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Illinois Environmental Protection Agency
BOW-Permits #15-CCR Coordinator
1021 North Grand Avenue East
P.O. Box 19276
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DATE
11 January 2024

SUBJECT
Sixth Post-Closure Groundwater Monitoring Report
Third Quarter 2023

REFERENCE
Grand Tower Energy Center
Closed Coal Combustion Residuals Impoundment
1820 Power Plant Rd
Grand Tower, Il 62942
ERM Project No. 0599247

To Whom it May Concern:

Environmental Resources Management (ERM) is submitting this report which provides the results and findings of the Grand Tower Energy Center (GTEC) quarterly post-closure groundwater sampling and coal combustion residuals (CCR) impoundment inspection event conducted during the third quarter 2023 at the GTEC facility located at 1820 Power Plant Rd, Grand Tower, Illinois (the “Site”). The third quarter groundwater sampling event took place between 19 September and 20 September 2023, and the impoundment inspection event was conducted on 19 September 2023. A Site location map is provided in Figure 1.

The third quarter 2023 groundwater sampling event was performed in accordance with the post-closure groundwater monitoring program presented within the Grand Tower Operating Permit Application submitted to the Illinois Environmental Protection Administration (IEPA) on 28 October 2021, which was modified in accordance with the Consolidated IEPA Comments dated 17 March 2022. The purpose of the sampling event was to continue the initial five-year period of quarterly groundwater monitoring for the evaluation of the concentration and areal distribution of impacts related to the closed CCR impoundment in Site groundwater. The parameters detected in the groundwater are associated with the historical CCR impoundment, which was capped and closed in 2020. The quarterly results include a summary of field activities, laboratory analytical, and documentation of other associated Site activity, as necessary. It should be noted that this is the sixth post-closure sampling event and that a sufficient amount of monitoring data still does not exist to provide an accurate evaluation of post-closure data trends and whether a statistically significant increase or decrease in the data trends exist during the current five-year post-closure monitoring period.

Third quarter 2023 site activities, performed in accordance with the proposed post-closure groundwater monitoring program, the results of which are summarized below, included:

- Inspection of the final cover system of the CCR impoundment;
- Inspection of the groundwater monitoring well array; and
- Groundwater monitoring activity.

QUARTERLY CCR IMPOUNDMENT INSPECTION

During the third quarter of 2023, an inspection of the CCR impoundment cover system and associated features was completed, and the full quarterly inspection report can be found in Appendix A. The woody vegetation (up to 1”diameter) noted to be within the riprap on the north, west, and southern impoundment cap faces during 2022 was treated with herbicide during the first half of 2023. However, a limited amount of live woody vegetation growth continues to be observed within the riprap. No significant degradation or issues were noted associated with the overall CCR impoundment cover system.

QUARTERLY MONITORING WELL INPSECTION AND GAUGING

During the third quarter of 2023, monitoring well inspections were conducted. The monitoring well protectors and casings were inspected for damage and/or signs of settling that might impact the integrity of the surface seals. The inspection tasks also included gauging total depths as well as static groundwater elevations. Both measurements were referenced from the top of casing (TOC) at each of the Site monitoring wells. Total depth and groundwater level measurements were obtained from the monitoring wells using a water level meter with an accuracy of 0.01 foot. The quarterly monitoring well inspection forms can be found in Appendix B. Based upon these measurements, a shallow groundwater contour map for the Site was developed for the third quarter of 2023. The groundwater gradient is primarily from east to west towards the Mississippi River except during times of flooding events that may cause a reverse flow from west to east for a short period of time (Natural Resource Technology, Phase 1 Hydrogeologic Assessment Report, March 2013). Figure 2 shows monitoring well locations with a groundwater contour and groundwater flow direction arrow, groundwater elevations at each monitoring well, and the Mississippi River elevation at the time of groundwater level gauging.

QUARTERLY GROUNDWATER MONITORING

The Groundwater Protection Standards (GWPS) for the Site are those provided in 35 IAC §845.600(a). Assessment of corrective measures began on 16 June 2022 with the commencement of the initial post-closure groundwater sampling event. During the third quarter 2023 sampling event, 12 monitoring wells (APW-01R, APW-02, APW-

03, APW-04, APW-05R, APW-06D, APW-06S, APW-07, APW-08, APW-09, APW-10D, and APW-10S) were sampled. The monitoring wells were purged prior to sampling using a submersible pump according to United States Environmental Protection Administration (USEPA) low flow purging and sampling procedures ("Low Stress Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells" revised September 19, 2017). The pump intake was placed within the screened interval of each monitoring well sampled and stabilization measurements were collected using a calibrated YSI Professional Plus meter during purging activities for the collection of pH, specific conductivity, temperature, dissolved oxygen, and oxidation reduction potential (ORP) readings. Turbidity readings were also collected from each monitoring well using a Hach 2100Q Turbidimeter. Well purging continued until stabilization of each field parameter was achieved according to USEPA guidelines for low-flow sampling. Once the field parameters stabilized, the YSI meter was disconnected, and groundwater samples were collected for analysis using the same dedicated polyethylene tubing that was used to purge the well. Field parameter measurements collected during this sampling event were recorded on field data forms. Copies of the field data forms are included in Appendix C.

