No	Stable									
WAP-2RR	18/18	0%	-	0.0584	0.05	0.109	0.16	0.001211	0.0348	0.5954	0.1	mg/L	Y	2	0	Yes	No	Increase		0.0770	Y		Y			N	No
WAP-3S	18/18	0%	-	0.855	0.89	1.245	1.5	0.09456	0.3075	0.3596	0.1	mg/L	Y	18	0	No	No	Stable		0.5200	Y		Y			Y	Yes
WAP-4S	18/18	0%	-	0.419	0.44	0.5205	0.58	0.01472	0.1213	0.2892	0.1	mg/L	Y	17	0	Yes	No	Increase		0.580	Y		Y			Y	Yes
WAP-5S	14/18	22%	0.005-0.005	0.024	0.000915	0.06425	0.4	0.008809	0.09385	3.91	0.1	mg/L	Y	1	0	Yes	No	Stable		0.005	N		N			N	No
CCR Appendix-IV: Radium-226 & 228 (pCi/L)																										
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	N	0	0	No	No	Stable	Non-parametric			4.74		5.000			
WAP-1	15/18	17%	0.48-1.45	1.45	1.25	2.598	4.74	0.8288	0.9104	0.6289	5	pCi/L	N	0	0	No	No	Stable									
WAP-2RR	11/18	39%	0.0883-0.419	0.606	0.506	1.623	2.15	0.2795	0.5287	0.8728	5	pCi/L	N	0	0	No	No	Stable		0.669	Y		N			N	No
WAP-3S	13/18	28%	0.199-5	1.14	1.035	1.923	1.38	1.025	1.013	0.8872	5	pCi/L	N	0	0	No	No	Stable		5.000	N		N			N	No
WAP-4S	8/18	56%	0.131-5	0.747	0.452	1.778	1.21	1.228	1.108	1.482	5	pCi/L	N	0	0	No	No	Stable		5.000	N		N			N	No
WAP-5S	9/18	50%	0.187-0.409	0.478	0.3955	0.9043	1.49	0.1008	0.3174	0.6644	5	pCi/L	N	0	0	No	No	Stable		0.801	Y		N			N	No
CCR Appendix-IV: Selenium, Total (mg/L)																										
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	Yes	NA	NA	Non-parametric			0.005		0.050			
WAP-1	2/16	88%	0.005-0.005	0.0046	0.005	0.005	0.0018	0.000001195	0.001093	0.2376	0.05	mg/L	N	0	0	No	NA	NA									
WAP-2RR	5/16	69%	0.005-0.005	0.00491	0.005	0.0062	0.0071	9.838E-07	0.0009919	0.2019	0.05	mg/L	N	0	0	No	No	NA		0.0071	Y		Y			N	No
WAP-3S	0/16	100%	0.005-0.005	0.005	0.005	0.005		7.228E-21	8.502E-11	0.000000017	0.05	mg/L	N	0	0	NA	NA	NA		0.005	N		N			N	No
WAP-4S	0/16	100%	0.005-0.005	0.005	0.005	0.005		7.228E-21	8.502E-11	0.000000017	0.05	mg/L	N	0	0	NA	NA	NA		0.005	N		N			N	No
WAP-5S	0/16	100%	0.005-0.005	0.005	0.005	0.005		7.228E-21	8.502E-11	0.000000017	0.05	mg/L	N	0	0	NA	NA	NA		0.005	N		N			N	No
CCR Appendix-IV: Thallium, Total (mg/L)																										
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	No	No	NA	Non-parametric			0.001		0.002			
WAP-1	11/18	39%	0.001-0.001	0.000576	0.0005	0.001	0.00063	1.397E-07	0.0003738	0.6492	0.002	mg/L	N	0	0	No	No	Stable									
WAP-2RR	10/18	44%	0.001-0.001	0.00055	0.000385	0.001	0.00047	1.805E-07	0.0004249	0.7731	0.002	mg/L	N	0	0	No	No	Stable		0.001	N		N			N	No
WAP-3S	0/18	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA		0.001	N		N			N	No
WAP-4S	0/18	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA		0.001	N		N			N	No
WAP-5S	2/18	89%	0.001-0.001	0.000907	0.001	0.001	0.00022	7.327E-08	0.0002707	0.2984	0.002	mg/L	N	0	0	No	No	NA		0.001	N		N			N	No

Notes:

* - Determined using the Shapiro-Wilks statistical test at a 1% significance level and a residual probability plot

CCR - Coal Combustion Residuals

GWPS - Groundwater Protection Standard

WAP - West Ash Pond

MCL - Maximum Concentration Llimit

mg/L - Miligrams per Liter

NA - Not Applicable

RSL - Regional Screening Level

SSI - Statistically Significant Increase

SSL - Statistically Significant Level

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TECHNICAL MEMORANDUM

8 April 2024
File No. 0129420-032

TO: Southern Indiana Gas and Electric Company

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

SUBJECT: Statistical Evaluation of the November 2023 Semi-annual Groundwater Assessment Monitoring Data
Southern Indiana Gas and Electric Company
West 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 2023 semi-annual assessment monitoring event for the F.B. Culley Generating Station West Ash Pond (WAP). 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 the Groundwater Protection Standards (GWPS), consistent with the requirements in 40 CFR § 257.95.

Methods used during this statistical analysis are described in Haley & Aldrich's 2017 *Statistical Data Analysis Plan for the F.B. Culley Generating Station*. A summary of how applicable performance standards described in 40 CFR § 257.93 (g) were achieved include:

- 40 CFR § 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.
- 40 CFR § 257.93 (g) (2) – Not applicable
- 40 CFR § 257.93 (g) (3) – Not applicable

- 40 CFR § 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.
- 40 CFR § 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.
- 40 CFR § 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 (WAP-2RR, WAP-3S, WAP-4S and WAP-5S) were compared to the GWPS established from the background dataset for the upgradient monitoring wells (WAP-1 and CCR-AP-7) for detected Appendix IV constituents. November 2023 analytical results are summarized in Table 1. GWPS for each of the Appendix IV constituents have been set equal to the highest value of the maximum contaminant level (MCL), regional screening level (RSL), or background concentration. The results of the assessment monitoring statistical evaluation are discussed below and provided in Attachment A.

Development of Groundwater Protection Standard

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 MCL, RSL, 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. Parametric TLs utilize normally distributed data or data normalized via a transformation of the sample background data 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 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 the EnvStats (version 2.8.1) R programming package after testing for outlier sample results that would warrant removal from the dataset based on likely error in sampling or measurement. Statistical outlier tests for the background data were performed using the outliers (version 0.15) R programming package, 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*.

TREND SUMMARY

Mann-Kendall trend analyses were performed on data sets from downgradient wells of sufficient sample size. Results of the trend analysis are included as Table 2. Trends indicated for constituents identified as SSLs are summarized below:

- Lithium in WAP-3S is increasing (trend confirmed by Thiel-Sen test, Sen's slope)
- Molybdenum in WAP-3S is stable
- Molybdenum in WAP-4S is increasing (trend confirmed by Thiel-Sen test), however no trend was identified in recent data (samples collected between August 2018 and November 2023).

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 2023 assessment monitoring event were compared to their respective GWPS (Attachment A). LCLs were calculated where constituents were detected at concentrations greater than a GWPS. An SSL is indicated when the LCL is greater than the GWPS. SSLs are summarized in the table below. Based on previous compliance sampling events and statistical evaluations, interwell comparisons were utilized for all downgradient wells and constituents. Based on this statistical evaluation, lithium, and molybdenum remain as the only Appendix IV constituent SSLs downgradient of

the WAP. This information is provided for Southern Indiana Gas and Electric Company's records. Because no new constituents were identified as SSLs, additional notification pertaining to the statistical analysis of the November 2023 groundwater analytical results is not required at this time.

Statistically Significant Level Summary - Appendix IV Constituents			
Location	**Constituent**	**November 2023 Concentration (mg/L)**	**Newly Identified SSL**
WAP-3S	Lithium, Total	0.091	No
WAP-3S	Molybdenum, Total	0.57	No
WAP-4S	Molybdenum, Total	0.46	No
Notes: mg/L = milligrams per liter			

Enclosure

Table 1. Summary of Groundwater Quality Data - November 2023
Table 2. Trend Summary

Attachment A – Assessment Monitoring Statistical Analysis Summary

TABLES

TABLE 1
SUMMARY OF GROUNDWATER QUALITY DATA - NOVEMBER 2023
F.B. CULLEY GENERATING STATION - FORMER WEST ASH POND
WARRICK COUNTY, INDIANA

Location Group	Action Level	Up-Gradient		Down-Gradient			
Location Name	GWPS	CCR-AP-7	WAP-1	WAP-2RR	WAP-3S	WAP-4S	WAP-5S
Sample Name		CCR-AP-7-20231106	WAP-1-20231106	WAP-2R-20231108	WAP-3S-20231108	WAP-4S-20231107	WAP-5S-20231107
Sample Date		11/06/2023	11/06/2023	11/08/2023	11/08/2023	11/07/2023	11/07/2023
Lab Sample ID		180-165178-25	180-165178-1	180-165178-2	180-165178-3	180-165178-5	180-165178-8
Assessment Monitoring - Appendix IV Constituents (mg/L)							
Antimony, Total	0.006	0.005 U	**0.00077 J**	0.005 U	0.005 U	0.005 U	0.005 U
Arsenic, Total	0.025	**0.0019 J**	**0.0074 J**	**0.0029 J**	0.01 U	**0.012**	0.01 U
Barium, Total	2	**0.1**	**0.46**	**0.071**	**0.032**	**0.049**	**0.046**
Beryllium, Total	0.004	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Boron, Total	4	0.05 U	0.05 U	**2.8**	**3.7**	**12**	**5.6**
Cadmium, Total	0.005	0.0005 U	**0.00023 J**	**0.00035 J**	**0.00011 J**	**0.000062 J**	**0.000092 J**
Chromium, Total	0.1	0.01 U	**0.0045 J**	**0.002 J**	0.01 U	0.01 U	0.01 U
Cobalt, Total	0.019	0.002 U	**0.0014 J**	**0.0045**	**0.00062 J**	**0.0018 J**	**0.0075**
Fluoride	4	**0.29**	**0.37 J+**	**0.28 J+**	**0.45 J+**	**0.19 J+**	**0.085 J+**
Lead, Total	0.035	0.003 U	**0.0072**	**0.0017 J**	0.003 U	0.003 U	0.003 U
Lithium, Total	0.04	**0.011**	**0.007**	**0.022**	**0.091**	**0.0025 J**	**0.0023 J**
Mercury, Total	0.002	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Molybdenum, Total	0.1	0.005 U	0.005 U	**0.1**	**0.57**	**0.46**	0.005 U
Selenium, Total	0.05	0.005 U	0.005 U	**0.0014 J**	0.005 U	0.005 U	0.005 U
Thallium, Total	0.002	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Radiological (pCi/L)							
Radium-226	NA	1 U ± 0.233	**1.46 ± 0.681**	1 U ± 0.356	**0.365 ± 0.225**	**1.05 ± 0.372**	1 U ± 0.214
Radium-228	NA	1.22 U ± 0.422	1 U ± 1.06	1 U ± 0.574	**0.534 ± 0.352**	**0.808 ± 0.36**	1 U ± 0.259
Radium-226 & 228	5	1.44 UJ ± 0.482	**2.47 J ± 1.26**	5 U ± 0.675	**0.899 ± 0.418**	**1.86 ± 0.518**	5 U ± 0.336
Field Parameters							
Temperature (Deg C)	NA	**17.68**	**19.95**	**17.04**	**17.14**	**16.36**	**23.59**
Dissolved Oxygen, Field (mg/L)	NA	**0.05**	**3.77**	**0.06**	**0.13**	**0.06**	**0.02**
Conductivity, Field (mS/cm)	NA	**0.6171**	**0.85824**	**0.39797**	**0.29112**	**0.64562**	**1.2555**
Oxidation Reduction Potential (ORP), Field (mv)	NA	**-111.40**	**-84.30**	**0.60**	**-28.40**	**-21.80**	**23.70**
Turbidity, Field (NTU)	NA	**28.94**	**137.18**	**34.30**	**3.30**	**43.31**	**0.00**
pH, Field (SU)	NA	**7.26**	**7.19**	**6.72**	**7.72**	**7.22**	**6.29**

Notes and Abbreviations:

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
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

- USEPA. 2020. Final Rule: Disposal of Coal Combustion Residuals from Electric Utilities. July 26. 40 CFR Part 257.
https://www.epa.gov/coalash/coal-ash-rule

Table 2. Trend Summary

Location	Chemical	Units	Identified Trends		Trend Analysis on All Available Data					Trend Analysis on Recent Data				
			Trend (All Data)	Trend (Recent Data)	Results, n	Detected Results, n	Max Concentration	Sen Slope (magnitude per year)	p-value	*Results, n	*Detected Results, n	*Max Concentration	*Sen Slope (magnitude per year)	*p-value
CCR-AP-7	Antimony, Total	mg/L	Not Evaluated - Majority of data (>75%) non-detect.	Not Evaluated - Only one detected result.	23	3	0.0025	NA	NA	12	1	0.0025	NA	NA
WAP-1	Antimony, Total	mg/L	Stable	No Trend	19	10	0.002	0	0.334	12	8	0.002	2.86e-06	0.726
WAP-2RR	Antimony, Total	mg/L	Not Evaluated - Only one detected result.	Not Evaluated - Only one detected result.	19	1	0.0025	NA	NA	12	1	0.0025	NA	NA
WAP-3S	Antimony, Total	mg/L	Not Evaluated - Only one detected result.	Not Evaluated - Only one detected result.	19	1	0.0025	NA	NA	12	1	0.0025	NA	NA
WAP-4S	Antimony, Total	mg/L	Not Evaluated - No detected results.	Not Evaluated - No detected results.	19	0	0.01	NA	NA	12	0	0.01	NA	NA
WAP-5S	Antimony, Total	mg/L	Not Evaluated - Only one detected result.	Not Evaluated - No detected results.	19	1	0.0025	NA	NA	12	0	0.0025	NA	NA
CCR-AP-7	Arsenic, Total	mg/L	Decreasing	Stable	23	23	0.018	-0.000232	0.0173	12	12	0.015	-0.000338	0.333
WAP-1	Arsenic, Total	mg/L	No Trend	No Trend	19	19	0.025	2.22e-05	0.834	12	12	0.025	0.000111	0.631
WAP-2RR	Arsenic, Total	mg/L	Probably Increasing	No Trend	19	18	0.0078	3e-05	0.0999	12	12	0.0078	6.79e-05	0.13
WAP-3S	Arsenic, Total	mg/L	Decreasing	Stable	19	17	0.0064	-0.000172	0.00865	12	10	0.0064	-0.00017	0.244
WAP-4S	Arsenic, Total	mg/L	Increasing	Increasing	19	19	0.027	0.00032	0.00259	12	12	0.027	0.00078	0.00473
WAP-5S	Arsenic, Total	mg/L	No Trend	No Trend	19	15	0.005	5e-06	0.726	12	9	0.005	9.17e-06	0.837
CCR-AP-7	Barium, Total	mg/L	Decreasing	Decreasing	23	23	0.19	-0.00222	0.019	12	12	0.19	-0.005	0.0447
WAP-1	Barium, Total	mg/L	No Trend	No Trend	19	19	0.99	0.0025	0.38	12	12	0.99	0.00143	0.73
WAP-2RR	Barium, Total	mg/L	Stable	No Trend	19	19	0.086	-0.000692	0.461	12	12	0.086	0.00183	0.188
WAP-3S	Barium, Total	mg/L	Decreasing	No Trend	19	19	0.39	-0.0128	0.0174	12	12	0.39	-0.0138	0.244
WAP-4S	Barium, Total	mg/L	Decreasing	No Trend	19	19	0.08	-0.000667	0.0202	12	12	0.069	0.0002	0.729
WAP-5S	Barium, Total	mg/L	Decreasing	Decreasing	19	19	0.063	-0.000909	0.000491	12	12	0.061	-0.00143	0.00826
CCR-AP-7	Beryllium, Total	mg/L	No Trend	Not Evaluated - Only one detected result.	23	7	0.00075	0	0.512	12	1	0.0005	NA	NA
WAP-1	Beryllium, Total	mg/L	Stable	No Trend	19	13	0.0012	0	1	12	7	0.00099	6.25e-06	0.529
WAP-2RR	Beryllium, Total	mg/L	Not Evaluated - Majority of data (>75%) non-detect.	Not Evaluated - Only one detected result.	19	2	0.0005	NA	NA	12	1	0.0005	NA	NA
WAP-3S	Beryllium, Total	mg/L	Not Evaluated - Only one detected result.	Not Evaluated - No detected results.	19	1	0.0005	NA	NA	12	0	0.0005	NA	NA
WAP-4S	Beryllium, Total	mg/L	Not Evaluated - No detected results.	Not Evaluated - No detected results.	19	0	0.0005	NA	NA	12	0	0.0005	NA	NA
WAP-5S	Beryllium, Total	mg/L	Not Evaluated - Only one detected result.	Not Evaluated - No detected results.	19	1	0.0005	NA	NA	12	0	0.0005	NA	NA
CCR-AP-7	Cadmium, Total	mg/L	Not Evaluated - Majority of data (>75%) non-detect.	Not Evaluated - No detected results.	23	2	0.0005	NA	NA	12	0	0.0005	NA	NA
WAP-1	Cadmium, Total	mg/L	No Trend	Stable	19	8	0.0005	0	0.256	12	3	0.0005	0	0.927
WAP-2RR	Cadmium, Total	mg/L	Probably Decreasing	Stable	19	17	0.001	-8.18e-06	0.0535	12	10	0.00053	-7.25e-06	0.582
WAP-3S	Cadmium, Total	mg/L	No Trend	No Trend	19	10	0.0005	0	0.331	12	4	0.0005	0	0.365
WAP-4S	Cadmium, Total	mg/L	Not Evaluated - Majority of data (>75%) non-detect.	Not Evaluated - Majority of data (>75%) non-detect.	19	3	0.0005	NA	NA	12	2	0.0005	NA	NA
WAP-5S	Cadmium, Total	mg/L	Not Evaluated - Majority of data (>75%) non-detect.	Not Evaluated - Majority of data (>75%) non-detect.	19	2	0.0005	NA	NA	12	2	0.0005	NA	NA
CCR-AP-7	Chromium, Total	mg/L	No Trend	No Trend	23	12	0.019	0	0.808	12	3	0.0062	0	0.3
WAP-1	Chromium, Total	mg/L	Stable	Stable	19	19	0.046	-0.000444	0.207	12	12	0.027	-0.000617	0.15
WAP-2RR	Chromium, Total	mg/L	Not Evaluated - Majority of data (>75%) non-detect.	Not Evaluated - Majority of data (>75%) non-detect.	19	3	0.0057	NA	NA	12	2	0.0057	NA	NA
WAP-3S	Chromium, Total	mg/L	No Trend	Not Evaluated - Majority of data (>75%) non-detect.	19	5	0.005	0	0.29	12	2	0.005	NA	NA
WAP-4S	Chromium, Total	mg/L	Not Evaluated - Only one detected result.	Not Evaluated - No detected results.	19	1	0.005	NA	NA	12	0	0.005	NA	NA
WAP-5S	Chromium, Total	mg/L	Not Evaluated - No detected results.	Not Evaluated - No detected results.	19	0	0.005	NA	NA	12	0	0.005	NA	NA
CCR-AP-7	Cobalt, Total	mg/L	Decreasing	No Trend	23	21	0.015	-9e-05	0.013	12	10	0.0049	-8e-06	0.891
WAP-1	Cobalt, Total	mg/L	Stable	Stable	19	19	0.019	-0.000275	0.172	12	12	0.012	-0.0003	0.115
WAP-2RR	Cobalt, Total	mg/L	Stable	No Trend	19	19	0.0097	0	0.916	12	12	0.0097	0.000153	0.409
WAP-3S	Cobalt, Total	mg/L	No Trend	No Trend	19	19	0.0018	1.8e-05	0.462	12	12	0.0018	1.64e-05	0.783
WAP-4S	Cobalt, Total	mg/L	No Trend	Stable	19	19	0.0093	0	0.972	12	12	0.0023	-1.34e-05	0.484
WAP-5S	Cobalt, Total	mg/L	Decreasing	Probably Decreasing	19	19	0.0094	-0.00014	0.0208	12	12	0.0094	-0.000214	0.0543
CCR-AP-7	Fluoride	mg/L	Increasing	Increasing	22	22	0.72	0.00875	0.019	12	12	0.72	0.0327	0.0194
WAP-1	Fluoride	mg/L	Probably Increasing	No Trend	19	19	2	0.01	0.0914	12	12	2	0.0317	0.193
WAP-2RR	Fluoride	mg/L	Increasing	Increasing	19	19	0.4	0.01	0.00326	12	12	0.4	0.0161	0.0236
WAP-3S	Fluoride	mg/L	Stable	No Trend	19	19	0.77	-0.00111	0.916	12	12	0.76	0.0069	0.945

Abbreviations: CF = confidence facotr; CV = coefficient of variation; mg/L = milligrams per liter; pCi/L = picocuries per liter.

Notes: *Recent data defined as the 12 most recent data points. MK = Mann Kendall Trend Test. Secular Trend Classification based on Aziz (2003) guidance and MK Results. Thiel-Sen slope and p-value evaluated at 95% confidence level to confirm MK trends.

Additional information about trend analysis provided in Attachment A.

Location	Chemical	Units	Identified Trends		Trend Analysis on All Available Data					Trend Analysis on Recent Data				
			Trend (All Data)	Trend (Recent Data)	Results, n	Detected Results, n	Max Concentration	Sen Slope (magnitude per year)	p-value	*Results, n	*Detected Results, n	*Max Concentration	*Sen Slope (magnitude per year)	*p-value
WAP-4S	Fluoride	mg/L	No Trend	No Trend	19	19	0.28	0.000909	0.751	12	12	0.28	0.0025	0.581
WAP-5S	Fluoride	mg/L	Stable	No Trend	19	18	0.21	-0.00147	0.344	12	11	0.13	0.00164	0.631
CCR-AP-7	Lead, Total	mg/L	Probably Decreasing	No Trend	23	14	0.02	-3.36e-05	0.0935	12	5	0.006	0	0.941
WAP-1	Lead, Total	mg/L	Stable	Stable	19	19	0.035	-0.00028	0.462	12	12	0.022	-0.000134	0.891
WAP-2RR	Lead, Total	mg/L	No Trend	No Trend	19	8	0.0064	0	0.724	12	7	0.0056	3.25e-05	0.175
WAP-3S	Lead, Total	mg/L	No Trend	No Trend	19	14	0.0027	1e-05	0.504	12	8	0.0027	1e-05	0.627
WAP-4S	Lead, Total	mg/L	Not Evaluated - Majority of data (>75%) non-detect.	No Trend	19	4	0.0015	NA	NA	12	3	0.0015	0	0.365
WAP-5S	Lead, Total	mg/L	Not Evaluated - Majority of data (>75%) non-detect.	Not Evaluated - Majority of data (>75%) non-detect.	19	2	0.0015	NA	NA	12	2	0.0015	NA	NA
CCR-AP-7	Lithium, Total	mg/L	Decreasing	Probably Decreasing	23	23	0.039	-0.000211	0.006	12	12	0.02	-0.00035	0.0612
WAP-1	Lithium, Total	mg/L	Probably Decreasing	Probably Decreasing	19	19	0.027	-0.000325	0.0981	12	12	0.021	-0.00045	0.0969
WAP-2RR	Lithium, Total	mg/L	Decreasing	Stable	19	19	0.06	-0.00175	0.00621	12	12	0.041	-0.000208	0.891
WAP-3S	Lithium, Total	mg/L	Increasing	Probably Increasing	19	19	0.12	0.00307	0.00018	12	12	0.12	0.00162	0.0739
WAP-4S	Lithium, Total	mg/L	Decreasing	Stable	19	12	0.017	-0.0006	0.0012	12	6	0.012	-0.000121	0.141
WAP-5S	Lithium, Total	mg/L	Decreasing	Probably Decreasing	19	8	0.025	-7.78e-05	0.00476	12	5	0.0047	-2.5e-05	0.0555
CCR-AP-7	Mercury, Total	mg/L	Not Evaluated - No detected results.	Not Evaluated - No detected results.	20	0	0.00025	NA	NA	12	0	0.00025	NA	NA
WAP-1	Mercury, Total	mg/L	Not Evaluated - No detected results.	Not Evaluated - No detected results.	17	0	0.00025	NA	NA	12	0	0.00025	NA	NA
WAP-2RR	Mercury, Total	mg/L	Not Evaluated - No detected results.	Not Evaluated - No detected results.	17	0	0.00025	NA	NA	12	0	0.00025	NA	NA
WAP-3S	Mercury, Total	mg/L	Not Evaluated - No detected results.	Not Evaluated - No detected results.	17	0	0.00025	NA	NA	12	0	0.00025	NA	NA
WAP-4S	Mercury, Total	mg/L	Not Evaluated - No detected results.	Not Evaluated - No detected results.	18	0	0.00025	NA	NA	12	0	0.00025	NA	NA
WAP-5S	Mercury, Total	mg/L	Not Evaluated - No detected results.	Not Evaluated - No detected results.	17	0	0.00025	NA	NA	12	0	0.00025	NA	NA
CCR-AP-7	Molybdenum, Total	mg/L	Decreasing	Stable	23	22	0.013	-0.00025	1.8e-05	12	11	0.0025	0	0.889
WAP-1	Molybdenum, Total	mg/L	Stable	No Trend	19	16	0.0028	-2e-05	0.461	12	10	0.0025	1.83e-05	0.535
WAP-2RR	Molybdenum, Total	mg/L	Increasing	Probably Increasing	19	19	0.16	0.00363	0.00769	12	12	0.16	0.00537	0.0726
WAP-3S	Molybdenum, Total	mg/L	Stable	Stable	19	19	1.5	-0.0278	0.107	12	12	1.1	-0.0383	0.169
WAP-4S	Molybdenum, Total	mg/L	Increasing	No Trend	19	19	0.58	0.0075	0.00199	12	12	0.58	0.00437	0.239
WAP-5S	Molybdenum, Total	mg/L	Increasing	Increasing	19	14	0.4	2.6e-05	0.0178	12	8	0.0025	0.000168	0.00499
CCR-AP-7	Radium-226 & 228	pCi/L	Stable	No Trend	20	20	1.72	-0.0163	0.417	12	12	1.44	0.0397	0.15
WAP-1	Radium-226 & 228	pCi/L	Increasing	No Trend	15	15	4.74	0.07	0.0331	12	12	4.74	0.0958	0.15
WAP-2RR	Radium-226 & 228	pCi/L	No Trend	No Trend	16	15	2.15	0.0195	0.224	12	11	2.15	0.037	0.304
WAP-3S	Radium-226 & 228	pCi/L	No Trend	No Trend	15	14	1.38	0.00111	1	12	11	1.38	0.0197	0.732
WAP-4S	Radium-226 & 228	pCi/L	No Trend	No Trend	16	15	1.86	0.0282	0.3	12	11	1.86	0.0379	0.451
WAP-5S	Radium-226 & 228	pCi/L	Increasing	Increasing	16	15	1.49	0.0369	0.0149	12	11	1.49	0.0614	0.0236
CCR-AP-7	Selenium, Total	mg/L	Not Evaluated - Majority of data (>75%) non-detect.	Not Evaluated - Only one detected result.	21	3	0.0028	NA	NA	12	1	0.0028	NA	NA
WAP-1	Selenium, Total	mg/L	Not Evaluated - Majority of data (>75%) non-detect.	Not Evaluated - Only one detected result.	17	2	0.0025	NA	NA	12	1	0.0025	NA	NA
WAP-2RR	Selenium, Total	mg/L	No Trend	No Trend	17	6	0.0071	0	0.382	12	6	0.0071	0	0.556
WAP-3S	Selenium, Total	mg/L	Not Evaluated - No detected results.	Not Evaluated - No detected results.	17	0	0.0025	NA	NA	12	0	0.0025	NA	NA
WAP-4S	Selenium, Total	mg/L	Not Evaluated - No detected results.	Not Evaluated - No detected results.	17	0	0.0025	NA	NA	12	0	0.0025	NA	NA
WAP-5S	Selenium, Total	mg/L	Not Evaluated - No detected results.	Not Evaluated - No detected results.	17	0	0.0025	NA	NA	12	0	0.0025	NA	NA
CCR-AP-7	Thallium, Total	mg/L	Not Evaluated - Majority of data (>75%) non-detect.	Not Evaluated - No detected results.	23	4	0.001	NA	NA	12	0	0.001	NA	NA
WAP-1	Thallium, Total	mg/L	No Trend	Increasing	19	11	0.001	1.17e-05	0.122	12	6	0.001	4.73e-05	0.00822
WAP-2RR	Thallium, Total	mg/L	Increasing	Increasing	19	10	0.001	1.8e-05	0.0118	12	4	0.001	4.2e-05	0.0208
WAP-3S	Thallium, Total	mg/L	Not Evaluated - No detected results.	Not Evaluated - No detected results.	19	0	0.001	NA	NA	12	0	0.001	NA	NA
WAP-4S	Thallium, Total	mg/L	Not Evaluated - No detected results.	Not Evaluated - No detected results.	19	0	0.001	NA	NA	12	0	0.001	NA	NA

Abbreviations: CF = confidence facotr; CV = coefficient of variation; mg/L = milligrams per liter; pCi/L = picocuries per liter.

Notes: *Recent data defined as the 12 most recent data points. MK = Mann Kendall Trend Test. Secular Trend Classification based on Aziz (2003) guidance and MK Results. Thiel-Sen slope and p-value evaluated at 95% confidence level to confirm MK trends.

Additional information about trend analysis provided in Attachment A.

			Identified Trends		Trend Analysis on All Available Data					Trend Analysis on Recent Data				
Location	Chemical	Units	Trend (All Data)	Trend (Recent Data)	Results, n	Detected Results, n	Max Concentration	Sen Slope (magnitude per year)	p-value	*Results, n	*Detected Results, n	*Max Concentration	*Sen Slope (magnitude per year)	*p-value
WAP-5S	Thallium, Total	mg/L	Not Evaluated - Majority of data (>75%) non-detect.	Not Evaluated - Only one detected result.	19	2	0.001	NA	NA	12	1	0.001	NA	NA

Abbreviations: CF = confidence facotr; CV = coefficient of variation; mg/L = milligrams per liter; pCi/L = picocuries per liter.

Notes: *Recent data defined as the 12 most recent data points. MK = Mann Kendall Trend Test. Secular Trend Classification based on Aziz (2003) guidance and MK Results. Thiel-Sen slope and p-value evaluated at 95% confidence level to confirm MK trends.

Additional information about trend analysis provided in Attachment A.

ATTACHMENT A
Assessment Monitoring Statistical Analysis Summary

Table A-1. Descriptive Statistics

Location	Constituent	Units	n	n, non-detects	percent of non-detects	max	min	mean	median	standard deviation	variance	reporting limit range	date range
CCR-AP-7	Antimony, Total	mg/L	23	20	87	0.0050	0.00016	0.00194	0.002	8.4e-04	7.1e-07	0.002 - 0.005	2016-06-10 to 2023-11-06
WAP-1	Antimony, Total	mg/L	19	9	47	0.0020	0.00045	0.0015	0.002	6.1e-04	3.7e-07	0.002 - 0.002	2018-03-15 to 2023-11-06
WAP-2RR	Antimony, Total	mg/L	19	18	95	0.0050	0.0011	0.00211	0.002	7.3e-04	5.3e-07	0.002 - 0.005	2018-03-15 to 2023-11-08
WAP-3S	Antimony, Total	mg/L	19	18	95	0.0050	0.00043	0.00208	0.002	7.9e-04	6.3e-07	0.002 - 0.005	2018-03-15 to 2023-11-08
WAP-4S	Antimony, Total	mg/L	19	19	100	0.0200	0.002	0.00311	0.002	4.1e-03	1.7e-05	0.002 - 0.02	2018-03-14 to 2023-11-07
WAP-5S	Antimony, Total	mg/L	19	18	95	0.0050	0.002	0.00216	0.002	6.9e-04	4.7e-07	0.002 - 0.005	2018-03-13 to 2023-11-07
CCR-AP-7	Arsenic, Total	mg/L	23	0	0	0.0180	0.00066	0.00588	0.0055	4.1e-03	1.7e-05	NA	2016-06-10 to 2023-11-06
WAP-1	Arsenic, Total	mg/L	19	0	0	0.0250	0.0032	0.00819	0.0066	6.0e-03	3.6e-05	NA	2018-03-15 to 2023-11-06
WAP-2RR	Arsenic, Total	mg/L	19	1	5	0.0078	0.00047	0.00167	0.001	1.9e-03	3.8e-06	0.001 - 0.001	2018-03-15 to 2023-11-08
WAP-3S	Arsenic, Total	mg/L	19	2	11	0.0100	0.00031	0.00281	0.0023	2.3e-03	5.4e-06	0.005 - 0.01	2018-03-15 to 2023-11-08
WAP-4S	Arsenic, Total	mg/L	19	0	0	0.0270	0.00073	0.00615	0.0046	5.8e-03	3.3e-05	NA	2018-03-14 to 2023-11-07
WAP-5S	Arsenic, Total	mg/L	19	4	21	0.0100	0.00039	0.00168	0.00076	2.4e-03	5.6e-06	0.001 - 0.01	2018-03-13 to 2023-11-07
CCR-AP-7	Barium, Total	mg/L	23	0	0	0.1900	0.076	0.128	0.12	2.9e-02	8.3e-04	NA	2016-06-10 to 2023-11-06
WAP-1	Barium, Total	mg/L	19	0	0	0.9900	0.37	0.52	0.46	1.7e-01	3.0e-02	NA	2018-03-15 to 2023-11-06
WAP-2RR	Barium, Total	mg/L	19	0	0	0.0860	0.023	0.0428	0.041	1.7e-02	2.8e-04	NA	2018-03-15 to 2023-11-08
WAP-3S	Barium, Total	mg/L	19	0	0	0.3900	0.024	0.163	0.16	1.2e-01	1.5e-02	NA	2018-03-15 to 2023-11-08
WAP-4S	Barium, Total	mg/L	19	0	0	0.0800	0.043	0.0561	0.056	8.3e-03	6.8e-05	NA	2018-03-14 to 2023-11-07
WAP-5S	Barium, Total	mg/L	19	0	0	0.0630	0.037	0.0512	0.052	7.2e-03	5.2e-05	NA	2018-03-13 to 2023-11-07
CCR-AP-7	Beryllium, Total	mg/L	23	16	70	0.0010	6.7e-05	0.00075	0.001	3.7e-04	1.4e-07	0.0005 - 0.001	2016-06-10 to 2023-11-06
WAP-1	Beryllium, Total	mg/L	19	6	32	0.0012	7.2e-05	0.000616	0.0005	3.7e-04	1.4e-07	0.0005 - 0.001	2018-03-15 to 2023-11-06
WAP-2RR	Beryllium, Total	mg/L	19	17	89	0.0010	0.00024	0.000901	0.001	2.4e-04	5.8e-08	0.0005 - 0.001	2018-03-15 to 2023-11-08
WAP-3S	Beryllium, Total	mg/L	19	18	95	0.0010	6.8e-05	0.000925	0.001	2.4e-04	5.6e-08	0.0005 - 0.001	2018-03-15 to 2023-11-08
WAP-4S	Beryllium, Total	mg/L	19	19	100	0.0010	0.0005	0.000974	0.001	1.1e-04	1.3e-08	0.0005 - 0.001	2018-03-14 to 2023-11-07
WAP-5S	Beryllium, Total	mg/L	19	18	95	0.0010	8.4e-05	0.000925	0.001	2.3e-04	5.5e-08	0.0005 - 0.001	2018-03-13 to 2023-11-07
CCR-AP-7	Cadmium, Total	mg/L	23	21	91	0.0010	0.00014	0.000911	0.001	2.4e-04	5.8e-08	0.0005 - 0.001	2016-06-10 to 2023-11-06
WAP-1	Cadmium, Total	mg/L	19	11	58	0.0010	0.00013	0.000696	0.001	3.7e-04	1.4e-07	0.001 - 0.001	2018-03-15 to 2023-11-06
WAP-2RR	Cadmium, Total	mg/L	19	2	11	0.0010	0.00027	0.0005	0.00043	2.3e-04	5.5e-08	0.001 - 0.001	2018-03-15 to 2023-11-08
WAP-3S	Cadmium, Total	mg/L	19	9	47	0.0010	0.00011	0.000582	0.0003	4.1e-04	1.7e-07	0.001 - 0.001	2018-03-15 to 2023-11-08
WAP-4S	Cadmium, Total	mg/L	19	16	84	0.0010	6.2e-05	0.000868	0.001	3.1e-04	9.9e-08	0.001 - 0.001	2018-03-14 to 2023-11-07
WAP-5S	Cadmium, Total	mg/L	19	17	89	0.0010	9.2e-05	0.000907	0.001	2.8e-04	7.7e-08	0.001 - 0.001	2018-03-13 to 2023-11-07
CCR-AP-7	Chromium, Total	mg/L	23	11	48	0.0190	0.00047	0.00385	0.002	4.0e-03	1.6e-05	0.002 - 0.01	2016-06-10 to 2023-11-06
WAP-1	Chromium, Total	mg/L	19	0	0	0.0460	0.0022	0.0135	0.01	1.3e-02	1.6e-04	NA	2018-03-15 to 2023-11-06
WAP-2RR	Chromium, Total	mg/L	19	16	84	0.0057	0.002	0.00262	0.002	1.3e-03	1.6e-06	0.002 - 0.005	2018-03-15 to 2023-11-08
WAP-3S	Chromium, Total	mg/L	19	14	74	0.0100	0.00099	0.00265	0.002	1.9e-03	3.8e-06	0.002 - 0.01	2018-03-15 to 2023-11-08
WAP-4S	Chromium, Total	mg/L	19	18	95	0.0100	0.00088	0.00252	0.002	2.0e-03	3.8e-06	0.002 - 0.01	2018-03-14 to 2023-11-07
WAP-5S	Chromium, Total	mg/L	19	19	100	0.0100	0.002	0.00258	0.002	1.9e-03	3.7e-06	0.002 - 0.01	2018-03-13 to 2023-11-07
CCR-AP-7	Cobalt, Total	mg/L	23	2	9	0.0150	0.00021	0.00226	0.001	3.2e-03	1.0e-05	0.0005 - 0.002	2016-06-10 to 2023-11-06
WAP-1	Cobalt, Total	mg/L	19	0	0	0.0190	0.00044	0.00548	0.0045	5.2e-03	2.8e-05	NA	2018-03-15 to 2023-11-06
WAP-2RR	Cobalt, Total	mg/L	19	0	0	0.0097	0.00052	0.00271	0.0022	2.1e-03	4.5e-06	NA	2018-03-15 to 2023-11-08
WAP-3S	Cobalt, Total	mg/L	19	0	0	0.0018	0.00034	0.000877	0.00071	4.5e-04	2.0e-07	NA	2018-03-15 to 2023-11-08
WAP-4S	Cobalt, Total	mg/L	19	0	0	0.0093	0.0013	0.00222	0.0018	1.7e-03	3.1e-06	NA	2018-03-14 to 2023-11-07
WAP-5S	Cobalt, Total	mg/L	19	0	0	0.0094	0.0016	0.00722	0.0076	1.9e-03	3.8e-06	NA	2018-03-13 to 2023-11-07
CCR-AP-7	Fluoride	mg/L	22	0	0	0.7200	0.14	0.334	0.295	1.3e-01	1.8e-02	NA	2016-08-12 to 2023-11-06
WAP-1	Fluoride	mg/L	19	0	0	2.0000	0.11	0.464	0.28	4.7e-01	2.2e-01	NA	2018-03-15 to 2023-11-06
WAP-2RR	Fluoride	mg/L	19	0	0	0.4000	0.11	0.24	0.24	8.2e-02	6.7e-03	NA	2018-03-15 to 2023-11-08
WAP-3S	Fluoride	mg/L	19	0	0	0.7700	0.24	0.539	0.55	1.6e-01	2.5e-02	NA	2018-03-15 to 2023-11-08
WAP-4S	Fluoride	mg/L	19	0	0	0.2800	0.11	0.205	0.22	4.6e-02	2.1e-03	NA	2018-03-14 to 2023-11-07
WAP-5S	Fluoride	mg/L	19	1	5	0.2100	0.03	0.103	0.1	3.7e-02	1.3e-03	0.1 - 0.1	2018-03-13 to 2023-11-07
CCR-AP-7	Lead, Total	mg/L	23	9	39	0.0200	0.00013	0.00299	0.001	4.4e-03	1.9e-05	0.001 - 0.003	2016-06-10 to 2023-11-06
WAP-1	Lead, Total	mg/L	19	0	0	0.0350	0.00068	0.0107	0.0089	9.9e-03	9.7e-05	NA	2018-03-15 to 2023-11-06
WAP-2RR	Lead, Total	mg/L	19	11	58	0.0064	0.00016	0.00143	0.001	1.7e-03	2.7e-06	0.001 - 0.001	2018-03-15 to 2023-11-08
WAP-3S	Lead, Total	mg/L	19	5	26	0.0030	0.00023	0.000965	0.00094	7.7e-04	6.0e-07	0.001 - 0.003	2018-03-15 to 2023-11-08
WAP-4S	Lead, Total	mg/L	19	15	79	0.0030	0.00013	0.000963	0.001	5.8e-04	3.3e-07	0.001 - 0.003	2018-03-14 to 2023-11-07
WAP-5S	Lead, Total	mg/L	19	17	89	0.0030	0.0002	0.00103	0.001	5.3e-04	2.8e-07	0.001 - 0.003	2018-03-13 to 2023-11-07
CCR-AP-7	Lithium, Total	mg/L	23	0	0	0.0390	0.007	0.0135	0.011	6.8e-03	4.7e-05	NA	2016-06-10 to 2023-11-06
WAP-1	Lithium, Total	mg/L	19	0	0	0.0270	0.0047	0.0121	0.01	6.1e-03	3.7e-05	NA	2018-03-15 to 2023-11-06
WAP-2RR	Lithium, Total	mg/L	19	0	0	0.0600	0.012	0.0312	0.026	1.4e-02	2.1e-04	NA	2018-03-15 to 2023-11-08
WAP-3S	Lithium, Total	mg/L	19	0	0	0.1200	0.033	0.0711	0.077	2.3e-02	5.3e-04	NA	2018-03-15 to 2023-11-08
WAP-4S	Lithium, Total	mg/L	19	7	37	0.0170	0.0014	0.00721	0.005	4.8e-03	2.3e-05	0.005 - 0.008	2018-03-14 to 2023-11-07
WAP-5S	Lithium, Total	mg/L	19	11	58	0.0500	0.0014	0.00754	0.005	1.1e-02	1.1e-04	0.005 - 0.05	2018-03-13 to 2023-11-07
CCR-AP-7	Mercury, Total	mg/L	20	20	100	0.0005	0.0002	0.000215	0.0002	6.7e-05	4.5e-09	0.0002 - 0.0005	2016-06-10 to 2023-11-06
WAP-1	Mercury, Total	mg/L	17	17	100	0.0005	0.0002	0.000218	0.0002	7.3e-05	5.3e-09	0.0002 - 0.0005	2018-03-15 to 2023-11-06
WAP-2RR	Mercury, Total	mg/L	17	17	100	0.0005	0.0002	0.000218	0.0002	7.3e-05	5.3e-09	0.0002 - 0.0005	2018-03-15 to 2023-11-08
WAP-3S	Mercury, Total	mg/L	17	17	100	0.0005	0.0002	0.000218	0.0002	7.3e-05	5.3e-09	0.0002 - 0.0005	2018-03-15 to 2023-11-08
WAP-4S	Mercury, Total	mg/L	18	18	100	0.0005	0.0002	0.000217	0.0002	7.1e-05	5.0e-09	0.0002 - 0.0005	2018-03-14 to 2023-11-07
WAP-5S	Mercury, Total	mg/L	17	17	100	0.0005	0.0002	0.000218	0.0002	7.3e-05	5.3e-09	0.0002 - 0.0005	2018-03-13 to 2023-11-07
CCR-AP-7	Molybdenum, Total	mg/L	23	1	4	0.0130	0.0011	0.00377	0.0025	3.1e-03	9.3e-06	0.005 - 0.005	2016-06-10 to 2023-11-06
WAP-1	Molybdenum, Total	mg/L	19	3	16	0.0050	0.00068	0.00197	0.0013	1.5e-03	2.2e-06	0.005 - 0.005	2018-03-15 to 2023-11-06
WAP-2RR	Molybdenum, Total	mg/L	19	0	0	0.1600	0.013	0.0606	0.05	3.5e-02	1.2e-03	NA	2018-03-15 to 2023-11-08
WAP-3S	Molybdenum, Total	mg/L	19	0	0	1.5000	0.26	0.84	0.86	3.1e-01	9.4e-02	NA	2018-03-15 to 2023-11-08
WAP-4S	Molybdenum, Total	mg/L	19	0	0	0.5800	0.00078	0.422	0.45	1.2e-01	1.4e-02	NA	2018-03-14 to 2023-11-07
WAP-5S	Molybdenum, Total	mg/L	19	5	26	0.4000	0.00064	0.023	0.00097	9.1e-02	8.3e-03	0.005 - 0.005	2018-03-13 to 2023-11-07
CCR-AP-7	Radium-226 & 228	pCi/L	20	0	0	1.7200	0.126	0.847	0.716	4.6e-01	2.1e-01	NA	2016-06-10 to 2023-11-06
WAP-1	Radium-226 & 228	pCi/L	15	0	0	4.7400	0.48	1.52	1.24	1.0e+00	1.1e+00	NA	2018-04-02 to 2023-11-06
WAP-2RR	Radium-226 & 228	pCi/L	16	1	6	2.1500	0.0883	0.625	0.468	5.6e-01	3.2e-01	0.797 - 0.797	2018-03-15 to 2023-11-08
WAP-3S	Radium-226 & 228	pCi/L	15	1	7	1.3800	0.199	0.838	0.899	3.5e-01	1.2e-01	0.36 - 0.36	2018-03-15 to 2023-11-08
WAP-4S	Radium-226 & 228	pCi/L	16	1	6	1.8600	0.131	0.57	0.314	4.9e-01	2.4e-01	0.266 - 0.266	2018-03-14 to 2023-11-07
WAP-5S	Radium-226 & 228	pCi/L	16	1	6	1.4900	0.187	0.481	0.369	3.4e-01	1.1e-01	0.377 - 0.377	2018-03-13 to 2023-11-07
CCR-AP-7	Selenium, Total	mg/L	21	18	86	0.0050	0.00035	0.00447	0.005	1.4e-03	1.9e-06	0.005 - 0.005	2016-06-10 to 2023-11-06
WAP-1	Selenium, Total	mg/L	17	15	88	0.0050	0.0018	0.00462	0.005	1.1e-03	1.1e-06	0.005 - 0.005	2018-03-15 to 2023-11-06