The groundwater samples collected were placed in laboratory-provided sample containers for analysis by Teklab, Inc. located in Collinsville, IL which is an IEPA-approved laboratory. Samples were transported under chain-of-custody procedures to the laboratory for analytical testing within laboratory provided coolers containing ice. The laboratory analytical report for the third quarter 2023 sampling event is included in Appendix D.

In accordance with the 3 March 2022 draft comments received from the IEPA Groundwater Section associated with the post-closure groundwater monitoring program contained in the Operating Permit Application submitted to the IEPA on 28 October 2021, the IEPA evaluates the efficacy of corrective actions for closed CCR impoundments through the comparison of the groundwater analytical results to the GWPS contained in 35 IAC §845.600. Under 35 IAC §845.600, the following groundwater parameters are to be monitored:

- Antimony
- Arsenic
- Barium
- Beryllium
- Boron
- Cadmium
- Chloride
- Chromium
- Cobalt
- Fluoride
- Lead
- Lithium
- Mercury
- Molybdenum
- pH
- Selenium
- Sulfate
- Thallium
- TDS
- Radium 226/228
- Calcium
- Turbidity

GROUNDWATER ANALYTICAL RESULTS

The analytical results for the post-closure groundwater sampling event conducted during the third quarter 2023 are presented in Table 1. During the third quarter 2023

sampling event, the following analytes were detected in the listed wells above the GWPS:

- Sulfate: APW-02
- Arsenic: APW-06D, APW-10S
- Boron: APW-02, APW-03, APW-05R, APW-06D, APW-06S,
- Calcium: APW-02, APW-03, APW-05R, APW-06D, APW-06S, APW-07, APW-10D, APW-10S
- Turbidity: APW-01R, APW-02, APW-04, APW-05R, APW-06D, APW-07, APW-08, APW-10D, APW-10S
- Lithium: APW-02, APW-03, APW-04, APW-05R, APW-06S
- Molybdenum: APW-02, APW-05R, APW-06S

APW-10S, located approximately one-half mile south of the closed CCR impoundment, continues to exhibit elevated arsenic concentrations. However, the occurrence of arsenic in this well is not considered to be related to the closed CCR impoundment due to its distance and location hydraulically side gradient in relation to the Site. Additionally, the monitoring wells located between the closed CCR impoundment (APW-03, APW-07, APW-08, and APW-09) and APW-10D do not exhibit arsenic concentration above the GWPS.

The GTEC CCR impoundment is currently in Corrective Action Monitoring (CAM). After at least eight quarterly CAM events have been completed, the groundwater sampling results will be evaluated to determine if statistically significant increases or decreases have occurred after cap and closure occurred in 2020 in accordance with 35 IAC Section §845.640(f). The statistical evaluation of the first eight CAM groundwater sampling events is anticipated to be completed during the first quarter of 2024. In accordance with 35 IAC Section §845.550(a) an Annual Groundwater Monitoring and Corrective Action Report will also be submitted for the preceding calendar year no later than January 31st of 2024.

At the end of the current five-year monitoring and reporting post-closure time frame, a groundwater performance monitoring report will be submitted to IEPA to either demonstrate restoration of groundwater quality to Class I standards or presents a continued groundwater monitoring plan for an additional five years. In addition, the results will be compared to the modeled concentrations to evaluate if a decreasing trend, as defined through modeling, is occurring at the predicted rate. Significant changes from the model results will lead to additional calibration and assessment of future expected rates of decrease for the constituents of concern (COCs).

SUMMARY AND CONCLUSIONS

Based upon the results of the third quarter 2023 groundwater sampling event, well inspection, and CCR impoundment inspection, the following observations and conclusions have been made:

- Similar to the groundwater sampling results obtained during the eight pre-closure sampling events in 2017 to 2018, and six post-closure groundwater sampling events, concentrations of COCs above the GWPS continue to be detected at well locations downgradient of the closed CCR impoundment.
- Boron has historically been the key indicator for corrective action and continued monitoring of groundwater at the Site. Incorporating data from the eight rounds of pre-closure groundwater sampling conducted during 2017 and 2018, as well as the six post groundwater monitoring events, boron continues to demonstrate a decreasing trend at APW-05R and is now below the analytical laboratory detection limit at APW-04.
- Historically, woody vegetation has been noted on the impoundment cap and treated with herbicide. ERM will continue to monitor and address woody vegetation on the impoundment cap and notify facility personnel so they manage appropriately. No significant degradation or issues were noted associated with the overall CCR impoundment cover system.