Location	Constituent	Units	n	n, non-detects	percent of non-detects	max	min	mean	median	standard deviation	variance	reporting limit range	date range
WAP-2RR	Selenium, Total	mg/L	17	11	65	0.0071	0.0014	0.00471	0.005	1.3e-03	1.6e-06	0.005 - 0.005	2018-03-15 to 2023-11-08
WAP-3S	Selenium, Total	mg/L	17	17	100	0.0050	0.005	0.005	0.005	0.0e+00	0.0e+00	0.005 - 0.005	2018-03-15 to 2023-11-08
WAP-4S	Selenium, Total	mg/L	17	17	100	0.0050	0.005	0.005	0.005	0.0e+00	0.0e+00	0.005 - 0.005	2018-03-14 to 2023-11-07
WAP-5S	Selenium, Total	mg/L	17	17	100	0.0050	0.005	0.005	0.005	0.0e+00	0.0e+00	0.005 - 0.005	2018-03-13 to 2023-11-07
CCR-AP-7	Thallium, Total	mg/L	23	19	83	0.0020	6.6e-05	0.000906	0.001	4.0e-04	1.6e-07	0.001 - 0.002	2016-06-10 to 2023-11-06
WAP-1	Thallium, Total	mg/L	19	8	42	0.0020	8.3e-05	0.000651	0.00053	4.9e-04	2.4e-07	0.001 - 0.002	2018-03-15 to 2023-11-06
WAP-2RR	Thallium, Total	mg/L	19	9	47	0.0020	6.7e-05	0.000626	0.00047	5.3e-04	2.8e-07	0.001 - 0.002	2018-03-15 to 2023-11-08
WAP-3S	Thallium, Total	mg/L	19	19	100	0.0020	0.001	0.00105	0.001	2.3e-04	5.3e-08	0.001 - 0.002	2018-03-15 to 2023-11-08
WAP-4S	Thallium, Total	mg/L	19	19	100	0.0020	0.001	0.00105	0.001	2.3e-04	5.3e-08	0.001 - 0.002	2018-03-14 to 2023-11-07
WAP-5S	Thallium, Total	mg/L	19	17	89	0.0020	0.00011	0.000965	0.001	3.6e-04	1.3e-07	0.001 - 0.002	2018-03-13 to 2023-11-07

Table A-2. Results of Shapiro-Wilk Test for Normality

		Shapiro-Wilk Test for Normality (R programming, package = stats, version 4.3.3, function = shapiro.test, non-detects substituted by 0.5*reporting limit)				
Location	Constituent	W statistic	p-value	Sample Count (n)	Non-Detect Count (n)	Data Normality (significance level = 0.05)
CCR-AP-7	Antimony, Total	0.479	5.5e-08	23	20	Not normal
WAP-1	Antimony, Total	0.827	0.0029	19	9	Not normal
WAP-2RR	Antimony, Total	0.267	7.6e-09	19	18	Not normal
WAP-3S	Antimony, Total	0.391	6.3e-08	19	18	Not normal
WAP-4S	Antimony, Total	NA	NA	19	19	Not Evaluated - All Non-Detect Results
WAP-5S	Antimony, Total	0.374	4.6e-08	19	18	Not normal
CCR-AP-7	Arsenic, Total	0.869	0.006	23	0	Not normal
WAP-1	Arsenic, Total	0.765	0.00037	19	0	Not normal
WAP-2RR	Arsenic, Total	0.598	4.2e-06	19	1	Not normal
WAP-3S	Arsenic, Total	0.932	0.19	19	2	Normal
WAP-4S	Arsenic, Total	0.625	8e-06	19	0	Not normal
WAP-5S	Arsenic, Total	0.630	9.1e-06	19	4	Not normal
CCR-AP-7	Barium, Total	0.957	0.4	23	0	Normal
WAP-1	Barium, Total	0.791	0.00085	19	0	Not normal
WAP-2RR	Barium, Total	0.904	0.058	19	0	Normal
WAP-3S	Barium, Total	0.899	0.048	19	0	Not normal
WAP-4S	Barium, Total	0.899	0.046	19	0	Not normal
WAP-5S	Barium, Total	0.952	0.43	19	0	Normal
CCR-AP-7	Beryllium, Total	0.768	0.00012	23	16	Not normal
WAP-1	Beryllium, Total	0.893	0.037	19	6	Not normal
WAP-2RR	Beryllium, Total	0.456	2.1e-07	19	17	Not normal
WAP-3S	Beryllium, Total	0.371	4.3e-08	19	18	Not normal
WAP-4S	Beryllium, Total	NA	NA	19	19	Not Evaluated - All Non-Detect Results
WAP-5S	Beryllium, Total	0.372	4.4e-08	19	18	Not normal
CCR-AP-7	Cadmium, Total	0.420	1.6e-08	23	21	Not normal
WAP-1	Cadmium, Total	0.688	4e-05	19	11	Not normal
WAP-2RR	Cadmium, Total	0.743	0.00019	19	2	Not normal
WAP-3S	Cadmium, Total	0.767	0.0004	19	9	Not normal
WAP-4S	Cadmium, Total	0.471	2.8e-07	19	16	Not normal
WAP-5S	Cadmium, Total	0.370	4.3e-08	19	17	Not normal
CCR-AP-7	Chromium, Total	0.597	8.3e-07	23	11	Not normal
WAP-1	Chromium, Total	0.770	0.00044	19	0	Not normal
WAP-2RR	Chromium, Total	0.568	2.1e-06	19	16	Not normal
WAP-3S	Chromium, Total	0.647	1.4e-05	19	14	Not normal
WAP-4S	Chromium, Total	0.363	3.8e-08	19	18	Not normal
WAP-5S	Chromium, Total	NA	NA	19	19	Not Evaluated - All Non-Detect Results
CCR-AP-7	Cobalt, Total	0.611	1.2e-06	23	2	Not normal
WAP-1	Cobalt, Total	0.800	0.0011	19	0	Not normal
WAP-2RR	Cobalt, Total	0.729	0.00013	19	0	Not normal
WAP-3S	Cobalt, Total	0.917	0.1	19	0	Normal
WAP-4S	Cobalt, Total	0.418	1e-07	19	0	Not normal
WAP-5S	Cobalt, Total	0.851	0.0069	19	0	Not normal
CCR-AP-7	Fluoride	0.878	0.011	22	0	Not normal
WAP-1	Fluoride	0.652	1.6e-05	19	0	Not normal
WAP-2RR	Fluoride	0.971	0.79	19	0	Normal
WAP-3S	Fluoride	0.967	0.71	19	0	Normal
WAP-4S	Fluoride	0.956	0.49	19	0	Normal
WAP-5S	Fluoride	0.929	0.17	19	1	Normal
CCR-AP-7	Lead, Total	0.587	6.5e-07	23	9	Not normal
WAP-1	Lead, Total	0.804	0.0013	19	0	Not normal
WAP-2RR	Lead, Total	0.506	5.7e-07	19	11	Not normal
WAP-3S	Lead, Total	0.776	0.00052	19	5	Not normal
WAP-4S	Lead, Total	0.589	3.4e-06	19	15	Not normal
WAP-5S	Lead, Total	0.411	9e-08	19	17	Not normal
CCR-AP-7	Lithium, Total	0.699	1.3e-05	23	0	Not normal
WAP-1	Lithium, Total	0.863	0.011	19	0	Not normal
WAP-2RR	Lithium, Total	0.922	0.12	19	0	Normal

		Shapiro-Wilk Test for Normality (R programming, package = stats, version 4.3.3, function = shapiro.test, non-detects substituted by 0.5*reporting limit)				
Location	**Constituent**	**W statistic**	**p-value**	**Sample Count (n)**	**Non-Detect Count (n)**	**Data Normality (significance level = 0.05)**
WAP-3S	Lithium, Total	0.968	0.74	19	0	Normal
WAP-4S	Lithium, Total	0.767	0.0004	19	7	Not normal
WAP-5S	Lithium, Total	0.511	6.3e-07	19	11	Not normal
CCR-AP-7	Mercury, Total	NA	NA	20	20	Not Evaluated - All Non-Detect Results
WAP-1	Mercury, Total	NA	NA	17	17	Not Evaluated - All Non-Detect Results
WAP-2RR	Mercury, Total	NA	NA	17	17	Not Evaluated - All Non-Detect Results
WAP-3S	Mercury, Total	NA	NA	17	17	Not Evaluated - All Non-Detect Results
WAP-4S	Mercury, Total	NA	NA	18	18	Not Evaluated - All Non-Detect Results
WAP-5S	Mercury, Total	NA	NA	17	17	Not Evaluated - All Non-Detect Results
CCR-AP-7	Molybdenum, Total	0.773	0.00015	23	1	Not normal
WAP-1	Molybdenum, Total	0.857	0.0089	19	3	Not normal
WAP-2RR	Molybdenum, Total	0.911	0.076	19	0	Normal
WAP-3S	Molybdenum, Total	0.988	1	19	0	Normal
WAP-4S	Molybdenum, Total	0.734	0.00015	19	0	Not normal
WAP-5S	Molybdenum, Total	0.250	5.8e-09	19	5	Not normal
CCR-AP-7	Radium-226 & 228	0.939	0.23	20	0	Normal
WAP-1	Radium-226 & 228	0.720	0.00041	15	0	Not normal
WAP-2RR	Radium-226 & 228	0.810	0.0038	16	1	Not normal
WAP-3S	Radium-226 & 228	0.943	0.42	15	1	Normal
WAP-4S	Radium-226 & 228	0.826	0.0063	16	1	Not normal
WAP-5S	Radium-226 & 228	0.775	0.0013	16	1	Not normal
CCR-AP-7	Selenium, Total	0.404	3e-08	21	18	Not normal
WAP-1	Selenium, Total	0.385	1.6e-07	17	15	Not normal
WAP-2RR	Selenium, Total	0.654	3.6e-05	17	11	Not normal
WAP-3S	Selenium, Total	NA	NA	17	17	Not Evaluated - All Non-Detect Results
WAP-4S	Selenium, Total	NA	NA	17	17	Not Evaluated - All Non-Detect Results
WAP-5S	Selenium, Total	NA	NA	17	17	Not Evaluated - All Non-Detect Results
CCR-AP-7	Thallium, Total	0.623	1.6e-06	23	19	Not normal
WAP-1	Thallium, Total	0.883	0.024	19	8	Not normal
WAP-2RR	Thallium, Total	0.843	0.0051	19	9	Not normal
WAP-3S	Thallium, Total	NA	NA	19	19	Not Evaluated - All Non-Detect Results
WAP-4S	Thallium, Total	NA	NA	19	19	Not Evaluated - All Non-Detect Results
WAP-5S	Thallium, Total	0.561	1.8e-06	19	17	Not normal

Table A-3. Results of Rosner/Dixon Test for Outliers

		Rosner or Dixon Test for Outliers (R programming, package = outliers, version 0.15, function = dixon.test or rosnerTest, non-detects substituted by 0.5*reporting limit)							
Location	**Constituent**	**Outlier Test**	**n**	**n, non-detects**	**statistic**	**Alternative Hypothesis**	**p-value**	**Statistical Outlier (significance level = 0.05)**	**Outlier Removed**
CCR-AP-7	Antimony, Total	Dixon	23	20	0.898	highest value 0.0025 is an outlier	0	Yes	No
WAP-1	Antimony, Total	Dixon	19	9	0.472	highest value 0.002 is an outlier	0.085	No	NA
WAP-2RR	Antimony, Total	Dixon	19	18	1.000	highest value 0.0025 is an outlier	0	Yes	No
WAP-3S	Antimony, Total	Dixon	19	18	1.000	highest value 0.0025 is an outlier	0	Yes	No
WAP-4S	Antimony, Total	Dixon	19	19	All results are non-detect	Not Evlauated	NA	NA	NA
WAP-5S	Antimony, Total	Dixon	19	18	1.000	highest value 0.0025 is an outlier	0	Yes	No
CCR-AP-7	Arsenic, Total	Dixon	23	0	0.593	highest value 0.018 is an outlier	0	Yes	No
WAP-1	Arsenic, Total	Dixon	19	0	0.519	highest value 0.025 is an outlier	0.036	Yes	No
WAP-2RR	Arsenic, Total	Dixon	19	1	0.675	highest value 0.0078 is an outlier	0	Yes	No
WAP-3S	Arsenic, Total	Dixon	19	2	0.452	highest value 0.0064 is an outlier	0.12	No	NA
WAP-4S	Arsenic, Total	Dixon	19	0	0.628	highest value 0.027 is an outlier	0	Yes	No
WAP-5S	Arsenic, Total	Dixon	19	4	0.556	highest value 0.005 is an outlier	0.017	Yes	No
CCR-AP-7	Barium, Total	Dixon	23	0	0.333	highest value 0.19 is an outlier	0.33	No	NA
WAP-1	Barium, Total	Dixon	19	0	0.508	highest value 0.99 is an outlier	0.045	Yes	No
WAP-2RR	Barium, Total	Dixon	19	0	0.393	highest value 0.086 is an outlier	0.25	No	NA
WAP-3S	Barium, Total	Dixon	19	0	0.167	highest value 0.39 is an outlier	0.61	No	NA
WAP-4S	Barium, Total	Dixon	19	0	0.548	highest value 0.08 is an outlier	0.019	Yes	No
WAP-5S	Barium, Total	Dixon	19	0	0.375	lowest value 0.037 is an outlier	0.31	No	NA
CCR-AP-7	Beryllium, Total	Dixon	23	16	0.192	lowest value 0.000067 is an outlier	0.9	No	NA
WAP-1	Beryllium, Total	Dixon	19	6	0.320	highest value 0.0012 is an outlier	0.53	No	NA
WAP-2RR	Beryllium, Total	Dixon	19	17	0.500	lowest value 0.00024 is an outlier	0.053	No	NA
WAP-3S	Beryllium, Total	Dixon	19	18	1.000	lowest value 0.000068 is an outlier	0	Yes	No
WAP-4S	Beryllium, Total	Dixon	19	19	All results are non-detect	Not Evlauated	NA	NA	NA
WAP-5S	Beryllium, Total	Dixon	19	18	1.000	lowest value 0.000084 is an outlier	0	Yes	No
CCR-AP-7	Cadmium, Total	Dixon	23	21	0.500	lowest value 0.00014 is an outlier	0.022	Yes	No
WAP-1	Cadmium, Total	Dixon	19	11	0.216	lowest value 0.00013 is an outlier	0.9	No	NA
WAP-2RR	Cadmium, Total	Dixon	19	2	0.691	highest value 0.001 is an outlier	0	Yes	No
WAP-3S	Cadmium, Total	Dixon	19	9	0.154	lowest value 0.00011 is an outlier	0.54	No	NA
WAP-4S	Cadmium, Total	Dixon	19	16	0.429	lowest value 0.000062 is an outlier	0.16	No	NA
WAP-5S	Cadmium, Total	Dixon	19	17	1.000	lowest value 0.000092 is an outlier	0	Yes	No
CCR-AP-7	Chromium, Total	Dixon	23	11	0.717	highest value 0.019 is an outlier	0	Yes	No
WAP-1	Chromium, Total	Dixon	19	0	0.448	highest value 0.046 is an outlier	0.12	No	NA
WAP-2RR	Chromium, Total	Dixon	19	16	0.681	highest value 0.0057 is an outlier	0	Yes	No
WAP-3S	Chromium, Total	Dixon	19	14	0.525	highest value 0.005 is an outlier	0.032	Yes	No
WAP-4S	Chromium, Total	Dixon	19	18	1.000	highest value 0.005 is an outlier	0	Yes	No
WAP-5S	Chromium, Total	Dixon	19	19	All results are non-detect	Not Evlauated	NA	NA	NA
CCR-AP-7	Cobalt, Total	Dixon	23	2	0.659	highest value 0.015 is an outlier	0	Yes	No
WAP-1	Cobalt, Total	Dixon	19	0	0.395	highest value 0.019 is an outlier	0.25	No	NA
WAP-2RR	Cobalt, Total	Dixon	19	0	0.595	highest value 0.0097 is an outlier	0.0029	Yes	No
WAP-3S	Cobalt, Total	Dixon	19	0	0.219	highest value 0.0018 is an outlier	0.92	No	NA
WAP-4S	Cobalt, Total	Dixon	19	0	0.886	highest value 0.0093 is an outlier	0	Yes	No
WAP-5S	Cobalt, Total	Dixon	19	0	0.603	lowest value 0.0016 is an outlier	9.3e-05	Yes	No
CCR-AP-7	Fluoride	Dixon	22	0	0.460	highest value 0.72 is an outlier	0.061	No	NA
WAP-1	Fluoride	Dixon	19	0	0.552	highest value 2 is an outlier	0.018	Yes	No
WAP-2RR	Fluoride	Dixon	19	0	0.200	highest value 0.4 is an outlier	0.81	No	NA
WAP-3S	Fluoride	Dixon	19	0	0.176	lowest value 0.24 is an outlier	0.66	No	NA
WAP-4S	Fluoride	Dixon	19	0	0.357	lowest value 0.11 is an outlier	0.37	No	NA
WAP-5S	Fluoride	Dixon	19	1	0.548	highest value 0.21 is an outlier	0.02	Yes	No
CCR-AP-7	Lead, Total	Dixon	23	9	0.605	highest value 0.02 is an outlier	0	Yes	No
WAP-1	Lead, Total	Dixon	19	0	0.399	highest value 0.035 is an outlier	0.24	No	NA
WAP-2RR	Lead, Total	Dixon	19	11	0.769	highest value 0.0064 is an outlier	0	Yes	No
WAP-3S	Lead, Total	Dixon	19	5	0.500	highest value 0.0027 is an outlier	0.053	No	NA
WAP-4S	Lead, Total	Dixon	19	15	0.840	highest value 0.0015 is an outlier	0	Yes	No
WAP-5S	Lead, Total	Dixon	19	17	1.000	highest value 0.0015 is an outlier	0	Yes	No
CCR-AP-7	Lithium, Total	Dixon	23	0	0.635	highest value 0.039 is an outlier	0	Yes	No
WAP-1	Lithium, Total	Dixon	19	0	0.294	highest value 0.027 is an outlier	0.65	No	NA
WAP-2RR	Lithium, Total	Dixon	19	0	0.182	highest value 0.06 is an outlier	0.7	No	NA

Rosner or Dixon Test for Outliers (R programming, package = outliers, version 0.15, function = dixon.test or rosnerTest, non-detects substituted by 0.5*reporting limit)									
Location	**Constituent**	**Outlier Test**	**n**	**n, non-detects**	**statistic**	**Alternative Hypothesis**	**p-value**	**Statistical Outlier (significance level = 0.05)**	**Outlier Removed**
WAP-3S	Lithium, Total	Dixon	19	0	0.362	highest value 0.12 is an outlier	0.35	No	NA
WAP-4S	Lithium, Total	Dixon	19	7	0.207	highest value 0.017 is an outlier	0.85	No	NA
WAP-5S	Lithium, Total	Dixon	19	11	0.867	highest value 0.025 is an outlier	0	Yes	No
CCR-AP-7	Mercury, Total	Dixon	20	20	All results are non-detect	Not Evlauated	NA	NA	NA
WAP-1	Mercury, Total	Dixon	17	17	All results are non-detect	Not Evlauated	NA	NA	NA
WAP-2RR	Mercury, Total	Dixon	17	17	All results are non-detect	Not Evlauated	NA	NA	NA
WAP-3S	Mercury, Total	Dixon	17	17	All results are non-detect	Not Evlauated	NA	NA	NA
WAP-4S	Mercury, Total	Dixon	18	18	All results are non-detect	Not Evlauated	NA	NA	NA
WAP-5S	Mercury, Total	Dixon	17	17	All results are non-detect	Not Evlauated	NA	NA	NA
CCR-AP-7	Molybdenum, Total	Dixon	23	1	0.414	highest value 0.013 is an outlier	0.11	No	NA
WAP-1	Molybdenum, Total	Dixon	19	3	0.098	highest value 0.0028 is an outlier	0.32	No	NA
WAP-2RR	Molybdenum, Total	Dixon	19	0	0.469	highest value 0.16 is an outlier	0.09	No	NA
WAP-3S	Molybdenum, Total	Dixon	19	0	0.306	highest value 1.5 is an outlier	0.59	No	NA
WAP-4S	Molybdenum, Total	Dixon	19	0	0.659	lowest value 0.00078 is an outlier	0	Yes	No
WAP-5S	Molybdenum, Total	Dixon	19	5	0.995	highest value 0.4 is an outlier	0	Yes	No
CCR-AP-7	Radium-226 & 228	Dixon	20	0	0.215	highest value 1.72 is an outlier	0.94	No	NA
WAP-1	Radium-226 & 228	Dixon	15	0	0.652	highest value 4.74 is an outlier	0.0084	Yes	No
WAP-2RR	Radium-226 & 228	Dixon	16	1	0.570	highest value 2.15 is an outlier	0.031	Yes	No
WAP-3S	Radium-226 & 228	Dixon	15	1	0.214	lowest value 0.18 is an outlier	0.7	No	NA
WAP-4S	Radium-226 & 228	Dixon	16	1	0.464	highest value 1.86 is an outlier	0.18	No	NA
WAP-5S	Radium-226 & 228	Dixon	16	1	0.549	highest value 1.49 is an outlier	0.049	Yes	No
CCR-AP-7	Selenium, Total	Dixon	21	18	1.000	lowest value 0.00035 is an outlier	0	Yes	No
WAP-1	Selenium, Total	Dixon	17	15	1.000	lowest value 0.0018 is an outlier	0	Yes	No
WAP-2RR	Selenium, Total	Dixon	17	11	0.478	highest value 0.0071 is an outlier	0.12	No	NA
WAP-3S	Selenium, Total	Dixon	17	17	All results are non-detect	Not Evlauated	NA	NA	NA
WAP-4S	Selenium, Total	Dixon	17	17	All results are non-detect	Not Evlauated	NA	NA	NA
WAP-5S	Selenium, Total	Dixon	17	17	All results are non-detect	Not Evlauated	NA	NA	NA
CCR-AP-7	Thallium, Total	Dixon	23	19	0.548	highest value 0.001 is an outlier	0.004	Yes	No
WAP-1	Thallium, Total	Dixon	19	8	0.573	highest value 0.001 is an outlier	0.011	Yes	No
WAP-2RR	Thallium, Total	Dixon	19	9	0.546	highest value 0.001 is an outlier	0.021	Yes	No
WAP-3S	Thallium, Total	Dixon	19	19	All results are non-detect	Not Evlauated	NA	NA	NA
WAP-4S	Thallium, Total	Dixon	19	19	All results are non-detect	Not Evlauated	NA	NA	NA
WAP-5S	Thallium, Total	Dixon	19	17	1.000	highest value 0.001 is an outlier	0	Yes	No

Table A-4. Results of Mann Kendall and Thiel Sen Trend Tests

		Mann Kendall Trends		Secular Trend Evaluation for All Data										Secular Trend Evaluation for Recent Data (subset of 12 most recent data points)									
				Mann-Kendall Test (R programming, package = Kendall, version = 2.2.1, function = MannKendall, non-detects substituted by 0.5*reporting limit)							Thiel-Sen Test (R programming, package = trend, version = 1.1.6, function = sens.slope, non-detects substituted by 0.5*reporting limit)			Mann-Kendall Test (R programming, package = Kendall, version = 2.2.1, function = MannKendall, non-detects substituted by 0.5*reporting limit)								Thiel-Sen Test (R programming, package = trend, version = 1.1.6, function = sens.slope, non-detects substituted by 0.5*reporting limit)		
Location	Constituent	Trends, All Data	Trends, Recent Data	n	n, detected results	Coefficient of Variance	Kendall's Tau	p-value	Confidence Factor	Kendall Score (S)	Sen Slope (mg/L per year)	p-value	MK Trend Confirmed	n	n, detected results	recent data date range	Coefficient of Variance	Kendall's Tau	p-value	Confidence Factor	Kendall Score (S)	Sen Slope (mg/L per year)	p-value	MK Trend Confirmed
CCR-AP-7	Antimony, Total	Not Evaluated - Majority of data (>75%) non-detect.	Not Evaluated - Only one detected result.	23	3	0.375	NA	NA	NA	NA	NA	NA	NA	12	1	2019-05-28 to 2023-11-06	0.396	NA	NA	NA	NA	NA	NA	NA
WAP-1	Antimony, Total	Stable	No Trend	19	10	0.357	-0.178	0.334	66.6	-27	0	0.334	No Trend	12	8	2018-08-16 to 2023-11-06	0.405	0.0953	0.726	27.4	6	0.00000286	0.726	No Trend
WAP-2RR	Antimony, Total	Not Evaluated - Only one detected result.	Not Evaluated - Only one detected result.	19	1	0.317	NA	NA	NA	NA	NA	NA	NA	12	1	2018-08-16 to 2023-11-08	0.381	NA	NA	NA	NA	NA	NA	NA
WAP-3S	Antimony, Total	Not Evaluated - Only one detected result.	Not Evaluated - Only one detected result.	19	1	0.357	NA	NA	NA	NA	NA	NA	NA	12	1	2018-08-16 to 2023-11-08	0.443	NA	NA	NA	NA	NA	NA	NA
WAP-4S	Antimony, Total	Not Evaluated - No detected results.	Not Evaluated - No detected results.	19	0	1.34	NA	NA	NA	NA	NA	NA	NA	12	0	2018-08-16 to 2023-11-07	1.38	NA	NA	NA	NA	NA	NA	NA
WAP-5S	Antimony, Total	Not Evaluated - Only one detected result.	Not Evaluated - No detected results.	19	1	0.365	NA	NA	NA	NA	NA	NA	NA	12	0	2018-08-16 to 2023-11-07	0.385	NA	NA	NA	NA	NA	NA	NA
CCR-AP-7	Arsenic, Total	Decreasing	Stable	23	23	0.701	-0.363	0.0173	98.3	-91	-0.000232	0.0173	No Trend	12	12	2019-05-28 to 2023-11-06	0.85	-0.233	0.333	66.7	-15	-0.000338	0.333	No Trend
WAP-1	Arsenic, Total	No Trend	No Trend	19	19	0.735	0.0409	0.834	16.6	7	0.0000222	0.834	No Trend	12	12	2018-08-16 to 2023-11-06	0.785	0.121	0.631	36.9	8	0.000111	0.631	No Trend
WAP-2RR	Arsenic, Total	Probably Increasing	No Trend	19	18	1.19	0.282	0.0999	90	48	0.00003	0.0999	No Trend	12	12	2018-08-16 to 2023-11-08	1.16	0.351	0.13	87	23	0.0000679	0.13	No Trend
WAP-3S	Arsenic, Total	Decreasing	Stable	19	17	0.641	-0.446	0.00865	99.1	-76	-0.000172	0.00865	No Trend	12	10	2018-08-16 to 2023-11-08	0.867	-0.273	0.244	75.6	-18	-0.00017	0.244	No Trend
WAP-4S	Arsenic, Total	Increasing	Increasing	19	19	0.936	0.512	0.00259	99.7	87	0.00032	0.00259	Trend confirmed	12	12	2018-08-16 to 2023-11-07	0.873	0.646	0.00473	99.5	42	0.00078	0.00473	Trend confirmed
WAP-5S	Arsenic, Total	No Trend	No Trend	19	15	1.05	0.0647	0.726	27.4	11	0.000005	0.726	No Trend	12	9	2018-08-16 to 2023-11-07	1.03	0.0606	0.837	16.3	4	0.00000917	0.837	No Trend
CCR-AP-7	Barium, Total	Decreasing	Decreasing	23	23	0.224	-0.367	0.019	98.1	-89	-0.00222	0.019	No Trend	12	12	2019-05-28 to 2023-11-06	0.25	-0.469	0.0447	95.5	-30	-0.005	0.0447	No Trend
WAP-1	Barium, Total	No Trend	No Trend	19	19	0.332	0.154	0.38	62	26	0.0025	0.38	No Trend	12	12	2018-08-16 to 2023-11-06	0.328	0.0923	0.73	27	6	0.00143	0.73	No Trend
WAP-2RR	Barium, Total	Stable	No Trend	19	19	0.394	-0.131	0.461	53.9	-22	-0.000692	0.461	No Trend	12	12	2018-08-16 to 2023-11-08	0.487	0.313	0.188	81.2	20	0.00183	0.188	No Trend
WAP-3S	Barium, Total	Decreasing	No Trend	19	19	0.762	-0.404	0.0174	98.3	-69	-0.0128	0.0174	No Trend	12	12	2018-08-16 to 2023-11-08	1.01	-0.273	0.244	75.6	-18	-0.0138	0.244	No Trend
WAP-4S	Barium, Total	Decreasing	No Trend	19	19	0.147	-0.401	0.0202	98	-67	-0.000667	0.0202	No Trend	12	12	2018-08-16 to 2023-11-07	0.12	0.0938	0.729	27.1	6	0.0002	0.729	No Trend
WAP-5S	Barium, Total	Decreasing	Decreasing	19	19	0.141	-0.601	0.000491	100	-100	-0.000909	0.000491	No Trend	12	12	2018-08-16 to 2023-11-07	0.145	-0.615	0.00826	99.2	-39	-0.00143	0.00826	No Trend
CCR-AP-7	Beryllium, Total	No Trend	Not Evaluated - Only one detected result.	23	7	0.415	0.114	0.512	48.8	22	0	0.512	No Trend	12	1	2019-05-28 to 2023-11-06	0.203	NA	NA	NA	NA	NA	NA	NA
WAP-1	Beryllium, Total	Stable	No Trend	19	13	0.617	-0.00603	1	0	-1	0	1	No Trend	12	7	2018-08-16 to 2023-11-06	0.565	0.159	0.529	47.1	10	0.00000625	0.529	No Trend
WAP-2RR	Beryllium, Total	Not Evaluated - Majority of data (>75%) non-detect.	Not Evaluated - Only one detected result.	19	2	0.179	NA	NA	NA	NA	NA	NA	NA	12	1	2018-08-16 to 2023-11-08	0.167	NA	NA	NA	NA	NA	NA	NA
WAP-3S	Beryllium, Total	Not Evaluated - Only one detected result.	Not Evaluated - No detected results.	19	1	0.241	NA	NA	NA	NA	NA	NA	NA	12	0	2018-08-16 to 2023-11-08	0.151	NA	NA	NA	NA	NA	NA	NA
WAP-4S	Beryllium, Total	Not Evaluated - No detected results.	Not Evaluated - No detected results.	19	0	0.118	NA	NA	NA	NA	NA	NA	NA	12	0	2018-08-16 to 2023-11-07	0.151	NA	NA	NA	NA	NA	NA	NA
WAP-5S	Beryllium, Total	Not Evaluated - Only one detected result.	Not Evaluated - No detected results.	19	1	0.234	NA	NA	NA	NA	NA	NA	NA	12	0	2018-08-16 to 2023-11-07	0.151	NA	NA	NA	NA	NA	NA	NA
CCR-AP-7	Cadmium, Total	Not Evaluated - Majority of data (>75%) non-detect.	Not Evaluated - No detected results.	23	2	0.203	NA	NA	NA	NA	NA	NA	NA	12	0	2019-05-28 to 2023-11-06	0.151	NA	NA	NA	NA	NA	NA	NA
WAP-1	Cadmium, Total	No Trend	Stable	19	8	0.339	0.213	0.256	74.4	30	0	0.256	No Trend	12	3	2018-08-16 to 2023-11-06	0.254	-0.0449	0.927	7.3	-2	0	0.927	No Trend
WAP-2RR	Cadmium, Total	Probably Decreasing	Stable	19	17	0.348	-0.332	0.0535	94.7	-56	-0.00000818	0.0535	No Trend	12	10	2018-08-16 to 2023-11-08	0.209	-0.137	0.582	41.8	-9	-0.00000725	0.582	No Trend
WAP-3S	Cadmium, Total	No Trend	No Trend	19	10	0.449	0.182	0.331	66.9	27	0	0.331	No Trend	12	4	2018-08-16 to 2023-11-08	0.418	0.24	0.365	63.5	12	0	0.365	No Trend
WAP-4S	Cadmium, Total	Not Evaluated - Majority of data (>75%) non-detect.	Not Evaluated - Majority of data (>75%) non-detect.	19	3	0.29	NA	NA	NA	NA	NA	NA	NA	12	2	2018-08-16 to 2023-11-07	0.343	NA	NA	NA	NA	NA	NA	NA
WAP-5S	Cadmium, Total	Not Evaluated - Majority of data (>75%) non-detect.	Not Evaluated - Majority of data (>75%) non-detect.	19	2	0.261	NA	NA	NA	NA	NA	NA	NA	12	2	2018-08-16 to 2023-11-07	0.339	NA	NA	NA	NA	NA	NA	NA
CCR-AP-7	Chromium, Total	No Trend	No Trend	23	12	1.27	0.0422	0.808	19.2	10	0	0.808	No Trend	12	3	2019-05-28 to 2023-11-06	0.805	0.264	0.3	70	15	0	0.3	No Trend
WAP-1	Chromium, Total	Stable	Stable	19	19	0.936	-0.218	0.207	79.3	-37	-0.000444	0.207	No Trend	12	12	2018-08-16 to 2023-11-06	0.704	-0.333	0.15	85	-22	-0.000617	0.15	No Trend
WAP-2RR	Chromium, Total	Not Evaluated - Majority of data (>75%) non-detect.	Not Evaluated - Majority of data (>75%) non-detect.	19	3	0.795	NA	NA	NA	NA	NA	NA	NA	12	2	2018-08-16 to 2023-11-08	0.806	NA	NA	NA	NA	NA	NA	NA
WAP-3S	Chromium, Total	No Trend	Not Evaluated - Majority of data (>75%) non-detect.	19	5	0.674	0.201	0.29	71	27	0	0.29	No Trend	12	2	2018-08-16 to 2023-11-08	0.726	NA	NA	NA	NA	NA	NA	NA
WAP-4S	Chromium, Total	Not Evaluated - Only one detected result.	Not Evaluated - No detected results.	19	1	0.752	NA	NA	NA	NA	NA	NA	NA	12	0	2018-08-16 to 2023-11-07	0.82	NA	NA	NA	NA	NA	NA	NA
WAP-5S	Chromium, Total	Not Evaluated - No detected results.	Not Evaluated - No detected results.	19	0	0.746	NA	NA	NA	NA	NA	NA	NA	12	0	2018-08-16 to 2023-11-07	0.82	NA	NA	NA	NA	NA	NA	NA

Note:
Mann Kendall Trends are classified based on Aziz (2003) guidance. Thiel-Sen test results are interpreted based on 5% signficance level (95% confidence level). Any group with a p-value < 0.05 is considered a statistically significant trend. The direction of trend is based on the sen slope (positive slope = increasing trend; negative slope = decreasing trend).

		Mann Kendall Trends		Secular Trend Evaluation for All Data										Secular Trend Evaluation for Recent Data (subset of 12 most recent data points)									
				Mann-Kendall Test (R programming, package = Kendall, version = 2.2.1, function = MannKendall, non-detects substituted by 0.5*reporting limit)							Thiel-Sen Test (R programming, package = trend, version = 1.1.6, function = sens.slope, non-detects substituted by 0.5*reporting limit)			Mann-Kendall Test (R programming, package = Kendall, version = 2.2.1, function = MannKendall, non-detects substituted by 0.5*reporting limit)								Thiel-Sen Test (R programming, package = trend, version = 1.1.6, function = sens.slope, non-detects substituted by 0.5*reporting limit)		
Location	Constituent	Trends, All Data	Trends, Recent Data	n	n, detected results	Coefficient of Variance	Kendall's Tau	p-value	Confidence Factor	Kendall Score (S)	Sen Slope (mg/L per year)	p-value	MK Trend Confirmed	n	n, detected results	recent data date range	Coefficient of Variance	Kendall's Tau	p-value	Confidence Factor	Kendall Score (S)	Sen Slope (mg/L per year)	p-value	MK Trend Confirmed
CCR-AP-7	Cobalt, Total	Decreasing	No Trend	23	21	1.47	-0.377	0.013	98.7	-95	-0.00009	0.013	No Trend	12	10	2019-05-28 to 2023-11-06	1.3	-0.0458	0.891	10.9	-3	-0.000008	0.891	No Trend
WAP-1	Cobalt, Total	Stable	Stable	19	19	0.958	-0.235	0.172	82.8	-40	-0.000275	0.172	No Trend	12	12	2018-08-16 to 2023-11-06	0.778	-0.364	0.115	88.5	-24	-0.0003	0.115	No Trend
WAP-2RR	Cobalt, Total	Stable	No Trend	19	19	0.785	-0.0237	0.916	8.4	-4	0	0.916	No Trend	12	12	2018-08-16 to 2023-11-08	0.901	0.198	0.409	59.1	13	0.000153	0.409	No Trend
WAP-3S	Cobalt, Total	No Trend	No Trend	19	19	0.508	0.13	0.462	53.8	22	0.000018	0.462	No Trend	12	12	2018-08-16 to 2023-11-08	0.453	0.0763	0.783	21.7	5	0.0000164	0.783	No Trend
WAP-4S	Cobalt, Total	No Trend	Stable	19	19	0.787	0.012	0.972	2.8	2	0	0.972	No Trend	12	12	2018-08-16 to 2023-11-07	0.129	-0.176	0.484	51.6	-11	-0.0000134	0.484	No Trend
WAP-5S	Cobalt, Total	Decreasing	Probably Decreasing	19	19	0.269	-0.394	0.0208	97.9	-67	-0.00014	0.0208	No Trend	12	12	2018-08-16 to 2023-11-07	0.218	-0.443	0.0543	94.6	-29	-0.000214	0.0543	No Trend
CCR-AP-7	Fluoride	Increasing	Increasing	22	22	0.397	0.368	0.019	98.1	84	0.00875	0.019	Trend confirmed	12	12	2019-05-28 to 2023-11-06	0.435	0.534	0.0194	98.1	35	0.0327	0.0194	Trend confirmed
WAP-1	Fluoride	Probably Increasing	No Trend	19	19	1.01	0.292	0.0914	90.9	49	0.01	0.0914	No Trend	12	12	2018-08-16 to 2023-11-06	0.962	0.303	0.193	80.7	20	0.0317	0.193	No Trend
WAP-2RR	Fluoride	Increasing	Increasing	19	19	0.341	0.5	0.00326	99.7	85	0.01	0.00326	Trend confirmed	12	12	2018-08-16 to 2023-11-08	0.281	0.515	0.0236	97.6	34	0.0161	0.0236	Trend confirmed
WAP-3S	Fluoride	Stable	No Trend	19	19	0.291	-0.0235	0.916	8.4	-4	-0.00111	0.916	No Trend	12	12	2018-08-16 to 2023-11-08	0.317	0.0303	0.945	5.5	2	0.0069	0.945	No Trend
WAP-4S	Fluoride	No Trend	No Trend	19	19	0.222	0.0601	0.751	24.9	10	0.000909	0.751	No Trend	12	12	2018-08-16 to 2023-11-07	0.198	0.14	0.581	41.9	9	0.0025	0.581	No Trend
WAP-5S	Fluoride	Stable	No Trend	19	18	0.384	-0.165	0.344	65.6	-28	-0.00147	0.344	No Trend	12	11	2018-08-16 to 2023-11-07	0.328	0.121	0.631	36.9	8	0.00164	0.631	No Trend
CCR-AP-7	Lead, Total	Probably Decreasing	No Trend	23	14	1.64	-0.265	0.0935	90.6	-63	-0.0000336	0.0935	No Trend	12	5	2019-05-28 to 2023-11-06	1.32	-0.0348	0.941	5.9	-2	0	0.941	No Trend
WAP-1	Lead, Total	Stable	Stable	19	19	0.919	-0.129	0.462	53.8	-22	-0.00028	0.462	No Trend	12	12	2018-08-16 to 2023-11-06	0.7	-0.0458	0.891	10.9	-3	-0.000134	0.891	No Trend
WAP-2RR	Lead, Total	No Trend	No Trend	19	8	1.53	0.071	0.724	27.6	10	0	0.724	No Trend	12	7	2018-08-16 to 2023-11-08	1.47	0.329	0.175	82.5	20	0.0000325	0.175	No Trend
WAP-3S	Lead, Total	No Trend	No Trend	19	14	0.808	0.119	0.504	49.6	20	0.00001	0.504	No Trend	12	8	2018-08-16 to 2023-11-08	0.783	0.125	0.627	37.3	8	0.00001	0.627	No Trend
WAP-4S	Lead, Total	Not Evaluated - Majority of data (>75%) non-detect.	No Trend	19	4	0.528	NA	NA	NA	NA	NA	NA	NA	12	3	2018-08-16 to 2023-11-07	0.676	0.24	0.365	63.5	12	0	0.365	No Trend
WAP-5S	Lead, Total	Not Evaluated - Majority of data (>75%) non-detect.	Not Evaluated - Majority of data (>75%) non-detect.	19	2	0.465	NA	NA	NA	NA	NA	NA	NA	12	2	2018-08-16 to 2023-11-07	0.574	NA	NA	NA	NA	NA	NA	NA
CCR-AP-7	Lithium, Total	Decreasing	Probably Decreasing	23	23	0.508	-0.427	0.006	99.4	-104	-0.000211	0.006	No Trend	12	12	2019-05-28 to 2023-11-06	0.351	-0.438	0.0612	93.9	-28	-0.00035	0.0612	No Trend
WAP-1	Lithium, Total	Probably Decreasing	Probably Decreasing	19	19	0.502	-0.287	0.0981	90.2	-48	-0.000325	0.0981	No Trend	12	12	2018-08-16 to 2023-11-06	0.426	-0.388	0.0969	90.3	-25	-0.00045	0.0969	No Trend
WAP-2RR	Lithium, Total	Decreasing	Stable	19	19	0.461	-0.467	0.00621	99.4	-79	-0.00175	0.00621	No Trend	12	12	2018-08-16 to 2023-11-08	0.36	-0.0458	0.891	10.9	-3	-0.000208	0.891	No Trend
WAP-3S	Lithium, Total	Increasing	Probably Increasing	19	19	0.324	0.633	0.00018	100	108	0.00307	0.00018	Trend confirmed	12	12	2018-08-16 to 2023-11-08	0.246	0.412	0.0739	92.6	27	0.00162	0.0739	No Trend
WAP-4S	Lithium, Total	Decreasing	Stable	19	12	0.857	-0.57	0.0012	99.9	-91	-0.0006	0.0012	No Trend	12	6	2018-08-16 to 2023-11-07	0.79	-0.362	0.141	85.9	-21	-0.000121	0.141	No Trend
WAP-5S	Lithium, Total	Decreasing	Probably Decreasing	19	8	1.2	-0.507	0.00476	99.5	-77	-0.0000778	0.00476	No Trend	12	5	2018-08-16 to 2023-11-07	0.343	-0.465	0.0555	94.5	-27	-0.000025	0.0555	No Trend
CCR-AP-7	Mercury, Total	Not Evaluated - No detected results.	Not Evaluated - No detected results.	20	0	0.312	NA	NA	NA	NA	NA	NA	NA	12	0	2017-11-17 to 2023-11-06	0.385	NA	NA	NA	NA	NA	NA	NA
WAP-1	Mercury, Total	Not Evaluated - No detected results.	Not Evaluated - No detected results.	17	0	0.334	NA	NA	NA	NA	NA	NA	NA	12	0	2018-07-05 to 2023-11-06	0.385	NA	NA	NA	NA	NA	NA	NA
WAP-2RR	Mercury, Total	Not Evaluated - No detected results.	Not Evaluated - No detected results.	17	0	0.334	NA	NA	NA	NA	NA	NA	NA	12	0	2018-07-06 to 2023-11-08	0.385	NA	NA	NA	NA	NA	NA	NA
WAP-3S	Mercury, Total	Not Evaluated - No detected results.	Not Evaluated - No detected results.	17	0	0.334	NA	NA	NA	NA	NA	NA	NA	12	0	2018-07-06 to 2023-11-08	0.385	NA	NA	NA	NA	NA	NA	NA
WAP-4S	Mercury, Total	Not Evaluated - No detected results.	Not Evaluated - No detected results.	18	0	0.326	NA	NA	NA	NA	NA	NA	NA	12	0	2018-07-25 to 2023-11-07	0.385	NA	NA	NA	NA	NA	NA	NA
WAP-5S	Mercury, Total	Not Evaluated - No detected results.	Not Evaluated - No detected results.	17	0	0.334	NA	NA	NA	NA	NA	NA	NA	12	0	2018-07-05 to 2023-11-07	0.385	NA	NA	NA	NA	NA	NA	NA
CCR-AP-7	Molybdenum, Total	Decreasing	Stable	23	22	0.833	-0.652	0.000018	100	-163	-0.00025	0.000018	No Trend	12	11	2019-05-28 to 2023-11-06	0.225	-0.0473	0.889	11.1	-3	0	0.889	No Trend
WAP-1	Molybdenum, Total	Stable	No Trend	19	16	0.49	-0.131	0.461	53.9	-22	-0.00002	0.461	No Trend	12	10	2018-08-16 to 2023-11-06	0.463	0.154	0.535	46.5	10	0.0000183	0.535	No Trend
WAP-2RR	Molybdenum, Total	Increasing	Probably Increasing	19	19	0.58	0.456	0.00769	99.2	77	0.00363	0.00769	Trend confirmed	12	12	2018-08-16 to 2023-11-08	0.493	0.419	0.0726	92.7	27	0.00537	0.0726	No Trend
WAP-3S	Molybdenum, Total	Stable	Stable	19	19	0.364	-0.276	0.107	89.3	-47	-0.0278	0.107	No Trend	12	12	2018-08-16 to 2023-11-08	0.33	-0.321	0.169	83.1	-21	-0.0383	0.169	No Trend
WAP-4S	Molybdenum, Total	Increasing	No Trend	19	19	0.281	0.53	0.00199	99.8	89	0.0075	0.00199	Trend confirmed	12	12	2018-08-16 to 2023-11-07	0.124	0.281	0.239	76.1	18	0.00437	0.239	No Trend
WAP-5S	Molybdenum, Total	Increasing	Increasing	19	14	4.09	0.411	0.0178	98.2	68	0.000026	0.0178	Trend confirmed	12	8	2018-08-16 to 2023-11-07	0.574	0.657	0.00499	99.5	41	0.000168	0.00499	Trend confirmed
CCR-AP-7	Radium-226 & 228	Stable	No Trend	20	20	0.547	-0.137	0.417	58.3	-26	-0.0163	0.417	No Trend	12	12	2019-05-28 to 2023-11-06	0.623	0.333	0.15	85	22	0.0397	0.15	No Trend
WAP-1	Radium-226 & 228	Increasing	No Trend	15	15	0.676	0.421	0.0331	96.7	44	0.07	0.0331	Trend confirmed	12	12	2018-07-25 to 2023-11-06	0.675	0.333	0.15	85	22	0.0958	0.15	No Trend
WAP-2RR	Radium-226 & 228	No Trend	No Trend	16	15	0.94	0.233	0.224	77.6	28	0.0195	0.224	No Trend	12	11	2018-07-26 to 2023-11-08	0.935	0.242	0.304	69.6	16	0.037	0.304	No Trend
WAP-3S	Radium-226 & 228	No Trend	No Trend	15	14	0.449	0.00952	1	0	1	0.00111	1	No Trend	12	11	2018-05-24 to 2023-11-08	0.512	0.0909	0.732	26.8	6	0.0197	0.732	No Trend
WAP-4S	Radium-226 & 228	No Trend	No Trend	16	15	0.877	0.2	0.3	70	24	0.0282	0.3	No Trend	12	11	2018-07-25 to 2023-11-07	0.836	0.182	0.451	54.9	12	0.0379	0.451	No Trend
WAP-5S	Radium-226 & 228	Increasing	Increasing	16	15	0.734	0.46	0.0149	98.5	55	0.0369	0.0149	Trend confirmed	12	11	2018-06-14 to 2023-11-07	0.711	0.515	0.0236	97.6	34	0.0614	0.0236	Trend confirmed
CCR-AP-7	Selenium, Total	Not Evaluated - Majority of data (>75%) non-detect.	Not Evaluated - Only one detected result.	21	3	0.258	NA	NA	NA	NA	NA	NA	NA	12	1	2018-06-11 to 2023-11-06	0.0343	NA	NA	NA	NA	NA	NA	NA
WAP-1	Selenium, Total	Not Evaluated - Majority of data (>75%) non-detect.	Not Evaluated - Only one detected result.	17	2	0.0962	NA	NA	NA	NA	NA	NA	NA	12	1	2018-07-05 to 2023-11-06	0.0828	NA	NA	NA	NA	NA	NA	NA

Note:
Mann Kendall Trends are classified based on Aziz (2003) guidance. Thiel-Sen test results are interpreted based on 5% signficance level (95% confidence level). Any group with a p-value < 0.05 is considered a statistically significant trend. The direction of trend is based on the sen slope (positive slope = increasing trend; negative slope = decreasing trend).

				Secular Trend Evaluation for All Data										Secular Trend Evaluation for Recent Data (subset of 12 most recent data points)									
		Mann Kendall Trends		Mann-Kendall Test (R programming, package = Kendall, version = 2.2.1, function = MannKendall, non-detects substituted by 0.5*reporting limit)							Thiel-Sen Test (R programming, package = trend, version = 1.1.6, function = sens.slope, non-detects substituted by 0.5*reporting limit)			Mann-Kendall Test (R programming, package = Kendall, version = 2.2.1, function = MannKendall, non-detects substituted by 0.5*reporting limit)								Thiel-Sen Test (R programming, package = trend, version = 1.1.6, function = sens.slope, non-detects substituted by 0.5*reporting limit)		
Location	Constituent	Trends, All Data	Trends, Recent Data	n	n, detected results	Coefficient of Variance	Kendall's Tau	p-value	Confidence Factor	Kendall Score (S)	Sen Slope (mg/L per year)	p-value	MK Trend Confirmed	n	n, detected results	recent data date range	Coefficient of Variance	Kendall's Tau	p-value	Confidence Factor	Kendall Score (S)	Sen Slope (mg/L per year)	p-value	MK Trend Confirmed
WAP-2RR	Selenium, Total	No Trend	No Trend	17	6	0.475	0.181	0.382	61.8	19	0	0.382	No Trend	12	6	2018-07-06 to 2023-11-08	0.512	0.155	0.556	44.4	9	0	0.556	No Trend
WAP-3S	Selenium, Total	Not Evaluated - No detected results.	Not Evaluated - No detected results.	17	0	0	NA	NA	NA	NA	NA	NA	NA	12	0	2018-07-06 to 2023-11-08	0	NA	NA	NA	NA	NA	NA	NA
WAP-4S	Selenium, Total	Not Evaluated - No detected results.	Not Evaluated - No detected results.	17	0	0	NA	NA	NA	NA	NA	NA	NA	12	0	2018-07-05 to 2023-11-07	0	NA	NA	NA	NA	NA	NA	NA
WAP-5S	Selenium, Total	Not Evaluated - No detected results.	Not Evaluated - No detected results.	17	0	0	NA	NA	NA	NA	NA	NA	NA	12	0	2018-07-05 to 2023-11-07	0	NA	NA	NA	NA	NA	NA	NA
CCR-AP-7	Thallium, Total	Not Evaluated - Majority of data (>75%) non-detect.	Not Evaluated - No detected results.	23	4	0.399	NA	NA	NA	NA	NA	NA	NA	12	0	2019-05-28 to 2023-11-06	0.266	NA	NA	NA	NA	NA	NA	NA
WAP-1	Thallium, Total	No Trend	Increasing	19	11	0.521	0.275	0.122	87.8	44	0.0000117	0.122	No Trend	12	6	2018-08-16 to 2023-11-06	0.569	0.625	0.00822	99.2	38	0.0000473	0.00822	Trend confirmed
WAP-2RR	Thallium, Total	Increasing	Increasing	19	10	0.651	0.449	0.0118	98.8	70	0.000018	0.0118	Trend confirmed	12	4	2018-08-16 to 2023-11-08	0.556	0.569	0.0208	97.9	31	0.000042	0.0208	Trend confirmed
WAP-3S	Thallium, Total	Not Evaluated - No detected results.	Not Evaluated - No detected results.	19	0	0.218	NA	NA	NA	NA	NA	NA	NA	12	0	2018-08-16 to 2023-11-08	0.266	NA	NA	NA	NA	NA	NA	NA
WAP-4S	Thallium, Total	Not Evaluated - No detected results.	Not Evaluated - No detected results.	19	0	0.218	NA	NA	NA	NA	NA	NA	NA	12	0	2018-08-16 to 2023-11-07	0.266	NA	NA	NA	NA	NA	NA	NA
WAP-5S	Thallium, Total	Not Evaluated - Majority of data (>75%) non-detect.	Not Evaluated - Only one detected result.	19	2	0.332	NA	NA	NA	NA	NA	NA	NA	12	1	2018-08-16 to 2023-11-07	0.331	NA	NA	NA	NA	NA	NA	NA

Note:

Mann Kendall Trends are classified based on Aziz (2003) guidance. Thiel-Sen test results are interpreted based on 5% signficance level (95% confidence level). Any group with a p-value < 0.05 is considered a statistically significant trend. The direction of trend is based on the sen slope (positive slope = increasing trend; negative slope = decreasing trend).

Table A-5. Upper Tolerance Limits (UTLs)

		Interwell Background Data Characterization [a]													Groundwater Protection Standard (GWPS) Determination					UTL Calculation Details		
Constituent	Units	n	n, non-detects	max reporting limit	max detected value	mean	median	min sample date	max sample date	standard deviation	coefficient of variation	Mann Kendall trend	Thiel-Sen trend confirmaion	data distribution (Shapiro-Francia) [b]	normalizing data transformation (if any)	UTL	UTL Result Detection Status [c]	MCL/RSL	GWPS	GWPS Source	UTL calculation method	UTL calculation details	Minimum Coverage (%)
Antimony, Total	mg/L	40	28	0.002	0.002	0.00168	0.002	2016-06-10	2023-05-22	0.000567	0.294	No Trend	No Trend	Not normal (Interwell Background)	NA - Original Data	0.002	No	0.006	0.006	MCL/RSL	Non-Parametric Tolerance Limits (USEPA, 2009 - Chapter 17.2.2)	Maximum Value (non-detects substituted by reporting limit value)	92.8
Arsenic, Total	mg/L	40	0	NA	0.025	0.00704	0.00565	2016-06-10	2023-05-22	0.0052	0.739	Stable	No Trend	Not normal (Interwell Background)	NA - Original Data	0.025	Yes	0.01	0.025	UTL	Non-Parametric Tolerance Limits (USEPA, 2009 - Chapter 17.2.2)	Maximum Value (non-detects substituted by reporting limit value)	92.8
Barium, Total	mg/L	40	0	NA	0.99	0.307	0.175	2016-06-10	2023-05-22	0.231	0.754	No Trend	No Trend	Not normal (Interwell Background)	NA - Original Data	0.99	Yes	2	2	MCL/RSL	Non-Parametric Tolerance Limits (USEPA, 2009 - Chapter 17.2.2)	Maximum Value (non-detects substituted by reporting limit value)	92.8
Beryllium, Total	mg/L	40	20	0.001	0.0012	0.000699	0.001	2016-06-10	2023-05-22	0.000381	0.52	No Trend	No Trend	Not normal (Interwell Background)	NA - Original Data	0.0012	Yes	0.004	0.004	MCL/RSL	Non-Parametric Tolerance Limits (USEPA, 2009 - Chapter 17.2.2)	Maximum Value (non-detects substituted by reporting limit value)	92.8
Cadmium, Total	mg/L	40	31	0.001	0.00049	0.000836	0.001	2016-06-10	2023-05-22	0.000313	0.25	No Trend	No Trend	Not normal (Interwell Background)	NA - Original Data	0.001	No	0.005	0.005	MCL/RSL	Non-Parametric Tolerance Limits (USEPA, 2009 - Chapter 17.2.2)	Maximum Value (non-detects substituted by reporting limit value)	92.8
Chromium, Total	mg/L	40	10	0.005	0.046	0.00824	0.0049	2016-06-10	2023-05-22	0.0103	1.33	No Trend	No Trend	Not normal (Interwell Background)	NA - Original Data	0.046	Yes	0.1	0.1	MCL/RSL	Non-Parametric Tolerance Limits (USEPA, 2009 - Chapter 17.2.2)	Maximum Value (non-detects substituted by reporting limit value)	92.8
Cobalt, Total	mg/L	40	1	0.0005	0.019	0.00382	0.0018	2016-06-10	2023-05-22	0.0046	1.21	No Trend	No Trend	Not normal (Interwell Background)	NA - Original Data	0.019	Yes	0.006	0.019	UTL	Non-Parametric Tolerance Limits (USEPA, 2009 - Chapter 17.2.2)	Maximum Value (non-detects substituted by reporting limit value)	92.8
Fluoride	mg/L	39	0	NA	2	0.398	0.29	2016-08-12	2023-05-22	0.342	0.86	Increasing	Increasing Trend Confirmed	Not normal (Interwell Background)	NA - Original Data	2	Yes	4	4	MCL/RSL	Non-Parametric Tolerance Limits (USEPA, 2009 - Chapter 17.2.2)	Maximum Value (non-detects substituted by reporting limit value)	92.6
Lead, Total	mg/L	40	8	0.001	0.035	0.00656	0.00315	2016-06-10	2023-05-22	0.00845	1.32	No Trend	No Trend	Not normal (Interwell Background)	NA - Original Data	0.035	Yes	0.015	0.035	UTL	Non-Parametric Tolerance Limits (USEPA, 2009 - Chapter 17.2.2)	Maximum Value (non-detects substituted by reporting limit value)	92.8
Lithium, Total	mg/L	40	0	NA	0.039	0.013	0.011	2016-06-10	2023-05-22	0.00655	0.502	Decreasing	Decreasing Trend Confirmed	Not normal (Interwell Background)	NA - Original Data	0.039	Yes	0.04	0.04	MCL/RSL	Non-Parametric Tolerance Limits (USEPA, 2009 - Chapter 17.2.2)	Maximum Value (non-detects substituted by reporting limit value)	92.8
Mercury, Total	mg/L	35	35	0.0002	NA	0.0002	0.0002	2016-06-10	2023-05-22	0	0.25	All results are non-detect	No Trend	Not normal (Interwell Background)	NA - Original Data	0.0002	No	0.002	0.002	MCL/RSL	Maximum reporting limit value, all non-detect results (USEPA, 2009 - Chapter 17.2.2)	Maximum reporting limit value	91.8
Molybdenum, Total	mg/L	40	2	0.005	0.013	0.00285	0.00175	2016-06-10	2023-05-22	0.00263	0.946	Decreasing	No Trend	Not normal (Interwell Background)	NA - Original Data	0.013	Yes	0.1	0.1	MCL/RSL	Non-Parametric Tolerance Limits (USEPA, 2009 - Chapter 17.2.2)	Maximum Value (non-detects substituted by reporting limit value)	92.8
Radium-226 & 228	pCi/L	33	0	NA	4.74	1.08	1.02	2016-06-10	2023-05-22	0.804	0.742	Stable	No Trend	Not normal (Interwell Background)	NA - Original Data	4.74	Yes	5	5	MCL/RSL	Non-Parametric Tolerance Limits (USEPA, 2009 - Chapter 17.2.2)	Maximum Value (non-detects substituted by reporting limit value)	91.3
Selenium, Total	mg/L	36	31	0.005	0.0028	0.00451	0.005	2016-06-10	2023-05-22	0.00127	0.204	Increasing	No Trend	Not normal (Interwell Background)	NA - Original Data	0.005	No	0.05	0.05	MCL/RSL	Non-Parametric Tolerance Limits (USEPA, 2009 - Chapter 17.2.2)	Maximum Value (non-detects substituted by reporting limit value)	92
Thallium, Total	mg/L	40	25	0.001	0.00063	0.00073	0.001	2016-06-10	2023-05-22	0.000372	0.384	No Trend	No Trend	Not normal (Interwell Background)	NA - Original Data	0.001	No	0.002	0.002	MCL/RSL	Non-Parametric Tolerance Limits (USEPA, 2009 - Chapter 17.2.2)	Maximum Value (non-detects substituted by reporting limit value)	92.8

Note:

[a] Interwell background datasets are analyte specific and include data collected from background wells (CCR-AP-7 and WAP-1). Interwell background datasets were re-tested for outliers, secular trends, and data normality. No outliers were removed.

[b] Parametric tolerance limit calculations were performed on normally distributed background data. If background data were not normally distributed, non-parametric tolerance limit calculations were performed.

[c] In some cases, the maximum value selected as the UTL is a non-detect results with an elevated reporting limit.

Units = mg/L, milligrams per liter. pCi/L = picocuries per liter.

Table A-6. Confidence Intervals

			Confidence Interval (CI) Dataset						CI Calculation [a]						SSL Confirmation		Non-Parametric CI Statistics	
Location	Chemical	Units	n	max (Rank n)	min (Rank 1)	median	mean	standard deviation	CI calculation method	degrees of freedom	95% Confidence UCL	95% Confidence LCL	99% Confidence UCL	99% Confidence LCL	GWPS	LCL > GWPS?	bootstrap iterations	bootstrap median
WAP-3S	Lithium, Total	mg/L	19	0.12	0.033	0.077	0.0711	0.023	Calculation of the Confidence Interval Around the Normal Mean (Parametric)	18	0.0822	0.0599	0.0863	0.0558	0.04	Yes, SSL	NA	NA
WAP-3S	Molybdenum, Total	mg/L	19	1.5	0.26	0.86	0.84	0.306	Calculation of the Confidence Interval Around the Normal Mean (Parametric)	18	0.987	0.693	1.04	0.638	0.10	Yes, SSL	NA	NA
WAP-4S	Molybdenum, Total	mg/L	19	0.58	0.00078	0.45	0.422	0.118	Bootstrap Calculation of the Confidence Interval Around the Median (Non-Parametric)	18	0.47	0.41	0.48	0.4	0.10	Yes, SSL	10000	0.47

Note:

Confidence intervals are calculated for analyte/well pairs with GWPS exceedances in the Nov 2023 dataset.

[a] The 95% lower confience level (LCL) is compared to the Groundwater Protection Standard (GWPS) to confirm a statistically significant level (SSL). The 99% confidence interval is also shown for purposes of comparison. UCL = upper confidence level.

APPENDIX B
Field Forms

VECTREN - FB CULLEY STATION
WEST ASH POND
CCR Groundwater Sampling Event
Gauging Date:
November 1, 2023
ATC Project No. 170LF01498

WELL ID	DATE	TIME	DTW FROM TOC
West Ash Pond Wells			
CCR-AP-7	11/1/2023	11:12	17.55
WAP-1	11/1/2023	10:42	16.47
WAP-2RR	11/1/2023	10:33	39.60
WAP-3S	11/1/2023	10:23	37.10
WAP-3D	11/1/2023	10:25	36.99
WAP-4S	11/1/2023	9:52	30.65
WAP-4I	11/1/2023	9:54	30.72
WAP-4D	11/1/2023	9:56	33.07
WAP-5S	11/1/2023	10:14	29.35
WAP-5I	11/1/2023	10:16	29.30
WAP-5D	11/1/2023	10:18	29.87
WAP-6S	11/1/2023	9:33	33.49
WAP-6I	11/1/2023	9:35	33.95
WAP-6D	11/1/2023	9:37	38.15
WAP-7S	11/1/2023	10:28	37.65
WAP-7D	11/1/2023	10:30	37.25
WAP-8S	11/1/2023	10:02	32.00
WAP-8I	11/1/2023	10:04	32.20
WAP-8D	11/1/2023	10:06	34.43
WAP-9S	11/1/2023	9:42	41.00
WAP-9I	11/1/2023	9:44	42.41
WAP-9D	11/1/2023	9:46	46.35
Temporary Piezometers			
PZ-1	Destroyed		
PZ-2	Destroyed		
PZ-3	11/1/2023	10:36	11.12
PZ-4	11/1/2023	10:38	17.99
PZ-5	11/1/2023	10:48	3.75
PZ-6	11/1/2023	10:40	17.48
PZ-7	11/1/2023	10:42	16.39
PZ-8	Destroyed		
PZ-9	Destroyed		
PZ-10	Destroyed		

NOTES
)TW= Depth to Water
TOC= Top of Casing

Low-Flow Test Report:

Test Date / Time: 11/6/2023 11:40:03 AM
Project: CULLEY EAST (8)
Operator Name: Jon Hill

Location Name: CCR-AP-7 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 24.6 ft** **Total Depth: 34.6 ft** **Initial Depth to Water: 17.14 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 29.6 ft** **Estimated Total Volume Pumped: 6000 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 9.90 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 450197**

Test Notes:
1.6 gallons purged. DO and turbidity stability criteria not achieved due to concern over drawdown and need to obtain QA/QC volume from location.

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		
11/6/2023 11:40 AM	00:00	7.25 pH	18.45 °C	623.13 µS/cm	0.68 mg/L	17.43 NTU	-112.0 mV	17.14 ft	100.00 ml/min
11/6/2023 11:43 AM	03:00	7.22 pH	17.15 °C	577.39 µS/cm	0.08 mg/L	11.92 NTU	-115.9 mV	18.01 ft	100.00 ml/min
11/6/2023 11:46 AM	06:00	7.22 pH	17.14 °C	696.54 µS/cm	0.06 mg/L	20.21 NTU	-118.5 mV	18.91 ft	100.00 ml/min
11/6/2023 11:49 AM	09:00	7.22 pH	17.27 °C	665.76 µS/cm	0.05 mg/L	36.80 NTU	-120.5 mV	19.97 ft	100.00 ml/min
11/6/2023 11:52 AM	12:00	7.23 pH	17.44 °C	671.69 µS/cm	0.05 mg/L	29.18 NTU	-122.1 mV	21.25 ft	100.00 ml/min
11/6/2023 11:55 AM	15:00	7.24 pH	17.60 °C	640.92 µS/cm	0.05 mg/L	27.27 NTU	-123.3 mV	23.78 ft	100.00 ml/min
11/6/2023 11:58 AM	18:00	7.25 pH	17.48 °C	617.64 µS/cm	0.04 mg/L	37.99 NTU	-124.4 mV	23.80 ft	100.00 ml/min
11/6/2023 12:01 PM	21:00	7.26 pH	17.50 °C	609.43 µS/cm	0.05 mg/L	23.57 NTU	-124.7 mV	23.80 ft	100.00 ml/min
11/6/2023 12:04 PM	24:00	7.26 pH	17.43 °C	535.11 µS/cm	0.18 mg/L	39.42 NTU	-122.9 mV	23.79 ft	100.00 ml/min
11/6/2023 12:07 PM	27:00	7.25 pH	17.48 °C	525.32 µS/cm	0.34 mg/L	14.97 NTU	-118.5 mV	23.87 ft	100.00 ml/min
11/6/2023 12:10 PM	30:00	7.24 pH	17.37 °C	545.84 µS/cm	0.29 mg/L	24.44 NTU	-116.2 mV	24.10 ft	100.00 ml/min
11/6/2023 12:13 PM	33:00	7.22 pH	17.32 °C	493.16 µS/cm	0.34 mg/L	29.90 NTU	-113.8 mV	24.32 ft	100.00 ml/min
11/6/2023 12:16 PM	36:00	7.21 pH	17.58 °C	419.86 µS/cm	0.45 mg/L	49.54 NTU	-111.6 mV	24.50 ft	100.00 ml/min
11/6/2023 12:19 PM	39:00	7.22 pH	17.49 °C	375.35 µS/cm	0.60 mg/L	38.98 NTU	-109.6 mV	24.76 ft	100.00 ml/min
11/6/2023 12:22 PM	42:00	7.21 pH	17.81 °C	347.38 µS/cm	0.74 mg/L	25.56 NTU	-106.3 mV	25.50 ft	100.00 ml/min

11/6/2023 12:25 PM	45:00	7.22 pH	17.82 °C	285.55 µS/cm	0.52 mg/L	37.50 NTU	-105.6 mV	26.08 ft	100.00 ml/min
11/6/2023 12:28 PM	48:00	7.23 pH	17.70 °C	652.19 µS/cm	0.22 mg/L	38.89 NTU	-107.0 mV	26.15 ft	100.00 ml/min
11/6/2023 12:31 PM	51:00	7.25 pH	17.65 °C	610.72 µS/cm	0.10 mg/L	38.79 NTU	-109.2 mV	26.51 ft	100.00 ml/min
11/6/2023 12:34 PM	54:00	7.25 pH	17.65 °C	663.63 µS/cm	0.07 mg/L	24.59 NTU	-110.0 mV	26.77 ft	100.00 ml/min
11/6/2023 12:37 PM	57:00	7.25 pH	17.66 °C	650.98 µS/cm	0.05 mg/L	25.76 NTU	-110.1 mV	26.92 ft	100.00 ml/min
11/6/2023 12:40 PM	01:00:00	7.26 pH	17.68 °C	617.10 µS/cm	0.05 mg/L	28.94 NTU	-111.4 mV	27.04 ft	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/8/2023 11:25:34 AM
Project: CULLEY WEST (14)
Operator Name: Jon Hill

Location Name: WAP-2RR **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 46 ft** **Total Depth: 56 ft** **Initial Depth to Water: 39.37 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 51.0 ft** **Estimated Total Volume Pumped: 1800 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.04 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 450197**

Test Notes:
0.5 gallons purged. DO just above 10% threshold (14%) for one of the final three readings, essentially 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		
11/8/2023 11:25 AM	00:00	6.90 pH	17.80 °C	431.42 µS/cm	0.62 mg/L	5.23 NTU	-34.1 mV	39.37 ft	100.00 ml/min
11/8/2023 11:28 AM	03:00	6.75 pH	17.15 °C	413.60 µS/cm	0.14 mg/L	77.04 NTU	-16.8 mV	39.39 ft	100.00 ml/min
11/8/2023 11:31 AM	06:00	6.73 pH	17.08 °C	408.22 µS/cm	0.10 mg/L	49.46 NTU	-10.3 mV	39.40 ft	100.00 ml/min
11/8/2023 11:34 AM	09:00	6.72 pH	17.06 °C	404.33 µS/cm	0.08 mg/L	36.03 NTU	-6.4 mV	39.40 ft	100.00 ml/min
11/8/2023 11:37 AM	12:00	6.72 pH	17.03 °C	402.02 µS/cm	0.07 mg/L	36.10 NTU	-3.6 mV	39.41 ft	100.00 ml/min
11/8/2023 11:40 AM	15:00	6.72 pH	17.04 °C	399.89 µS/cm	0.07 mg/L	40.11 NTU	-1.3 mV	39.41 ft	100.00 ml/min
11/8/2023 11:43 AM	18:00	6.72 pH	17.04 °C	397.97 µS/cm	0.06 mg/L	34.30 NTU	0.6 mV	39.41 ft	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/8/2023 9:10:54 AM
Project: CULLEY WEST (10)
Operator Name: Jon Hill

Location Name: WAP-3S **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 60.3 ft** **Total Depth: 70.3 ft** **Initial Depth to Water: 36.6 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 65.3 ft** **Estimated Total Volume Pumped: 1800 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.00 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 450197**

Test Notes:
0.5 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		
11/8/2023 9:10 AM	00:00	7.65 pH	17.28 °C	298.10 µS/cm	0.79 mg/L	6.01 NTU	-7.6 mV	36.60 ft	100.00 ml/min
11/8/2023 9:13 AM	03:00	7.70 pH	17.18 °C	289.75 µS/cm	0.30 mg/L	5.24 NTU	-13.0 mV	36.60 ft	100.00 ml/min
11/8/2023 9:16 AM	06:00	7.71 pH	17.18 °C	290.95 µS/cm	0.21 mg/L	3.41 NTU	-17.5 mV	36.60 ft	100.00 ml/min
11/8/2023 9:19 AM	09:00	7.72 pH	17.18 °C	290.04 µS/cm	0.17 mg/L	4.57 NTU	-21.2 mV	36.60 ft	100.00 ml/min
11/8/2023 9:22 AM	12:00	7.71 pH	17.16 °C	292.13 µS/cm	0.15 mg/L	3.07 NTU	-23.3 mV	36.60 ft	100.00 ml/min
11/8/2023 9:25 AM	15:00	7.73 pH	17.19 °C	291.22 µS/cm	0.14 mg/L	2.59 NTU	-26.9 mV	36.60 ft	100.00 ml/min
11/8/2023 9:28 AM	18:00	7.72 pH	17.14 °C	291.12 µS/cm	0.13 mg/L	3.30 NTU	-28.4 mV	36.60 ft	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/8/2023 9:32:33 AM
Project: CULLEY WEST (11)
Operator Name: Jon Hill

Location Name: WAP-3D **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 72.7 ft** **Total Depth: 82.7 ft** **Initial Depth to Water: 36.45 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 77.7 ft** **Estimated Total Volume Pumped: 2100 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.13 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 450197**

Test Notes:
0.5 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		
11/8/2023 9:32 AM	00:00	7.60 pH	17.23 °C	340.49 µS/cm	0.34 mg/L	0.17 NTU	-25.2 mV	36.45 ft	100.00 ml/min
11/8/2023 9:35 AM	03:00	7.59 pH	17.22 °C	324.68 µS/cm	0.28 mg/L	0.12 NTU	-23.8 mV	36.47 ft	100.00 ml/min
11/8/2023 9:38 AM	06:00	7.59 pH	17.23 °C	325.34 µS/cm	0.20 mg/L	0.13 NTU	-22.7 mV	36.51 ft	100.00 ml/min
11/8/2023 9:41 AM	09:00	7.59 pH	17.23 °C	326.08 µS/cm	0.17 mg/L	0.46 NTU	-21.6 mV	36.55 ft	100.00 ml/min
11/8/2023 9:44 AM	12:00	7.59 pH	17.23 °C	326.32 µS/cm	0.15 mg/L	0.36 NTU	-20.7 mV	36.57 ft	100.00 ml/min
11/8/2023 9:47 AM	15:00	7.58 pH	17.17 °C	406.44 µS/cm	0.14 mg/L	1.51 NTU	-19.8 mV	36.58 ft	100.00 ml/min
11/8/2023 9:50 AM	18:00	7.58 pH	17.13 °C	406.07 µS/cm	0.12 mg/L	1.87 NTU	-18.9 mV	36.58 ft	100.00 ml/min
11/8/2023 9:53 AM	21:00	7.58 pH	17.15 °C	405.77 µS/cm	0.12 mg/L	2.45 NTU	-18.2 mV	36.58 ft	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/7/2023 12:37:22 PM
Project: CULLEY WEST (4)
Operator Name: Jon Hill

Location Name: WAP-4S **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 35.0 ft** **Total Depth: 45.0 ft** **Initial Depth to Water: 30.68 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 40.0 ft** **Estimated Total Volume Pumped: 3000 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.27 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 450197**

Test Notes:
0.81 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		
11/7/2023 12:37 PM	00:00	7.19 pH	17.15 °C	679.71 µS/cm	0.43 mg/L	1,144.0 NTU	16.9 mV	30.68 ft	100.00 ml/min
11/7/2023 12:40 PM	03:00	7.21 pH	16.81 °C	666.55 µS/cm	0.17 mg/L	391.27 NTU	7.6 mV	30.75 ft	100.00 ml/min
11/7/2023 12:43 PM	06:00	7.21 pH	16.64 °C	662.00 µS/cm	0.12 mg/L	244.18 NTU	-0.3 mV	30.82 ft	100.00 ml/min
11/7/2023 12:46 PM	09:00	7.21 pH	16.65 °C	658.51 µS/cm	0.10 mg/L	234.10 NTU	-6.8 mV	30.87 ft	100.00 ml/min
11/7/2023 12:49 PM	12:00	7.21 pH	16.58 °C	656.47 µS/cm	0.09 mg/L	190.03 NTU	-11.7 mV	30.87 ft	100.00 ml/min
11/7/2023 12:52 PM	15:00	7.21 pH	16.56 °C	653.74 µS/cm	0.08 mg/L	37.55 NTU	-15.9 mV	30.88 ft	100.00 ml/min
11/7/2023 12:55 PM	18:00	7.21 pH	16.59 °C	652.11 µS/cm	0.08 mg/L	56.03 NTU	-19.2 mV	30.90 ft	100.00 ml/min
11/7/2023 12:58 PM	21:00	7.22 pH	16.52 °C	650.24 µS/cm	0.07 mg/L	30.16 NTU	-22.0 mV	30.91 ft	100.00 ml/min
11/7/2023 1:01 PM	24:00	7.22 pH	16.46 °C	649.12 µS/cm	0.06 mg/L	47.25 NTU	-24.3 mV	30.94 ft	100.00 ml/min
11/7/2023 1:04 PM	27:00	7.22 pH	16.47 °C	647.96 µS/cm	0.06 mg/L	45.85 NTU	-26.2 mV	30.94 ft	100.00 ml/min
11/7/2023 1:07 PM	30:00	7.22 pH	16.36 °C	645.62 µS/cm	0.06 mg/L	43.31 NTU	-27.8 mV	30.95 ft	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/7/2023 1:26:09 PM
Project: CULLEY WEST (5)
Operator Name: Jon Hill

Location Name: WAP-4I **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 65.1 ft** **Total Depth: 75.1 ft** **Initial Depth to Water: 30.8 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 70.1 ft** **Estimated Total Volume Pumped: 1800 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.10 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 450197**

Test Notes:
0.5 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		
11/7/2023 1:26 PM	00:00	7.39 pH	19.21 °C	267.54 µS/cm	0.28 mg/L	141.67 NTU	-14.2 mV	30.80 ft	100.00 ml/min
11/7/2023 1:29 PM	03:00	7.38 pH	19.26 °C	268.01 µS/cm	0.17 mg/L	84.48 NTU	-15.7 mV	30.81 ft	100.00 ml/min
11/7/2023 1:32 PM	06:00	7.36 pH	19.32 °C	267.79 µS/cm	0.14 mg/L	119.73 NTU	-16.7 mV	30.83 ft	100.00 ml/min
11/7/2023 1:35 PM	09:00	7.35 pH	19.39 °C	267.73 µS/cm	0.14 mg/L	64.80 NTU	-17.6 mV	30.85 ft	100.00 ml/min
11/7/2023 1:38 PM	12:00	7.35 pH	19.47 °C	267.46 µS/cm	0.13 mg/L	78.14 NTU	-18.1 mV	30.89 ft	100.00 ml/min
11/7/2023 1:41 PM	15:00	7.34 pH	19.49 °C	267.34 µS/cm	0.12 mg/L	65.42 NTU	-18.2 mV	30.90 ft	100.00 ml/min
11/7/2023 1:44 PM	18:00	7.33 pH	19.55 °C	267.14 µS/cm	0.12 mg/L	71.86 NTU	-18.2 mV	30.90 ft	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/7/2023 2:04:31 PM
Project: CULLEY WEST (6)
Operator Name: Jon Hill

Location Name: WAP-4D **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 106.0 ft** **Total Depth: 116.0 ft** **Initial Depth to Water: 31.1 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 111.0 ft** **Estimated Total Volume Pumped: 2100 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 1.15 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 450197**

Test Notes:
0.5 gallons purged. Drawdown >0.3 ft, but it is noted water level was well above top of screen.

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		
11/7/2023 2:04 PM	00:00	7.46 pH	18.59 °C	246.39 µS/cm	1.95 mg/L	1.74 NTU	10.3 mV	31.10 ft	100.00 ml/min
11/7/2023 2:07 PM	03:00	7.46 pH	18.65 °C	247.84 µS/cm	0.50 mg/L	0.59 NTU	-19.8 mV	31.65 ft	100.00 ml/min
11/7/2023 2:10 PM	06:00	7.54 pH	18.48 °C	245.43 µS/cm	0.17 mg/L	0.29 NTU	-74.6 mV	31.91 ft	100.00 ml/min
11/7/2023 2:13 PM	09:00	7.58 pH	18.42 °C	244.70 µS/cm	0.12 mg/L	0.20 NTU	-99.6 mV	32.07 ft	100.00 ml/min
11/7/2023 2:16 PM	12:00	7.60 pH	18.40 °C	231.48 µS/cm	0.10 mg/L	0.42 NTU	-111.3 mV	32.13 ft	100.00 ml/min
11/7/2023 2:19 PM	15:00	7.62 pH	18.37 °C	231.03 µS/cm	0.09 mg/L	0.17 NTU	-118.1 mV	32.19 ft	100.00 ml/min
11/7/2023 2:22 PM	18:00	7.62 pH	18.36 °C	230.72 µS/cm	0.09 mg/L	0.13 NTU	-122.7 mV	32.21 ft	100.00 ml/min
11/7/2023 2:25 PM	21:00	7.63 pH	18.34 °C	230.47 µS/cm	0.09 mg/L	0.43 NTU	-126.1 mV	32.25 ft	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/7/2023 1:18:11 PM
Project: CULLEY WEST
Operator Name: Mykah Bertram

Location Name: WAP-5S **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 30.1 ft** **Total Depth: 40.1 ft** **Initial Depth to Water: 29.27 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 35.1 ft** **Estimated Total Volume Pumped: 18000 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 400 ml/min** **Final Draw Down: 2.45 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 613473**

Test Notes:
4.8 gallons purged. DO didnt stabilize but almost to non-detect at final reading.