If you have any questions, please contact me at (314) 447-7237

Sincerely,

Randy Homburg
Managing Consultant

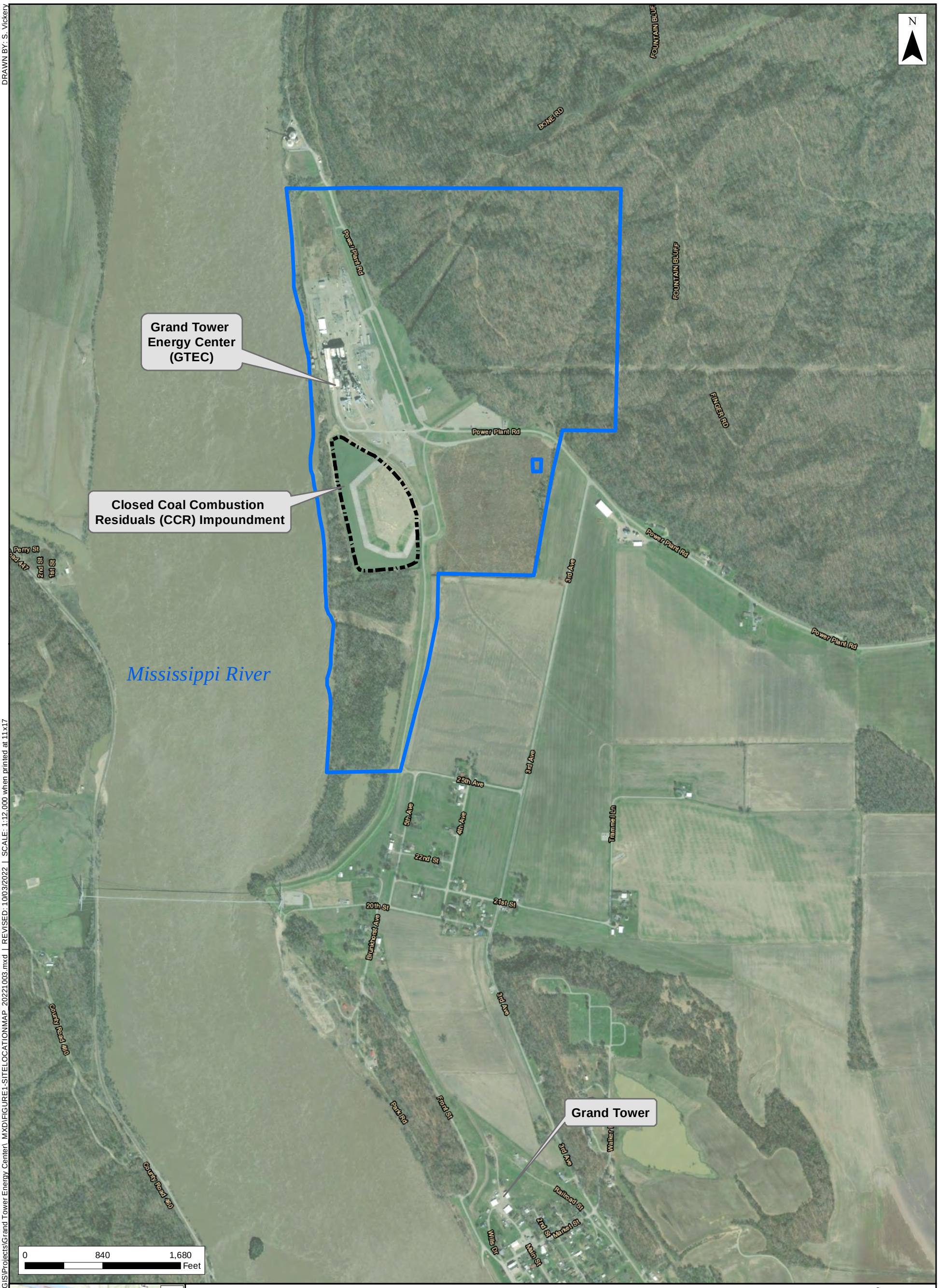
Alan J. Cork, P.E.
Partner, Engineer

Attachments:
cc: Mr. John Brodhead, Grand Tower Energy Center (electronic)

FIGURES

DRAWN BY: S. Vickery

FILE: \\usbdcfs02\data\Philadelphia\Team\DMM\GIS\Projects\Grand Tower Energy Center_MXD\FIGURE1-SITELOCATIONMAP_20221003.mxd | REVISED: 10/03/2022 | SCALE: 1:12,000 when printed at 11x17



Legend

- Closed Coal Combustion Residuals (CCR) Impoundment
- Approximate Parcel Boundary