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		
11/7/2023 1:18 PM	00:00	6.25 pH	24.17 °C	1,256.3 µS/cm	0.09 mg/L	0.47 NTU	32.5 mV	30.94 ft	400.00 ml/min
11/7/2023 1:21 PM	03:00	6.26 pH	23.88 °C	1,259.8 µS/cm	0.05 mg/L	0.00 NTU	37.7 mV	30.95 ft	400.00 ml/min
11/7/2023 1:24 PM	06:00	6.27 pH	23.86 °C	1,261.1 µS/cm	0.07 mg/L	0.00 NTU	37.6 mV	30.95 ft	400.00 ml/min
11/7/2023 1:27 PM	09:00	6.28 pH	23.75 °C	1,258.9 µS/cm	0.23 mg/L	0.00 NTU	31.4 mV	30.95 ft	400.00 ml/min
11/7/2023 1:30 PM	12:00	6.29 pH	23.70 °C	1,260.4 µS/cm	0.32 mg/L	0.00 NTU	29.6 mV	31.09 ft	400.00 ml/min
11/7/2023 1:33 PM	15:00	6.29 pH	23.63 °C	1,260.5 µS/cm	0.33 mg/L	0.00 NTU	29.1 mV	31.17 ft	400.00 ml/min
11/7/2023 1:36 PM	18:00	6.28 pH	23.61 °C	1,259.9 µS/cm	0.27 mg/L	0.03 NTU	27.2 mV	31.21 ft	400.00 ml/min
11/7/2023 1:39 PM	21:00	6.28 pH	23.63 °C	1,262.3 µS/cm	0.22 mg/L	0.18 NTU	27.7 mV	31.25 ft	400.00 ml/min
11/7/2023 1:42 PM	24:00	6.28 pH	23.60 °C	1,260.0 µS/cm	0.17 mg/L	0.52 NTU	25.8 mV	31.37 ft	400.00 ml/min
11/7/2023 1:45 PM	27:00	6.29 pH	23.60 °C	1,261.1 µS/cm	0.13 mg/L	0.54 NTU	25.0 mV	31.40 ft	400.00 ml/min
11/7/2023 1:48 PM	30:00	6.28 pH	23.55 °C	1,260.3 µS/cm	0.11 mg/L	0.00 NTU	25.2 mV	31.48 ft	400.00 ml/min
11/7/2023 1:51 PM	33:00	6.29 pH	23.58 °C	1,260.3 µS/cm	0.08 mg/L	1.23 NTU	24.8 mV	31.50 ft	400.00 ml/min
11/7/2023 1:54 PM	36:00	6.29 pH	23.53 °C	1,258.2 µS/cm	0.05 mg/L	0.00 NTU	24.5 mV	31.55 ft	400.00 ml/min
11/7/2023 1:57 PM	39:00	6.29 pH	23.58 °C	1,258.9 µS/cm	0.04 mg/L	0.00 NTU	24.1 mV	31.62 ft	400.00 ml/min
11/7/2023 2:00 PM	42:00	6.29 pH	23.59 °C	1,256.4 µS/cm	0.03 mg/L	0.00 NTU	23.8 mV	31.68 ft	400.00 ml/min

11/7/2023 2:03 PM	45:00	6.29 pH	23.59 °C	1,255.5 µS/cm	0.02 mg/L	0.00 NTU	23.7 mV	31.72 ft	400.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/7/2023 2:30:35 PM
Project: CULLEY WEST
Operator Name: Mykah Bertram

Location Name: WAP-5I **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 65.0 ft** **Total Depth: 75.0 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 70.0 ft** **Estimated Total Volume Pumped: 7200 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 400 ml/min**	**Instrument Used: Aqua TROLL 500** **Serial Number: 613473**

Test Notes:
1.9 gallons purged. Final drawdown 0.11 ft (Depth to Water field not set up on low flow file but is recorded on field form).

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10	+/- 10	
11/7/2023 2:30 PM	00:00	6.70 pH	26.17 °C	343.96 µS/cm	1.24 mg/L	6.93 NTU	13.1 mV	400.00 ml/min
11/7/2023 2:33 PM	03:00	6.90 pH	26.06 °C	337.01 µS/cm	0.12 mg/L	0.54 NTU	-21.2 mV	400.00 ml/min
11/7/2023 2:36 PM	06:00	6.94 pH	26.09 °C	336.57 µS/cm	0.07 mg/L	0.00 NTU	-28.9 mV	400.00 ml/min
11/7/2023 2:39 PM	09:00	6.94 pH	26.07 °C	335.83 µS/cm	0.05 mg/L	0.00 NTU	-30.1 mV	400.00 ml/min
11/7/2023 2:42 PM	12:00	6.94 pH	26.11 °C	335.72 µS/cm	0.05 mg/L	8.88 NTU	-31.3 mV	400.00 ml/min
11/7/2023 2:45 PM	15:00	6.94 pH	26.13 °C	335.91 µS/cm	0.05 mg/L	2.28 NTU	-32.0 mV	400.00 ml/min
11/7/2023 2:48 PM	18:00	6.93 pH	26.17 °C	336.02 µS/cm	0.05 mg/L	0.75 NTU	-32.2 mV	400.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/7/2023 3:25:40 PM
Project: CULLEY WEST
Operator Name: Mykah Bertram

Location Name: WAP-5D **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 103.1 ft** **Total Depth: 113.1 ft** **Initial Depth to Water: 29.89 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 108.1 ft** **Estimated Total Volume Pumped: 4800 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.05 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 613473**

Test Notes:
1.3 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		
11/7/2023 3:25 PM	00:00	6.98 pH	26.24 °C	306.22 µS/cm	0.64 mg/L	3.49 NTU	-67.8 mV	29.90 ft	200.00 ml/min
11/7/2023 3:28 PM	03:00	7.03 pH	25.84 °C	305.97 µS/cm	0.25 mg/L	2.58 NTU	-103.2 mV	29.90 ft	200.00 ml/min
11/7/2023 3:31 PM	06:00	7.05 pH	25.80 °C	306.71 µS/cm	0.18 mg/L	2.88 NTU	-110.8 mV	29.91 ft	200.00 ml/min
11/7/2023 3:34 PM	09:00	7.05 pH	25.84 °C	306.72 µS/cm	0.15 mg/L	1.84 NTU	-113.4 mV	29.92 ft	200.00 ml/min
11/7/2023 3:37 PM	12:00	7.06 pH	25.85 °C	306.30 µS/cm	0.12 mg/L	3.54 NTU	-115.1 mV	29.93 ft	200.00 ml/min
11/7/2023 3:40 PM	15:00	7.06 pH	25.82 °C	306.74 µS/cm	0.12 mg/L	0.00 NTU	-116.0 mV	29.93 ft	200.00 ml/min
11/7/2023 3:43 PM	18:00	7.06 pH	25.74 °C	306.65 µS/cm	0.11 mg/L	0.00 NTU	-116.1 mV	29.94 ft	200.00 ml/min
11/7/2023 3:46 PM	21:00	7.07 pH	25.71 °C	306.69 µS/cm	0.11 mg/L	0.00 NTU	-116.6 mV	29.95 ft	200.00 ml/min
11/7/2023 3:49 PM	24:00	7.06 pH	25.73 °C	306.38 µS/cm	0.10 mg/L	0.00 NTU	-116.5 mV	29.94 ft	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/7/2023 9:13:22 AM
Project: CULLEY WEST
Operator Name: Myka Bertram

Location Name: WAP-6S **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 40.1 ft** **Total Depth: 50.1 ft** **Initial Depth to Water: 33.47 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 45.1 ft** **Estimated Total Volume Pumped: 9290 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 300 ml/min** **Final Draw Down: -1.35 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 613473**

Test Notes:
2.5 gallons purged. DO just above 10% threshold for one of the final three readings, essentially stable. Turbidity slightly above 10 NTU (10-15 NTU) for final three readings.

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		
11/7/2023 9:13 AM	00:00	6.79 pH	22.16 °C	555.74 µS/cm	0.19 mg/L	25.35 NTU	-23.7 mV	33.47 ft	300.00 ml/min
11/7/2023 9:14 AM	00:58	6.80 pH	22.12 °C	556.33 µS/cm	0.17 mg/L	30.12 NTU	-25.1 mV	33.40 ft	300.00 ml/min
11/7/2023 9:17 AM	03:58	6.84 pH	22.04 °C	536.59 µS/cm	0.13 mg/L	32.22 NTU	-26.9 mV	33.20 ft	300.00 ml/min
11/7/2023 9:20 AM	06:58	6.87 pH	22.03 °C	524.62 µS/cm	0.11 mg/L	41.58 NTU	-28.1 mV	33.14 ft	300.00 ml/min
11/7/2023 9:23 AM	09:58	6.89 pH	22.02 °C	519.08 µS/cm	0.10 mg/L	39.91 NTU	-28.6 mV	32.76 ft	300.00 ml/min
11/7/2023 9:26 AM	12:58	6.90 pH	22.06 °C	516.26 µS/cm	0.09 mg/L	35.11 NTU	-29.4 mV	32.48 ft	300.00 ml/min
11/7/2023 9:29 AM	15:58	6.91 pH	22.01 °C	512.73 µS/cm	0.08 mg/L	24.07 NTU	-29.7 mV	32.25 ft	300.00 ml/min
11/7/2023 9:32 AM	18:58	6.91 pH	22.00 °C	511.41 µS/cm	0.07 mg/L	23.49 NTU	-30.2 mV	32.21 ft	300.00 ml/min
11/7/2023 9:35 AM	21:58	6.92 pH	22.00 °C	510.82 µS/cm	0.06 mg/L	17.84 NTU	-30.9 mV	32.17 ft	300.00 ml/min
11/7/2023 9:38 AM	24:58	6.92 pH	22.03 °C	507.93 µS/cm	0.06 mg/L	10.91 NTU	-31.0 mV	32.14 ft	300.00 ml/min
11/7/2023 9:41 AM	27:58	6.92 pH	22.01 °C	509.42 µS/cm	0.06 mg/L	15.21 NTU	-31.7 mV	32.13 ft	300.00 ml/min
11/7/2023 9:44 AM	30:58	6.93 pH	21.96 °C	505.78 µS/cm	0.06 mg/L	12.06 NTU	-31.7 mV	32.12 ft	300.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/7/2023 10:27:04 AM
Project: CULLEY WEST
Operator Name: Mykah Bertram

Location Name: WAP-6I **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 70.0 ft** **Total Depth: 80.0 ft** **Initial Depth to Water: 34.18 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 75.0 ft** **Estimated Total Volume Pumped: 10325 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 300 ml/min** **Final Draw Down: -0.96 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 613473**

Test Notes:
2.7 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		
11/7/2023 10:27 AM	00:00	6.99 pH	23.62 °C	326.03 µS/cm	0.76 mg/L	1.36 NTU	-41.8 mV	34.34 ft	300.00 ml/min
11/7/2023 10:30 AM	03:00	7.07 pH	23.61 °C	344.54 µS/cm	0.24 mg/L	1.00 NTU	-71.1 mV	34.41 ft	300.00 ml/min
11/7/2023 10:33 AM	06:00	7.10 pH	23.66 °C	346.89 µS/cm	0.15 mg/L	6.22 NTU	-82.4 mV	34.32 ft	300.00 ml/min
11/7/2023 10:36 AM	09:00	7.10 pH	23.75 °C	346.67 µS/cm	0.12 mg/L	5.91 NTU	-88.5 mV	33.92 ft	300.00 ml/min
11/7/2023 10:39 AM	12:00	7.10 pH	23.84 °C	347.36 µS/cm	0.10 mg/L	0.58 NTU	-92.8 mV	33.74 ft	300.00 ml/min
11/7/2023 10:42 AM	15:00	7.10 pH	23.97 °C	347.17 µS/cm	0.09 mg/L	2.57 NTU	-96.7 mV	33.48 ft	300.00 ml/min
11/7/2023 10:45 AM	18:00	7.10 pH	24.03 °C	347.08 µS/cm	0.09 mg/L	2.81 NTU	-100.0 mV	33.25 ft	300.00 ml/min
11/7/2023 10:48 AM	21:00	7.10 pH	23.92 °C	347.01 µS/cm	0.08 mg/L	1.01 NTU	-102.9 mV	32.99 ft	300.00 ml/min
11/7/2023 10:51 AM	24:00	7.10 pH	24.06 °C	347.06 µS/cm	0.08 mg/L	0.00 NTU	-105.1 mV	32.87 ft	300.00 ml/min
11/7/2023 10:54 AM	27:00	7.10 pH	24.06 °C	347.22 µS/cm	0.09 mg/L	0.00 NTU	-107.0 mV	32.84 ft	300.00 ml/min
11/7/2023 10:57 AM	30:00	7.09 pH	24.12 °C	347.64 µS/cm	0.08 mg/L	0.00 NTU	-108.1 mV	33.06 ft	300.00 ml/min
11/7/2023 11:00 AM	33:00	7.10 pH	24.15 °C	347.01 µS/cm	0.08 mg/L	0.00 NTU	-110.0 mV	33.22 ft	300.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/7/2023 11:53:15 AM
Project: CULLEY WEST
Operator Name: Mykah Bertram

Location Name: WAP-6D **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 105.6 ft** **Total Depth: 115.6 ft** **Initial Depth to Water: 39.07 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 110.6 ft** **Estimated Total Volume Pumped: 6600 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: -0.16 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 613473**

Test Notes:
1.7 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		
11/7/2023 11:53 AM	00:00	7.17 pH	27.02 °C	300.71 µS/cm	0.71 mg/L	1.52 NTU	-123.5 mV	38.50 ft	200.00 ml/min
11/7/2023 11:56 AM	03:00	7.21 pH	24.43 °C	296.96 µS/cm	0.14 mg/L	0.00 NTU	-134.1 mV	37.84 ft	200.00 ml/min
11/7/2023 11:59 AM	06:00	7.22 pH	24.35 °C	297.15 µS/cm	0.13 mg/L	0.00 NTU	-138.1 mV	37.08 ft	200.00 ml/min
11/7/2023 12:02 PM	09:00	7.23 pH	24.18 °C	297.72 µS/cm	0.09 mg/L	0.00 NTU	-140.3 mV	36.92 ft	200.00 ml/min
11/7/2023 12:05 PM	12:00	7.23 pH	24.32 °C	298.00 µS/cm	0.09 mg/L	0.00 NTU	-141.3 mV	37.00 ft	200.00 ml/min
11/7/2023 12:08 PM	15:00	7.23 pH	24.38 °C	298.09 µS/cm	0.09 mg/L	0.00 NTU	-142.1 mV	37.45 ft	200.00 ml/min
11/7/2023 12:11 PM	18:00	7.23 pH	24.42 °C	298.15 µS/cm	0.09 mg/L	0.00 NTU	-142.1 mV	37.87 ft	200.00 ml/min
11/7/2023 12:14 PM	21:00	7.23 pH	24.47 °C	298.21 µS/cm	0.09 mg/L	0.00 NTU	-142.5 mV	38.12 ft	200.00 ml/min
11/7/2023 12:17 PM	24:00	7.23 pH	24.48 °C	298.09 µS/cm	0.10 mg/L	0.00 NTU	-142.3 mV	38.49 ft	200.00 ml/min
11/7/2023 12:20 PM	27:00	7.23 pH	24.50 °C	297.92 µS/cm	0.10 mg/L	0.00 NTU	-142.3 mV	38.73 ft	200.00 ml/min
11/7/2023 12:23 PM	30:00	7.23 pH	24.42 °C	297.79 µS/cm	0.11 mg/L	0.00 NTU	-142.0 mV	38.83 ft	200.00 ml/min
11/7/2023 12:26 PM	33:00	7.23 pH	24.48 °C	297.32 µS/cm	0.10 mg/L	0.00 NTU	-141.8 mV	38.91 ft	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/8/2023 10:16:23 AM
Project: CULLEY WEST (12)
Operator Name: Jon Hill

Location Name: WAP-7S **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 50.2 ft** **Total Depth: 60.2 ft** **Initial Depth to Water: 37.19 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 55.2 ft** **Estimated Total Volume Pumped: 1800 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.01 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 450197**

Test Notes:
0.5 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		
11/8/2023 10:16 AM	00:00	10.10 pH	17.44 °C	557.32 µS/cm	1.09 mg/L	31.01 NTU	-29.9 mV	37.19 ft	100.00 ml/min
11/8/2023 10:19 AM	03:00	10.49 pH	17.40 °C	602.44 µS/cm	0.21 mg/L	0.25 NTU	-48.1 mV	37.20 ft	100.00 ml/min
11/8/2023 10:22 AM	06:00	10.53 pH	17.36 °C	619.38 µS/cm	0.15 mg/L	0.11 NTU	-56.7 mV	37.21 ft	100.00 ml/min
11/8/2023 10:25 AM	09:00	10.55 pH	17.39 °C	628.77 µS/cm	0.12 mg/L	0.13 NTU	-61.2 mV	37.21 ft	100.00 ml/min
11/8/2023 10:28 AM	12:00	10.55 pH	17.37 °C	635.14 µS/cm	0.11 mg/L	0.15 NTU	-64.0 mV	37.20 ft	100.00 ml/min
11/8/2023 10:31 AM	15:00	10.54 pH	17.40 °C	638.34 µS/cm	0.10 mg/L	0.14 NTU	-65.6 mV	37.20 ft	100.00 ml/min
11/8/2023 10:34 AM	18:00	10.53 pH	17.39 °C	639.39 µS/cm	0.09 mg/L	0.15 NTU	-66.4 mV	37.20 ft	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/8/2023 10:39:35 AM
Project: CULLEY WEST (13)
Operator Name: Jon Hill

Location Name: WAP-7D **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 68.6 ft** **Total Depth: 78.6 ft** **Initial Depth to Water: 36.8 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 73.6 ft** **Estimated Total Volume Pumped: 2100 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.03 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 450197**

Test Notes:
0.5 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		
11/8/2023 10:39 AM	00:00	7.94 pH	17.30 °C	905.39 µS/cm	0.07 mg/L	0.18 NTU	-52.2 mV	36.80 ft	100.00 ml/min
11/8/2023 10:42 AM	03:00	7.51 pH	17.28 °C	873.41 µS/cm	0.07 mg/L	0.19 NTU	-66.5 mV	36.81 ft	100.00 ml/min
11/8/2023 10:45 AM	06:00	7.36 pH	17.29 °C	852.34 µS/cm	0.06 mg/L	0.19 NTU	-62.5 mV	36.82 ft	100.00 ml/min
11/8/2023 10:48 AM	09:00	7.29 pH	17.27 °C	832.86 µS/cm	0.06 mg/L	0.16 NTU	-58.7 mV	36.82 ft	100.00 ml/min
11/8/2023 10:51 AM	12:00	7.25 pH	17.27 °C	818.54 µS/cm	0.06 mg/L	0.16 NTU	-55.6 mV	36.83 ft	100.00 ml/min
11/8/2023 10:54 AM	15:00	7.24 pH	17.28 °C	805.98 µS/cm	0.06 mg/L	0.11 NTU	-53.6 mV	36.83 ft	100.00 ml/min
11/8/2023 10:57 AM	18:00	7.22 pH	17.28 °C	794.54 µS/cm	0.06 mg/L	0.15 NTU	-52.4 mV	36.83 ft	100.00 ml/min
11/8/2023 11:00 AM	21:00	7.22 pH	17.29 °C	786.85 µS/cm	0.05 mg/L	0.15 NTU	-51.4 mV	36.83 ft	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/8/2023 6:58:04 AM
Project: CULLEY WEST (7)
Operator Name: Jon Hill

Location Name: WAP-8S **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 40.1 ft** **Total Depth: 50.1 ft** **Initial Depth to Water: 32.12 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 45.1 ft** **Estimated Total Volume Pumped: 2100 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.05 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 450197**

Test Notes:
0.5 gallons purged. DO just above 10% threshold for one of the final three readings, essentially 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		
11/8/2023 6:58 AM	00:00	7.32 pH	16.10 °C	486.95 µS/cm	0.58 mg/L	109.36 NTU	-17.4 mV	32.12 ft	100.00 ml/min
11/8/2023 7:01 AM	03:00	7.39 pH	16.00 °C	487.51 µS/cm	0.19 mg/L	57.37 NTU	-84.3 mV	32.12 ft	100.00 ml/min
11/8/2023 7:04 AM	06:00	7.43 pH	15.95 °C	487.51 µS/cm	0.13 mg/L	18.59 NTU	-105.1 mV	32.15 ft	100.00 ml/min
11/8/2023 7:07 AM	09:00	7.46 pH	15.92 °C	486.97 µS/cm	0.11 mg/L	12.96 NTU	-115.2 mV	32.15 ft	100.00 ml/min
11/8/2023 7:10 AM	12:00	7.47 pH	15.91 °C	484.83 µS/cm	0.09 mg/L	9.24 NTU	-121.9 mV	32.16 ft	100.00 ml/min
11/8/2023 7:13 AM	15:00	7.48 pH	15.91 °C	485.34 µS/cm	0.08 mg/L	5.66 NTU	-126.8 mV	32.16 ft	100.00 ml/min
11/8/2023 7:16 AM	18:00	7.49 pH	15.91 °C	484.91 µS/cm	0.07 mg/L	2.78 NTU	-130.5 mV	32.16 ft	100.00 ml/min
11/8/2023 7:19 AM	21:00	7.50 pH	15.93 °C	485.41 µS/cm	0.07 mg/L	1.82 NTU	-133.4 mV	32.17 ft	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/8/2023 7:42:00 AM
Project: CULLEY WEST (8)
Operator Name: Jon Hill

Location Name: WAP-8I **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 70.1 ft** **Total Depth: 80.1 ft** **Initial Depth to Water: 31.7 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 75.1 ft** **Estimated Total Volume Pumped: 2100 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.02 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 450197**

Test Notes:
0.5 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		
11/8/2023 7:42 AM	00:00	7.52 pH	16.38 °C	211.47 µS/cm	2.78 mg/L	269.02 NTU	-29.0 mV	31.70 ft	100.00 ml/min
11/8/2023 7:45 AM	03:00	7.47 pH	15.75 °C	212.53 µS/cm	0.41 mg/L	965.48 NTU	-36.1 mV	31.71 ft	100.00 ml/min
11/8/2023 7:48 AM	06:00	7.46 pH	15.66 °C	212.59 µS/cm	0.17 mg/L	219.81 NTU	-43.6 mV	31.72 ft	100.00 ml/min
11/8/2023 7:51 AM	09:00	7.45 pH	15.62 °C	212.46 µS/cm	0.12 mg/L	33.95 NTU	-51.3 mV	31.72 ft	100.00 ml/min
11/8/2023 7:54 AM	12:00	7.45 pH	15.61 °C	212.53 µS/cm	0.11 mg/L	24.54 NTU	-57.6 mV	31.72 ft	100.00 ml/min
11/8/2023 7:57 AM	15:00	7.45 pH	15.59 °C	212.61 µS/cm	0.10 mg/L	10.76 NTU	-61.6 mV	31.72 ft	100.00 ml/min
11/8/2023 8:00 AM	18:00	7.45 pH	15.60 °C	212.82 µS/cm	0.09 mg/L	12.31 NTU	-64.7 mV	31.72 ft	100.00 ml/min
11/8/2023 8:03 AM	21:00	7.45 pH	15.60 °C	213.12 µS/cm	0.09 mg/L	37.77 NTU	-66.9 mV	31.72 ft	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/8/2023 8:19:46 AM
Project: CULLEY WEST (9)
Operator Name: Jon Hill

Location Name: WAP-8D **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 97.0 ft** **Total Depth: 107.0 ft** **Initial Depth to Water: 32.58 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 102.0 ft** **Estimated Total Volume Pumped: 2400 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.10 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 450197**

Test Notes:
0.6 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		
11/8/2023 8:19 AM	00:00	7.86 pH	20.67 °C	0.05 µS/cm	8.62 mg/L	1.76 NTU	-19.9 mV	32.58 ft	100.00 ml/min
11/8/2023 8:22 AM	03:00	7.40 pH	16.19 °C	194.31 µS/cm	0.41 mg/L	0.88 NTU	-15.5 mV	32.61 ft	100.00 ml/min
11/8/2023 8:25 AM	06:00	7.47 pH	15.94 °C	190.30 µS/cm	0.15 mg/L	4.31 NTU	-56.7 mV	32.62 ft	100.00 ml/min
11/8/2023 8:28 AM	09:00	7.53 pH	15.92 °C	189.65 µS/cm	0.11 mg/L	3.14 NTU	-81.8 mV	32.65 ft	100.00 ml/min
11/8/2023 8:31 AM	12:00	7.56 pH	15.91 °C	189.76 µS/cm	0.08 mg/L	1.06 NTU	-94.1 mV	32.65 ft	100.00 ml/min
11/8/2023 8:34 AM	15:00	7.58 pH	15.94 °C	190.02 µS/cm	0.07 mg/L	1.48 NTU	-101.4 mV	32.66 ft	100.00 ml/min
11/8/2023 8:37 AM	18:00	7.58 pH	15.92 °C	189.31 µS/cm	0.06 mg/L	1.22 NTU	-106.2 mV	32.67 ft	100.00 ml/min
11/8/2023 8:40 AM	21:00	7.59 pH	15.92 °C	189.33 µS/cm	0.05 mg/L	4.32 NTU	-109.9 mV	32.68 ft	100.00 ml/min
11/8/2023 8:43 AM	24:00	7.60 pH	15.92 °C	189.31 µS/cm	0.04 mg/L	2.31 NTU	-112.7 mV	32.68 ft	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/7/2023 7:43:55 AM
Project: CULLEY WEST
Operator Name: Jon Hill

Location Name: WAP-9S **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 54.7 ft** **Total Depth: 64.7 ft** **Initial Depth to Water: 40.72 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 59.7 ft** **Estimated Total Volume Pumped: 3900 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.03 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 450197**

Test Notes:
1.0 gallon purged. DO just above 10% threshold for one of the final three readings, essentially 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		
11/7/2023 7:43 AM	00:00	7.65 pH	16.03 °C	280.50 µS/cm	3.27 mg/L	523.04 NTU	76.5 mV	40.72 ft	100.00 ml/min
11/7/2023 7:46 AM	03:00	7.67 pH	15.98 °C	236.74 µS/cm	3.00 mg/L	181.07 NTU	75.1 mV	40.73 ft	100.00 ml/min
11/7/2023 7:49 AM	06:00	7.67 pH	15.93 °C	274.63 µS/cm	2.88 mg/L	82.29 NTU	73.3 mV	40.75 ft	100.00 ml/min
11/7/2023 7:52 AM	09:00	7.68 pH	15.92 °C	275.66 µS/cm	2.96 mg/L	46.25 NTU	71.4 mV	40.75 ft	100.00 ml/min
11/7/2023 7:55 AM	12:00	7.68 pH	15.94 °C	276.92 µS/cm	2.50 mg/L	31.93 NTU	69.4 mV	40.75 ft	100.00 ml/min
11/7/2023 7:58 AM	15:00	7.69 pH	16.02 °C	267.49 µS/cm	4.42 mg/L	39.98 NTU	67.3 mV	40.75 ft	100.00 ml/min
11/7/2023 8:01 AM	18:00	7.68 pH	16.04 °C	270.93 µS/cm	2.90 mg/L	17.99 NTU	65.2 mV	40.75 ft	100.00 ml/min
11/7/2023 8:04 AM	21:00	7.68 pH	16.09 °C	251.93 µS/cm	3.29 mg/L	16.00 NTU	63.1 mV	40.75 ft	100.00 ml/min
11/7/2023 8:07 AM	24:00	7.68 pH	16.07 °C	243.99 µS/cm	2.46 mg/L	7.15 NTU	60.7 mV	40.75 ft	100.00 ml/min
11/7/2023 8:10 AM	27:00	7.68 pH	16.08 °C	191.14 µS/cm	2.52 mg/L	4.42 NTU	58.3 mV	40.75 ft	100.00 ml/min
11/7/2023 8:13 AM	30:00	7.68 pH	16.08 °C	276.92 µS/cm	2.48 mg/L	2.67 NTU	55.8 mV	40.75 ft	100.00 ml/min
11/7/2023 8:16 AM	33:00	7.69 pH	16.09 °C	277.11 µS/cm	3.13 mg/L	2.59 NTU	53.9 mV	40.75 ft	100.00 ml/min
11/7/2023 8:19 AM	36:00	7.69 pH	16.08 °C	274.29 µS/cm	2.85 mg/L	0.81 NTU	51.9 mV	40.75 ft	100.00 ml/min
11/7/2023 8:22 AM	39:00	7.69 pH	16.14 °C	269.73 µS/cm	2.80 mg/L	0.32 NTU	50.5 mV	40.75 ft	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/7/2023 9:27:03 AM
Project: CULLEY WEST (2)
Operator Name: Jon Hill

Location Name: WAP-9I **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 79.7 ft** **Total Depth: 89.7 ft** **Initial Depth to Water: 40.8 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 84.7 ft** **Estimated Total Volume Pumped: 2400 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.00 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 450197**

Test Notes:
0.6 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		
11/7/2023 9:27 AM	00:00	7.61 pH	17.95 °C	272.30 µS/cm	3.60 mg/L	8.54 NTU	61.9 mV	40.80 ft	100.00 ml/min
11/7/2023 9:30 AM	03:00	7.54 pH	17.48 °C	271.54 µS/cm	4.09 mg/L	2.71 NTU	52.6 mV	40.80 ft	100.00 ml/min
11/7/2023 9:33 AM	06:00	7.51 pH	17.32 °C	269.91 µS/cm	4.22 mg/L	0.68 NTU	40.8 mV	40.80 ft	100.00 ml/min
11/7/2023 9:36 AM	09:00	7.51 pH	17.35 °C	269.03 µS/cm	4.46 mg/L	3.42 NTU	30.4 mV	40.80 ft	100.00 ml/min
11/7/2023 9:39 AM	12:00	7.51 pH	17.44 °C	268.34 µS/cm	4.68 mg/L	2.22 NTU	21.4 mV	40.80 ft	100.00 ml/min
11/7/2023 9:42 AM	15:00	7.51 pH	17.40 °C	267.58 µS/cm	5.31 mg/L	2.75 NTU	14.5 mV	40.80 ft	100.00 ml/min
11/7/2023 9:45 AM	18:00	7.51 pH	17.34 °C	238.78 µS/cm	5.71 mg/L	1.33 NTU	9.3 mV	40.80 ft	100.00 ml/min
11/7/2023 9:48 AM	21:00	7.51 pH	17.26 °C	237.62 µS/cm	6.07 mg/L	2.50 NTU	5.4 mV	40.80 ft	100.00 ml/min
11/7/2023 9:51 AM	24:00	7.51 pH	17.30 °C	237.33 µS/cm	6.08 mg/L	1.94 NTU	2.4 mV	40.80 ft	100.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 11/7/2023 11:02:54 AM
Project: CULLEY WEST (3)
Operator Name: Jon Hill

Location Name: WAP-9D **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 116.1 ft** **Total Depth: 126.1 ft** **Initial Depth to Water: 44.4 ft**	**Pump Type: Dedicated** **Tubing Type: LDPE** **Pump Intake From TOC: 121.1 ft** **Estimated Total Volume Pumped: 1800 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.03 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 450197**

Test Notes:
0.5 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		
11/7/2023 11:02 AM	00:00	7.27 pH	20.08 °C	247.80 µS/cm	4.51 mg/L	43.64 NTU	-70.7 mV	44.40 ft	100.00 ml/min
11/7/2023 11:05 AM	03:00	7.35 pH	19.43 °C	249.79 µS/cm	4.95 mg/L	5.98 NTU	-63.9 mV	44.41 ft	100.00 ml/min
11/7/2023 11:08 AM	06:00	7.36 pH	19.22 °C	248.91 µS/cm	4.13 mg/L	1.98 NTU	-62.3 mV	44.44 ft	100.00 ml/min
11/7/2023 11:11 AM	09:00	7.38 pH	19.09 °C	247.82 µS/cm	3.48 mg/L	0.52 NTU	-64.1 mV	44.45 ft	100.00 ml/min
11/7/2023 11:14 AM	12:00	7.38 pH	19.07 °C	246.82 µS/cm	3.97 mg/L	0.33 NTU	-63.9 mV	44.45 ft	100.00 ml/min
11/7/2023 11:17 AM	15:00	7.38 pH	19.19 °C	246.25 µS/cm	3.67 mg/L	0.27 NTU	-65.0 mV	44.47 ft	100.00 ml/min
11/7/2023 11:20 AM	18:00	7.38 pH	19.35 °C	245.95 µS/cm	3.93 mg/L	0.32 NTU	-64.4 mV	44.47 ft	100.00 ml/min

Samples

Sample ID:	Description:

CENTERPOINT ENERGY - FB CULLEY STATION
WEST ASH POND
CCR Groundwater Sampling Event
Gauging Date:
May 6, 2024
Atlas Project No. 170LF01646

WELL ID	DATE	TIME	DTW FROM TOC
West Ash Pond Wells			
CCR-AP-7	5/6/2024	10:00	4.65
WAP-1	5/6/2024	11:50	10.82
WAP-2RR	5/6/2024	12:10	37.25
WAP-3S	5/6/2024	12:20	35.55
WAP-3D	5/6/2024	12:20	35.52
WAP-4S	5/6/2024	11:35	30.49
WAP-4I	5/6/2024	11:35	32.09
WAP-4D	5/6/2024	11:35	33.13
WAP-5S	5/6/2024	11:00	29.14
WAP-5I	5/6/2024	11:00	29.30
WAP-5D	5/6/2024	11:00	29.80
WAP-6S	5/6/2024	11:20	33.85
WAP-6I	5/6/2024	11:20	34.42
WAP-6D	5/6/2024	11:20	38.93
WAP-7S	5/6/2024	12:30	35.61
WAP-7D	5/6/2024	12:30	35.21
WAP-8S	5/6/2024	14:45	31.80
WAP-8I	5/6/2024	14:45	31.89
WAP-8D	5/6/2024	14:45	34.23
WAP-9S	5/6/2024	11:25	40.95
WAP-9I	5/6/2024	11:25	42.74
WAP-9D	5/6/2024	11:25	46.76
Temporary Piezometers			
PZ-1	Destroyed		
PZ-2	Destroyed		
PZ-3	5/6/2024	11:55	9.11
PZ-4	5/6/2024	Not Gauged	
PZ-5	5/6/2024	12:50	4.04
PZ-6	5/6/2024	11:50	9.26
PZ-7	5/6/2024	11:45	9.76
PZ-8	Destroyed		
PZ-9	Destroyed		
PZ-10	Destroyed		

NOTES
DTW= Depth to Water
TOC= Top of Casing

APPENDIX C
Laboratory Analytical Reports

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13

ANALYTICAL REPORT

PREPARED FOR

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

Generated 1/9/2024 6:08:50 PM

JOB DESCRIPTION

CCR Groundwater Monitoring FB Culley West
FB Culley West

JOB NUMBER

180-165178-1

Eurofins Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh PA 15238

See page two for job notes and contact information.

myEOL

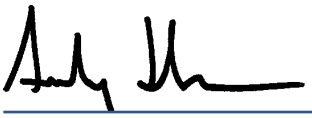
Job Notes

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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Authorized for release by
Andy Johnson, Senior Project Manager
Andy.Johnson@et.eurofinsus.com
(615)818-9567

Table of Contents

Job Narrative
180-165178-1

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 11/10/2023 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 6 coolers at receipt time were 1.7°C, 1.7°C, 2.3°C, 2.5°C, 3.0°C and 3.2°C

HPLC/IC
Method 9056A_ORGFM_28D: The following samples were diluted due to the nature of the sample matrix: WAP-7D (180-165178-15) and DUP-2 (180-165178-23) at 2.5 and 2.5. Elevated reporting limits (RLs) are provided.

Method 9056A_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 180-452926 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 9056A_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 180-452921 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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

Metals
Method 6010D: preparation batch 160-640432, 160-640434 and 160-640434 and analytical batch 160-640837
The following samples were diluted to bring the concentration of target analytes within the calibration range: WAP-2R (180-165178-2), WAP-3S (180-165178-3), WAP-3D (180-165178-4), WAP-4S (180-165178-5), WAP-5S (180-165178-8), WAP-7S (180-165178-14), WAP-7D (180-165178-15), WAP-8S (180-165178-16), DUP-1 (180-165178-22), DUP-2 (180-165178-23), (180-165178-E-4-C PDS) and (180-165178-E-22-C PDS). Elevated reporting limits (RLs) are provided.

Method 6010D: The post digestion spike % recovery for boron associated with batch 160-640837 was outside of control limits. The associated sample is: (180-165178-E-4-C PDS).

Method 6020B: Due to the high concentration of calcium, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 160-640431 and analytical batch 160-640835 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria. WAP-4D (180-165178-7[MS]) and WAP-4D (180-165178-7[MSD])

Method 6020B: The post digestion spike % recovery for calcium associated with batch 160-640835 was not calculated due to a high concentration of this analyte in the original sample. The associated sample is: (180-165178-E-7-D PDS).

Method 6020B: Due to the high concentration of calcium, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 160-640433 and analytical batch 160-640836 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria. CCR-AP-7 (180-165178-25[MS]) and CCR-AP-7 (180-165178-25[MSD])

Method 6020B: The post digestion spike % recovery for calcium associated with batch 160-640836 was not calculated due to a high concentration of this analyte in the original sample. The associated sample is: (180-165178-E-25-D PDS).

Method 6020B: preparation batch 160-640431 and 160-640433 and analytical batch 160-641264
The following samples were diluted to bring the concentration of target analytes within the calibration range: WAP-4S

(180-165178-5), WAP-5S (180-165178-8), WAP-7D (180-165178-15) and DUP-2 (180-165178-23). 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. WAP-5S (180-165178-8) and WAP-9S (180-165178-19)

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 160-636990
The barium carrier recovery is outside the upper control limit (110%) for the following sample: WAP-6D (180-165178-13). The QC samples associated with the batch have acceptable carrier recovery indicating the presence of matrix interference.

Method 9315_Ra226: Radium-226 batch 636990
The following sample has a barium carrier recovery above the 110% QC limit. Affected samples had a barium correction applied, however, there is significant concentrations of salt-like compounds (i.e. calcium, magnesium, sodium, and strontium) that can interfere with a barium sulfate recovery. The LCS (laboratory control sample) has an acceptable spike recovery demonstrating acceptable sample preparation and instrument performance. The samples have been truncated to 100% to reduce any potential bias a high carrier recovery may have. The data have been qualified and reported. WAP-6D (180-165178-13)

Method 9320_Ra228: Radium-228 batch 636989
The detection goal was not met for the following sample(s). Sample was prepped at a reduced volume due to the presence of matrix interferences: WAP-1 (180-165178-1). Analytical results are reported with the detection limit achieved.

Method 9320_Ra228: Radium 228 prep batch 160-636991
The barium carrier recovery is outside the upper control limit (110%) for the following sample: WAP-6D (180-165178-13). The QC samples associated with the batch have acceptable carrier recovery indicating the presence of matrix interference.

Method 9320_Ra228: Radium-228 batch 636991
The following sample has a barium carrier recovery above the 110% QC limit. Affected samples had a barium correction applied, however, there is significant concentrations of salt-like compounds (i.e. calcium, magnesium, sodium, and strontium) that can interfere with a barium sulfate recovery. The LCS (laboratory control sample) has an acceptable spike recovery demonstrating acceptable sample preparation and instrument performance. The samples have been truncated to 100% to reduce any potential bias a high carrier recovery may have. The data have been qualified and reported. WAP-6D (180-165178-13)

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.

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

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.
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.
X	Carrier is outside acceptance limits.