Notes:
1. CCR Surface Impoundment Closed Prior to July 31, 2021
2. World Imagery (3/24/2021)

Source: Esri - World Topoographic Map; NAD 1983 StatePlane Illinois West FIPS 1202 Feet

Figure 1
Site Location Map
Grand Tower Energy Center, LLC
Grand Tower, Ilinois
Jackson County

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Power Plant Rd

N

APW-01R
329.41

APW-05R
327.69

APW-02
327.8

APW-04
329.41

327.75

329.25

329.5

APW-06S
328.2

APW-06D
328.59

329

APW-03
329.34

APW-09
329.84

329.75

328

328.75

328.5

APW-07
328.52

328.25

APW-08
329.62

Mississippi River

*Mississippi River
Elevation = 327.73

APW-10D
329.96

APW-10S
328.29

0 250 500 Feet

25th Ave

N

0 0.425 0.85 Miles

Legend

- Monitoring Well Location
- Groundwater Contour (0.25 Ft. Interval) - Dashed where inferred
- Groundwater Flow Direction
- 348.37 Groundwater Elevation

Notes:
1. CCR Surface Impoundment Closed Prior to July 31, 2021
2. Date of gauging September 19, 2023
3. Ft AMSL - Feet Above Mean Sea Level
4. (D) - Designated Wells not used in contouring
5. * River stage at Mississippi River Gauge at Grand Tower, IL (NGVD29) (https://rivergages.mvr.usace.army.mil/WaterControl/shefdata2.cfm?sid=CE358576&d=31&dt=E)
6. Contours are dashed where inferred
7. BING Imagery, 2022

Figure 2
Sampling Event Results
September 2023
Grand Tower Energy Center, LLC
Grand Tower, Illinois
Jackson County

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FILE: M:\IS\Projects\G-L\Grand Tower Energy Center\GrandTower_IL_MXDPRO\GroundwaterContour_SEPT2023\GroundwaterContour_SEPT2023 - Copy.aprx | REVISED: 01/10/2024 | SCALE: 1:3,400 when printed at 11x17

Source: Esri - World Topoographic Map; NAD 1983 StatePlane Illinois West FIPS 1202 Feet