Glossary

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

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TNTC	Too Numerous To Count

Accreditation/Certification Summary

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

Job ID: 180-165178-1
SDG: FB Culley West

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	12-12-23
Florida	NELAP	E871008	12-12-23
Georgia	State	PA 02-00416	12-12-23
Illinois	NELAP	004375	12-12-23
Kansas	NELAP	E-10350	12-12-23
Kentucky (UST)	State	162013	04-30-23 *
Kentucky (WW)	State	KY98043	12-31-23
Louisiana	NELAP	04041	06-30-22 *
Louisiana (All)	NELAP	04041	12-12-23
Maine	State	PA00164	03-06-24
Minnesota	NELAP	042-999-482	12-12-23
New Hampshire	NELAP	2030	12-12-23
New Jersey	NELAP	PA005	12-12-23
New York	NELAP	11182	12-12-23
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	12-12-23
Rhode Island	State	LAO00362	12-31-22 *
South Carolina	State	89014	04-30-23 *
Texas	NELAP	T104704528	12-12-23
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	12-12-23
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	12-08-24
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 (WW)	State	KY90125 (Permit KY0004049)	12-31-24
Louisiana	NELAP	04080	06-30-22 *

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

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 180-165178-1
Project/Site: CCR Groundwater Monitoring FB Culley West
SDG: FB Culley West

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 (All)	NELAP	04080	06-30-24
Louisiana (DW)	State	LA011	12-31-24
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	01-31-24

Sample Summary

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

Job ID: 180-165178-1
SDG: FB Culley West

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-165178-1	WAP-1	Water	11/06/23 14:00	11/10/23 09:05
180-165178-2	WAP-2R	Water	11/08/23 11:00	11/10/23 09:05
180-165178-3	WAP-3S	Water	11/08/23 08:30	11/10/23 09:05
180-165178-4	WAP-3D	Water	11/08/23 09:00	11/10/23 09:05
180-165178-5	WAP-4S	Water	11/07/23 12:20	11/10/23 09:05
180-165178-6	WAP-4I	Water	11/07/23 13:00	11/10/23 09:05
180-165178-7	WAP-4D	Water	11/07/23 14:00	11/10/23 09:05
180-165178-8	WAP-5S	Water	11/07/23 14:20	11/10/23 09:05
180-165178-9	WAP-5I	Water	11/07/23 15:00	11/10/23 09:05
180-165178-10	WAP-5D	Water	11/07/23 16:00	11/10/23 09:05
180-165178-11	WAP-6S	Water	11/07/23 10:10	11/10/23 09:05
180-165178-12	WAP-6I	Water	11/07/23 11:20	11/10/23 09:05
180-165178-13	WAP-6D	Water	11/07/23 12:40	11/10/23 09:05
180-165178-14	WAP-7S	Water	11/08/23 09:40	11/10/23 09:05
180-165178-15	WAP-7D	Water	11/08/23 10:15	11/10/23 09:05
180-165178-16	WAP-8S	Water	11/08/23 06:30	11/10/23 09:05
180-165178-17	WAP-8I	Water	11/08/23 07:10	11/10/23 09:05
180-165178-18	WAP-8D	Water	11/08/23 07:55	11/10/23 09:05
180-165178-19	WAP-9S	Water	11/07/23 07:30	11/10/23 09:05
180-165178-20	WAP-9I	Water	11/07/23 09:10	11/10/23 09:05
180-165178-21	WAP-9D	Water	11/07/23 11:20	11/10/23 09:05
180-165178-22	DUP-1	Water	11/08/23 00:00	11/10/23 09:05
180-165178-23	DUP-2	Water	11/08/23 00:00	11/10/23 09:05
180-165178-24	FB-1	Water	11/08/23 10:40	11/10/23 09:05
180-165178-25	CCR-AP-7	Water	11/06/23 13:00	11/10/23 09:05

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 180-165178-1
Project/Site: CCR Groundwater Monitoring FB Culley West
SDG: FB Culley West

Method	Method Description	Protocol	Laboratory
EPA 9056A	Anions, Ion Chromatography	SW846	EET PIT
EPA 6010D	Metals (ICP)	SW846	EET SL
EPA 6020B	Metals (ICP/MS)	SW846	EET SL
EPA 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 West

Job ID: 180-165178-1
SDG: FB Culley West

Client Sample ID: WAP-1

Date Collected: 11/06/23 14:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-1

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	451646	11/11/23 19:26	M1D	EET PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	640432	12/12/23 12:44	LKP	EET SL
Total Recoverable	Analysis	EPA 6010D		1			640666	12/13/23 18:35	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	640431	12/12/23 12:42	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		2			640835	12/14/23 16:38	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	638599	11/29/23 07:37	LKP	EET SL
Total/NA	Analysis	EPA 7470A		1			638795	11/29/23 12:00	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			452044	11/15/23 11:48	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	451806	11/13/23 17:27	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			506.59 mL	1.0 g	636867	11/15/23 07:01	BMW	EET SL
Total/NA	Analysis	9315		1			640848	12/15/23 21:10	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			506.59 mL	1.0 g	636989	11/15/23 07:23	BMW	EET SL
Total/NA	Analysis	9320		1			640846	12/15/23 12:03	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			643608	01/09/24 13:06	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: WAP-2R

Date Collected: 11/08/23 11:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-2

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	451646	11/11/23 19:44	M1D	EET PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	640432	12/12/23 12:44	LKP	EET SL
Total Recoverable	Analysis	EPA 6010D		2			640837	12/14/23 15:37	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	640431	12/12/23 12:42	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		2			640835	12/14/23 16:41	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	638600	11/29/23 07:43	LKP	EET SL
Total/NA	Analysis	EPA 7470A		1			638795	11/29/23 13:49	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			452044	11/15/23 11:53	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	452068	11/15/23 18:12	LWM	EET PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 180-165178-1
Project/Site: CCR Groundwater Monitoring FB Culley West
SDG: FB Culley West

Client Sample ID: WAP-2R
Lab Sample ID: 180-165178-2
Date Collected: 11/08/23 11:00
Matrix: Water
Date Received: 11/10/23 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-21			762.03 mL	1.0 g	636867	11/15/23 07:01	BMW	EET SL
Total/NA	Analysis	9315		1			640848	12/15/23 21:10	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			762.03 mL	1.0 g	636989	11/15/23 07:23	BMW	EET SL
Total/NA	Analysis	9320		1			640846	12/15/23 12:03	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			643608	01/09/24 13:06	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: WAP-3S
Lab Sample ID: 180-165178-3
Date Collected: 11/08/23 08:30
Matrix: Water
Date Received: 11/10/23 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	451646	11/11/23 20:03	M1D	EET PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	640432	12/12/23 12:44	LKP	EET SL
Total Recoverable	Analysis	EPA 6010D		2			640837	12/14/23 15:42	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	640431	12/12/23 12:42	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		2			640835	12/14/23 16:45	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	638600	11/29/23 07:43	LKP	EET SL
Total/NA	Analysis	EPA 7470A		1			638795	11/29/23 13:51	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			452044	11/15/23 11:58	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	452068	11/15/23 18:12	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			998.84 mL	1.0 g	636867	11/15/23 07:01	BMW	EET SL
Total/NA	Analysis	9315		1			640848	12/15/23 21:10	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			998.84 mL	1.0 g	636989	11/15/23 07:23	BMW	EET SL
Total/NA	Analysis	9320		1			640846	12/15/23 12:03	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			643608	01/09/24 13:06	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: WAP-3D
Lab Sample ID: 180-165178-4
Date Collected: 11/08/23 09:00
Matrix: Water
Date Received: 11/10/23 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	451646	11/11/23 20:21	M1D	EET PIT
	Instrument ID: INTEGRION									

Lab Chronicle

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

Job ID: 180-165178-1
SDG: FB Culley West

Client Sample ID: WAP-3D

Date Collected: 11/08/23 09:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-4

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	640432	12/12/23 12:44	LKP	EET SL
Total Recoverable	Analysis	EPA 6010D		2			640837	12/14/23 15:46	CGB	EET SL
	Instrument ID:	ICP 6500 Duo								
Total Recoverable	Prep	3005A			50 mL	50 mL	640431	12/12/23 12:42	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		2			640835	12/14/23 16:48	CGB	EET SL
	Instrument ID:	ICPMS7700								
Total/NA	Prep	7470A			30 mL	30 mL	638600	11/29/23 07:43	LKP	EET SL
Total/NA	Analysis	EPA 7470A		1			638795	11/29/23 13:53	CGB	EET SL
	Instrument ID:	HAA2								
Total/NA	Analysis	EPA 9040C		1			452044	11/15/23 12:03	BAB	EET PIT
	Instrument ID:	OZ								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	452068	11/15/23 18:12	LWM	EET PIT
	Instrument ID:	NOEQUIP								
Total/NA	Prep	PrecSep-21			999.30 mL	1.0 g	636867	11/15/23 07:01	BMW	EET SL
Total/NA	Analysis	9315		1	1.0 mL	1.0 mL	640848	12/15/23 21:10	FLC	EET SL
	Instrument ID:	GFPCPURPLE								
Total/NA	Prep	PrecSep_0			999.30 mL	1.0 g	636989	11/15/23 07:23	BMW	EET SL
Total/NA	Analysis	9320		1			640846	12/15/23 12:04	FLC	EET SL
	Instrument ID:	GFPCBLUE								
Total/NA	Analysis	Ra226_Ra228		1			643608	01/09/24 13:06	SCB	EET SL
	Instrument ID:	NOEQUIP								

Client Sample ID: WAP-4S

Date Collected: 11/07/23 12:20
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-5

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	451646	11/11/23 22:49	M1D	EET PIT
	Instrument ID:	INTEGRION								
Total Recoverable	Prep	3005A			50 mL	50 mL	640432	12/12/23 12:44	LKP	EET SL
Total Recoverable	Analysis	EPA 6010D		10			640837	12/14/23 15:55	CGB	EET SL
	Instrument ID:	ICP 6500 Duo								
Total Recoverable	Prep	3005A			50 mL	50 mL	640431	12/12/23 12:42	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		2			640835	12/14/23 17:02	CGB	EET SL
	Instrument ID:	ICPMS7700								
Total Recoverable	Prep	3005A			50 mL	50 mL	640431	12/12/23 12:42	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		5			641264	12/18/23 11:50	CGB	EET SL
	Instrument ID:	ICPMS7700								
Total/NA	Prep	7470A			30 mL	30 mL	638599	11/29/23 07:37	LKP	EET SL
Total/NA	Analysis	EPA 7470A		1			638795	11/29/23 12:16	CGB	EET SL
	Instrument ID:	HAA2								
Total/NA	Analysis	EPA 9040C		1			452044	11/15/23 12:08	BAB	EET PIT
	Instrument ID:	OZ								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	451923	11/14/23 15:25	LWM	EET PIT
	Instrument ID:	NOEQUIP								

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 180-165178-1
Project/Site: CCR Groundwater Monitoring FB Culley West
SDG: FB Culley West

Client Sample ID: WAP-4S
Lab Sample ID: 180-165178-5
Date Collected: 11/07/23 12:20
Matrix: Water
Date Received: 11/10/23 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-21			1002.03 mL	1.0 g	636867	11/15/23 07:01	BMW	EET SL
Total/NA	Analysis	9315		1			640848	12/15/23 21:10	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			1002.03 mL	1.0 g	636989	11/15/23 07:23	BMW	EET SL
Total/NA	Analysis	9320		1			640846	12/15/23 12:04	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			643608	01/09/24 13:06	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: WAP-4I
Lab Sample ID: 180-165178-6
Date Collected: 11/07/23 13:00
Matrix: Water
Date Received: 11/10/23 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	451646	11/11/23 23:07	M1D	EET PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	640432	12/12/23 12:44	LKP	EET SL
Total Recoverable	Analysis	EPA 6010D		1			640666	12/13/23 19:02	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	640431	12/12/23 12:42	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		2			640835	12/14/23 17:05	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	638599	11/29/23 07:37	LKP	EET SL
Total/NA	Analysis	EPA 7470A		1			638795	11/29/23 12:18	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			452044	11/15/23 12:12	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	451923	11/14/23 15:25	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			782.84 mL	1.0 g	636867	11/15/23 07:01	BMW	EET SL
Total/NA	Analysis	9315		1			640848	12/15/23 21:10	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			782.84 mL	1.0 g	636989	11/15/23 07:23	BMW	EET SL
Total/NA	Analysis	9320		1			640846	12/15/23 12:04	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			643608	01/09/24 13:06	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: WAP-4D
Lab Sample ID: 180-165178-7
Date Collected: 11/07/23 14:00
Matrix: Water
Date Received: 11/10/23 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	451647	11/11/23 19:57	AM	EET PIT
	Instrument ID: CHIC2100A									

Lab Chronicle

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

Job ID: 180-165178-1
SDG: FB Culley West

Client Sample ID: WAP-4D

Date Collected: 11/07/23 14:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-7

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	452346	11/19/23 03:00	AM	EET PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	640432	12/12/23 12:44	LKP	EET SL
Total Recoverable	Analysis	EPA 6010D		1			640666	12/13/23 19:20	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	640431	12/12/23 12:42	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		2			640835	12/14/23 17:09	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	638599	11/29/23 07:37	LKP	EET SL
Total/NA	Analysis	EPA 7470A		1			638795	11/29/23 12:20	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			452044	11/15/23 12:21	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	451923	11/14/23 15:25	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			996.95 mL	1.0 g	640588	12/13/23 14:37	KAC	EET SL
Total/NA	Analysis	9315		1			642933	01/04/24 07:21	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			996.95 mL	1.0 g	640591	12/13/23 14:38	KAC	EET SL
Total/NA	Analysis	9320		1			641298	12/19/23 11:38	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Analysis	Ra226_Ra228		1			643608	01/09/24 13:06	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: WAP-5S

Date Collected: 11/07/23 14:20
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-8

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	451646	11/11/23 23:26	M1D	EET PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	640432	12/12/23 12:44	LKP	EET SL
Total Recoverable	Analysis	EPA 6010D		5			640837	12/14/23 16:00	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	640431	12/12/23 12:42	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		2			640835	12/14/23 17:26	CGB	EET SL
	Instrument ID: ICPMS7700									
Total Recoverable	Prep	3005A			50 mL	50 mL	640431	12/12/23 12:42	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		5			641264	12/18/23 11:54	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	638599	11/29/23 07:37	LKP	EET SL
Total/NA	Analysis	EPA 7470A		1			638795	11/29/23 12:27	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			452044	11/15/23 12:30	BAB	EET PIT
	Instrument ID: OZ									

Lab Chronicle

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

Job ID: 180-165178-1
SDG: FB Culley West

Client Sample ID: WAP-5S

Date Collected: 11/07/23 14:20
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-8

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	SM 2540C		1	100 mL	100 mL	451923	11/14/23 15:25	LWM	EET PIT
Total/NA	Prep	PrecSep-21			1014.88 mL	1.0 g	636990	11/15/23 07:27	BMW	EET SL
Total/NA	Analysis	9315		1			640986	12/16/23 12:38	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			1014.88 mL	1.0 g	636991	11/15/23 07:55	BMW	EET SL
Total/NA	Analysis	9320		1			640987	12/16/23 10:05	FLC	EET SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228		1			641269	12/18/23 14:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: WAP-5I

Date Collected: 11/07/23 15:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-9

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	451646	11/11/23 23:44	M1D	EET PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	640432	12/12/23 12:44	LKP	EET SL
Total Recoverable	Analysis	EPA 6010D		1			640666	12/13/23 19:42	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	640431	12/12/23 12:42	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		2			640835	12/14/23 17:29	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	638599	11/29/23 07:37	LKP	EET SL
Total/NA	Analysis	EPA 7470A		1			638795	11/29/23 12:30	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			452044	11/15/23 12:35	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	451923	11/14/23 15:25	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1003.76 mL	1.0 g	636990	11/15/23 07:27	BMW	EET SL
Total/NA	Analysis	9315		1			640986	12/16/23 14:26	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			1003.76 mL	1.0 g	636991	11/15/23 07:55	BMW	EET SL
Total/NA	Analysis	9320		1			640987	12/16/23 10:06	FLC	EET SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228		1			641269	12/18/23 14:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Lab Chronicle

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

Job ID: 180-165178-1
SDG: FB Culley West

Client Sample ID: WAP-5D

Date Collected: 11/07/23 16:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-10

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	451646	11/12/23 00:03	M1D	EET PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	640432	12/12/23 12:44	LKP	EET SL
Total Recoverable	Analysis	EPA 6010D		1			640666	12/13/23 19:47	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	640431	12/12/23 12:42	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		2			640835	12/14/23 17:33	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	638599	11/29/23 07:37	LKP	EET SL
Total/NA	Analysis	EPA 7470A		1			638795	11/29/23 12:32	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			452044	11/15/23 12:39	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	451923	11/14/23 15:25	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			999.15 mL	1.0 g	636990	11/15/23 07:27	BMW	EET SL
Total/NA	Analysis	9315		1			640986	12/16/23 14:26	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			999.15 mL	1.0 g	636991	11/15/23 07:55	BMW	EET SL
Total/NA	Analysis	9320		1			640987	12/16/23 10:06	FLC	EET SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228		1			641269	12/18/23 14:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: WAP-6S

Date Collected: 11/07/23 10:10
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	451646	11/12/23 00:21	M1D	EET PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	640432	12/12/23 12:44	LKP	EET SL
Total Recoverable	Analysis	EPA 6010D		1			640666	12/13/23 19:52	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	640431	12/12/23 12:42	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		2			640835	12/14/23 17:46	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	638599	11/29/23 07:37	LKP	EET SL
Total/NA	Analysis	EPA 7470A		1			638795	11/29/23 12:38	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			452044	11/15/23 12:44	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	451923	11/14/23 15:25	LWM	EET PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 180-165178-1
Project/Site: CCR Groundwater Monitoring FB Culley West
SDG: FB Culley West

Client Sample ID: WAP-6S
Lab Sample ID: 180-165178-11
Date Collected: 11/07/23 10:10
Matrix: Water
Date Received: 11/10/23 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-21			1000.25 mL	1.0 g	636990	11/15/23 07:27	BMW	EET SL
Total/NA	Analysis	9315		1			640959	12/16/23 14:29	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1000.25 mL	1.0 g	636991	11/15/23 07:55	BMW	EET SL
Total/NA	Analysis	9320		1			640987	12/16/23 10:06	FLC	EET SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228		1			641269	12/18/23 14:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: WAP-6I
Lab Sample ID: 180-165178-12
Date Collected: 11/07/23 11:20
Matrix: Water
Date Received: 11/10/23 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	451646	11/12/23 00:40	M1D	EET PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	640432	12/12/23 12:44	LKP	EET SL
Total Recoverable	Analysis	EPA 6010D		1			640666	12/13/23 19:56	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	640431	12/12/23 12:42	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		2			640835	12/14/23 17:50	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	638599	11/29/23 07:37	LKP	EET SL
Total/NA	Analysis	EPA 7470A		1			638795	11/29/23 12:40	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			452044	11/15/23 12:49	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	451923	11/14/23 15:25	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1002.03 mL	1.0 g	636990	11/15/23 07:27	BMW	EET SL
Total/NA	Analysis	9315		1			640957	12/16/23 15:16	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			1002.03 mL	1.0 g	636991	11/15/23 07:55	BMW	EET SL
Total/NA	Analysis	9320		1			640987	12/16/23 10:06	FLC	EET SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228		1			641269	12/18/23 14:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: WAP-6D
Lab Sample ID: 180-165178-13
Date Collected: 11/07/23 12:40
Matrix: Water
Date Received: 11/10/23 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	451646	11/12/23 01:35	M1D	EET PIT
	Instrument ID: INTEGRION									

Lab Chronicle

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

Job ID: 180-165178-1
SDG: FB Culley West

Client Sample ID: WAP-6D

Date Collected: 11/07/23 12:40
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-13

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	640432	12/12/23 12:44	LKP	EET SL
Total Recoverable	Analysis	EPA 6010D		1			640666	12/13/23 20:01	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	640431	12/12/23 12:42	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		2			640835	12/14/23 17:53	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	638599	11/29/23 07:37	LKP	EET SL
Total/NA	Analysis	EPA 7470A		1			638795	11/29/23 13:15	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			452044	11/15/23 12:53	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	451923	11/14/23 15:25	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			994.29 mL	1.0 g	636990	11/15/23 07:27	BMW	EET SL
Total/NA	Analysis	9315		1			640957	12/16/23 15:16	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			994.29 mL	1.0 g	636991	11/15/23 07:55	BMW	EET SL
Total/NA	Analysis	9320		1			640986	12/16/23 10:03	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			641269	12/18/23 14:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: WAP-7S

Date Collected: 11/08/23 09:40
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-14

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	451646	11/12/23 01:54	M1D	EET PIT
	Instrument ID: INTEGRION									
Total Recoverable	Prep	3005A			50 mL	50 mL	640432	12/12/23 12:44	LKP	EET SL
Total Recoverable	Analysis	EPA 6010D		10			640837	12/14/23 16:18	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	640431	12/12/23 12:42	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		2			640835	12/14/23 17:57	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	638600	11/29/23 07:43	LKP	EET SL
Total/NA	Analysis	EPA 7470A		1			638795	11/29/23 13:55	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			452044	11/15/23 12:58	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	452068	11/15/23 18:12	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			996.78 mL	1.0 g	636990	11/15/23 07:27	BMW	EET SL
Total/NA	Analysis	9315		1			640957	12/16/23 15:16	FLC	EET SL
	Instrument ID: GFPCRED									

Lab Chronicle

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

Job ID: 180-165178-1
SDG: FB Culley West

Client Sample ID: WAP-7S

Date Collected: 11/08/23 09:40
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-14

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_0			996.78 mL	1.0 g	636991	11/15/23 07:55	BMW	EET SL
Total/NA	Analysis	9320		1			640986	12/16/23 10:03	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			641269	12/18/23 14:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: WAP-7D

Date Collected: 11/08/23 10:15
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-15

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	451647	11/11/23 20:38	AM	EET PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		2.5	1 mL	1 mL	452000	11/16/23 02:00	AM	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	640432	12/12/23 12:44	LKP	EET SL
Total Recoverable	Analysis	EPA 6010D		10			640837	12/14/23 16:23	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	640431	12/12/23 12:42	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		2			640835	12/14/23 18:00	CGB	EET SL
	Instrument ID: ICPMS7700									
Total Recoverable	Prep	3005A			50 mL	50 mL	640431	12/12/23 12:42	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		5			641264	12/18/23 11:57	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	638600	11/29/23 07:43	LKP	EET SL
Total/NA	Analysis	EPA 7470A		1			638795	11/29/23 13:57	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			452044	11/15/23 13:03	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	452068	11/15/23 18:12	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			999.71 mL	1.0 g	636990	11/15/23 07:27	BMW	EET SL
Total/NA	Analysis	9315		1			640959	12/16/23 15:27	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			999.71 mL	1.0 g	636991	11/15/23 07:55	BMW	EET SL
Total/NA	Analysis	9320		1			640986	12/16/23 10:03	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			641269	12/18/23 14:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: WAP-8S
Lab Sample ID: 180-165178-16
Date Collected: 11/08/23 06:30
Matrix: Water
Date Received: 11/10/23 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	451647	11/11/23 18:33	AM	EET PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	452000	11/16/23 02:41	AM	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	640432	12/12/23 12:44	LKP	EET SL
Total Recoverable	Analysis	EPA 6010D		2			640837	12/14/23 16:27	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	640431	12/12/23 12:42	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		2			640835	12/14/23 18:04	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	638600	11/29/23 07:43	LKP	EET SL
Total/NA	Analysis	EPA 7470A		1			638795	11/29/23 14:04	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			452193	11/16/23 11:25	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	452068	11/15/23 18:12	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1002.29 mL	1.0 g	636990	11/15/23 07:27	BMW	EET SL
Total/NA	Analysis	9315		1			640959	12/16/23 15:28	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1002.29 mL	1.0 g	636991	11/15/23 07:55	BMW	EET SL
Total/NA	Analysis	9320		1			640986	12/16/23 10:03	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			641269	12/18/23 14:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: WAP-8I
Lab Sample ID: 180-165178-17
Date Collected: 11/08/23 07:10
Matrix: Water
Date Received: 11/10/23 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	451647	11/11/23 18:47	AM	EET PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	452000	11/16/23 02:55	AM	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	640432	12/12/23 12:44	LKP	EET SL
Total Recoverable	Analysis	EPA 6010D		1			640666	12/13/23 20:33	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	640431	12/12/23 12:42	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		2			640835	12/14/23 18:07	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	638600	11/29/23 07:43	LKP	EET SL
Total/NA	Analysis	EPA 7470A		1			638795	11/29/23 14:06	CGB	EET SL
	Instrument ID: HAA2									

Lab Chronicle

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

Job ID: 180-165178-1
SDG: FB Culley West

Client Sample ID: WAP-8I

Date Collected: 11/08/23 07:10
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-17

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			452193	11/16/23 11:30	BAB	EET PIT
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	452069	11/15/23 18:30	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			752.75 mL	1.0 g	636990	11/15/23 07:27	BMW	EET SL
Total/NA	Analysis	9315		1			640959	12/16/23 15:28	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			752.75 mL	1.0 g	636991	11/15/23 07:55	BMW	EET SL
Total/NA	Analysis	9320		1			640986	12/16/23 10:04	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			641269	12/18/23 14:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: WAP-8D

Date Collected: 11/08/23 07:55
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-18

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	451647	11/11/23 21:06	AM	EET PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	452000	11/16/23 02:27	AM	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	640432	12/12/23 12:44	LKP	EET SL
Total Recoverable	Analysis	EPA 6010D		1			640666	12/13/23 20:37	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	640431	12/12/23 12:42	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		2			640835	12/14/23 18:10	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	638600	11/29/23 07:43	LKP	EET SL
Total/NA	Analysis	EPA 7470A		1			638795	11/29/23 14:35	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			452193	11/16/23 11:34	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	452069	11/15/23 18:30	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1003.27 mL	1.0 g	636990	11/15/23 07:27	BMW	EET SL
Total/NA	Analysis	9315		1			640959	12/16/23 15:26	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1003.27 mL	1.0 g	636991	11/15/23 07:55	BMW	EET SL
Total/NA	Analysis	9320		1			640986	12/16/23 10:02	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			641269	12/18/23 14:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: WAP-9S
Lab Sample ID: 180-165178-19
Date Collected: 11/07/23 07:30
Matrix: Water
Date Received: 11/10/23 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	451647	11/11/23 21:20	AM	EET PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	452926	11/28/23 13:13	M1D	EET PIT
	Instrument ID: CHICS2100B									
Total Recoverable	Prep	3005A			50 mL	50 mL	640432	12/12/23 12:44	LKP	EET SL
Total Recoverable	Analysis	EPA 6010D		1			640666	12/13/23 20:42	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	640431	12/12/23 12:42	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		2			640835	12/14/23 18:14	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	638599	11/29/23 07:37	LKP	EET SL
Total/NA	Analysis	EPA 7470A		1			638795	11/29/23 13:17	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			452193	11/16/23 11:39	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	451923	11/14/23 15:25	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1001.12 mL	1.0 g	636990	11/15/23 07:27	BMW	EET SL
Total/NA	Analysis	9315		1			640959	12/16/23 15:26	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1001.12 mL	1.0 g	636991	11/15/23 07:55	BMW	EET SL
Total/NA	Analysis	9320		1			640986	12/16/23 10:02	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			641269	12/18/23 14:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: WAP-9I
Lab Sample ID: 180-165178-20
Date Collected: 11/07/23 09:10
Matrix: Water
Date Received: 11/10/23 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	451647	11/11/23 21:34	AM	EET PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	452921	11/28/23 13:01	AM	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	640432	12/12/23 12:44	LKP	EET SL
Total Recoverable	Analysis	EPA 6010D		1			640666	12/13/23 20:47	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	640431	12/12/23 12:42	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		2			640835	12/14/23 18:17	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	638599	11/29/23 07:37	LKP	EET SL
Total/NA	Analysis	EPA 7470A		1			638795	11/29/23 13:19	CGB	EET SL
	Instrument ID: HAA2									

Lab Chronicle

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

Job ID: 180-165178-1
SDG: FB Culley West

Client Sample ID: WAP-9I

Date Collected: 11/07/23 09:10
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-20

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			452193	11/16/23 11:44	BAB	EET PIT
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	451923	11/14/23 15:25	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			997.86 mL	1.0 g	636990	11/15/23 07:27	BMW	EET SL
Total/NA	Analysis	9315		1			640959	12/16/23 15:26	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			997.86 mL	1.0 g	636991	11/15/23 07:55	BMW	EET SL
Total/NA	Analysis	9320		1			640986	12/16/23 10:04	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			641269	12/18/23 14:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: WAP-9D

Date Collected: 11/07/23 11:20
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-21

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	451647	11/11/23 22:15	AM	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	640434	12/12/23 12:46	LKP	EET SL
Total Recoverable	Analysis	EPA 6010D		1			640666	12/13/23 17:31	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	640433	12/12/23 12:45	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		2			640836	12/14/23 18:38	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	638599	11/29/23 07:37	LKP	EET SL
Total/NA	Analysis	EPA 7470A		1			638795	11/29/23 13:21	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			452193	11/16/23 11:48	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	451923	11/14/23 15:25	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1013.60 mL	1.0 g	636990	11/15/23 07:27	BMW	EET SL
Total/NA	Analysis	9315		1			640959	12/16/23 15:26	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1013.60 mL	1.0 g	636991	11/15/23 07:55	BMW	EET SL
Total/NA	Analysis	9320		1			640986	12/16/23 10:02	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			641269	12/18/23 14:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: DUP-1
Lab Sample ID: 180-165178-22

Date Collected: 11/08/23 00:00
Matrix: Water
Date Received: 11/10/23 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	451647	11/11/23 22:29	AM	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	640434	12/12/23 12:46	LKP	EET SL
Total Recoverable	Analysis	EPA 6010D		5			640837	12/14/23 16:32	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	640433	12/12/23 12:45	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		2			640836	12/14/23 18:41	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	638600	11/29/23 07:43	LKP	EET SL
Total/NA	Analysis	EPA 7470A		1			638795	11/29/23 14:36	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			452193	11/16/23 11:53	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	452069	11/15/23 18:30	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1004.36 mL	1.0 g	636990	11/15/23 07:27	BMW	EET SL
Total/NA	Analysis	9315		1			640959	12/16/23 15:26	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1004.36 mL	1.0 g	636991	11/15/23 07:55	BMW	EET SL
Total/NA	Analysis	9320		1			640986	12/16/23 10:03	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			641269	12/18/23 14:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: DUP-2
Lab Sample ID: 180-165178-23

Date Collected: 11/08/23 00:00
Matrix: Water
Date Received: 11/10/23 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		2.5	1 mL	1 mL	451647	11/11/23 20:52	AM	EET PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		2.5	1 mL	1 mL	452000	11/16/23 02:14	AM	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	640434	12/12/23 12:46	LKP	EET SL
Total Recoverable	Analysis	EPA 6010D		10			640837	12/14/23 16:41	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	640433	12/12/23 12:45	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		2			640836	12/14/23 18:45	CGB	EET SL
	Instrument ID: ICPMS7700									
Total Recoverable	Prep	3005A			50 mL	50 mL	640433	12/12/23 12:45	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		5			641264	12/18/23 12:01	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	638600	11/29/23 07:43	LKP	EET SL
Total/NA	Analysis	EPA 7470A		1			638795	11/29/23 14:38	CGB	EET SL
	Instrument ID: HAA2									

Lab Chronicle

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

Job ID: 180-165178-1
SDG: FB Culley West

Client Sample ID: DUP-2

Date Collected: 11/08/23 00:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-23

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			452193	11/16/23 11:58	BAB	EET PIT
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	452069	11/15/23 18:30	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1000.65 mL	1.0 g	636990	11/15/23 07:27	BMW	EET SL
Total/NA	Analysis	9315		1			640959	12/16/23 15:27	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1000.65 mL	1.0 g	636991	11/15/23 07:55	BMW	EET SL
Total/NA	Analysis	9320		1			640986	12/16/23 10:03	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			641269	12/18/23 14:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Client Sample ID: FB-1

Date Collected: 11/08/23 10:40
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-24

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	451647	11/11/23 22:43	AM	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	640434	12/12/23 12:46	LKP	EET SL
Total Recoverable	Analysis	EPA 6010D		1			640666	12/13/23 17:50	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	640433	12/12/23 12:45	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		2			640836	12/14/23 18:48	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	638600	11/29/23 07:43	LKP	EET SL
Total/NA	Analysis	EPA 7470A		1			638795	11/29/23 14:40	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			452193	11/16/23 12:08	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	452069	11/15/23 18:30	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1000.05 mL	1.0 g	636990	11/15/23 07:27	BMW	EET SL
Total/NA	Analysis	9315		1			640959	12/16/23 15:27	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1000.05 mL	1.0 g	636991	11/15/23 07:55	BMW	EET SL
Total/NA	Analysis	9320		1			640986	12/16/23 10:03	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			641269	12/18/23 14:03	SCB	EET SL
	Instrument ID: NOEQUIP									

Lab Chronicle

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

Job ID: 180-165178-1
SDG: FB Culley West

Client Sample ID: CCR-AP-7

Date Collected: 11/06/23 13:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-25

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	451647	11/11/23 22:57	AM	EET PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	640434	12/12/23 12:46	LKP	EET SL
Total Recoverable	Analysis	EPA 6010D		1			640666	12/13/23 17:54	CGB	EET SL
	Instrument ID: ICP 6500 Duo									
Total Recoverable	Prep	3005A			50 mL	50 mL	640433	12/12/23 12:45	LKP	EET SL
Total Recoverable	Analysis	EPA 6020B		2			640836	12/14/23 18:52	CGB	EET SL
	Instrument ID: ICPMS7700									
Total/NA	Prep	7470A			30 mL	30 mL	638599	11/29/23 07:37	LKP	EET SL
Total/NA	Analysis	EPA 7470A		1			638795	11/29/23 12:02	CGB	EET SL
	Instrument ID: HAA2									
Total/NA	Analysis	EPA 9040C		1			452193	11/16/23 11:15	BAB	EET PIT
	Instrument ID: OZ									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	451806	11/13/23 17:27	LWM	EET PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1002.93 mL	1.0 g	636990	11/15/23 07:27	BMW	EET SL
Total/NA	Analysis	9315		1			640959	12/16/23 15:27	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1002.93 mL	1.0 g	636991	11/15/23 07:55	BMW	EET SL
Total/NA	Analysis	9320		1			640986	12/16/23 10:03	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			641269	12/18/23 14:03	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
  - M1D = Maureen Donlin

Lab: EET SL
- Batch Type: Prep
  - BMW = Bailey Woodliff
  - KAC = Kevin Cox
  - LKP = Laura Pemberton
- Batch Type: Analysis
  - CGB = Cory Buffington
  - FLC = Fernando Cruz
  - SCB = Sarah Bernsen

Client Sample ID: WAP-1

Date Collected: 11/06/23 14:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-1

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	58		1.0	0.71	mg/L			11/11/23 19:26	1
Fluoride	0.37		0.10	0.026	mg/L			11/11/23 19:26	1
Sulfate	290		1.0	0.76	mg/L			11/11/23 19:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	21	J	50	19	ug/L		12/12/23 12:44	12/13/23 18:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0074	J	0.010	0.0016	mg/L		12/12/23 12:42	12/14/23 16:38	2
Barium	0.46		0.0020	0.00069	mg/L		12/12/23 12:42	12/14/23 16:38	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:42	12/14/23 16:38	2
Calcium	180		0.20	0.096	mg/L		12/12/23 12:42	12/14/23 16:38	2
Cadmium	0.00023	J	0.00050	0.000060	mg/L		12/12/23 12:42	12/14/23 16:38	2
Cobalt	0.0014	J	0.0020	0.00060	mg/L		12/12/23 12:42	12/14/23 16:38	2
Chromium	0.0045	J	0.010	0.0013	mg/L		12/12/23 12:42	12/14/23 16:38	2
Lithium	0.0070		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 16:38	2
Molybdenum	ND		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 16:38	2
Lead	0.0072		0.0030	0.0010	mg/L		12/12/23 12:42	12/14/23 16:38	2
Antimony	0.00077	J	0.0050	0.00029	mg/L		12/12/23 12:42	12/14/23 16:38	2
Selenium	ND		0.0050	0.00067	mg/L		12/12/23 12:42	12/14/23 16:38	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:42	12/14/23 16:38	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:37	11/29/23 12:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	930		10	10	mg/L			11/13/23 17:27	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.4	HF	0.1	0.1	SU			11/15/23 11:48	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	1.46		0.669	0.681	1.00	0.806	pCi/L	11/15/23 07:01	12/15/23 21:10	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*71.2*		*30 - 110*	*11/15/23 07:01*	*12/15/23 21:10*	*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	1.01	U G	1.05	1.06	1.00	1.70	pCi/L	11/15/23 07:23	12/15/23 12:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*71.2*		*30 - 110*	*11/15/23 07:23*	*12/15/23 12:03*	*1*

Client Sample ID: WAP-1
Date Collected: 11/06/23 14:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-1
Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*71.8*		*30 - 110*	*11/15/23 07:23*	*12/15/23 12:03*	*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	**2.47**		1.25	1.26	5.00	1.70	pCi/L		01/09/24 13:06	1

Client Sample ID: WAP-2R

Date Collected: 11/08/23 11:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-2

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	40		1.0	0.71	mg/L			11/11/23 19:44	1
Fluoride	0.28		0.10	0.026	mg/L			11/11/23 19:44	1
Sulfate	91		1.0	0.76	mg/L			11/11/23 19:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2800		100	38	ug/L		12/12/23 12:44	12/14/23 15:37	2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0029	J	0.010	0.0016	mg/L		12/12/23 12:42	12/14/23 16:41	2
Barium	0.071		0.0020	0.00069	mg/L		12/12/23 12:42	12/14/23 16:41	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:42	12/14/23 16:41	2
Calcium	120		0.20	0.096	mg/L		12/12/23 12:42	12/14/23 16:41	2
Cadmium	0.00035	J	0.00050	0.000060	mg/L		12/12/23 12:42	12/14/23 16:41	2
Cobalt	0.0045		0.0020	0.00060	mg/L		12/12/23 12:42	12/14/23 16:41	2
Chromium	0.0020	J	0.010	0.0013	mg/L		12/12/23 12:42	12/14/23 16:41	2
Lithium	0.022		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 16:41	2
Molybdenum	0.10		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 16:41	2
Lead	0.0017	J	0.0030	0.0010	mg/L		12/12/23 12:42	12/14/23 16:41	2
Antimony	ND		0.0050	0.00029	mg/L		12/12/23 12:42	12/14/23 16:41	2
Selenium	0.0014	J	0.0050	0.00067	mg/L		12/12/23 12:42	12/14/23 16:41	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:42	12/14/23 16:41	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:43	11/29/23 13:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	550		10	10	mg/L			11/15/23 18:12	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.1	HF	0.1	0.1	SU			11/15/23 11:53	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	0.452	U	0.354	0.356	1.00	0.519	pCi/L	11/15/23 07:01	12/15/23 21:10	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*68.1*		*30 - 110*	*11/15/23 07:01*	*12/15/23 21:10*	*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	0.345	U	0.573	0.574	1.00	0.980	pCi/L	11/15/23 07:23	12/15/23 12:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*68.1*		*30 - 110*	*11/15/23 07:23*	*12/15/23 12:03*	*1*

Client Sample ID: WAP-2R
Date Collected: 11/08/23 11:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-2
Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*81.5*		*30 - 110*	*11/15/23 07:23*	*12/15/23 12:03*	*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	0.797	U	0.674	0.675	5.00	0.980	pCi/L		01/09/24 13:06	1

Client Sample ID: WAP-3S

Date Collected: 11/08/23 08:30
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-3

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**28**		1.0	0.71	mg/L			11/11/23 20:03	1
Fluoride	**0.45**		0.10	0.026	mg/L			11/11/23 20:03	1
Sulfate	**88**		1.0	0.76	mg/L			11/11/23 20:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**3700**		100	38	ug/L		12/12/23 12:44	12/14/23 15:42	2

Method: SW846 EPA 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		12/12/23 12:42	12/14/23 16:45	2
Barium	**0.032**		0.0020	0.00069	mg/L		12/12/23 12:42	12/14/23 16:45	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:42	12/14/23 16:45	2
Calcium	**83**		0.20	0.096	mg/L		12/12/23 12:42	12/14/23 16:45	2
Cadmium	**0.00011**	**J**	0.00050	0.000060	mg/L		12/12/23 12:42	12/14/23 16:45	2
Cobalt	**0.00062**	**J**	0.0020	0.00060	mg/L		12/12/23 12:42	12/14/23 16:45	2
Chromium	ND		0.010	0.0013	mg/L		12/12/23 12:42	12/14/23 16:45	2
Lithium	**0.091**		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 16:45	2
Molybdenum	**0.57**		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 16:45	2
Lead	ND		0.0030	0.0010	mg/L		12/12/23 12:42	12/14/23 16:45	2
Antimony	ND		0.0050	0.00029	mg/L		12/12/23 12:42	12/14/23 16:45	2
Selenium	ND		0.0050	0.00067	mg/L		12/12/23 12:42	12/14/23 16:45	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:42	12/14/23 16:45	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:43	11/29/23 13:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**370**		10	10	mg/L			11/15/23 18:12	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	**7.9**	**HF**	0.1	0.1	SU			11/15/23 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	**0.365**		0.223	0.225	1.00	0.297	pCi/L	11/15/23 07:01	12/15/23 21:10	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.1*		*30 - 110*	*11/15/23 07:01*	*12/15/23 21:10*	*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	**0.534**		0.349	0.352	1.00	0.515	pCi/L	11/15/23 07:23	12/15/23 12:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.1*		*30 - 110*	*11/15/23 07:23*	*12/15/23 12:03*	*1*

Client Sample ID: WAP-3S
Date Collected: 11/08/23 08:30
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-3
Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*81.9*		*30 - 110*	*11/15/23 07:23*	*12/15/23 12:03*	*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	**0.899**		0.414	0.418	5.00	0.515	pCi/L		01/09/24 13:06	1

Client Sample ID: WAP-3D

Date Collected: 11/08/23 09:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-4

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			11/11/23 20:21	1
Fluoride	**0.21**		0.10	0.026	mg/L			11/11/23 20:21	1
Sulfate	**230**		1.0	0.76	mg/L			11/11/23 20:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**2900**		100	38	ug/L		12/12/23 12:44	12/14/23 15:46	2

Method: SW846 EPA 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		12/12/23 12:42	12/14/23 16:48	2
Barium	**0.016**		0.0020	0.00069	mg/L		12/12/23 12:42	12/14/23 16:48	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:42	12/14/23 16:48	2
Calcium	**130**		0.20	0.096	mg/L		12/12/23 12:42	12/14/23 16:48	2
Cadmium	**0.0034**		0.00050	0.000060	mg/L		12/12/23 12:42	12/14/23 16:48	2
Cobalt	**0.0011**	**J**	0.0020	0.00060	mg/L		12/12/23 12:42	12/14/23 16:48	2
Chromium	ND		0.010	0.0013	mg/L		12/12/23 12:42	12/14/23 16:48	2
Lithium	**0.086**		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 16:48	2
Molybdenum	**0.30**		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 16:48	2
Lead	ND		0.0030	0.0010	mg/L		12/12/23 12:42	12/14/23 16:48	2
Antimony	ND		0.0050	0.00029	mg/L		12/12/23 12:42	12/14/23 16:48	2
Selenium	ND		0.0050	0.00067	mg/L		12/12/23 12:42	12/14/23 16:48	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:42	12/14/23 16:48	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:43	11/29/23 13:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**620**		10	10	mg/L			11/15/23 18:12	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	**7.8**	**HF**	0.1	0.1	SU			11/15/23 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	**1.01**		0.325	0.337	1.00	0.321	pCi/L	11/15/23 07:01	12/15/23 21:10	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.8*		*30 - 110*	*11/15/23 07:01*	*12/15/23 21:10*	*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	0.419	U	0.381	0.383	1.00	0.606	pCi/L	11/15/23 07:23	12/15/23 12:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.8*		*30 - 110*	*11/15/23 07:23*	*12/15/23 12:04*	*1*

Client Sample ID: WAP-3D
Date Collected: 11/08/23 09:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-4
Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*78.9*		*30 - 110*	*11/15/23 07:23*	*12/15/23 12:04*	*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**		0.501	0.510	5.00	0.606	pCi/L		01/09/24 13:06	1

Client Sample ID: WAP-4S

Date Collected: 11/07/23 12:20
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-5

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	130		1.0	0.71	mg/L			11/11/23 22:49	1
Fluoride	0.19		0.10	0.026	mg/L			11/11/23 22:49	1
Sulfate	460		1.0	0.76	mg/L			11/11/23 22:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	12000		500	190	ug/L		12/12/23 12:44	12/14/23 15:55	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.012		0.010	0.0016	mg/L		12/12/23 12:42	12/14/23 17:02	2
Barium	0.049		0.0020	0.00069	mg/L		12/12/23 12:42	12/14/23 17:02	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:42	12/14/23 17:02	2
Calcium	310		0.50	0.24	mg/L		12/12/23 12:42	12/18/23 11:50	5
Cadmium	0.000062	J	0.00050	0.000060	mg/L		12/12/23 12:42	12/14/23 17:02	2
Cobalt	0.0018	J	0.0020	0.00060	mg/L		12/12/23 12:42	12/14/23 17:02	2
Chromium	ND		0.010	0.0013	mg/L		12/12/23 12:42	12/14/23 17:02	2
Lithium	0.0025	J	0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 17:02	2
Molybdenum	0.46		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 17:02	2
Lead	ND		0.0030	0.0010	mg/L		12/12/23 12:42	12/14/23 17:02	2
Antimony	ND		0.0050	0.00029	mg/L		12/12/23 12:42	12/14/23 17:02	2
Selenium	ND		0.0050	0.00067	mg/L		12/12/23 12:42	12/14/23 17:02	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:42	12/14/23 17:02	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:37	11/29/23 12:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1200		10	10	mg/L			11/14/23 15:25	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.5	HF	0.1	0.1	SU			11/15/23 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	1.05		0.359	0.372	1.00	0.364	pCi/L	11/15/23 07:01	12/15/23 21:10	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*30 - 110*	*11/15/23 07:01*	*12/15/23 21:10*	*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	0.808		0.352	0.360	1.00	0.457	pCi/L	11/15/23 07:23	12/15/23 12:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*30 - 110*	*11/15/23 07:23*	*12/15/23 12:04*	*1*

Client Sample ID: WAP-4S
Date Collected: 11/07/23 12:20
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-5
Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*81.5*		*30 - 110*	*11/15/23 07:23*	*12/15/23 12:04*	*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	**1.86**		0.503	0.518	5.00	0.457	pCi/L		01/09/24 13:06	1

Client Sample ID: WAP-4I

Date Collected: 11/07/23 13:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-6