TABLES

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling					
Sample ID				**APW-1R-20170907**	**APW-1R-20170927**	**APW-1R-20171018**	**APW-1R-20171108**	**APW-1R-20171127**	**APW-1R-20171228**	**APW-1R-20180117**	**APW-1R-20180207**	**APW-1R-WG-20220615**	**APW-01R-WG-20220915**	**APW-01R-WG-20221130**	**APW-01R-WG-20230202**	**APW-01R-WG-20230627**	**APW-01R-WG-20230920**
Location ID				**APW-01R**	**APW-01R**	**APW-01R**	**APW-01R**	**APW-01R**	**APW-01R**	**APW-01R**	**APW-01R**	**APW-01R**	**APW-01R**	**APW-01R**	**APW-01R**	**APW-01R**	**APW-01R**
Sample Date				**09/05/2017**	**09/27/2017**	**10/18/2017**	**11/08/2017**	**11/27/2017**	**12/28/2017**	**01/17/2018**	**02/07/2018**	**06/15/2022**	**09/15/2022**	**11/30/2022**	**02/02/2023**	**06/27/2023**	**09/20/2023**
Sample Type				**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**														
UNSPECIFIED																	
Fluoride	N	mg/L	4	0.15	0.17	0.16	0.12	0.14	0.15	0.18	0.16	0.21	0.15	0.18	0.17	0.14	0.17
Radium-226	N	pCi/L	NS	0.25 ± .12 U	0.18 ± .09 U	0.307 ± .320	0.13 ± 0.43 U	-0.07 ± 0.16 U	0.23 ± 0.1 U	0.03 ± 0.07 U	-0.04 ± 0.08 U	0.0323 ± 0.141 U	0.24 ± 0.1 U	0.4 ± 0.12 U	0.16 ± 0.169 J	0.27 ± 0.11 U	0.32 ± 0.11 U
Radium-228	N	pCi/L	NS	2.29 ± .98	0.51 ± .39 U	0.12 ± .332	0.57 ± 0.33 U	0.47 ± 0.54 U	0.04 ± 0.34 U	0.98 ± 0.62 J	0.22 ± 0.34 U	0.661 ± 0.257	0.43 ± 0.49 UQM-	0.41 ± 0.56 U	0.531 ± 0.284	0.85 ± 0.61 J	0.32 ± 0.56 U
Sulfate	N	mg/L	400	41	65	65	54	58	88	78	79	33	73 S	69	74	37	79
CALC																	
Radium-226/228	N	pCi/L	5									0.693 ± 0.293	0.67 ± 0.59 U	0.81 ± 0.68 U	0.691 ± 0.330	1.12 ± 0.72 U	0.64 ± 0.67 U
FIELD PARAM																	
Turbidity, Field	N	NTU	17.96[1]									33.9	31.7	31.7	89.5	83.2	133
GEN CHEM																	
Chloride	N	mg/L	200	5 U	5 U	5 U	5 U	5 U	9	11	10	2	7	7	7	4 U	5
Dissolved Solids, Total	N	mg/L	1200	400	428	376	358 R	412	474	434	392	342	420 H	385	384	328	355
pH, Lab	N	pH units	6.22-9.0[2]	6.64	6.54	6.6	6.8	7.11	6.96	7.09	6.52	6.98	6.91	6.43	6.57	6.53 H	6.66 H
METALS																	
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0012	0.001 U	0.001 U	0.001	0.0011	0.0016
Arsenic	T	mg/L	0.01	0.0012	0.0012	0.001 U	0.0012	0.0011	0.001 U	0.0011	0.0011	0.0019	0.0019	0.0021	0.0016	0.0013	0.0029
Barium	D	mg/L	2									0.16	0.153	0.162 B	0.155	0.164	0.21
Barium	T	mg/L	2	0.168	0.193	0.171	0.176	0.165	0.178	0.182	0.18	0.197	0.185	0.199	0.178	0.168	0.202
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									0.163	0.244	0.219	0.205	0.249	0.204
Boron	T	mg/L	2	0.218	0.251	0.238	0.211	0.225	0.329	0.357	0.311	0.228	0.242	0.222	0.221	0.176	0.18
Cadmium	D	mg/L	0.005									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2[1]									85.6	83.8 S	73.9	71.4	66.4	72.1
Calcium	T	mg/L	103.2[1]	84.3 S	93 S	86.2 S	88.2	91.2 S	91	97.1	85.8 S	90.3	91.4	79.7	75.5 S	66.8 B	59.2 S
Chromium	D	mg/L	0.1									0.0009 J	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0023	0.0021	0.0033	0.001 U	0.001 U	0.0018	0.0015	0.0015	0.0031	0.0034	0.0041	0.0022	0.0015 U	0.0085
Cobalt	D	mg/L	0.006									0.0002 J	0.001 U	0.001 U	0.001 U	0.001 U	0.0012
Cobalt	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0017	0.0017	0.0031	0.0013	0.0014	0.0041
Iron	T	mg/L	NS									1.42					
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0013	0.0062	0.0014	0.001 U	0.001 U	0.0026
Lithium	D	mg/L	0.04									0.0127	0.0156	0.0139	0.0135	0.015	0.0211
Lithium	T	mg/L	0.04	0.0155	0.018	0.0173	0.0175	0.018	0.0179	0.0164	0.0159	0.0171	0.0169	0.0155	0.0157	0.0142	0.0147
Manganese	T	mg/L	NS									0.139					
Mercury	D	mg/L	0.002										0.0002 U				
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Molybdenum	T	mg/L	0.1	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Nickel	D	mg/L	NS									0.0043		0.0061			
Nickel	T	mg/L	NS	0.0044	0.0062	0.0054	0.004	0.0038	0.0046	0.005	0.0057	0.0083		0.012			
Selenium	D	mg/L	0.05									0.0028	0.0032	0.0033	0.0032	0.0032	0.0037
Selenium	T	mg/L	0.05	0.0038	0.004	0.0034	0.0044	0.0041	0.004	0.004	0.0037	0.0028	0.0038	0.0035	0.0037	0.0033	0.0037
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0014	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled prior to closure of CCR impoundment									Post-Closure Sampling								
			Sample ID Location ID Sample Date Sample Type	APW-2-20170907 APW-02 09/06/2017 N	APW-2-20170927 APW-02 09/28/2017 N	APW-2-20171020 APW-02 10/20/2017 N	APW-2-20171109 APW-02 11/09/2017 N	APW-2-20171129 APW-02 11/29/2017 N	APW-2-20171227 APW-02 12/27/2017 N	APW-2-20180119 APW-02 01/19/2018 N	APW-2-20180207 APW-02 02/07/2018 N	APW-02-WG-20220616 APW-02 06/16/2022 N	APW-02-WG-20220914 APW-02 09/14/2022 N	DUP-002-WG-20220914 APW-02 09/14/2022 FD	APW-02-WG-20221129 APW-02 11/29/2022 N	DUP-02-WG-20221129 APW-02 11/29/2022 FD	APW-02-WG-20230201 APW-02 02/01/2023 N	DUP-02-WG-20230201 APW-02 02/01/2023 FD	APW-02-WG-20230627 APW-02 06/27/2023 N	DUP-02-WG-20230627 APW-02 06/27/2023 FD	APW-02-WG-20230920 APW-02 09/20/2023 N
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**																		
UNSPECIFIED																					
Fluoride	N	mg/L	4	0.24	0.26	0.25	0.24	0.24	0.25	0.26	0.24	0.25	0.22	0.22	0.25	0.26	0.23	0.22	0.22	0.22	0.24
Radium-226	N	pCi/L	NS	1.06 ± 0.21	0.03 ± 0.1 U	-0.132 ± 0.410	1.47 ± 0.26		0.33 ± 0.12 U	0.47 ± 0.15 U	0.97 ± 0.23 J	0.159 ± 0.181 J	0.27 ± 0.1 UQDR	0.14 ± 0.07 U	0.5 ± 0.14 U	0.35 ± 0.12 U	0.0737 ± 0.256 U	0.175 ± 0.279 J	0.21 ± 0.1 U	-0.05 ± 0.07 U	0.38 ± 0.12 U
Radium-228	N	pCi/L	NS	1.98 ± 0.95	-0.01 ± 0.6 U	0.504 ± 0.378	0.91 ± 0.36 J		0.95 ± 0.52 J	1.08 ± 0.59	0.99 ± 0.5 J	0.308 ± 0.236 J3U	0.4 ± 0.48 UQDR	2.81 ± 1.03	0.24 ± 0.44 U	0.27 ± 0.55 U	1.07 ± 0.466	0.981 ± 0.290	-0.42 ± 0.6 U	0.13 ± 0.52 U	3.71 ± 0.93
Sulfate	N	mg/L	400	462	460	472 S	479	472	426	443	416	496	491	490	418	438	459	459	500	465	460
CALC																					
Radium-226/228	N	pCi/L	5									0.467 ± 0.297 J	0.67 ± 0.58 U	2.95 ± 1.1	0.74 ± 0.58 U	0.62 ± 0.67 U	1.14 ± 0.532	1.16 ± 0.402	0.21 ± 0.7 U	0.13 ± 0.59 U	4.09 ± 1.05
FIELD PARAM																					
Turbidity, Field	N	NTU	17.96[1]									38	19.2		132		93.6		104.3		97
GEN CHEM																					
Chloride	N	mg/L	200	13	12	11	11	12	12	12	12	9	11	10	9	9	10	10	7	8	7
Dissolved Solids, Total	N	mg/L	1200	858	880	934	916	870	848	836	888	930	890 H	905 H	885	856	852	866	920	870	845
pH, Lab	N	pH units	6.22-9.0[2]	7.09	7.05	7.08	7.07	7.05	7.14	7.06	6.96	7.21	7.32	7.25	7.01	7.02	6.98	7.05	6.9 H	7.03 H	7.15 H
METALS																					
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0021	0.0006 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0117	0.0048	0.0049	0.0012	0.0187	0.016	0.0138	0.011	0.0107	0.0072
Arsenic	T	mg/L	0.01	0.0199	0.0147	0.0212	0.017	0.0169	0.0157	0.0148	0.0243	0.0158	0.026	0.0176	0.022	0.0173	0.0185	0.0175	0.0148	0.0146	0.0093
Barium	D	mg/L	2									0.154	0.123	0.135	0.125 B	0.148 B	0.187	0.154	0.142	0.145	0.133
Barium	T	mg/L	2	0.479	0.355	0.685	0.44	0.427	0.338	0.351	0.739	0.237	0.408	0.238	0.254	0.218	0.214	0.159	0.149	0.206	0.152
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011	0.002 U	0.001 U	0.001 U	0.001 SU	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									8.17	7.49 S	7.9	6.656	6.63	8.21	7.39	8.97	9.24	8.91
Boron	T	mg/L	2	8.16	8.73	8.94 S	9	8.98	8.39	8.19	8.24	8.13	9.43	8.72	8.97 S	7.69	7.75	8.32 S	9.14	9.51 S	8.24