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	30		1.0	0.71	mg/L			11/11/23 23:07	1
Fluoride	0.12		0.10	0.026	mg/L			11/11/23 23:07	1
Sulfate	54		1.0	0.76	mg/L			11/11/23 23:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	110		50	19	ug/L		12/12/23 12:44	12/13/23 19:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.16		0.010	0.0016	mg/L		12/12/23 12:42	12/14/23 17:05	2
Barium	0.36		0.0020	0.00069	mg/L		12/12/23 12:42	12/14/23 17:05	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:42	12/14/23 17:05	2
Calcium	49		0.20	0.096	mg/L		12/12/23 12:42	12/14/23 17:05	2
Cadmium	0.000088	J	0.00050	0.000060	mg/L		12/12/23 12:42	12/14/23 17:05	2
Cobalt	0.0053		0.0020	0.00060	mg/L		12/12/23 12:42	12/14/23 17:05	2
Chromium	ND		0.010	0.0013	mg/L		12/12/23 12:42	12/14/23 17:05	2
Lithium	0.0058		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 17:05	2
Molybdenum	0.0037	J	0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 17:05	2
Lead	0.0025	J	0.0030	0.0010	mg/L		12/12/23 12:42	12/14/23 17:05	2
Antimony	ND		0.0050	0.00029	mg/L		12/12/23 12:42	12/14/23 17:05	2
Selenium	ND		0.0050	0.00067	mg/L		12/12/23 12:42	12/14/23 17:05	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:42	12/14/23 17:05	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:37	11/29/23 12:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	260		10	10	mg/L			11/14/23 15:25	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.5	HF	0.1	0.1	SU			11/15/23 12:12	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	2.76		0.670	0.715	1.00	0.540	pCi/L	11/15/23 07:01	12/15/23 21:10	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.8*		*30 - 110*	*11/15/23 07:01*	*12/15/23 21:10*	*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	2.17		0.709	0.736	1.00	0.840	pCi/L	11/15/23 07:23	12/15/23 12:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.8*		*30 - 110*	*11/15/23 07:23*	*12/15/23 12:04*	*1*

Client Sample ID: WAP-4I
Date Collected: 11/07/23 13:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-6
Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*76.6*		*30 - 110*	*11/15/23 07:23*	*12/15/23 12:04*	*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	**4.93**		0.975	1.03	5.00	0.840	pCi/L		01/09/24 13:06	1

Client Sample ID: WAP-4D

Date Collected: 11/07/23 14:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-7

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	25		1.0	0.71	mg/L			11/19/23 03:00	1
Fluoride	0.10		0.10	0.026	mg/L			11/11/23 19:57	1
Sulfate	33		1.0	0.76	mg/L			11/11/23 19:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	46	J	50	19	ug/L		12/12/23 12:44	12/13/23 19:20	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0087	J	0.010	0.0016	mg/L		12/12/23 12:42	12/14/23 17:09	2
Barium	0.28		0.0020	0.00069	mg/L		12/12/23 12:42	12/14/23 17:09	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:42	12/14/23 17:09	2
Calcium	47		0.20	0.096	mg/L		12/12/23 12:42	12/14/23 17:09	2
Cadmium	ND		0.00050	0.000060	mg/L		12/12/23 12:42	12/14/23 17:09	2
Cobalt	ND		0.0020	0.00060	mg/L		12/12/23 12:42	12/14/23 17:09	2
Chromium	ND		0.010	0.0013	mg/L		12/12/23 12:42	12/14/23 17:09	2
Lithium	0.0025	J	0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 17:09	2
Molybdenum	0.0047	J	0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 17:09	2
Lead	ND		0.0030	0.0010	mg/L		12/12/23 12:42	12/14/23 17:09	2
Antimony	ND		0.0050	0.00029	mg/L		12/12/23 12:42	12/14/23 17:09	2
Selenium	ND		0.0050	0.00067	mg/L		12/12/23 12:42	12/14/23 17:09	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:42	12/14/23 17:09	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:37	11/29/23 12:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	230		10	10	mg/L			11/14/23 15:25	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.8	HF	0.1	0.1	SU			11/15/23 12:21	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	0.326		0.102	0.106	1.00	0.0810	pCi/L	12/13/23 14:37	01/04/24 07:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.0*		*30 - 110*	*12/13/23 14:37*	*01/04/24 07:21*	*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	0.624		0.398	0.402	1.00	0.585	pCi/L	12/13/23 14:38	12/19/23 11:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.0*		*30 - 110*	*12/13/23 14:38*	*12/19/23 11:38*	*1*

Client Sample ID: WAP-4D
Date Collected: 11/07/23 14:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-7
Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	73.6		30 - 110	12/13/23 14:38	12/19/23 11:38	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	0.950		0.411	0.416	5.00	0.585	pCi/L		01/09/24 13:06	1

Client Sample ID: WAP-5S

Date Collected: 11/07/23 14:20
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-8

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	93		1.0	0.71	mg/L			11/11/23 23:26	1
Fluoride	0.085	J	0.10	0.026	mg/L			11/11/23 23:26	1
Sulfate	470		1.0	0.76	mg/L			11/11/23 23:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	5600		250	96	ug/L		12/12/23 12:44	12/14/23 16:00	5

Method: SW846 EPA 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		12/12/23 12:42	12/14/23 17:26	2
Barium	0.046		0.0020	0.00069	mg/L		12/12/23 12:42	12/14/23 17:26	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:42	12/14/23 17:26	2
Calcium	270		0.50	0.24	mg/L		12/12/23 12:42	12/18/23 11:54	5
Cadmium	0.000092	J	0.00050	0.000060	mg/L		12/12/23 12:42	12/14/23 17:26	2
Cobalt	0.0075		0.0020	0.00060	mg/L		12/12/23 12:42	12/14/23 17:26	2
Chromium	ND		0.010	0.0013	mg/L		12/12/23 12:42	12/14/23 17:26	2
Lithium	0.0023	J	0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 17:26	2
Molybdenum	ND		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 17:26	2
Lead	ND		0.0030	0.0010	mg/L		12/12/23 12:42	12/14/23 17:26	2
Antimony	ND		0.0050	0.00029	mg/L		12/12/23 12:42	12/14/23 17:26	2
Selenium	ND		0.0050	0.00067	mg/L		12/12/23 12:42	12/14/23 17:26	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:42	12/14/23 17:26	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:37	11/29/23 12:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1200		10	10	mg/L			11/14/23 15:25	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.1	HF	0.1	0.1	SU			11/15/23 12:30	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	0.203	U	0.213	0.214	1.00	0.339	pCi/L	11/15/23 07:27	12/16/23 12:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.4*		*30 - 110*	*11/15/23 07:27*	*12/16/23 12:38*	*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	0.174	U	0.258	0.259	1.00	0.437	pCi/L	11/15/23 07:55	12/16/23 10:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.4*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:05*	*1*

Client Sample ID: WAP-5S
Date Collected: 11/07/23 14:20
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-8
Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*90.1*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:05*	*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	0.377	U	0.335	0.336	5.00	0.437	pCi/L		12/18/23 14:03	1

Client Sample ID: WAP-5I
Date Collected: 11/07/23 15:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-9
Matrix: Water

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			11/11/23 23:44	1
Fluoride	0.12		0.10	0.026	mg/L			11/11/23 23:44	1
Sulfate	56		1.0	0.76	mg/L			11/11/23 23:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	89		50	19	ug/L		12/12/23 12:44	12/13/23 19:42	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0071	J	0.010	0.0016	mg/L		12/12/23 12:42	12/14/23 17:29	2
Barium	0.13		0.0020	0.00069	mg/L		12/12/23 12:42	12/14/23 17:29	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:42	12/14/23 17:29	2
Calcium	45		0.20	0.096	mg/L		12/12/23 12:42	12/14/23 17:29	2
Cadmium	ND		0.00050	0.000060	mg/L		12/12/23 12:42	12/14/23 17:29	2
Cobalt	ND		0.0020	0.00060	mg/L		12/12/23 12:42	12/14/23 17:29	2
Chromium	ND		0.010	0.0013	mg/L		12/12/23 12:42	12/14/23 17:29	2
Lithium	0.0040	J	0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 17:29	2
Molybdenum	ND		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 17:29	2
Lead	ND		0.0030	0.0010	mg/L		12/12/23 12:42	12/14/23 17:29	2
Antimony	ND		0.0050	0.00029	mg/L		12/12/23 12:42	12/14/23 17:29	2
Selenium	ND		0.0050	0.00067	mg/L		12/12/23 12:42	12/14/23 17:29	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:42	12/14/23 17:29	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:37	11/29/23 12:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	250		10	10	mg/L			11/14/23 15:25	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.6	HF	0.1	0.1	SU			11/15/23 12:35	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	0.319	U	0.240	0.242	1.00	0.359	pCi/L	11/15/23 07:27	12/16/23 14:26	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*105*		*30 - 110*	*11/15/23 07:27*	*12/16/23 14:26*	*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	0.732		0.334	0.341	1.00	0.445	pCi/L	11/15/23 07:55	12/16/23 10:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*105*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:06*	*1*

Client Sample ID: WAP-5I
Date Collected: 11/07/23 15:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-9
Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*80.4*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:06*	*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	**1.05**		0.411	0.418	5.00	0.445	pCi/L		12/18/23 14:03	1

Client Sample ID: WAP-5D

Date Collected: 11/07/23 16:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-10

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**20**		1.0	0.71	mg/L			11/12/23 00:03	1
Fluoride	**0.12**		0.10	0.026	mg/L			11/12/23 00:03	1
Sulfate	**40**		1.0	0.76	mg/L			11/12/23 00:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**51**		50	19	ug/L		12/12/23 12:44	12/13/23 19:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.010**		0.010	0.0016	mg/L		12/12/23 12:42	12/14/23 17:33	2
Barium	**0.20**		0.0020	0.00069	mg/L		12/12/23 12:42	12/14/23 17:33	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:42	12/14/23 17:33	2
Calcium	**48**		0.20	0.096	mg/L		12/12/23 12:42	12/14/23 17:33	2
Cadmium	ND		0.00050	0.000060	mg/L		12/12/23 12:42	12/14/23 17:33	2
Cobalt	ND		0.0020	0.00060	mg/L		12/12/23 12:42	12/14/23 17:33	2
Chromium	ND		0.010	0.0013	mg/L		12/12/23 12:42	12/14/23 17:33	2
Lithium	ND		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 17:33	2
Molybdenum	**0.0040**	**J**	0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 17:33	2
Lead	ND		0.0030	0.0010	mg/L		12/12/23 12:42	12/14/23 17:33	2
Antimony	ND		0.0050	0.00029	mg/L		12/12/23 12:42	12/14/23 17:33	2
Selenium	ND		0.0050	0.00067	mg/L		12/12/23 12:42	12/14/23 17:33	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:42	12/14/23 17:33	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:37	11/29/23 12:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**230**		10	10	mg/L			11/14/23 15:25	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	**7.7**	**HF**	0.1	0.1	SU			11/15/23 12:39	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	**0.707**		0.289	0.296	1.00	0.323	pCi/L	11/15/23 07:27	12/16/23 14:26	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.0*		*30 - 110*	*11/15/23 07:27*	*12/16/23 14:26*	*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	0.164	U	0.276	0.276	1.00	0.472	pCi/L	11/15/23 07:55	12/16/23 10:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.0*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:06*	*1*

Client Sample ID: WAP-5D
Date Collected: 11/07/23 16:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-10
Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*82.6*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:06*	*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	**0.871**		0.400	0.405	5.00	0.472	pCi/L		12/18/23 14:03	1

Client Sample ID: WAP-6S

Date Collected: 11/07/23 10:10
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-11

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	31		1.0	0.71	mg/L			11/12/23 00:21	1
Fluoride	0.35		0.10	0.026	mg/L			11/12/23 00:21	1
Sulfate	93		1.0	0.76	mg/L			11/12/23 00:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1800		50	19	ug/L		12/12/23 12:44	12/13/23 19:52	1

Method: SW846 EPA 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		12/12/23 12:42	12/14/23 17:46	2
Barium	0.043		0.0020	0.00069	mg/L		12/12/23 12:42	12/14/23 17:46	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:42	12/14/23 17:46	2
Calcium	85		0.20	0.096	mg/L		12/12/23 12:42	12/14/23 17:46	2
Cadmium	ND		0.00050	0.000060	mg/L		12/12/23 12:42	12/14/23 17:46	2
Cobalt	0.00084	J	0.0020	0.00060	mg/L		12/12/23 12:42	12/14/23 17:46	2
Chromium	ND		0.010	0.0013	mg/L		12/12/23 12:42	12/14/23 17:46	2
Lithium	0.0021	J	0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 17:46	2
Molybdenum	0.14		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 17:46	2
Lead	ND		0.0030	0.0010	mg/L		12/12/23 12:42	12/14/23 17:46	2
Antimony	ND		0.0050	0.00029	mg/L		12/12/23 12:42	12/14/23 17:46	2
Selenium	ND		0.0050	0.00067	mg/L		12/12/23 12:42	12/14/23 17:46	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:42	12/14/23 17:46	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:37	11/29/23 12:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	440		10	10	mg/L			11/14/23 15:25	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.6	HF	0.1	0.1	SU			11/15/23 12:44	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	0.133	U	0.271	0.271	1.00	0.479	pCi/L	11/15/23 07:27	12/16/23 14:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.9*		*30 - 110*	*11/15/23 07:27*	*12/16/23 14:29*	*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	0.147	U	0.270	0.270	1.00	0.468	pCi/L	11/15/23 07:55	12/16/23 10:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.9*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:06*	*1*

Client Sample ID: WAP-6S
Date Collected: 11/07/23 10:10
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-11
Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*87.1*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:06*	*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	0.280	U	0.383	0.383	5.00	0.479	pCi/L		12/18/23 14:03	1

Client Sample ID: WAP-6I

Date Collected: 11/07/23 11:20
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-12

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	28		1.0	0.71	mg/L			11/12/23 00:40	1
Fluoride	0.12		0.10	0.026	mg/L			11/12/23 00:40	1
Sulfate	46		1.0	0.76	mg/L			11/12/23 00:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	94		50	19	ug/L		12/12/23 12:44	12/13/23 19:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0067	J	0.010	0.0016	mg/L		12/12/23 12:42	12/14/23 17:50	2
Barium	0.21		0.0020	0.00069	mg/L		12/12/23 12:42	12/14/23 17:50	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:42	12/14/23 17:50	2
Calcium	49		0.20	0.096	mg/L		12/12/23 12:42	12/14/23 17:50	2
Cadmium	ND		0.00050	0.000060	mg/L		12/12/23 12:42	12/14/23 17:50	2
Cobalt	ND		0.0020	0.00060	mg/L		12/12/23 12:42	12/14/23 17:50	2
Chromium	ND		0.010	0.0013	mg/L		12/12/23 12:42	12/14/23 17:50	2
Lithium	0.0048	J	0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 17:50	2
Molybdenum	0.0044	J	0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 17:50	2
Lead	ND		0.0030	0.0010	mg/L		12/12/23 12:42	12/14/23 17:50	2
Antimony	ND		0.0050	0.00029	mg/L		12/12/23 12:42	12/14/23 17:50	2
Selenium	ND		0.0050	0.00067	mg/L		12/12/23 12:42	12/14/23 17:50	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:42	12/14/23 17:50	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:37	11/29/23 12:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	260		10	10	mg/L			11/14/23 15:25	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.8	HF	0.1	0.1	SU			11/15/23 12:49	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	0.272	U	0.200	0.202	1.00	0.284	pCi/L	11/15/23 07:27	12/16/23 15:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*104*		*30 - 110*	*11/15/23 07:27*	*12/16/23 15:16*	*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	0.0795	U	0.247	0.247	1.00	0.442	pCi/L	11/15/23 07:55	12/16/23 10:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*104*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:06*	*1*

Client Sample ID: WAP-6I
Date Collected: 11/07/23 11:20
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-12
Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*84.1*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:06*	*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	0.352	U	0.318	0.319	5.00	0.442	pCi/L		12/18/23 14:03	1

Client Sample ID: WAP-6D

Date Collected: 11/07/23 12:40
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-13

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	22		1.0	0.71	mg/L			11/12/23 01:35	1
Fluoride	0.13		0.10	0.026	mg/L			11/12/23 01:35	1
Sulfate	42		1.0	0.76	mg/L			11/12/23 01:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	57		50	19	ug/L		12/12/23 12:44	12/13/23 20:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0054	J	0.010	0.0016	mg/L		12/12/23 12:42	12/14/23 17:53	2
Barium	0.20		0.0020	0.00069	mg/L		12/12/23 12:42	12/14/23 17:53	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:42	12/14/23 17:53	2
Calcium	43		0.20	0.096	mg/L		12/12/23 12:42	12/14/23 17:53	2
Cadmium	ND		0.00050	0.000060	mg/L		12/12/23 12:42	12/14/23 17:53	2
Cobalt	ND		0.0020	0.00060	mg/L		12/12/23 12:42	12/14/23 17:53	2
Chromium	ND		0.010	0.0013	mg/L		12/12/23 12:42	12/14/23 17:53	2
Lithium	0.0034	J	0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 17:53	2
Molybdenum	0.0022	J	0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 17:53	2
Lead	ND		0.0030	0.0010	mg/L		12/12/23 12:42	12/14/23 17:53	2
Antimony	ND		0.0050	0.00029	mg/L		12/12/23 12:42	12/14/23 17:53	2
Selenium	ND		0.0050	0.00067	mg/L		12/12/23 12:42	12/14/23 17:53	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:42	12/14/23 17:53	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:37	11/29/23 13:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	230		10	10	mg/L			11/14/23 15:25	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.8	HF	0.1	0.1	SU			11/15/23 12:53	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	0.485		0.235	0.239	1.00	0.262	pCi/L	11/15/23 07:27	12/16/23 15:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*116*	*X*	*30 - 110*	*11/15/23 07:27*	*12/16/23 15:16*	*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	0.239	U	0.313	0.314	1.00	0.522	pCi/L	11/15/23 07:55	12/16/23 10:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*116*	*X*	*30 - 110*	*11/15/23 07:55*	*12/16/23 10:03*	*1*

Client Sample ID: WAP-6D
Date Collected: 11/07/23 12:40
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-13
Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*82.6*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:03*	*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	**0.724**		0.391	0.395	5.00	0.522	pCi/L		12/18/23 14:03	1

Client Sample ID: WAP-7S

Date Collected: 11/08/23 09:40
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-14

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	69		1.0	0.71	mg/L			11/12/23 01:54	1
Fluoride	0.10		0.10	0.026	mg/L			11/12/23 01:54	1
Sulfate	330		1.0	0.76	mg/L			11/12/23 01:54	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	10000		500	190	ug/L		12/12/23 12:44	12/14/23 16:18	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0076	J	0.010	0.0016	mg/L		12/12/23 12:42	12/14/23 17:57	2
Barium	0.037		0.0020	0.00069	mg/L		12/12/23 12:42	12/14/23 17:57	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:42	12/14/23 17:57	2
Calcium	160		0.20	0.096	mg/L		12/12/23 12:42	12/14/23 17:57	2
Cadmium	ND		0.00050	0.000060	mg/L		12/12/23 12:42	12/14/23 17:57	2
Cobalt	ND		0.0020	0.00060	mg/L		12/12/23 12:42	12/14/23 17:57	2
Chromium	ND		0.010	0.0013	mg/L		12/12/23 12:42	12/14/23 17:57	2
Lithium	0.22		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 17:57	2
Molybdenum	0.14		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 17:57	2
Lead	ND		0.0030	0.0010	mg/L		12/12/23 12:42	12/14/23 17:57	2
Antimony	0.0012	J	0.0050	0.00029	mg/L		12/12/23 12:42	12/14/23 17:57	2
Selenium	0.0011	J	0.0050	0.00067	mg/L		12/12/23 12:42	12/14/23 17:57	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:42	12/14/23 17:57	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:43	11/29/23 13:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	720		10	10	mg/L			11/15/23 18:12	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	10.0	HF	0.1	0.1	SU			11/15/23 12:58	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	0.288		0.198	0.199	1.00	0.257	pCi/L	11/15/23 07:27	12/16/23 15:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.8*		*30 - 110*	*11/15/23 07:27*	*12/16/23 15:16*	*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	0.0231	U	0.278	0.278	1.00	0.515	pCi/L	11/15/23 07:55	12/16/23 10:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.8*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:03*	*1*

Client Sample ID: WAP-7S
Lab Sample ID: 180-165178-14

Date Collected: 11/08/23 09:40
Matrix: Water
Date Received: 11/10/23 09:05

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*84.1*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:03*	*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	0.311	U	0.341	0.342	5.00	0.515	pCi/L		12/18/23 14:03	1

Client Sample ID: WAP-7D

Date Collected: 11/08/23 10:15
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-15

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**130**		2.5	1.8	mg/L			11/16/23 02:00	2.5
Fluoride	**0.31**		0.25	0.065	mg/L			11/11/23 20:38	2.5
Sulfate	**930**		2.5	1.9	mg/L			11/11/23 20:38	2.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**9400**		500	190	ug/L		12/12/23 12:44	12/14/23 16:23	10

Method: SW846 EPA 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		12/12/23 12:42	12/14/23 18:00	2
Barium	**0.030**		0.0020	0.00069	mg/L		12/12/23 12:42	12/14/23 18:00	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:42	12/14/23 18:00	2
Calcium	**390**		0.50	0.24	mg/L		12/12/23 12:42	12/18/23 11:57	5
Cadmium	ND		0.00050	0.000060	mg/L		12/12/23 12:42	12/14/23 18:00	2
Cobalt	**0.0036**		0.0020	0.00060	mg/L		12/12/23 12:42	12/14/23 18:00	2
Chromium	ND		0.010	0.0013	mg/L		12/12/23 12:42	12/14/23 18:00	2
Lithium	**0.063**		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 18:00	2
Molybdenum	**0.21**		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 18:00	2
Lead	ND		0.0030	0.0010	mg/L		12/12/23 12:42	12/14/23 18:00	2
Antimony	ND		0.0050	0.00029	mg/L		12/12/23 12:42	12/14/23 18:00	2
Selenium	ND		0.0050	0.00067	mg/L		12/12/23 12:42	12/14/23 18:00	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:42	12/14/23 18:00	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:43	11/29/23 13:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1700**		10	10	mg/L			11/15/23 18:12	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	**7.6**	**HF**	0.1	0.1	SU			11/15/23 13:03	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	**0.695**		0.278	0.285	1.00	0.295	pCi/L	11/15/23 07:27	12/16/23 15:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.2*		*30 - 110*	*11/15/23 07:27*	*12/16/23 15:27*	*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	0.382	U	0.343	0.345	1.00	0.545	pCi/L	11/15/23 07:55	12/16/23 10:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.2*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:03*	*1*

Client Sample ID: WAP-7D
Date Collected: 11/08/23 10:15
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-15
Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*79.6*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:03*	*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	**1.08**		0.442	0.447	5.00	0.545	pCi/L		12/18/23 14:03	1

Client Sample ID: WAP-8S

Date Collected: 11/08/23 06:30
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-16

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	97		1.0	0.71	mg/L			11/16/23 02:41	1
Fluoride	0.095	J	0.10	0.026	mg/L			11/11/23 18:33	1
Sulfate	310		1.0	0.76	mg/L			11/11/23 18:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	3200		100	38	ug/L		12/12/23 12:44	12/14/23 16:27	2

Method: SW846 EPA 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		12/12/23 12:42	12/14/23 18:04	2
Barium	0.15		0.0020	0.00069	mg/L		12/12/23 12:42	12/14/23 18:04	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:42	12/14/23 18:04	2
Calcium	150		0.20	0.096	mg/L		12/12/23 12:42	12/14/23 18:04	2
Cadmium	ND		0.00050	0.000060	mg/L		12/12/23 12:42	12/14/23 18:04	2
Cobalt	0.0020		0.0020	0.00060	mg/L		12/12/23 12:42	12/14/23 18:04	2
Chromium	ND		0.010	0.0013	mg/L		12/12/23 12:42	12/14/23 18:04	2
Lithium	0.023		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 18:04	2
Molybdenum	0.24		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 18:04	2
Lead	ND		0.0030	0.0010	mg/L		12/12/23 12:42	12/14/23 18:04	2
Antimony	ND		0.0050	0.00029	mg/L		12/12/23 12:42	12/14/23 18:04	2
Selenium	ND		0.0050	0.00067	mg/L		12/12/23 12:42	12/14/23 18:04	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:42	12/14/23 18:04	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:43	11/29/23 14:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	820		10	10	mg/L			11/15/23 18:12	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.4	HF	0.1	0.1	SU			11/16/23 11:25	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	0.711		0.301	0.308	1.00	0.345	pCi/L	11/15/23 07:27	12/16/23 15:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.6*		*30 - 110*	*11/15/23 07:27*	*12/16/23 15:28*	*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	0.554		0.341	0.345	1.00	0.500	pCi/L	11/15/23 07:55	12/16/23 10:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.6*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:03*	*1*

Client Sample ID: WAP-8S
Date Collected: 11/08/23 06:30
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-16
Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*86.7*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:03*	*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	**1.27**		0.455	0.462	5.00	0.500	pCi/L		12/18/23 14:03	1

Client Sample ID: WAP-8I

Date Collected: 11/08/23 07:10
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-17

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	30		1.0	0.71	mg/L			11/16/23 02:55	1
Fluoride	0.12		0.10	0.026	mg/L			11/11/23 18:47	1
Sulfate	44		1.0	0.76	mg/L			11/11/23 18:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	100		50	19	ug/L		12/12/23 12:44	12/13/23 20:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.035		0.010	0.0016	mg/L		12/12/23 12:42	12/14/23 18:07	2
Barium	0.089		0.0020	0.00069	mg/L		12/12/23 12:42	12/14/23 18:07	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:42	12/14/23 18:07	2
Calcium	46		0.20	0.096	mg/L		12/12/23 12:42	12/14/23 18:07	2
Cadmium	ND		0.00050	0.000060	mg/L		12/12/23 12:42	12/14/23 18:07	2
Cobalt	0.00082	J	0.0020	0.00060	mg/L		12/12/23 12:42	12/14/23 18:07	2
Chromium	ND		0.010	0.0013	mg/L		12/12/23 12:42	12/14/23 18:07	2
Lithium	0.0033	J	0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 18:07	2
Molybdenum	0.030		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 18:07	2
Lead	ND		0.0030	0.0010	mg/L		12/12/23 12:42	12/14/23 18:07	2
Antimony	ND		0.0050	0.00029	mg/L		12/12/23 12:42	12/14/23 18:07	2
Selenium	ND		0.0050	0.00067	mg/L		12/12/23 12:42	12/14/23 18:07	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:42	12/14/23 18:07	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:43	11/29/23 14:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	240		10	10	mg/L			11/15/23 18:30	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.5	HF	0.1	0.1	SU			11/16/23 11:30	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	0.138	U	0.282	0.282	1.00	0.505	pCi/L	11/15/23 07:27	12/16/23 15:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.7*		*30 - 110*	*11/15/23 07:27*	*12/16/23 15:28*	*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	0.471	0.471	1.00	0.832	pCi/L	11/15/23 07:55	12/16/23 10:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.7*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:04*	*1*

Client Sample ID: WAP-8I

Date Collected: 11/08/23 07:10
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-17

Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*73.6*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:04*	*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	0.549	0.549	5.00	0.832	pCi/L		12/18/23 14:03	1

Client Sample ID: WAP-8D

Date Collected: 11/08/23 07:55
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-18

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	24		1.0	0.71	mg/L			11/16/23 02:27	1
Fluoride	0.11		0.10	0.026	mg/L			11/11/23 21:06	1
Sulfate	45		1.0	0.76	mg/L			11/11/23 21:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	59		50	19	ug/L		12/12/23 12:44	12/13/23 20:37	1

Method: SW846 EPA 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		12/12/23 12:42	12/14/23 18:10	2
Barium	0.066		0.0020	0.00069	mg/L		12/12/23 12:42	12/14/23 18:10	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:42	12/14/23 18:10	2
Calcium	39		0.20	0.096	mg/L		12/12/23 12:42	12/14/23 18:10	2
Cadmium	ND		0.00050	0.000060	mg/L		12/12/23 12:42	12/14/23 18:10	2
Cobalt	ND		0.0020	0.00060	mg/L		12/12/23 12:42	12/14/23 18:10	2
Chromium	ND		0.010	0.0013	mg/L		12/12/23 12:42	12/14/23 18:10	2
Lithium	0.0023	J	0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 18:10	2
Molybdenum	ND		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 18:10	2
Lead	ND		0.0030	0.0010	mg/L		12/12/23 12:42	12/14/23 18:10	2
Antimony	ND		0.0050	0.00029	mg/L		12/12/23 12:42	12/14/23 18:10	2
Selenium	ND		0.0050	0.00067	mg/L		12/12/23 12:42	12/14/23 18:10	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:42	12/14/23 18:10	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:43	11/29/23 14:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	210		10	10	mg/L			11/15/23 18:30	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.6	HF	0.1	0.1	SU			11/16/23 11:34	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	0.682		0.323	0.329	1.00	0.400	pCi/L	11/15/23 07:27	12/16/23 15:26	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.1*		*30 - 110*	*11/15/23 07:27*	*12/16/23 15:26*	*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	0.408	U	0.359	0.361	1.00	0.566	pCi/L	11/15/23 07:55	12/16/23 10:02	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.1*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:02*	*1*

Client Sample ID: WAP-8D
Date Collected: 11/08/23 07:55
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-18
Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*83.7*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:02*	*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	**1.09**		0.483	0.488	5.00	0.566	pCi/L		12/18/23 14:03	1

Client Sample ID: WAP-9S

Date Collected: 11/07/23 07:30
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-19

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**21**	**F1**	1.0	0.71	mg/L			11/28/23 13:13	1
Fluoride	**0.49**		0.10	0.026	mg/L			11/11/23 21:20	1
Sulfate	**28**		1.0	0.76	mg/L			11/11/23 21:20	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**540**		50	19	ug/L		12/12/23 12:44	12/13/23 20:42	1

Method: SW846 EPA 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		12/12/23 12:42	12/14/23 18:14	2
Barium	**0.072**		0.0020	0.00069	mg/L		12/12/23 12:42	12/14/23 18:14	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:42	12/14/23 18:14	2
Calcium	**54**		0.20	0.096	mg/L		12/12/23 12:42	12/14/23 18:14	2
Cadmium	ND		0.00050	0.000060	mg/L		12/12/23 12:42	12/14/23 18:14	2
Cobalt	ND		0.0020	0.00060	mg/L		12/12/23 12:42	12/14/23 18:14	2
Chromium	ND		0.010	0.0013	mg/L		12/12/23 12:42	12/14/23 18:14	2
Lithium	**0.0070**		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 18:14	2
Molybdenum	**0.092**		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 18:14	2
Lead	ND		0.0030	0.0010	mg/L		12/12/23 12:42	12/14/23 18:14	2
Antimony	ND		0.0050	0.00029	mg/L		12/12/23 12:42	12/14/23 18:14	2
Selenium	ND		0.0050	0.00067	mg/L		12/12/23 12:42	12/14/23 18:14	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:42	12/14/23 18:14	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:37	11/29/23 13:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**280**		10	10	mg/L			11/14/23 15:25	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	**7.8**	**HF**	0.1	0.1	SU			11/16/23 11:39	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	0.191	U	0.211	0.212	1.00	0.342	pCi/L	11/15/23 07:27	12/16/23 15:26	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*105*		*30 - 110*	*11/15/23 07:27*	*12/16/23 15:26*	*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	0.318	U	0.262	0.263	1.00	0.404	pCi/L	11/15/23 07:55	12/16/23 10:02	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*105*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:02*	*1*

Client Sample ID: WAP-9S
Date Collected: 11/07/23 07:30
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-19
Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*87.5*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:02*	*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	**0.509**		0.336	0.338	5.00	0.404	pCi/L		12/18/23 14:03	1

Client Sample ID: WAP-9I
Date Collected: 11/07/23 09:10
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-20
Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**29**	**F1 F2**	1.0	0.71	mg/L			11/28/23 13:01	1
Fluoride	**0.097**	**J**	0.10	0.026	mg/L			11/11/23 21:34	1
Sulfate	**40**		1.0	0.76	mg/L			11/11/23 21:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**110**		50	19	ug/L		12/12/23 12:44	12/13/23 20:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.011**		0.010	0.0016	mg/L		12/12/23 12:42	12/14/23 18:17	2
Barium	**0.16**		0.0020	0.00069	mg/L		12/12/23 12:42	12/14/23 18:17	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:42	12/14/23 18:17	2
Calcium	**51**		0.20	0.096	mg/L		12/12/23 12:42	12/14/23 18:17	2
Cadmium	ND		0.00050	0.000060	mg/L		12/12/23 12:42	12/14/23 18:17	2
Cobalt	**0.0014**	**J**	0.0020	0.00060	mg/L		12/12/23 12:42	12/14/23 18:17	2
Chromium	**0.0014**	**J**	0.010	0.0013	mg/L		12/12/23 12:42	12/14/23 18:17	2
Lithium	**0.0050**		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 18:17	2
Molybdenum	**0.0080**		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 18:17	2
Lead	ND		0.0030	0.0010	mg/L		12/12/23 12:42	12/14/23 18:17	2
Antimony	ND		0.0050	0.00029	mg/L		12/12/23 12:42	12/14/23 18:17	2
Selenium	ND		0.0050	0.00067	mg/L		12/12/23 12:42	12/14/23 18:17	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:42	12/14/23 18:17	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:37	11/29/23 13:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**260**		10	10	mg/L			11/14/23 15:25	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	**7.7**	**HF**	0.1	0.1	SU			11/16/23 11:44	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	**0.444**		0.258	0.261	1.00	0.344	pCi/L	11/15/23 07:27	12/16/23 15:26	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.4*		*30 - 110*	*11/15/23 07:27*	*12/16/23 15:26*	*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	0.348	U	0.333	0.335	1.00	0.532	pCi/L	11/15/23 07:55	12/16/23 10:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.4*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:04*	*1*

Client Sample ID: WAP-9I

Date Collected: 11/07/23 09:10
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-20

Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*77.4*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:04*	*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	**0.793**		0.421	0.425	5.00	0.532	pCi/L		12/18/23 14:03	1

Client Sample ID: WAP-9D

Date Collected: 11/07/23 11:20
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-21

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	25		1.0	0.71	mg/L			11/11/23 22:15	1
Fluoride	0.096	J	0.10	0.026	mg/L			11/11/23 22:15	1
Sulfate	41		1.0	0.76	mg/L			11/11/23 22:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	50		50	19	ug/L		12/12/23 12:46	12/13/23 17:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0055	J	0.010	0.0016	mg/L		12/12/23 12:45	12/14/23 18:38	2
Barium	0.18		0.0020	0.00069	mg/L		12/12/23 12:45	12/14/23 18:38	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:45	12/14/23 18:38	2
Calcium	42		0.20	0.096	mg/L		12/12/23 12:45	12/14/23 18:38	2
Cadmium	0.00016	J	0.00050	0.000060	mg/L		12/12/23 12:45	12/14/23 18:38	2
Cobalt	ND		0.0020	0.00060	mg/L		12/12/23 12:45	12/14/23 18:38	2
Chromium	ND		0.010	0.0013	mg/L		12/12/23 12:45	12/14/23 18:38	2
Lithium	0.0040	J	0.0050	0.0020	mg/L		12/12/23 12:45	12/14/23 18:38	2
Molybdenum	0.0023	J	0.0050	0.0020	mg/L		12/12/23 12:45	12/14/23 18:38	2
Lead	ND		0.0030	0.0010	mg/L		12/12/23 12:45	12/14/23 18:38	2
Antimony	ND		0.0050	0.00029	mg/L		12/12/23 12:45	12/14/23 18:38	2
Selenium	ND		0.0050	0.00067	mg/L		12/12/23 12:45	12/14/23 18:38	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:45	12/14/23 18:38	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:37	11/29/23 13:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	220		10	10	mg/L			11/14/23 15:25	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.7	HF	0.1	0.1	SU			11/16/23 11:48	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	0.524		0.270	0.274	1.00	0.347	pCi/L	11/15/23 07:27	12/16/23 15:26	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*30 - 110*	*11/15/23 07:27*	*12/16/23 15:26*	*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	0.562		0.341	0.345	1.00	0.504	pCi/L	11/15/23 07:55	12/16/23 10:02	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:02*	*1*

Client Sample ID: WAP-9D
Date Collected: 11/07/23 11:20
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-21
Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*84.1*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:02*	*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	**1.09**		0.435	0.441	5.00	0.504	pCi/L		12/18/23 14:03	1

Client Sample ID: DUP-1

Date Collected: 11/08/23 00:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-22

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			11/11/23 22:29	1
Fluoride	0.098	J	0.10	0.026	mg/L			11/11/23 22:29	1
Sulfate	310		1.0	0.76	mg/L			11/11/23 22:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	3500		250	96	ug/L		12/12/23 12:46	12/14/23 16:32	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.017		0.010	0.0016	mg/L		12/12/23 12:45	12/14/23 18:41	2
Barium	0.16		0.0020	0.00069	mg/L		12/12/23 12:45	12/14/23 18:41	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:45	12/14/23 18:41	2
Calcium	160		0.20	0.096	mg/L		12/12/23 12:45	12/14/23 18:41	2
Cadmium	0.000096	J	0.00050	0.000060	mg/L		12/12/23 12:45	12/14/23 18:41	2
Cobalt	0.0023		0.0020	0.00060	mg/L		12/12/23 12:45	12/14/23 18:41	2
Chromium	ND		0.010	0.0013	mg/L		12/12/23 12:45	12/14/23 18:41	2
Lithium	0.022		0.0050	0.0020	mg/L		12/12/23 12:45	12/14/23 18:41	2
Molybdenum	0.26		0.0050	0.0020	mg/L		12/12/23 12:45	12/14/23 18:41	2
Lead	ND		0.0030	0.0010	mg/L		12/12/23 12:45	12/14/23 18:41	2
Antimony	ND		0.0050	0.00029	mg/L		12/12/23 12:45	12/14/23 18:41	2
Selenium	ND		0.0050	0.00067	mg/L		12/12/23 12:45	12/14/23 18:41	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:45	12/14/23 18:41	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:43	11/29/23 14:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	820		10	10	mg/L			11/15/23 18:30	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.5	HF	0.1	0.1	SU			11/16/23 11:53	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	0.519		0.252	0.257	1.00	0.296	pCi/L	11/15/23 07:27	12/16/23 15:26	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.9*		*30 - 110*	*11/15/23 07:27*	*12/16/23 15:26*	*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	0.380	U	0.318	0.320	1.00	0.498	pCi/L	11/15/23 07:55	12/16/23 10:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.9*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:03*	*1*

Client Sample ID: DUP-1
Date Collected: 11/08/23 00:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-22
Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*84.1*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:03*	*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	**0.899**		0.406	0.410	5.00	0.498	pCi/L		12/18/23 14:03	1

Client Sample ID: DUP-2

Date Collected: 11/08/23 00:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-23

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	120		2.5	1.8	mg/L			11/16/23 02:14	2.5
Fluoride	0.30		0.25	0.065	mg/L			11/11/23 20:52	2.5
Sulfate	920		2.5	1.9	mg/L			11/11/23 20:52	2.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	9200		500	190	ug/L		12/12/23 12:46	12/14/23 16:41	10

Method: SW846 EPA 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		12/12/23 12:45	12/14/23 18:45	2
Barium	0.030		0.0020	0.00069	mg/L		12/12/23 12:45	12/14/23 18:45	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:45	12/14/23 18:45	2
Calcium	410		0.50	0.24	mg/L		12/12/23 12:45	12/18/23 12:01	5
Cadmium	0.000082	J	0.00050	0.000060	mg/L		12/12/23 12:45	12/14/23 18:45	2
Cobalt	0.0037		0.0020	0.00060	mg/L		12/12/23 12:45	12/14/23 18:45	2
Chromium	ND		0.010	0.0013	mg/L		12/12/23 12:45	12/14/23 18:45	2
Lithium	0.064		0.0050	0.0020	mg/L		12/12/23 12:45	12/14/23 18:45	2
Molybdenum	0.21		0.0050	0.0020	mg/L		12/12/23 12:45	12/14/23 18:45	2
Lead	ND		0.0030	0.0010	mg/L		12/12/23 12:45	12/14/23 18:45	2
Antimony	ND		0.0050	0.00029	mg/L		12/12/23 12:45	12/14/23 18:45	2
Selenium	ND		0.0050	0.00067	mg/L		12/12/23 12:45	12/14/23 18:45	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:45	12/14/23 18:45	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:43	11/29/23 14:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1700		10	10	mg/L			11/15/23 18:30	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.4	HF	0.1	0.1	SU			11/16/23 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	0.685		0.318	0.324	1.00	0.391	pCi/L	11/15/23 07:27	12/16/23 15:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.7*		*30 - 110*	*11/15/23 07:27*	*12/16/23 15:27*	*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	0.244	U	0.249	0.250	1.00	0.399	pCi/L	11/15/23 07:55	12/16/23 10:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.7*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:03*	*1*

Client Sample ID: DUP-2
Date Collected: 11/08/23 00:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-23
Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*85.2*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:03*	*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	**0.929**		0.404	0.409	5.00	0.399	pCi/L		12/18/23 14:03	1

Client Sample ID: FB-1

Date Collected: 11/08/23 10:40
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-24

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			11/11/23 22:43	1
Fluoride	ND		0.10	0.026	mg/L			11/11/23 22:43	1
Sulfate	ND		1.0	0.76	mg/L			11/11/23 22:43	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**24**	**J**	50	19	ug/L		12/12/23 12:46	12/13/23 17:50	1

Method: SW846 EPA 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		12/12/23 12:45	12/14/23 18:48	2
Barium	ND		0.0020	0.00069	mg/L		12/12/23 12:45	12/14/23 18:48	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:45	12/14/23 18:48	2
Calcium	ND		0.20	0.096	mg/L		12/12/23 12:45	12/14/23 18:48	2
Cadmium	ND		0.00050	0.000060	mg/L		12/12/23 12:45	12/14/23 18:48	2
Cobalt	ND		0.0020	0.00060	mg/L		12/12/23 12:45	12/14/23 18:48	2
Chromium	ND		0.010	0.0013	mg/L		12/12/23 12:45	12/14/23 18:48	2
Lithium	ND		0.0050	0.0020	mg/L		12/12/23 12:45	12/14/23 18:48	2
Molybdenum	ND		0.0050	0.0020	mg/L		12/12/23 12:45	12/14/23 18:48	2
Lead	ND		0.0030	0.0010	mg/L		12/12/23 12:45	12/14/23 18:48	2
Antimony	ND		0.0050	0.00029	mg/L		12/12/23 12:45	12/14/23 18:48	2
Selenium	ND		0.0050	0.00067	mg/L		12/12/23 12:45	12/14/23 18:48	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:45	12/14/23 18:48	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:43	11/29/23 14:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	ND		10	10	mg/L			11/15/23 18:30	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	**4.6**	**HF**	0.1	0.1	SU			11/16/23 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	0.113	U	0.163	0.163	1.00	0.278	pCi/L	11/15/23 07:27	12/16/23 15:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*104*		*30 - 110*	*11/15/23 07:27*	*12/16/23 15:27*	*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	**0.777**		0.305	0.313	1.00	0.363	pCi/L	11/15/23 07:55	12/16/23 10:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*104*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:03*	*1*

Client Sample ID: FB-1

Date Collected: 11/08/23 10:40
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-24

Matrix: Water

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*84.1*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:03*	*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	**0.891**		0.346	0.353	5.00	0.363	pCi/L		12/18/23 14:03	1