Cadmium	D	mg/L	0.005									0.0003 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0006 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2[1]									175	136 S	165	96.1	129	108	144	147	148	151
Calcium	T	mg/L	103.2[1]	148	145	171 S	157	158	135	134	175	189	198	178	145 S	149	144	149 S	161 B	167 S	132
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0374	0.0455	0.0503	0.0235	0.014	0.0566	0.127	0.112	0.0254	0.0148	0.0066	0.0064	0.0054	0.0052	0.0022	0.0024	0.0079	0.008
Cobalt	D	mg/L	0.006									0.0003 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.0057	0.0023	0.0097	0.0041	0.0038	0.0018	0.0028	0.011	0.0011 J	0.0044	0.0011	0.0015	0.0011	0.001 U	0.001 U	0.001 U	0.0016	0.001 U
Iron	T	mg/L	NS									11.7									
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.0115	0.0054	0.0201	0.0096	0.0075	0.0031	0.0048	0.0239	0.0022	0.0119	0.0033	0.0033	0.0034	0.0027	0.0023	0.0025	0.0029	0.002
Lithium	D	mg/L	0.04									0.037	0.0374	0.0404	0.028	0.0356	0.0425	0.0387	0.0442	0.0455	0.0583
Lithium	T	mg/L	0.04	0.05	0.0455	0.0647	0.0521	0.0542	0.0474	0.045	0.0604	0.0507	0.0559	0.0456	0.0386	0.0411	0.0417	0.044	0.0459	0.048	0.0422
Manganese	T	mg/L	NS									0.752									
Mercury	D	mg/L	0.002										0.0002 U	0.0002 U							
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.00043	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.201	0.139	0.156	0.0337	0.145	0.151	0.159	0.227	0.227	0.214
Molybdenum	T	mg/L	0.1	0.172	0.147	0.214	0.175	0.165	0.111	0.0951	0.131	0.24	0.174	0.174	0.128	0.119	0.165	0.16	0.229	0.252	0.198
Nickel	D	mg/L	NS									0.0039			0.0022	0.001 U					
Nickel	T	mg/L	NS	0.0288	0.0263	0.0412	0.0202	0.0135	0.0295	0.0631	0.0725	0.0142			0.0045	0.0047					
Selenium	D	mg/L	0.05									0.001 U	0.001 U	0.001 U	0.0071	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	D	mg/L	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	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling					
Sample ID				**APW-3-20170907**	**APW-3-20170929**	**APW-3-20171020**	**APW-3-20171110**	**APW-3-20171129**	**APW-3-20171228**	**APW-3-20180119**	**APW-3-20180208**	**APW-03-WG-20220616**	**APW-03-WG-20220915**	**APW-03-WG-20221130**	**APW-03-WG-20230130**	**APW-03-WG-20230626**	**APW-03-WG-20230919**
Location ID				**APW-03**	**APW-03**	**APW-03**	**APW-03**	**APW-03**	**APW-03**	**APW-03**	**APW-03**	**APW-03**	**APW-03**	**APW-03**	**APW-03**	**APW-03**	**APW-03**
Sample Date				**09/06/2017**	**09/29/2017**	**10/20/2017**	**11/10/2017**	**11/29/2017**	**12/28/2017**	**01/19/2018**	**02/08/2018**	**06/16/2022**	**09/15/2022**	**11/30/2022**	**01/30/2023**	**06/26/2023**	**09/19/2023**
Sample Type				**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**														
UNSPECIFIED																	
Fluoride	N	mg/L	4	0.28	0.29	0.29	0.31	0.27	0.29	0.29	0.34	0.26	0.2	0.26	0.23	0.23	0.25
Radium-226	N	pCi/L	NS	0.53 ± .18 U	0.04 ± 0.09 U	0.409 ± 0.426	0.18 ± 0.11 U	0.33 ± 0.17 U	0.2 ± 0.1 U	0.1 ± 0.1 U	0.31 ± 0.15 U	0.201 ± 0.155	0.56 ± 0.13 U	0.19 ± 0.1 U	0.293 ± 0.212	0.23 ± 0.11 U	0.2 ± 0.09 U
Radium-228	N	pCi/L	NS	2.05 ± .96	1.01 ± 0.57	0.492 ± 0.373	0.72 ± 0.37 J	0.31 ± 0.49 U	0.37 ± 0.44 U	1.32 ± 0.68	0.06 ± 0.36 U	1.89 ± 0.26 J3	0.4 ± 0.5 UQDR	0.67 ± 0.59 U	0.119 ± 0.430 U	0.61 ± 0.54 U	0.85 ± 0.52 J
Sulfate	N	mg/L	400	175	222	201	207	204	168	152	194	393	150	226	322	292	280
CALC																	
Radium-226/228	N	pCi/L	5									2.09 ± 0.303	0.96 ± 0.63 U	0.86 ± 0.69 U	0.412 ± 0.479 J	0.84 ± 0.65 U	1.05 ± 0.61 U
FIELD PARAM																	
Turbidity, Field	N	NTU	17.96[1]									40.3	56.1	103	50.7	6.04	2.72
GEN CHEM																	
Chloride	N	mg/L	200	22	21	21	22	19	20	16	23	20	16	20	21	17	16
Dissolved Solids, Total	N	mg/L	1200	464	514	486	450	554	504	498	456	724	602 H	610	524	614	636