Client Sample ID: CCR-AP-7

Date Collected: 11/06/23 13:00
Date Received: 11/10/23 09:05

Lab Sample ID: 180-165178-25

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			11/11/23 22:57	1
Fluoride	0.29		0.10	0.026	mg/L			11/11/23 22:57	1
Sulfate	84		1.0	0.76	mg/L			11/11/23 22:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	36	J	50	19	ug/L		12/12/23 12:46	12/13/23 17:54	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0019	J	0.010	0.0016	mg/L		12/12/23 12:45	12/14/23 18:52	2
Barium	0.10		0.0020	0.00069	mg/L		12/12/23 12:45	12/14/23 18:52	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:45	12/14/23 18:52	2
Calcium	110		0.20	0.096	mg/L		12/12/23 12:45	12/14/23 18:52	2
Cadmium	ND		0.00050	0.000060	mg/L		12/12/23 12:45	12/14/23 18:52	2
Cobalt	ND		0.0020	0.00060	mg/L		12/12/23 12:45	12/14/23 18:52	2
Chromium	ND		0.010	0.0013	mg/L		12/12/23 12:45	12/14/23 18:52	2
Lithium	0.011		0.0050	0.0020	mg/L		12/12/23 12:45	12/14/23 18:52	2
Molybdenum	ND		0.0050	0.0020	mg/L		12/12/23 12:45	12/14/23 18:52	2
Lead	ND		0.0030	0.0010	mg/L		12/12/23 12:45	12/14/23 18:52	2
Antimony	ND		0.0050	0.00029	mg/L		12/12/23 12:45	12/14/23 18:52	2
Selenium	ND		0.0050	0.00067	mg/L		12/12/23 12:45	12/14/23 18:52	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:45	12/14/23 18:52	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:37	11/29/23 12:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	590		10	10	mg/L			11/13/23 17:27	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 EPA 9040C)	7.5	HF	0.1	0.1	SU			11/16/23 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	0.217	U	0.232	0.233	1.00	0.373	pCi/L	11/15/23 07:27	12/16/23 15:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.4*		*30 - 110*	*11/15/23 07:27*	*12/16/23 15:27*	*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	1.22		0.407	0.422	1.00	0.481	pCi/L	11/15/23 07:55	12/16/23 10:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.4*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:03*	*1*

Client Sample ID: CCR-AP-7
Lab Sample ID: 180-165178-25

Date Collected: 11/06/23 13:00
Matrix: Water
Date Received: 11/10/23 09:05

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Y Carrier	*84.1*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:03*	*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	**1.44**		0.468	0.482	5.00	0.481	pCi/L		12/18/23 14:03	1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-451646/38
Matrix: Water
Analysis Batch: 451646

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			11/11/23 20:40	1
Fluoride	ND		0.10	0.026	mg/L			11/11/23 20:40	1
Sulfate	ND		1.0	0.76	mg/L			11/11/23 20:40	1

Lab Sample ID: MB 180-451646/6
Matrix: Water
Analysis Batch: 451646

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			11/11/23 10:49	1
Fluoride	ND		0.10	0.026	mg/L			11/11/23 10:49	1
Sulfate	ND		1.0	0.76	mg/L			11/11/23 10:49	1

Lab Sample ID: LCS 180-451646/39
Matrix: Water
Analysis Batch: 451646

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	2.54		mg/L		101	80 - 120
Sulfate	50.0	49.2		mg/L		98	80 - 120

Lab Sample ID: LCS 180-451646/7
Matrix: Water
Analysis Batch: 451646

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	49.4		mg/L		99	80 - 120
Fluoride	2.50	2.48		mg/L		99	80 - 120
Sulfate	50.0	48.2		mg/L		96	80 - 120

Lab Sample ID: MB 180-451647/42
Matrix: Water
Analysis Batch: 451647

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			11/11/23 19:29	1
Fluoride	ND		0.10	0.026	mg/L			11/11/23 19:29	1
Sulfate	ND		1.0	0.76	mg/L			11/11/23 19:29	1

Lab Sample ID: MB 180-451647/6
Matrix: Water
Analysis Batch: 451647

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			11/11/23 10:30	1
Fluoride	ND		0.10	0.026	mg/L			11/11/23 10:30	1
Sulfate	ND		1.0	0.76	mg/L			11/11/23 10:30	1

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

Lab Sample ID: LCS 180-451647/43
Matrix: Water
Analysis Batch: 451647

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	55.8		mg/L		112	80 - 120		
Fluoride			2.50	2.61		mg/L		104	80 - 120		
Sulfate			50.0	50.4		mg/L		101	80 - 120		

Lab Sample ID: LCS 180-451647/7
Matrix: Water
Analysis Batch: 451647

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			50.0	52.5		mg/L		105	80 - 120		
Fluoride			2.50	2.49		mg/L		100	80 - 120		
Sulfate			50.0	48.1		mg/L		96	80 - 120		

Lab Sample ID: 180-165178-7 MS
Matrix: Water
Analysis Batch: 451647

Client Sample ID: WAP-4D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	24		50.0	76.6		mg/L		105	80 - 120		
Fluoride	0.10		2.50	2.61		mg/L		100	80 - 120		
Sulfate	33		50.0	79.7		mg/L		94	80 - 120		

Lab Sample ID: 180-165178-7 MSD
Matrix: Water
Analysis Batch: 451647

Client Sample ID: WAP-4D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	24		50.0	75.5		mg/L		102	80 - 120	1	15
Fluoride	0.10		2.50	2.58		mg/L		99	80 - 120	1	15
Sulfate	33		50.0	78.3		mg/L		91	80 - 120	2	15

Lab Sample ID: 180-165178-25 MS
Matrix: Water
Analysis Batch: 451647

Client Sample ID: CCR-AP-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	42		50.0	96.3		mg/L		108	80 - 120		
Fluoride	0.29		2.50	2.80		mg/L		100	80 - 120		
Sulfate	84		50.0	130		mg/L		93	80 - 120		

Lab Sample ID: 180-165178-25 MSD
Matrix: Water
Analysis Batch: 451647

Client Sample ID: CCR-AP-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	42		50.0	100		mg/L		115	80 - 120	4	15
Fluoride	0.29		2.50	2.90		mg/L		104	80 - 120	4	15
Sulfate	84		50.0	135		mg/L		102	80 - 120	3	15

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

Lab Sample ID: MB 180-452000/36
Matrix: Water
Analysis Batch: 452000

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			11/16/23 00:22	1
Fluoride	ND		0.10	0.026	mg/L			11/16/23 00:22	1
Sulfate	ND		1.0	0.76	mg/L			11/16/23 00:22	1

Lab Sample ID: LCS 180-452000/37
Matrix: Water
Analysis Batch: 452000

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	53.0		mg/L		106	80 - 120
Fluoride	2.50	2.50		mg/L		100	80 - 120
Sulfate	50.0	49.5		mg/L		99	80 - 120

Lab Sample ID: MB 180-452346/41
Matrix: Water
Analysis Batch: 452346

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			11/18/23 22:23	1
Fluoride	ND		0.10	0.026	mg/L			11/18/23 22:23	1
Sulfate	ND		1.0	0.76	mg/L			11/18/23 22:23	1

Lab Sample ID: LCS 180-452346/42
Matrix: Water
Analysis Batch: 452346

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	49.8		mg/L		100	80 - 120
Fluoride	2.50	2.53		mg/L		101	80 - 120
Sulfate	50.0	49.6		mg/L		99	80 - 120

Lab Sample ID: MB 180-452921/6
Matrix: Water
Analysis Batch: 452921

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			11/28/23 12:14	1
Fluoride	ND		0.10	0.026	mg/L			11/28/23 12:14	1
Sulfate	ND		1.0	0.76	mg/L			11/28/23 12:14	1

Lab Sample ID: LCS 180-452921/7
Matrix: Water
Analysis Batch: 452921

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	51.2		mg/L		102	80 - 120
Fluoride	2.50	2.67		mg/L		107	80 - 120
Sulfate	50.0	51.1		mg/L		102	80 - 120

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

Lab Sample ID: 180-165178-20 MS
Matrix: Water
Analysis Batch: 452921

Client Sample ID: WAP-9I
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	29	F1 F2	50.0	113	F1	mg/L		167	80 - 120
Fluoride	0.12	F1	2.50	3.17	F1	mg/L		122	80 - 120
Sulfate	46		50.0	99.9		mg/L		109	80 - 120

Lab Sample ID: 180-165178-20 MSD
Matrix: Water
Analysis Batch: 452921

Client Sample ID: WAP-9I
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	29	F1 F2	50.0	85.7	F2	mg/L		113	80 - 120	27	15
Fluoride	0.12	F1	2.50	3.15	F1	mg/L		121	80 - 120	1	15
Sulfate	46		50.0	99.1		mg/L		107	80 - 120	1	15

Lab Sample ID: MB 180-452926/6
Matrix: Water
Analysis Batch: 452926

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			11/28/23 12:40	1
Fluoride	ND		0.10	0.026	mg/L			11/28/23 12:40	1
Sulfate	ND		1.0	0.76	mg/L			11/28/23 12:40	1

Lab Sample ID: LCS 180-452926/7
Matrix: Water
Analysis Batch: 452926

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	48.6		mg/L		97	80 - 120
Fluoride	2.50	2.62		mg/L		105	80 - 120
Sulfate	50.0	48.7		mg/L		97	80 - 120

Lab Sample ID: 180-165178-19 MS
Matrix: Water
Analysis Batch: 452926

Client Sample ID: WAP-9S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	21	F1	50.0	82.7	F1	mg/L		124	80 - 120
Fluoride	0.57	F1	2.50	3.79	F1	mg/L		129	80 - 120
Sulfate	28	F1	50.0	91.1	F1	mg/L		126	80 - 120

Lab Sample ID: 180-165178-19 MSD
Matrix: Water
Analysis Batch: 452926

Client Sample ID: WAP-9S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	21	F1	50.0	79.1		mg/L		117	80 - 120	5	15
Fluoride	0.57	F1	2.50	3.63	F1	mg/L		123	80 - 120	4	15
Sulfate	28	F1	50.0	86.8		mg/L		117	80 - 120	5	15

Method: EPA 6010D - Metals (ICP)

Lab Sample ID: MB 160-640432/1-A
Matrix: Water
Analysis Batch: 640666

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 640432

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		50	19	ug/L		12/12/23 12:44	12/13/23 18:26	1

Lab Sample ID: LCS 160-640432/2-A
Matrix: Water
Analysis Batch: 640666

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 640432

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	200	190		ug/L		95	80 - 120

Lab Sample ID: 180-165178-7 MS
Matrix: Water
Analysis Batch: 640666

Client Sample ID: WAP-4D
Prep Type: Total Recoverable
Prep Batch: 640432

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	46	J	200	225		ug/L		90	75 - 125

Lab Sample ID: 180-165178-7 MSD
Matrix: Water
Analysis Batch: 640666

Client Sample ID: WAP-4D
Prep Type: Total Recoverable
Prep Batch: 640432

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	46	J	200	222		ug/L		88	75 - 125	2	20

Lab Sample ID: MB 160-640434/1-A
Matrix: Water
Analysis Batch: 640666

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 640434

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		50	19	ug/L		12/12/23 12:46	12/13/23 17:22	1

Lab Sample ID: LCS 160-640434/2-A
Matrix: Water
Analysis Batch: 640666

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 640434

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	200	184		ug/L		92	80 - 120

Lab Sample ID: 180-165178-25 MS
Matrix: Water
Analysis Batch: 640666

Client Sample ID: CCR-AP-7
Prep Type: Total Recoverable
Prep Batch: 640434

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	36	J	200	207		ug/L		86	75 - 125

Lab Sample ID: 180-165178-25 MSD
Matrix: Water
Analysis Batch: 640666

Client Sample ID: CCR-AP-7
Prep Type: Total Recoverable
Prep Batch: 640434

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	36	J	200	204		ug/L		84	75 - 125	2	20

Method: EPA 6010D - Metals (ICP)

Lab Sample ID: MB 160-640439/1-A
Matrix: Water
Analysis Batch: 640837

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 640439

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		50	19	ug/L		12/12/23 13:00	12/14/23 14:20	1

Lab Sample ID: LCS 160-640439/2-A
Matrix: Water
Analysis Batch: 640837

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 640439

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	200	181		ug/L		90	80 - 120

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

Lab Sample ID: MB 160-640431/1-A
Matrix: Water
Analysis Batch: 640835

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 640431

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.010	0.0016	mg/L		12/12/23 12:42	12/14/23 16:31	2
Barium	ND		0.0020	0.00069	mg/L		12/12/23 12:42	12/14/23 16:31	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:42	12/14/23 16:31	2
Calcium	ND		0.20	0.096	mg/L		12/12/23 12:42	12/14/23 16:31	2
Cadmium	ND		0.00050	0.000060	mg/L		12/12/23 12:42	12/14/23 16:31	2
Cobalt	ND		0.0020	0.00060	mg/L		12/12/23 12:42	12/14/23 16:31	2
Chromium	ND		0.010	0.0013	mg/L		12/12/23 12:42	12/14/23 16:31	2
Lithium	ND		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 16:31	2
Molybdenum	ND		0.0050	0.0020	mg/L		12/12/23 12:42	12/14/23 16:31	2
Lead	ND		0.0030	0.0010	mg/L		12/12/23 12:42	12/14/23 16:31	2
Antimony	ND		0.0050	0.00029	mg/L		12/12/23 12:42	12/14/23 16:31	2
Selenium	ND		0.0050	0.00067	mg/L		12/12/23 12:42	12/14/23 16:31	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:42	12/14/23 16:31	2

Lab Sample ID: LCS 160-640431/2-A
Matrix: Water
Analysis Batch: 640835

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 640431

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	1.01		mg/L		101	80 - 120
Barium	1.00	0.993		mg/L		99	80 - 120
Beryllium	0.100	0.100		mg/L		100	80 - 120
Calcium	10.0	10.4		mg/L		104	80 - 120
Cadmium	1.00	1.00		mg/L		100	80 - 120
Cobalt	1.00	1.03		mg/L		103	80 - 120
Chromium	1.00	1.02		mg/L		102	80 - 120
Lithium	0.100	0.103		mg/L		103	80 - 120
Molybdenum	0.495	0.502		mg/L		101	80 - 120
Lead	1.00	1.02		mg/L		102	80 - 120
Antimony	0.500	0.510		mg/L		102	80 - 120
Selenium	0.500	0.501		mg/L		100	80 - 120
Thallium	0.200	0.202		mg/L		101	80 - 120

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

Lab Sample ID: 180-165178-7 MS
Matrix: Water
Analysis Batch: 640835

Client Sample ID: WAP-4D
Prep Type: Total Recoverable
Prep Batch: 640431

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.0087	J	1.00	1.02		mg/L		102	75 - 125
Barium	0.28		1.00	1.26		mg/L		99	75 - 125
Beryllium	ND		0.100	0.105		mg/L		105	75 - 125
Calcium	47		10.0	60.8	4	mg/L		142	75 - 125
Cadmium	ND		1.00	1.01		mg/L		101	75 - 125
Cobalt	ND		1.00	1.01		mg/L		101	75 - 125
Chromium	ND		1.00	1.02		mg/L		102	75 - 125
Lithium	0.0025	J	0.100	0.112		mg/L		110	75 - 125
Molybdenum	0.0047	J	0.495	0.504		mg/L		101	75 - 125
Lead	ND		1.00	1.00		mg/L		100	75 - 125
Antimony	ND		0.500	0.520		mg/L		104	75 - 125
Selenium	ND		0.500	0.502		mg/L		100	75 - 125
Thallium	ND		0.200	0.199		mg/L		99	75 - 125

Lab Sample ID: 180-165178-7 MSD
Matrix: Water
Analysis Batch: 640835

Client Sample ID: WAP-4D
Prep Type: Total Recoverable
Prep Batch: 640431

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.0087	J	1.00	1.04		mg/L		103	75 - 125	1	20
Barium	0.28		1.00	1.27		mg/L		99	75 - 125	1	20
Beryllium	ND		0.100	0.103		mg/L		103	75 - 125	3	20
Calcium	47		10.0	59.5	4	mg/L		128	75 - 125	2	20
Cadmium	ND		1.00	1.01		mg/L		101	75 - 125	0	20
Cobalt	ND		1.00	1.01		mg/L		101	75 - 125	0	20
Chromium	ND		1.00	1.02		mg/L		102	75 - 125	0	20
Lithium	0.0025	J	0.100	0.108		mg/L		106	75 - 125	4	20
Molybdenum	0.0047	J	0.495	0.501		mg/L		100	75 - 125	1	20
Lead	ND		1.00	1.04		mg/L		104	75 - 125	4	20
Antimony	ND		0.500	0.524		mg/L		105	75 - 125	1	20
Selenium	ND		0.500	0.507		mg/L		101	75 - 125	1	20
Thallium	ND		0.200	0.209		mg/L		105	75 - 125	5	20

Lab Sample ID: MB 160-640433/1-A
Matrix: Water
Analysis Batch: 640836

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 640433

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.010	0.0016	mg/L		12/12/23 12:45	12/14/23 18:31	2
Barium	ND		0.0020	0.00069	mg/L		12/12/23 12:45	12/14/23 18:31	2
Beryllium	ND		0.00050	0.00020	mg/L		12/12/23 12:45	12/14/23 18:31	2
Calcium	ND		0.20	0.096	mg/L		12/12/23 12:45	12/14/23 18:31	2
Cadmium	ND		0.00050	0.000060	mg/L		12/12/23 12:45	12/14/23 18:31	2
Cobalt	ND		0.0020	0.00060	mg/L		12/12/23 12:45	12/14/23 18:31	2
Chromium	ND		0.010	0.0013	mg/L		12/12/23 12:45	12/14/23 18:31	2
Lithium	ND		0.0050	0.0020	mg/L		12/12/23 12:45	12/14/23 18:31	2
Molybdenum	ND		0.0050	0.0020	mg/L		12/12/23 12:45	12/14/23 18:31	2
Lead	ND		0.0030	0.0010	mg/L		12/12/23 12:45	12/14/23 18:31	2
Antimony	ND		0.0050	0.00029	mg/L		12/12/23 12:45	12/14/23 18:31	2

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

Lab Sample ID: MB 160-640433/1-A
Matrix: Water
Analysis Batch: 640836

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 640433

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		0.0050	0.00067	mg/L		12/12/23 12:45	12/14/23 18:31	2
Thallium	ND		0.0020	0.00038	mg/L		12/12/23 12:45	12/14/23 18:31	2

Lab Sample ID: LCS 160-640433/2-A
Matrix: Water
Analysis Batch: 640836

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 640433

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	1.03		mg/L		103	80 - 120
Barium	1.00	0.995		mg/L		99	80 - 120
Beryllium	0.100	0.0968		mg/L		97	80 - 120
Calcium	10.0	10.5		mg/L		105	80 - 120
Cadmium	1.00	1.01		mg/L		101	80 - 120
Cobalt	1.00	1.05		mg/L		105	80 - 120
Chromium	1.00	1.03		mg/L		103	80 - 120
Lithium	0.100	0.104		mg/L		104	80 - 120
Molybdenum	0.495	0.522		mg/L		105	80 - 120
Lead	1.00	1.02		mg/L		102	80 - 120
Antimony	0.500	0.518		mg/L		104	80 - 120
Selenium	0.500	0.507		mg/L		101	80 - 120
Thallium	0.200	0.206		mg/L		103	80 - 120

Lab Sample ID: 180-165178-25 MS
Matrix: Water
Analysis Batch: 640836

Client Sample ID: CCR-AP-7
Prep Type: Total Recoverable
Prep Batch: 640433

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.0019	J	1.00	1.00		mg/L		100	75 - 125
Barium	0.10		1.00	1.06		mg/L		96	75 - 125
Beryllium	ND		0.100	0.0988		mg/L		99	75 - 125
Calcium	110		10.0	126	4	mg/L		128	75 - 125
Cadmium	ND		1.00	1.03		mg/L		103	75 - 125
Cobalt	ND		1.00	0.976		mg/L		98	75 - 125
Chromium	ND		1.00	1.02		mg/L		102	75 - 125
Lithium	0.011		0.100	0.117		mg/L		106	75 - 125
Molybdenum	ND		0.495	0.495		mg/L		100	75 - 125
Lead	ND		1.00	0.997		mg/L		100	75 - 125
Antimony	ND		0.500	0.521		mg/L		104	75 - 125
Selenium	ND		0.500	0.495		mg/L		99	75 - 125
Thallium	ND		0.200	0.201		mg/L		100	75 - 125

Lab Sample ID: 180-165178-25 MSD
Matrix: Water
Analysis Batch: 640836

Client Sample ID: CCR-AP-7
Prep Type: Total Recoverable
Prep Batch: 640433

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.0019	J	1.00	1.00		mg/L		100	75 - 125	0	20
Barium	0.10		1.00	1.06		mg/L		96	75 - 125	0	20
Beryllium	ND		0.100	0.0987		mg/L		99	75 - 125	0	20

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

Lab Sample ID: 180-165178-25 MSD — **Client Sample ID: CCR-AP-7**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 640836 — **Prep Batch: 640433**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	110		10.0	130	4	mg/L		168	75 - 125	3	20
Cadmium	ND		1.00	0.998		mg/L		100	75 - 125	3	20
Cobalt	ND		1.00	0.992		mg/L		99	75 - 125	2	20
Chromium	ND		1.00	1.01		mg/L		101	75 - 125	0	20
Lithium	0.011		0.100	0.113		mg/L		101	75 - 125	4	20
Molybdenum	ND		0.495	0.502		mg/L		102	75 - 125	1	20
Lead	ND		1.00	0.999		mg/L		100	75 - 125	0	20
Antimony	ND		0.500	0.523		mg/L		105	75 - 125	0	20
Selenium	ND		0.500	0.501		mg/L		100	75 - 125	1	20
Thallium	ND		0.200	0.200		mg/L		100	75 - 125	0	20

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 160-638599/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 638795 — **Prep Batch: 638599**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:37	11/29/23 11:46	1

Lab Sample ID: LCS 160-638599/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 638795 — **Prep Batch: 638599**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	5.00	5.09		ug/L		102	80 - 120

Lab Sample ID: 180-165178-7 MS — **Client Sample ID: WAP-4D**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 638795 — **Prep Batch: 638599**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		5.00	5.06		ug/L		101	80 - 120

Lab Sample ID: 180-165178-7 MSD — **Client Sample ID: WAP-4D**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 638795 — **Prep Batch: 638599**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		5.00	4.77		ug/L		95	80 - 120	6	20

Lab Sample ID: 180-165178-25 MS — **Client Sample ID: CCR-AP-7**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 638795 — **Prep Batch: 638599**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		5.00	5.04		ug/L		101	80 - 120

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

Lab Sample ID: 180-165178-25 MSD
Matrix: Water
Analysis Batch: 638795

Client Sample ID: CCR-AP-7
Prep Type: Total/NA
Prep Batch: 638599

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		5.00	4.92		ug/L		98	80 - 120	3	20

Lab Sample ID: MB 160-638600/1-A
Matrix: Water
Analysis Batch: 638795

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 638600

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.50	0.21	ug/L		11/29/23 07:43	11/29/23 13:30	1

Lab Sample ID: LCS 160-638600/2-A
Matrix: Water
Analysis Batch: 638795

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 638600

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	5.00	5.34		ug/L		107	80 - 120

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-452044/24
Matrix: Water
Analysis Batch: 452044

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: 180-165178-7 DU
Matrix: Water
Analysis Batch: 452044

Client Sample ID: WAP-4D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.8	HF	7.8	HF	SU		0	2

Lab Sample ID: LCS 180-452193/1
Matrix: Water
Analysis Batch: 452193

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: 180-165178-24 DU
Matrix: Water
Analysis Batch: 452193

Client Sample ID: FB-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	4.6	HF	4.5		SU		2	2

Method: EPA 9040C - pH (Continued)

Lab Sample ID: 180-165178-25 DU
Matrix: Water
Analysis Batch: 452193

Client Sample ID: CCR-AP-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.5	HF		7.5	HF	SU				0.1	2

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

Lab Sample ID: MB 180-451806/1
Matrix: Water
Analysis Batch: 451806

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			11/13/23 17:27	1

Lab Sample ID: LCS 180-451806/2
Matrix: Water
Analysis Batch: 451806

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	322		mg/L		96	85 - 115		

Lab Sample ID: 180-165178-25 DU
Matrix: Water
Analysis Batch: 451806

Client Sample ID: CCR-AP-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	590			599		mg/L				2	10

Lab Sample ID: MB 180-451923/1
Matrix: Water
Analysis Batch: 451923

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			11/14/23 15:25	1

Lab Sample ID: LCS 180-451923/2
Matrix: Water
Analysis Batch: 451923

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	324		mg/L		96	85 - 115		

Lab Sample ID: 180-165178-7 DU
Matrix: Water
Analysis Batch: 451923

Client Sample ID: WAP-4D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	230			229		mg/L				0.4	10

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

Lab Sample ID: MB 180-452068/1
Matrix: Water
Analysis Batch: 452068

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			11/15/23 18:12	1

Lab Sample ID: LCS 180-452068/2
Matrix: Water
Analysis Batch: 452068

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	326		mg/L		97	85 - 115

Lab Sample ID: MB 180-452069/1
Matrix: Water
Analysis Batch: 452069

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			11/15/23 18:30	1

Lab Sample ID: LCS 180-452069/2
Matrix: Water
Analysis Batch: 452069

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	332		mg/L		99	85 - 115

Lab Sample ID: 180-165178-17 DU
Matrix: Water
Analysis Batch: 452069

Client Sample ID: WAP-8I
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	240		238		mg/L		1	10

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-636867/1-A
Matrix: Water
Analysis Batch: 640846

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 636867

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.04021	U	0.140	0.140	1.00	0.306	pCi/L	11/15/23 07:01	12/15/23 21:10	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*30 - 110*	*11/15/23 07:01*	*12/15/23 21:10*	*1*

Lab Sample ID: MB 160-636990/1-A
Matrix: Water
Analysis Batch: 640959

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 636990

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02914	U	0.225	0.225	1.00	0.428	pCi/L	11/15/23 07:27	12/16/23 12:42	1

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

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	104		30 - 110	11/15/23 07:27	12/16/23 12:42	1

Lab Sample ID: LCS 160-636990/2-A
Matrix: Water
Analysis Batch: 640986

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 636990

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	9.689		1.25	1.00	0.370	pCi/L	86	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	106		30 - 110

Lab Sample ID: 180-165178-25 DU
Matrix: Water
Analysis Batch: 640959

Client Sample ID: CCR-AP-7
Prep Type: Total/NA
Prep Batch: 636990

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	0.217	U		0.3708	U	0.262	1.00	0.373	pCi/L			0.31	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	90.5		30 - 110

Lab Sample ID: MB 160-640588/1-A
Matrix: Water
Analysis Batch: 642933

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 640588

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.008196	U	0.0416	0.0416	1.00	0.0831	pCi/L	12/13/23 09:29	01/04/24 07:15	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	96.8		30 - 110	12/13/23 09:29	01/04/24 07:15	1

Lab Sample ID: LCS 160-640588/2-A
Matrix: Water
Analysis Batch: 642933

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 640588

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.90		1.11	1.00	0.111	pCi/L	96	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	99.8		30 - 110

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

Lab Sample ID: 180-165178-7 DU
Matrix: Water
Analysis Batch: 643032

Client Sample ID: WAP-4D
Prep Type: Total/NA
Prep Batch: 640588

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	0.326			0.3232		0.119	1.00	0.130	pCi/L			0.01	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*81.6*		*30 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-636989/1-A
Matrix: Water
Analysis Batch: 640847

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 636989

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.07796	U	0.234	0.234	1.00	0.424	pCi/L	11/15/23 07:23	12/15/23 11:50	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*30 - 110*	*11/15/23 07:23*	*12/15/23 11:50*	*1*
Y Carrier	*80.4*		*30 - 110*	*11/15/23 07:23*	*12/15/23 11:50*	*1*

Lab Sample ID: LCS 160-636989/2-A
Matrix: Water
Analysis Batch: 640847

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 636989

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			7.64	7.318		1.08	1.00	0.504	pCi/L	96	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*97.2*		*30 - 110*
Y Carrier	*77.8*		*30 - 110*

Lab Sample ID: MB 160-636991/1-A
Matrix: Water
Analysis Batch: 640987

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 636991

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.5677		0.329	0.333	1.00	0.475	pCi/L	11/15/23 07:55	12/16/23 10:05	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*104*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:05*	*1*
Y Carrier	*82.2*		*30 - 110*	*11/15/23 07:55*	*12/16/23 10:05*	*1*

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-636991/2-A
Matrix: Water
Analysis Batch: 640987

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 636991

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			7.64	6.759		0.970	1.00	0.427	pCi/L	88	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*106*		*30 - 110*
Y Carrier	*83.7*		*30 - 110*

Lab Sample ID: 180-165178-25 DU
Matrix: Water
Analysis Batch: 640957

Client Sample ID: CCR-AP-7
Prep Type: Total/NA
Prep Batch: 636991

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	1.22			0.4847		0.317	1.00	0.459	pCi/L			1.0	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*90.5*		*30 - 110*
Y Carrier	*87.1*		*30 - 110*

Lab Sample ID: MB 160-640591/1-A
Matrix: Water
Analysis Batch: 641298

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 640591

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.3126	U	0.287	0.289	1.00	0.454	pCi/L	12/13/23 09:36	12/19/23 11:35	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.8*		*30 - 110*	*12/13/23 09:36*	*12/19/23 11:35*	*1*
Y Carrier	*81.1*		*30 - 110*	*12/13/23 09:36*	*12/19/23 11:35*	*1*

Lab Sample ID: LCS 160-640591/2-A
Matrix: Water
Analysis Batch: 641298

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 640591

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			9.39	9.378		1.25	1.00	0.514	pCi/L	100	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*99.8*		*30 - 110*
Y Carrier	*81.1*		*30 - 110*

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: 180-165178-7 DU
Matrix: Water
Analysis Batch: 641298

Client Sample ID: WAP-4D
Prep Type: Total/NA
Prep Batch: 640591

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	0.624			0.1453	U	0.343	1.00	0.608	pCi/L			0.64	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*81.6*		*30 - 110*
Y Carrier	*68.8*		*30 - 110*

HPLC/IC

Analysis Batch: 451646

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-1	WAP-1	Total/NA	Water	EPA 9056A	
180-165178-2	WAP-2R	Total/NA	Water	EPA 9056A	
180-165178-3	WAP-3S	Total/NA	Water	EPA 9056A	
180-165178-4	WAP-3D	Total/NA	Water	EPA 9056A	
180-165178-5	WAP-4S	Total/NA	Water	EPA 9056A	
180-165178-6	WAP-4I	Total/NA	Water	EPA 9056A	
180-165178-8	WAP-5S	Total/NA	Water	EPA 9056A	
180-165178-9	WAP-5I	Total/NA	Water	EPA 9056A	
180-165178-10	WAP-5D	Total/NA	Water	EPA 9056A	
180-165178-11	WAP-6S	Total/NA	Water	EPA 9056A	
180-165178-12	WAP-6I	Total/NA	Water	EPA 9056A	
180-165178-13	WAP-6D	Total/NA	Water	EPA 9056A	
180-165178-14	WAP-7S	Total/NA	Water	EPA 9056A	
MB 180-451646/38	Method Blank	Total/NA	Water	EPA 9056A	
MB 180-451646/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-451646/39	Lab Control Sample	Total/NA	Water	EPA 9056A	
LCS 180-451646/7	Lab Control Sample	Total/NA	Water	EPA 9056A	

Analysis Batch: 451647

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-7	WAP-4D	Total/NA	Water	EPA 9056A	
180-165178-15	WAP-7D	Total/NA	Water	EPA 9056A	
180-165178-16	WAP-8S	Total/NA	Water	EPA 9056A	
180-165178-17	WAP-8I	Total/NA	Water	EPA 9056A	
180-165178-18	WAP-8D	Total/NA	Water	EPA 9056A	
180-165178-19	WAP-9S	Total/NA	Water	EPA 9056A	
180-165178-20	WAP-9I	Total/NA	Water	EPA 9056A	
180-165178-21	WAP-9D	Total/NA	Water	EPA 9056A	
180-165178-22	DUP-1	Total/NA	Water	EPA 9056A	
180-165178-23	DUP-2	Total/NA	Water	EPA 9056A	
180-165178-24	FB-1	Total/NA	Water	EPA 9056A	
180-165178-25	CCR-AP-7	Total/NA	Water	EPA 9056A	
MB 180-451647/42	Method Blank	Total/NA	Water	EPA 9056A	
MB 180-451647/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-451647/43	Lab Control Sample	Total/NA	Water	EPA 9056A	
LCS 180-451647/7	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-165178-7 MS	WAP-4D	Total/NA	Water	EPA 9056A	
180-165178-7 MSD	WAP-4D	Total/NA	Water	EPA 9056A	
180-165178-25 MS	CCR-AP-7	Total/NA	Water	EPA 9056A	
180-165178-25 MSD	CCR-AP-7	Total/NA	Water	EPA 9056A	

Analysis Batch: 452000

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-15	WAP-7D	Total/NA	Water	EPA 9056A	
180-165178-16	WAP-8S	Total/NA	Water	EPA 9056A	
180-165178-17	WAP-8I	Total/NA	Water	EPA 9056A	
180-165178-18	WAP-8D	Total/NA	Water	EPA 9056A	
180-165178-23	DUP-2	Total/NA	Water	EPA 9056A	
MB 180-452000/36	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-452000/37	Lab Control Sample	Total/NA	Water	EPA 9056A	

HPLC/IC

Analysis Batch: 452346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-7	WAP-4D	Total/NA	Water	EPA 9056A	
MB 180-452346/41	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-452346/42	Lab Control Sample	Total/NA	Water	EPA 9056A	

Analysis Batch: 452921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-20	WAP-9I	Total/NA	Water	EPA 9056A	
MB 180-452921/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-452921/7	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-165178-20 MS	WAP-9I	Total/NA	Water	EPA 9056A	
180-165178-20 MSD	WAP-9I	Total/NA	Water	EPA 9056A	

Analysis Batch: 452926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-19	WAP-9S	Total/NA	Water	EPA 9056A	
MB 180-452926/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-452926/7	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-165178-19 MS	WAP-9S	Total/NA	Water	EPA 9056A	
180-165178-19 MSD	WAP-9S	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 638599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-1	WAP-1	Total/NA	Water	7470A	
180-165178-5	WAP-4S	Total/NA	Water	7470A	
180-165178-6	WAP-4I	Total/NA	Water	7470A	
180-165178-7	WAP-4D	Total/NA	Water	7470A	
180-165178-8	WAP-5S	Total/NA	Water	7470A	
180-165178-9	WAP-5I	Total/NA	Water	7470A	
180-165178-10	WAP-5D	Total/NA	Water	7470A	
180-165178-11	WAP-6S	Total/NA	Water	7470A	
180-165178-12	WAP-6I	Total/NA	Water	7470A	
180-165178-13	WAP-6D	Total/NA	Water	7470A	
180-165178-19	WAP-9S	Total/NA	Water	7470A	
180-165178-20	WAP-9I	Total/NA	Water	7470A	
180-165178-21	WAP-9D	Total/NA	Water	7470A	
180-165178-25	CCR-AP-7	Total/NA	Water	7470A	
MB 160-638599/1-A	Method Blank	Total/NA	Water	7470A	
LCS 160-638599/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-165178-7 MS	WAP-4D	Total/NA	Water	7470A	
180-165178-7 MSD	WAP-4D	Total/NA	Water	7470A	
180-165178-25 MS	CCR-AP-7	Total/NA	Water	7470A	
180-165178-25 MSD	CCR-AP-7	Total/NA	Water	7470A	

Prep Batch: 638600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-2	WAP-2R	Total/NA	Water	7470A	
180-165178-3	WAP-3S	Total/NA	Water	7470A	
180-165178-4	WAP-3D	Total/NA	Water	7470A	
180-165178-14	WAP-7S	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 638600 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-15	WAP-7D	Total/NA	Water	7470A	
180-165178-16	WAP-8S	Total/NA	Water	7470A	
180-165178-17	WAP-8I	Total/NA	Water	7470A	
180-165178-18	WAP-8D	Total/NA	Water	7470A	
180-165178-22	DUP-1	Total/NA	Water	7470A	
180-165178-23	DUP-2	Total/NA	Water	7470A	
180-165178-24	FB-1	Total/NA	Water	7470A	
MB 160-638600/1-A	Method Blank	Total/NA	Water	7470A	
LCS 160-638600/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 638795

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-1	WAP-1	Total/NA	Water	EPA 7470A	638599
180-165178-2	WAP-2R	Total/NA	Water	EPA 7470A	638600
180-165178-3	WAP-3S	Total/NA	Water	EPA 7470A	638600
180-165178-4	WAP-3D	Total/NA	Water	EPA 7470A	638600
180-165178-5	WAP-4S	Total/NA	Water	EPA 7470A	638599
180-165178-6	WAP-4I	Total/NA	Water	EPA 7470A	638599
180-165178-7	WAP-4D	Total/NA	Water	EPA 7470A	638599
180-165178-8	WAP-5S	Total/NA	Water	EPA 7470A	638599
180-165178-9	WAP-5I	Total/NA	Water	EPA 7470A	638599
180-165178-10	WAP-5D	Total/NA	Water	EPA 7470A	638599
180-165178-11	WAP-6S	Total/NA	Water	EPA 7470A	638599
180-165178-12	WAP-6I	Total/NA	Water	EPA 7470A	638599
180-165178-13	WAP-6D	Total/NA	Water	EPA 7470A	638599
180-165178-14	WAP-7S	Total/NA	Water	EPA 7470A	638600
180-165178-15	WAP-7D	Total/NA	Water	EPA 7470A	638600
180-165178-16	WAP-8S	Total/NA	Water	EPA 7470A	638600
180-165178-17	WAP-8I	Total/NA	Water	EPA 7470A	638600
180-165178-18	WAP-8D	Total/NA	Water	EPA 7470A	638600
180-165178-19	WAP-9S	Total/NA	Water	EPA 7470A	638599
180-165178-20	WAP-9I	Total/NA	Water	EPA 7470A	638599
180-165178-21	WAP-9D	Total/NA	Water	EPA 7470A	638599
180-165178-22	DUP-1	Total/NA	Water	EPA 7470A	638600
180-165178-23	DUP-2	Total/NA	Water	EPA 7470A	638600
180-165178-24	FB-1	Total/NA	Water	EPA 7470A	638600
180-165178-25	CCR-AP-7	Total/NA	Water	EPA 7470A	638599
MB 160-638599/1-A	Method Blank	Total/NA	Water	EPA 7470A	638599
MB 160-638600/1-A	Method Blank	Total/NA	Water	EPA 7470A	638600
LCS 160-638599/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	638599
LCS 160-638600/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	638600
180-165178-7 MS	WAP-4D	Total/NA	Water	EPA 7470A	638599
180-165178-7 MSD	WAP-4D	Total/NA	Water	EPA 7470A	638599
180-165178-25 MS	CCR-AP-7	Total/NA	Water	EPA 7470A	638599
180-165178-25 MSD	CCR-AP-7	Total/NA	Water	EPA 7470A	638599

Prep Batch: 640431

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-1	WAP-1	Total Recoverable	Water	3005A	
180-165178-2	WAP-2R	Total Recoverable	Water	3005A	
180-165178-3	WAP-3S	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 640431 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-4	WAP-3D	Total Recoverable	Water	3005A	
180-165178-5	WAP-4S	Total Recoverable	Water	3005A	
180-165178-6	WAP-4I	Total Recoverable	Water	3005A	
180-165178-7	WAP-4D	Total Recoverable	Water	3005A	
180-165178-8	WAP-5S	Total Recoverable	Water	3005A	
180-165178-9	WAP-5I	Total Recoverable	Water	3005A	
180-165178-10	WAP-5D	Total Recoverable	Water	3005A	
180-165178-11	WAP-6S	Total Recoverable	Water	3005A	
180-165178-12	WAP-6I	Total Recoverable	Water	3005A	
180-165178-13	WAP-6D	Total Recoverable	Water	3005A	
180-165178-14	WAP-7S	Total Recoverable	Water	3005A	
180-165178-15	WAP-7D	Total Recoverable	Water	3005A	
180-165178-16	WAP-8S	Total Recoverable	Water	3005A	
180-165178-17	WAP-8I	Total Recoverable	Water	3005A	
180-165178-18	WAP-8D	Total Recoverable	Water	3005A	
180-165178-19	WAP-9S	Total Recoverable	Water	3005A	
180-165178-20	WAP-9I	Total Recoverable	Water	3005A	
MB 160-640431/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 160-640431/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-165178-7 MS	WAP-4D	Total Recoverable	Water	3005A	
180-165178-7 MSD	WAP-4D	Total Recoverable	Water	3005A	

Prep Batch: 640432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-1	WAP-1	Total Recoverable	Water	3005A	
180-165178-2	WAP-2R	Total Recoverable	Water	3005A	
180-165178-3	WAP-3S	Total Recoverable	Water	3005A	
180-165178-4	WAP-3D	Total Recoverable	Water	3005A	
180-165178-5	WAP-4S	Total Recoverable	Water	3005A	
180-165178-6	WAP-4I	Total Recoverable	Water	3005A	
180-165178-7	WAP-4D	Total Recoverable	Water	3005A	
180-165178-8	WAP-5S	Total Recoverable	Water	3005A	
180-165178-9	WAP-5I	Total Recoverable	Water	3005A	
180-165178-10	WAP-5D	Total Recoverable	Water	3005A	
180-165178-11	WAP-6S	Total Recoverable	Water	3005A	
180-165178-12	WAP-6I	Total Recoverable	Water	3005A	
180-165178-13	WAP-6D	Total Recoverable	Water	3005A	
180-165178-14	WAP-7S	Total Recoverable	Water	3005A	
180-165178-15	WAP-7D	Total Recoverable	Water	3005A	
180-165178-16	WAP-8S	Total Recoverable	Water	3005A	
180-165178-17	WAP-8I	Total Recoverable	Water	3005A	
180-165178-18	WAP-8D	Total Recoverable	Water	3005A	
180-165178-19	WAP-9S	Total Recoverable	Water	3005A	
180-165178-20	WAP-9I	Total Recoverable	Water	3005A	
MB 160-640432/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 160-640432/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-165178-7 MS	WAP-4D	Total Recoverable	Water	3005A	
180-165178-7 MSD	WAP-4D	Total Recoverable	Water	3005A	

QC Association Summary

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

Job ID: 180-165178-1
SDG: FB Culley West

Metals

Prep Batch: 640433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-21	WAP-9D	Total Recoverable	Water	3005A	
180-165178-22	DUP-1	Total Recoverable	Water	3005A	
180-165178-23	DUP-2	Total Recoverable	Water	3005A	
180-165178-24	FB-1	Total Recoverable	Water	3005A	
180-165178-25	CCR-AP-7	Total Recoverable	Water	3005A	
MB 160-640433/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 160-640433/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-165178-25 MS	CCR-AP-7	Total Recoverable	Water	3005A	
180-165178-25 MSD	CCR-AP-7	Total Recoverable	Water	3005A	

Prep Batch: 640434

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-21	WAP-9D	Total Recoverable	Water	3005A	
180-165178-22	DUP-1	Total Recoverable	Water	3005A	
180-165178-23	DUP-2	Total Recoverable	Water	3005A	
180-165178-24	FB-1	Total Recoverable	Water	3005A	
180-165178-25	CCR-AP-7	Total Recoverable	Water	3005A	
MB 160-640434/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 160-640434/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-165178-25 MS	CCR-AP-7	Total Recoverable	Water	3005A	
180-165178-25 MSD	CCR-AP-7	Total Recoverable	Water	3005A	

Prep Batch: 640439

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 160-640439/1-A	Method Blank	Total Recoverable	Water	3010A	
LCS 160-640439/2-A	Lab Control Sample	Total Recoverable	Water	3010A	

Analysis Batch: 640666

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-1	WAP-1	Total Recoverable	Water	EPA 6010D	640432
180-165178-6	WAP-4I	Total Recoverable	Water	EPA 6010D	640432
180-165178-7	WAP-4D	Total Recoverable	Water	EPA 6010D	640432
180-165178-9	WAP-5I	Total Recoverable	Water	EPA 6010D	640432
180-165178-10	WAP-5D	Total Recoverable	Water	EPA 6010D	640432
180-165178-11	WAP-6S	Total Recoverable	Water	EPA 6010D	640432
180-165178-12	WAP-6I	Total Recoverable	Water	EPA 6010D	640432
180-165178-13	WAP-6D	Total Recoverable	Water	EPA 6010D	640432
180-165178-17	WAP-8I	Total Recoverable	Water	EPA 6010D	640432
180-165178-18	WAP-8D	Total Recoverable	Water	EPA 6010D	640432
180-165178-19	WAP-9S	Total Recoverable	Water	EPA 6010D	640432
180-165178-20	WAP-9I	Total Recoverable	Water	EPA 6010D	640432
180-165178-21	WAP-9D	Total Recoverable	Water	EPA 6010D	640434
180-165178-24	FB-1	Total Recoverable	Water	EPA 6010D	640434
180-165178-25	CCR-AP-7	Total Recoverable	Water	EPA 6010D	640434
MB 160-640432/1-A	Method Blank	Total Recoverable	Water	EPA 6010D	640432
MB 160-640434/1-A	Method Blank	Total Recoverable	Water	EPA 6010D	640434
LCS 160-640432/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6010D	640432
LCS 160-640434/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6010D	640434
180-165178-7 MS	WAP-4D	Total Recoverable	Water	EPA 6010D	640432
180-165178-7 MSD	WAP-4D	Total Recoverable	Water	EPA 6010D	640432
180-165178-25 MS	CCR-AP-7	Total Recoverable	Water	EPA 6010D	640434

Metals (Continued)

Analysis Batch: 640666 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-25 MSD	CCR-AP-7	Total Recoverable	Water	EPA 6010D	640434

Analysis Batch: 640835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-1	WAP-1	Total Recoverable	Water	EPA 6020B	640431
180-165178-2	WAP-2R	Total Recoverable	Water	EPA 6020B	640431
180-165178-3	WAP-3S	Total Recoverable	Water	EPA 6020B	640431
180-165178-4	WAP-3D	Total Recoverable	Water	EPA 6020B	640431
180-165178-5	WAP-4S	Total Recoverable	Water	EPA 6020B	640431
180-165178-6	WAP-4I	Total Recoverable	Water	EPA 6020B	640431
180-165178-7	WAP-4D	Total Recoverable	Water	EPA 6020B	640431
180-165178-8	WAP-5S	Total Recoverable	Water	EPA 6020B	640431
180-165178-9	WAP-5I	Total Recoverable	Water	EPA 6020B	640431
180-165178-10	WAP-5D	Total Recoverable	Water	EPA 6020B	640431
180-165178-11	WAP-6S	Total Recoverable	Water	EPA 6020B	640431
180-165178-12	WAP-6I	Total Recoverable	Water	EPA 6020B	640431
180-165178-13	WAP-6D	Total Recoverable	Water	EPA 6020B	640431
180-165178-14	WAP-7S	Total Recoverable	Water	EPA 6020B	640431
180-165178-15	WAP-7D	Total Recoverable	Water	EPA 6020B	640431
180-165178-16	WAP-8S	Total Recoverable	Water	EPA 6020B	640431
180-165178-17	WAP-8I	Total Recoverable	Water	EPA 6020B	640431
180-165178-18	WAP-8D	Total Recoverable	Water	EPA 6020B	640431
180-165178-19	WAP-9S	Total Recoverable	Water	EPA 6020B	640431
180-165178-20	WAP-9I	Total Recoverable	Water	EPA 6020B	640431
MB 160-640431/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	640431
LCS 160-640431/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	640431
180-165178-7 MS	WAP-4D	Total Recoverable	Water	EPA 6020B	640431
180-165178-7 MSD	WAP-4D	Total Recoverable	Water	EPA 6020B	640431

Analysis Batch: 640836

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-21	WAP-9D	Total Recoverable	Water	EPA 6020B	640433
180-165178-22	DUP-1	Total Recoverable	Water	EPA 6020B	640433
180-165178-23	DUP-2	Total Recoverable	Water	EPA 6020B	640433
180-165178-24	FB-1	Total Recoverable	Water	EPA 6020B	640433
180-165178-25	CCR-AP-7	Total Recoverable	Water	EPA 6020B	640433
MB 160-640433/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	640433
LCS 160-640433/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	640433
180-165178-25 MS	CCR-AP-7	Total Recoverable	Water	EPA 6020B	640433
180-165178-25 MSD	CCR-AP-7	Total Recoverable	Water	EPA 6020B	640433

Analysis Batch: 640837

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-2	WAP-2R	Total Recoverable	Water	EPA 6010D	640432
180-165178-3	WAP-3S	Total Recoverable	Water	EPA 6010D	640432
180-165178-4	WAP-3D	Total Recoverable	Water	EPA 6010D	640432
180-165178-5	WAP-4S	Total Recoverable	Water	EPA 6010D	640432
180-165178-8	WAP-5S	Total Recoverable	Water	EPA 6010D	640432
180-165178-14	WAP-7S	Total Recoverable	Water	EPA 6010D	640432
180-165178-15	WAP-7D	Total Recoverable	Water	EPA 6010D	640432
180-165178-16	WAP-8S	Total Recoverable	Water	EPA 6010D	640432

Metals (Continued)

Analysis Batch: 640837 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-22	DUP-1	Total Recoverable	Water	EPA 6010D	640434
180-165178-23	DUP-2	Total Recoverable	Water	EPA 6010D	640434
MB 160-640439/1-A	Method Blank	Total Recoverable	Water	EPA 6010D	640439
LCS 160-640439/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6010D	640439

Analysis Batch: 641264

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-5	WAP-4S	Total Recoverable	Water	EPA 6020B	640431
180-165178-8	WAP-5S	Total Recoverable	Water	EPA 6020B	640431
180-165178-15	WAP-7D	Total Recoverable	Water	EPA 6020B	640431
180-165178-23	DUP-2	Total Recoverable	Water	EPA 6020B	640433

General Chemistry

Analysis Batch: 451806

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-1	WAP-1	Total/NA	Water	SM 2540C	
180-165178-25	CCR-AP-7	Total/NA	Water	SM 2540C	
MB 180-451806/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-451806/2	Lab Control Sample	Total/NA	Water	SM 2540C	
180-165178-25 DU	CCR-AP-7	Total/NA	Water	SM 2540C	

Analysis Batch: 451923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-5	WAP-4S	Total/NA	Water	SM 2540C	
180-165178-6	WAP-4I	Total/NA	Water	SM 2540C	
180-165178-7	WAP-4D	Total/NA	Water	SM 2540C	
180-165178-8	WAP-5S	Total/NA	Water	SM 2540C	
180-165178-9	WAP-5I	Total/NA	Water	SM 2540C	
180-165178-10	WAP-5D	Total/NA	Water	SM 2540C	
180-165178-11	WAP-6S	Total/NA	Water	SM 2540C	
180-165178-12	WAP-6I	Total/NA	Water	SM 2540C	
180-165178-13	WAP-6D	Total/NA	Water	SM 2540C	
180-165178-19	WAP-9S	Total/NA	Water	SM 2540C	
180-165178-20	WAP-9I	Total/NA	Water	SM 2540C	
180-165178-21	WAP-9D	Total/NA	Water	SM 2540C	
MB 180-451923/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-451923/2	Lab Control Sample	Total/NA	Water	SM 2540C	
180-165178-7 DU	WAP-4D	Total/NA	Water	SM 2540C	

Analysis Batch: 452044

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-1	WAP-1	Total/NA	Water	EPA 9040C	
180-165178-2	WAP-2R	Total/NA	Water	EPA 9040C	
180-165178-3	WAP-3S	Total/NA	Water	EPA 9040C	
180-165178-4	WAP-3D	Total/NA	Water	EPA 9040C	
180-165178-5	WAP-4S	Total/NA	Water	EPA 9040C	
180-165178-6	WAP-4I	Total/NA	Water	EPA 9040C	
180-165178-7	WAP-4D	Total/NA	Water	EPA 9040C	
180-165178-8	WAP-5S	Total/NA	Water	EPA 9040C	
180-165178-9	WAP-5I	Total/NA	Water	EPA 9040C	

General Chemistry (Continued)

Analysis Batch: 452044 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-10	WAP-5D	Total/NA	Water	EPA 9040C	
180-165178-11	WAP-6S	Total/NA	Water	EPA 9040C	
180-165178-12	WAP-6I	Total/NA	Water	EPA 9040C	
180-165178-13	WAP-6D	Total/NA	Water	EPA 9040C	
180-165178-14	WAP-7S	Total/NA	Water	EPA 9040C	
180-165178-15	WAP-7D	Total/NA	Water	EPA 9040C	
LCS 180-452044/24	Lab Control Sample	Total/NA	Water	EPA 9040C	
180-165178-7 DU	WAP-4D	Total/NA	Water	EPA 9040C	

Analysis Batch: 452068

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-2	WAP-2R	Total/NA	Water	SM 2540C	
180-165178-3	WAP-3S	Total/NA	Water	SM 2540C	
180-165178-4	WAP-3D	Total/NA	Water	SM 2540C	
180-165178-14	WAP-7S	Total/NA	Water	SM 2540C	
180-165178-15	WAP-7D	Total/NA	Water	SM 2540C	
180-165178-16	WAP-8S	Total/NA	Water	SM 2540C	
MB 180-452068/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-452068/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 452069

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-17	WAP-8I	Total/NA	Water	SM 2540C	
180-165178-18	WAP-8D	Total/NA	Water	SM 2540C	
180-165178-22	DUP-1	Total/NA	Water	SM 2540C	
180-165178-23	DUP-2	Total/NA	Water	SM 2540C	
180-165178-24	FB-1	Total/NA	Water	SM 2540C	
MB 180-452069/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-452069/2	Lab Control Sample	Total/NA	Water	SM 2540C	
180-165178-17 DU	WAP-8I	Total/NA	Water	SM 2540C	

Analysis Batch: 452193

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-16	WAP-8S	Total/NA	Water	EPA 9040C	
180-165178-17	WAP-8I	Total/NA	Water	EPA 9040C	
180-165178-18	WAP-8D	Total/NA	Water	EPA 9040C	
180-165178-19	WAP-9S	Total/NA	Water	EPA 9040C	
180-165178-20	WAP-9I	Total/NA	Water	EPA 9040C	
180-165178-21	WAP-9D	Total/NA	Water	EPA 9040C	
180-165178-22	DUP-1	Total/NA	Water	EPA 9040C	
180-165178-23	DUP-2	Total/NA	Water	EPA 9040C	
180-165178-24	FB-1	Total/NA	Water	EPA 9040C	
180-165178-25	CCR-AP-7	Total/NA	Water	EPA 9040C	
LCS 180-452193/1	Lab Control Sample	Total/NA	Water	EPA 9040C	
180-165178-24 DU	FB-1	Total/NA	Water	EPA 9040C	
180-165178-25 DU	CCR-AP-7	Total/NA	Water	EPA 9040C	

Rad

Prep Batch: 636867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-1	WAP-1	Total/NA	Water	PrecSep-21	
180-165178-2	WAP-2R	Total/NA	Water	PrecSep-21	
180-165178-3	WAP-3S	Total/NA	Water	PrecSep-21	
180-165178-4	WAP-3D	Total/NA	Water	PrecSep-21	
180-165178-5	WAP-4S	Total/NA	Water	PrecSep-21	
180-165178-6	WAP-4I	Total/NA	Water	PrecSep-21	
MB 160-636867/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Prep Batch: 636989

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-1	WAP-1	Total/NA	Water	PrecSep_0	
180-165178-2	WAP-2R	Total/NA	Water	PrecSep_0	
180-165178-3	WAP-3S	Total/NA	Water	PrecSep_0	
180-165178-4	WAP-3D	Total/NA	Water	PrecSep_0	
180-165178-5	WAP-4S	Total/NA	Water	PrecSep_0	
180-165178-6	WAP-4I	Total/NA	Water	PrecSep_0	
MB 160-636989/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-636989/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Prep Batch: 636990

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-8	WAP-5S	Total/NA	Water	PrecSep-21	
180-165178-9	WAP-5I	Total/NA	Water	PrecSep-21	
180-165178-10	WAP-5D	Total/NA	Water	PrecSep-21	
180-165178-11	WAP-6S	Total/NA	Water	PrecSep-21	
180-165178-12	WAP-6I	Total/NA	Water	PrecSep-21	
180-165178-13	WAP-6D	Total/NA	Water	PrecSep-21	
180-165178-14	WAP-7S	Total/NA	Water	PrecSep-21	
180-165178-15	WAP-7D	Total/NA	Water	PrecSep-21	
180-165178-16	WAP-8S	Total/NA	Water	PrecSep-21	
180-165178-17	WAP-8I	Total/NA	Water	PrecSep-21	
180-165178-18	WAP-8D	Total/NA	Water	PrecSep-21	
180-165178-19	WAP-9S	Total/NA	Water	PrecSep-21	
180-165178-20	WAP-9I	Total/NA	Water	PrecSep-21	
180-165178-21	WAP-9D	Total/NA	Water	PrecSep-21	
180-165178-22	DUP-1	Total/NA	Water	PrecSep-21	
180-165178-23	DUP-2	Total/NA	Water	PrecSep-21	
180-165178-24	FB-1	Total/NA	Water	PrecSep-21	
180-165178-25	CCR-AP-7	Total/NA	Water	PrecSep-21	
MB 160-636990/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-636990/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
180-165178-25 DU	CCR-AP-7	Total/NA	Water	PrecSep-21	

Prep Batch: 636991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-8	WAP-5S	Total/NA	Water	PrecSep_0	
180-165178-9	WAP-5I	Total/NA	Water	PrecSep_0	
180-165178-10	WAP-5D	Total/NA	Water	PrecSep_0	
180-165178-11	WAP-6S	Total/NA	Water	PrecSep_0	
180-165178-12	WAP-6I	Total/NA	Water	PrecSep_0	
180-165178-13	WAP-6D	Total/NA	Water	PrecSep_0	

Rad (Continued)

Prep Batch: 636991 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-14	WAP-7S	Total/NA	Water	PrecSep_0	
180-165178-15	WAP-7D	Total/NA	Water	PrecSep_0	
180-165178-16	WAP-8S	Total/NA	Water	PrecSep_0	
180-165178-17	WAP-8I	Total/NA	Water	PrecSep_0	
180-165178-18	WAP-8D	Total/NA	Water	PrecSep_0	
180-165178-19	WAP-9S	Total/NA	Water	PrecSep_0	
180-165178-20	WAP-9I	Total/NA	Water	PrecSep_0	
180-165178-21	WAP-9D	Total/NA	Water	PrecSep_0	
180-165178-22	DUP-1	Total/NA	Water	PrecSep_0	
180-165178-23	DUP-2	Total/NA	Water	PrecSep_0	
180-165178-24	FB-1	Total/NA	Water	PrecSep_0	
180-165178-25	CCR-AP-7	Total/NA	Water	PrecSep_0	
MB 160-636991/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-636991/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
180-165178-25 DU	CCR-AP-7	Total/NA	Water	PrecSep_0	

Prep Batch: 640588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-7	WAP-4D	Total/NA	Water	PrecSep-21	
MB 160-640588/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-640588/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
180-165178-7 DU	WAP-4D	Total/NA	Water	PrecSep-21	

Prep Batch: 640591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165178-7	WAP-4D	Total/NA	Water	PrecSep_0	
MB 160-640591/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-640591/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
180-165178-7 DU	WAP-4D	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 PA

eurofins
Environment Testing

Client Information	Sampler: Jon Hill	Lab PM: Hayes, Ken	Carrier Tracking No(s):	COC No.: 180-96232-14503.1
Client Contact: Mark Breting	Phone: 317-473-1325	E-Mail: Ken.Hayes@et.eurofinsus.com	State of Origin: IN	Page: Page 1 of 3
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:	PO #: 0129420-032-001-02			
Email: mark.breting@atcassociates.com	WO #: See Chain			
Project Name: CCR GW Monitoring FB Culley West	Project #: 18016014			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	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:
WAP-1	11.6.23	1400	G	W					(1) 1L only
WAP-2R	11.8.23	1100							
WAP-3S	11.8.23	0830							
WAP-3D	11.8.23	0900							
WAP-4S	11.7.23	1220							
WAP-4I	11.7.23	1300							
WAP-4D	11.7.23	1400							
WAP-5S	11.7.23	1420							
WAP-5I	11.7.23	1500							
WAP-5D	11.7.23	1600							

180-165178 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	Date/Time	Company	Received by	Date/Time	Company
1	J Hill	11.9.23 / 800			11/10/23 0905	EPHANE
2	Relinquished by:	Date/Time	Company	Received by	Date/Time.	Company
3	Relinquished by:	Date/Time.	Company	Received by:	Date/Time:	Company

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

Ver: 06/08/2021

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

370472

Chain of Custody Record HARRISBURG PA

eurofins Environment Testing

Client Information	Sampler: Jon Hall	Lab PM: Hayes, Ken	Carrier Tracking No(s):	COC No: 180-96232-14503.2
Client Contact: Mark Breting	Phone: 317-473-1325	E-Mail: Ken.Hayes@et.eurofinsus.com	State of Origin: IN	Page: Page 2 of 3
Company: Atlas Technical Consultants LLC	PWSID:	Analysis Requested		Job #:
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)
City: Indianapolis	TAT Requested (days):			
State, Zip: IN, 46256	Compliance Project: Δ Yes Δ No			
Phone:	PO #: 0129420-032-001-02			Other:
Email: mark.breting@atcassociates.com	WO #: See Chain			
Project Name: CCR GW Monitoring FB Culley West	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)	9040C, 9056A_ORGFM_28D	6020A, 7470A	2540C_Calcd - TDS	9315_Ra226, 9320_Ra228	Special Instructions/Note:
WAP-6S	11.7.23	1010	G	W					
WAP-6I	11.7.23	1120							
WAP-6D	11.7.23	1240							
WAP-7S	11.8.23	0940							
WAP-7D	11.8.23	1015							
WAP-8S	11.8.23	0630							
WAP-8I	11.8.23	0710							
WAP-8D	11.8.23	0755							
WAP-9S	11.7.23	0730							
WAP-9I	11.7.23	0910							
WAP-9D	11.7.23	1120	↓	↓	↓	↓	↓	↓	

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
1	J Hall	11.9.23 / 800			11/10/23 0905	EHHNE
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

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

370472
HARRISBURG PA

eurofins Environment Testing

Client Information	Sampler: Jon Hall	Lab PM: Hayes, Ken	Carrier Tracking No(s):	COC No: 180-96232-14503.3
Client Contact: Mark Breting	Phone: 317-473-1325	E-Mail: Ken.Hayes@et.eurofinsus.com	State of Origin: IN	Page: Page 3 of 3
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:	PO #: 0129420-032-001-02			
Email: mark.breting@atcassociates.com	WO #: See Chain			
Project Name: CCR GW Monitoring FB Culley West	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, 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		
MS-1	11.7.23	1400	G	W								[illegible] MP-4D
MSD-1	11.7.23	1400										[illegible] MP-4D
MS-2	11.6.23	1300										CCR-AP-7
MSD-2	11.6.23	1300										CCR-AP-7
Dup-1	11.8.23	—										
Dup-2	11.8.23	—										
FB-1	11.8.23	1040										
CCR-AP-7	11.6.23	1300										

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
[signature]	11.9.23 800a		[signature]	11/10/23 0905	EPHNE
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

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

Chain of Custody Record

370472
HARRISBURG PA

eurofins
Environment Testing

Client Information	Sampler: Jon Hill	Lab PM: Hayes, Ken	Carrier Tracking No(s):	COC No.: 180-96232-14503.1
Client Contact: Mark Breting	Phone: 317-473-1325	E-Mail: Ken.Hayes@et.eurofinsus.com	State of Origin: IN	Page: Page 1 of 3
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:	PO #: 0129420-032-001-02			
Email: mark.breting@atcassociates.com	WO #: See Chain			
Project Name: CCR GW Monitoring FB Culley West	Project #: 18016014			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	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:
WAP-1	11.6.23	1400	G	W					(1) 1L only
WAP-2R	11.8.23	1100							
WAP-3S	11.8.23	0830							
WAP-3D	11.8.23	0900							
WAP-4S	11.7.23	1220							
WAP-4I	11.7.23	1300							
WAP-4D	11.7.23	1400							
WAP-5S	11.7.23	1420							
WAP-5I	11.7.23	1500							
WAP-5D	11.7.23	1600							

180-165178 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	Date/Time	Company	Received by	Date/Time	Company
1	J Hill	11.9.23 / 800			11/10/23 0905	EPHANE
2	Relinquished by:	Date/Time	Company	Received by	Date/Time.	Company
3	Relinquished by:	Date/Time.	Company	Received by:	Date/Time:	Company

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

Ver: 06/08/2021

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

370472

Chain of Custody Record HARRISBURG PA

eurofins Environment Testing

Client Information	Sampler: Jon Hall	Lab PM: Hayes, Ken	Carrier Tracking No(s):	COC No: 180-96232-14503.2
Client Contact: Mark Breting	Phone: 317-473-1325	E-Mail: Ken.Hayes@et.eurofinsus.com	State of Origin: IN	Page: Page 2 of 3
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:	PO #: 0129420-032-001-02			
Email: mark.breting@atcassociates.com	WO #: See Chain			
Project Name: CCR GW Monitoring FB Culley West	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)	9040C, 9056A_ORGFM_28D	6020A, 7470A	2540C_Calcd - TDS	9315_Ra226, 9320_Ra228	Special Instructions/Note:
WAP-6S	11.7.23	1010	G	W					
WAP-6I	11.7.23	1120							
WAP-6D	11.7.23	1240							
WAP-7S	11.8.23	0940							
WAP-7D	11.8.23	1015							
WAP-8S	11.8.23	0630							
WAP-8I	11.8.23	0710							
WAP-8D	11.8.23	0755							
WAP-9S	11.7.23	0730							
WAP-9I	11.7.23	0910							
WAP-9D	11.7.23	1120	↓	↓	↓	↓	↓	↓	

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
1	J Hall	11.9.23 / 800			11/10/23 0905	EHHE
2		Date/Time.	Company	Received by	Date/Time.	Company
3		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

370472
HARRISBURG PA

eurofins Environment Testing

Client Information	Sampler: Jon Hall	Lab PM: Hayes, Ken	Carrier Tracking No(s):	COC No: 180-96232-14503.3
Client Contact: Mark Breting	Phone: 317-473-1325	E-Mail: Ken.Hayes@et.eurofinsus.com	State of Origin: IN	Page: Page 3 of 3
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:	PO #: 0129420-032-001-02			
Email: mark.breting@atcassociates.com	WO #: See Chain			
Project Name: CCR GW Monitoring FB Culley West	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, 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		
MS-1	11.7.23	1400	G	W								~~arsenic~~ MAP-4D
MSD-1	11.7.23	1400										~~arsenic~~ MAP-4D
MS-2	11.6.23	1300										CCR-AP-7
MSD-2	11.6.23	1300										CCR-AP-7
Dup-1	11.8.23	—										
Dup-2	11.8.23	—										
FB-1	11.8.23	1040										
CCR-AP-7	11.6.23	1300										

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
Jon Hall	11.9.23 800a			11/10/23 0905	EPHNE
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

Part # 159469-434 MTW EXP 03/24

ORIGIN ID:GTYA (317) 579-4082
MARK BRETING
FB CULLEY WEST VECTREN
3711 DARLINGTON ROAD

NEWBURGH, IN 47630
UNITED STATES US

SHIP DATE: [illegible]OCT23
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
INV:
PO:
REF:
DEPT:

570C1/8CBB/6F4D

RMA:

Uncorrected temp 3.6 °C
Thermometer ID 21
CF -0.6 Initials SR
PT-WI-SR-001 effective 11/8/18

FedEx Express
E

J211020121101uv

FedEx
TRK# 0221 6772 2899 2398

FRI - 10 NOV 10:30A
PRIORITY OVERNIGHT

NX AGCA

15238
PA-US PIT

#9019140 11/09 583J5/F0B2/9AE3

#130297-435 RRDP EXP 07/24

180-165178 Waybill

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:

FedEx Express

J211020121101uv

FedEx
TRK# 0221 **6772 2899 2549**

FRI - 10 NOV 10:30A
PRIORITY OVERNIGHT

NX AGCA

15238
PA-US **PIT**

Uncorrected temp 2.1 °C
Thermometer ID 22
CF -0.4 Initials PM
PT-WI-SR-001 effective 11/8/18

#9019140 11/09 583J5/F0B2/9AE3

ORIGIN ID:GTYA (317) 579-4082
MARK BRETING
FB CULLEY WEST 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:

FedEx Express

E

FedEx
TRK# 0221 6772 2899 2387

FRI - 10 NOV 10:30A
PRIORITY OVERNIGHT

NX AGCA

15238
PA-US PIT

Uncorrected temp 3.1 °C
Thermometer ID 21
CF -0.6 Initials SR
PT-WI-SR-001 effective 11/8/18

#9019140 11/09 583J5/F0B2/9AE3

ORIGIN ID:GTYA (317) 579-4082
MARK BRETING
FB CULLEY WEST 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 22
Thermometer ID
CF -0.4 Initials PM
PT-WI-SR-001 effective 11/8/13

FedEx Express E

FedEx
TRK# 0221 6772 2899 2446

FRI - 10 NOV 10:30A
PRIORITY OVERNIGHT

NX AGCA

15238
PA-US PIT

#9019140 11/09 583J5/FOB2/9AE3

Part # 159469-434 MTW EXP 03/24

ORIGIN ID:GTYA (317) 579-4082
MARK BRETING
FB CULLEY WEST 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 2.9
Thermometer ID 21
CF 0.0 Initials JR

FedEx Express

E

J211020121101uv

570C1/BCBB/6F4D

FedEx
TRK# 0221 6772 2899 2457

FRI – 10 NOV 10:30A
PRIORITY OVERNIGHT

NX AGCA

15238
PA-US PIT

#9019140 11/09 583J5/F0B2/9AE3

Part # 159469-434 MTW EXP 03/24

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 3.8 °C
Thermometer ID 21
CF - 0.0 Initials AR
PT-WI-SR-001 effective 11/8/18

FedEx Express

J211020121101uv

FedEx
TRK# 0221 **6772 2899 2550**

FRI - 10 NOV 10:30A
PRIORITY OVERNIGHT

NX AGCA

15238
PA-US PIT

#9019140 11/09 583J5/F0B2/9AE3

M9019140 11/09 5B3J5/F082/9AE3
NX AGCA
PA-US
15238
PIT
FedEx
TRK# 6772 2899 2398
0221
FRI - 10 NOV 10:30A
PRIORITY OVERNIGHT
Part # 159469-434 MTW EXP 03/24
ORIGIN ID:GTYA (317) 579-4082
MARK BRETING
FB CULLEY WEST VECTREN
3711 DARLINGTON ROAD
NEWBURGH, IN 47630
UNITED STATES US
SHIP DATE: 50CT23
ACTWGT: 55.00 LB MAN
CAD: 0129669/CAFE3514
TO SAMPLE RECEIVING
EUROFINS ENVIRONMENT TESTING NE
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 152382907
(412) 963-7068
INV:
PO:
REF:
DEPT:
RMA:
Uncorrected temp
Thermometer ID
3.6
21
CF -0.1
Initials
PT-WI-SR-001 effective 11/8/18
FedEx
Expr ess
180-165178 Waybill

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:

FedEx Express

E

J211020121101uv

FedEx
TRK# 0221 6772 2899 2549

FRI - 10 NOV 10:30A
PRIORITY OVERNIGHT

NX AGCA

15238
PA-US PIT

Uncorrected temp 2.1 °C
Thermometer ID 22
CF -0.4 Initials PM
PT-WI-SR-001 effective 11/8/18

#9019140 11/09 583J5/FOB2/9AE3

ORIGIN ID:GTYA (317) 579-4082
MARK BRETING
FB CULLEY WEST 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:

FedEx Express E

FedEx
TRK# 0221 **6772 2899 2387**

FRI - 10 NOV 10:30A
PRIORITY OVERNIGHT

NX AGCA

15238 PA-US PIT

Uncorrected temp 3.1 °C
Thermometer ID 21
CF -0.6 Initials SR
PT-WI-SR-001 effective 11/8/18

#9019140 11/09 583J5/F0B2/9AE3

Part # 159469-434 MTW EXP 03/24

ORIGIN ID:GTYA (317) 579-4082
MARK BRETING
FB CULLEY WEST 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:

570C1/3CBB/6F4D

RMA:

Uncorrected temp 2.1
Thermometer ID 22
CF -0.4 Initials PM
PT-WI-SR-001 effective 11/8/18

FedEx Express
E
J211020121101uv

FedEx
TRK# 0221 **6772 2899 2446**

FRI - 10 NOV 10:30A
PRIORITY OVERNIGHT

NX AGCA

15238
PA-US PIT

#159297-435 ... EXP 07/24

#9019140 11/09 583J5/FOB2/0023

Part # 159469-434 MTW EXP 03/24

ORIGIN ID:GTYA (317) 579-4082
MARK BRETING
FB CULLEY WEST 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:

570C1/BCB8/6F4D

RMA:

Uncorrected temp 2.9 °C
Thermometer ID 21
CF -0.0 Initials JR

FedEx Express

E

J211020121101uv

FedEx
TRK# 0221 6772 2899 2457

FRI - 10 NOV 10:30A
PRIORITY OVERNIGHT

NX AGCA

15238
PA-US PIT

#9019140 11/09 583J5/F0B2/9AE3

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:

570C1/8CBB/6F4D

RMA:

Uncorrected temp 3.8 °C
Thermometer ID 21
CF - 0.0 Initials AR
PT-WI-SR-001 effective 11/8/18

FedEx Express
J211020121101uv

FedEx
TRK# 0221 6772 2899 2550

FRI - 10 NOV 10:30A
PRIORITY OVERNIGHT

NX AGCA

15238
PA-US PIT

#9019140 11/09 583J5/FOB2/9AE3

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: 180-499386.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Andy.Johnson@et.eurofinsus.com	State of Origin: Indiana	Page: Page 1 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-165178-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/18/2023			
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 West	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	Ra226/Ra228_GFPC	6020B/3005A (MOD) Custom Sublist	6010D/3005A (MOD) Boron	7470A/7470A_Prep								Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
WAP-1 (180-165178-1)	11/6/23	14:00 Eastern		Water			X	X	X	X	X	X								2	
WAP-2RR (180-165178-2)	11/8/23	11:00 Eastern		Water			X	X	X	X	X	X								2	
WAP-3S (180-165178-3)	11/8/23	08:30 Eastern		Water			X	X	X	X	X	X								2	
WAP-3D (180-165178-4)	11/8/23	09:00 Eastern		Water			X	X	X	X	X	X								2	
WAP-4S (180-165178-5)	11/7/23	12:20 Eastern		Water			X	X	X	X	X	X								2	
WAP-4I (180-165178-6)	11/7/23	13:00 Eastern		Water			X	X	X	X	X	X								2	
WAP-4D (180-165178-7)	11/7/23	14:00 Eastern		Water			X	X	X	X	X	X								2	
WAP-4D (180-165178-7DU)	11/7/23	14:00 Eastern	DU	Water			X	X	X											2	
WAP-4D (180-165178-7MS)	11/7/23	14:00 Eastern	MS	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	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: Fedex	Date/Time: 11/13/23 1700	Company: Eurofins	Received by: M. Pinetta Fedex
Relinquished by:	Date/Time:	Company:	Received by:
Relinquished by:	Date/Time:	Company:	Received by:

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: Johnson, Andy	Carrier Tracking No(s):	COC No: 180-499386.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Andy.Johnson@et.eurofinsus.com	State of Origin: Indiana	Page: Page 2 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note)		Job #: 180-165178-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/18/2023	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:
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 West	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	6020B/3005A (MOD) Custom Sublist	6010D/3005A (MOD) Boron	7470A/7470A_Prep								Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
WAP-4D (180-165178-7MSD)	11/7/23	14:00 Eastern	MSD	Water						X	X	X								2	
WAP-5S (180-165178-8)	11/7/23	14:20 Eastern		Water			X	X	X	X	X	X								2	
WAP-5I (180-165178-9)	11/7/23	15:00 Eastern		Water			X	X	X	X	X	X								2	
WAP-5D (180-165178-10)	11/7/23	16:00 Eastern		Water			X	X	X	X	X	X								2	
WAP-6S (180-165178-11)	11/7/23	10:10 Eastern		Water			X	X	X	X	X	X								2	
WAP-6I (180-165178-12)	11/7/23	11:20 Eastern		Water			X	X	X	X	X	X								2	
WAP-6D (180-165178-13)	11/7/23	12:40 Eastern		Water			X	X	X	X	X	X								2	
WAP-7S (180-165178-14)	11/8/23	09:40 Eastern		Water			X	X	X	X	X	X								2	
WAP-7D (180-165178-15)	11/8/23	10:15 Eastern		Water			X	X	X	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	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: Fedex	Date/Time: 11/13/23 1700	Company	Received by: Fedex	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: M. Pinette	Date/Time: NOV 14 2023 0900	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

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: Johnson, Andy	Carrier Tracking No(s):	COC No: 180-499386.3
Client Contact: Shipping/Receiving	Phone:	E-Mail: Andy.Johnson@et.eurofinsus.com	State of Origin: Indiana	Page: Page 3 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-165178-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/18/2023	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 West	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	6020B/3005A (MOD) Custom Sublist	6010D/3005A (MOD) Boron	7470A/7470A_Prep	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
WAP-8S (180-165178-16)	11/8/23	06:30 Eastern		Water			X	X	X	X	X	X	2	
WAP-8I (180-165178-17)	11/8/23	07:10 Eastern		Water			X	X	X	X	X	X	2	
WAP-8D (180-165178-18)	11/8/23	07:55 Eastern		Water			X	X	X	X	X	X	2	
WAP-9S (180-165178-19)	11/7/23	07:30 Eastern		Water			X	X	X	X	X	X	2	
WAP-9I (180-165178-20)	11/7/23	09:10 Eastern		Water			X	X	X	X	X	X	2	
WAP-9D (180-165178-21)	11/7/23	11:20 Eastern		Water			X	X	X	X	X	X	2	
DUP-1 (180-165178-22)	11/8/23	Eastern		Water			X	X	X	X	X	X	2	
DUP-2 (180-165178-23)	11/8/23	Eastern		Water			X	X	X	X	X	X	2	
FB-1 (180-165178-24)	11/8/23	10:40 Eastern		Water			X	X	X	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	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: 11/13/23 1700	Company: FedEx	Received by: Fedex
Relinquished by: Fedex	Date/Time:	Company	Received by: M. Pinette
Relinquished by:	Date/Time:	Company	Received by:

Date/Time:	Company
Date/Time: NOV 14 2023 0900	Company
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: Johnson, Andy	Carrier Tracking No(s):	COC No: 180-499386.4
Client Contact: Shipping/Receiving	Phone:	E-Mail: Andy.Johnson@et.eurofinsus.com	State of Origin: Indiana	Page: Page 4 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-165178-1
Address: 13715 Rider Trail North,	Due Date Requested: 12/18/2023			
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 West	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	6020B/3005A (MOD) Custom Sublist	6010D/3005A (MOD) Boron	7470A/7470A_Prep	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
CCR-AP-7 (180-165178-25)	11/6/23	13:00 Eastern		Water			X	X	X	X	X	X	2	
CCR-AP-7 (180-165178-25DU)	11/6/23	13:00 Eastern	DU	Water			X	X	X				2	
CCR-AP-7 (180-165178-25MS)	11/6/23	13:00 Eastern	MS	Water						X	X	X	2	
CCR-AP-7 (180-165178-25MSD)	11/6/23	13:00 Eastern	MSD	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: Fedex	Date/Time: 11/13/23 1700	Company:	Received by: M. Pinetta Fedex	Date/Time: NOV 14 2023 0900	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

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: Johnson, Andy	Carrier Tracking No(s):	COC No: 180-499386.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Andy.Johnson@et.eurofinsus.com	State of Origin: Indiana	Page: Page 1 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-165178-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/18/2023			
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 West	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	Ra226/Ra228_GFPC	6020B/3005A (MOD) Custom Sublist	6010D/3005A (MOD) Boron	7470A/7470A_Prep								Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
WAP-1 (180-165178-1)	11/6/23	14:00 Eastern		Water			X	X	X	X	X	X								2	
WAP-2RR (180-165178-2)	11/8/23	11:00 Eastern		Water			X	X	X	X	X	X								2	
WAP-3S (180-165178-3)	11/8/23	08:30 Eastern		Water			X	X	X	X	X	X								2	
WAP-3D (180-165178-4)	11/8/23	09:00 Eastern		Water			X	X	X	X	X	X								2	
WAP-4S (180-165178-5)	11/7/23	12:20 Eastern		Water			X	X	X	X	X	X								2	
WAP-4I (180-165178-6)	11/7/23	13:00 Eastern		Water			X	X	X	X	X	X								2	
WAP-4D (180-165178-7)	11/7/23	14:00 Eastern		Water			X	X	X	X	X	X								2	
WAP-4D (180-165178-7DU)	11/7/23	14:00 Eastern	DU	Water			X	X	X											2	
WAP-4D (180-165178-7MS)	11/7/23	14:00 Eastern	MS	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	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:
Relinquished by: Fedex	Date/Time: 11/13/23 1700	Company:	Received by: M. Pinette Fedex	Date/Time: NOV 14 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:

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: Johnson, Andy	Carrier Tracking No(s):	COC No: 180-499386.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Andy.Johnson@et.eurofinsus.com	State of Origin: Indiana	Page: Page 2 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note)		Job #: 180-165178-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/18/2023	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:
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 West	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	6020B/3005A (MOD) Custom Sublist	6010D/3005A (MOD) Boron	7470A/7470A_Prep							Total Number of containers	Special Instructions/Note:
			Preservation Code:																	
WAP-4D (180-165178-7MSD)	11/7/23	14:00 Eastern	MSD	Water						X	X	X							2	
WAP-5S (180-165178-8)	11/7/23	14:20 Eastern		Water			X	X	X	X	X	X							2	
WAP-5I (180-165178-9)	11/7/23	15:00 Eastern		Water			X	X	X	X	X	X							2	
WAP-5D (180-165178-10)	11/7/23	16:00 Eastern		Water			X	X	X	X	X	X							2	
WAP-6S (180-165178-11)	11/7/23	10:10 Eastern		Water			X	X	X	X	X	X							2	
WAP-6I (180-165178-12)	11/7/23	11:20 Eastern		Water			X	X	X	X	X	X							2	
WAP-6D (180-165178-13)	11/7/23	12:40 Eastern		Water			X	X	X	X	X	X							2	
WAP-7S (180-165178-14)	11/8/23	09:40 Eastern		Water			X	X	X	X	X	X							2	
WAP-7D (180-165178-15)	11/8/23	10:15 Eastern		Water			X	X	X	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	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: Fedex	Date/Time: 11/13/23 1700	Company	Received by: Fedex	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: M. Pinette	Date/Time: NOV 14 2023 0900	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

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: Johnson, Andy	Carrier Tracking No(s):	COC No: 180-499386.3
Client Contact: Shipping/Receiving	Phone:	E-Mail: Andy.Johnson@et.eurofinsus.com	State of Origin: Indiana	Page: Page 3 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-165178-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/18/2023	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 West	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	6020B/3005A (MOD) Custom Sublist	6010D/3005A (MOD) Boron	7470A/7470A_Prep	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
WAP-8S (180-165178-16)	11/8/23	06:30 Eastern		Water			X	X	X	X	X	X	2	
WAP-8I (180-165178-17)	11/8/23	07:10 Eastern		Water			X	X	X	X	X	X	2	
WAP-8D (180-165178-18)	11/8/23	07:55 Eastern		Water			X	X	X	X	X	X	2	
WAP-9S (180-165178-19)	11/7/23	07:30 Eastern		Water			X	X	X	X	X	X	2	
WAP-9I (180-165178-20)	11/7/23	09:10 Eastern		Water			X	X	X	X	X	X	2	
WAP-9D (180-165178-21)	11/7/23	11:20 Eastern		Water			X	X	X	X	X	X	2	
DUP-1 (180-165178-22)	11/8/23	Eastern		Water			X	X	X	X	X	X	2	
DUP-2 (180-165178-23)	11/8/23	Eastern		Water			X	X	X	X	X	X	2	
FB-1 (180-165178-24)	11/8/23	10:40 Eastern		Water			X	X	X	X	X	X	2	

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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: 11/13/23 1700	Company: FedEx	Received by: Fedex
Relinquished by: Fedex	Date/Time:	Company	Received by: M. Pinette
Relinquished by:	Date/Time:	Company	Received by:

Custody Seals Intact: ☐ Yes ☐ 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: Johnson, Andy	Carrier Tracking No(s):	COC No: 180-499386.4
Client Contact: Shipping/Receiving	Phone:	E-Mail: Andy.Johnson@et.eurofinsus.com	State of Origin: Indiana	Page: Page 4 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-165178-1
Address: 13715 Rider Trail North,	Due Date Requested: 12/18/2023	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 West	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	6020B/3005A (MOD) Custom Sublist	6010D/3005A (MOD) Boron	7470A/7470A_Prep	Total Number of containers	Special Instructions/Note:
Preservation Code:														
CCR-AP-7 (180-165178-25)	11/6/23	13:00 Eastern		Water			X	X	X	X	X	X	2	
CCR-AP-7 (180-165178-25DU)	11/6/23	13:00 Eastern	DU	Water			X	X	X				2	
CCR-AP-7 (180-165178-25MS)	11/6/23	13:00 Eastern	MS	Water						X	X	X	2	
CCR-AP-7 (180-165178-25MSD)	11/6/23	13:00 Eastern	MSD	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	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: Fedex	Date/Time: 11/13/23 1700	Company:	Received by: M. Pinette Fedex	Date/Time:	Company
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time: NOV 14 2023 0900	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-165178-1
SDG Number: FB Culley West

Login Number: 165178
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.	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: 180-165178-1
SDG Number: FB Culley West

Login Number: 165178
List Number: 2
Creator: Pinette, Meadow L

List Source: Eurofins St. Louis
List Creation: 11/14/23 01:55 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	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 180-165178-1
SDG Number: FB Culley West

Login Number: 165178
List Number: 3
Creator: Pinette, Meadow L

List Source: Eurofins St. Louis
List Creation: 12/13/23 12:55 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	