pH, Lab	N	pH units	6.22-9.0[2]	7.88	7.46	7.65	7.93	7.5	7.48	7.26	7.78	7.85	7.46	7.21	7.45	7.77 H	7.84 H
METALS																	
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0015	0.0014	0.0024	0.002	0.0016	0.0019
Arsenic	T	mg/L	0.01	0.0022	0.0029	0.0021	0.0018	0.0023	0.0024	0.0028	0.0018	0.002	0.0046	0.0059	0.003	0.004	0.0017
Barium	D	mg/L	2									0.139	0.124	0.108 B	0.139	0.13	0.136
Barium	T	mg/L	2	0.111	0.146	0.104	0.0814	0.121	0.1	0.15	0.0806	0.158	0.181	0.19	0.135	0.155	0.137
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									4.23	1.49	2.99	4.98	4.64	4.11
Boron	T	mg/L	2	4.16	4.21 S	4.7	4.67	4.44 S	4.52	4.08	4.92	4.27	1.84	3.59	4.94	4.67	4.19 S
Cadmium	D	mg/L	0.005									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0002 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2[1]									174	125	101	121	125	137
Calcium	T	mg/L	103.2[1]	86.3	104 S	88.1	74.9	116 S	95	101	77.1	153	143	115	111	139 B	124 S
Chromium	D	mg/L	0.1									0.0011 J	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0081	0.0053	0.0026	0.001 U	0.001 U	0.005	0.0025	0.001 U	0.0044	0.0083	0.0118	0.0019	0.0241	0.0015 U
Cobalt	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.001 U	0.0015	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0005 J	0.0014	0.0021	0.001 U	0.0014	0.001 U
Iron	T	mg/L	NS									1.66					
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.0021	0.0042	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0013	0.0023	0.0029	0.001 U	0.0044	0.001 U
Lithium	D	mg/L	0.04									0.0338	0.0288	0.0266	0.0275	0.0262	0.0406
Lithium	T	mg/L	0.04	0.0258	0.0262	0.0259	0.0245	0.0308	0.027	0.035	0.0239	0.0361	0.0329	0.029	0.0276	0.0352	0.0312
Manganese	T	mg/L	NS									0.321					
Mercury	D	mg/L	0.002										0.0002 U				
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.057	0.0342	0.0648	0.0521	0.0656	0.0487
Molybdenum	T	mg/L	0.1	0.0778	0.0754	0.0761	0.0713	0.0684	0.0748	0.0824	0.0849	0.0601	0.0413	0.0621	0.0528	0.0553	0.0558
Nickel	D	mg/L	NS									0.0016		0.0011			
Nickel	T	mg/L	NS	0.0055	0.0051	0.0019	0.001 U	0.001 U	0.0026	0.0025	0.001	0.0033		0.01			
Selenium	D	mg/L	0.05									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling					
Sample ID				**APW-4-20170907**	**APW-4-20170929**	**APW-4-20171019**	**APW-4-20171108**	**APW-4-20171128**	**APW-4-20171228**	**APW-4-20180119**	**APW-4-20180208**	**APW-04-WG-20220615**	**APW-04-WG-20220915**	**APW-04-WG-20221128**	**APW-04-WG-20230202**	**APW-04-WG-20230627**	**APW-04-WG-20230920**
Location ID				**APW-04**	**APW-04**	**APW-04**	**APW-04**	**APW-04**	**APW-04**	**APW-04**	**APW-04**	**APW-04**	**APW-04**	**APW-04**	**APW-04**	**APW-04**	**APW-04**
Sample Date				**09/08/2017**	**09/29/2017**	**10/19/2017**	**11/08/2017**	**11/28/2017**	**12/28/2017**	**01/19/2018**	**02/08/2018**	**06/15/2022**	**09/15/2022**	**11/28/2022**	**02/02/2023**	**06/27/2023**	**09/20/2023**
Sample Type				**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**														
UNSPECIFIED																	
Fluoride	N	mg/L	4	0.18	0.19	0.18	0.17	0.18	0.17	0.17	0.16	0.2	0.17	0.17	0.15	0.16	0.15
Radium-226	N	pCi/L	NS	0.38 ± 0.16 U	0.02 ± 0.08 U	-0.272 ± 0.328	0.15 ± 0.09 U	0.09 ± 0.13 U	0.17 ± 0.09 U	-0.05 ± 0.08 U	0.13 ± 0.11 U	0.103 ± 0.164 J	0.5 ± 0.13 U	0.11 ± 0.08 U	0.352 ± 0.232	0.33 ± 0.12 U	0.09 ± 0.07 U
Radium-228	N	pCi/L	NS	0.95 ± 0.64 J	-0.45 ± 0.68 U	0.53 ± 0.382	0.64 ± 0.31 U	0.88 ± 0.64 J	0.73 ± 0.36 J	0.34 ± 0.51 U	0.64 ± 0.48 U	0.245 ± 0.235 J	2.15 ± 0.78	1.47 ± 0.67	0.961 ± 0.296	0.92 ± 0.68 J	1.18 ± 0.67
Sulfate	N	mg/L	400	126	116	109	120	107	100	99	92	94	83	68	62	65	66
CALC																	
Radium-226/228	N	pCi/L	5									0.348 ± 0.287 J	2.65 ± 0.91	1.58 ± 0.75 U	1.31 ± 0.376	1.25 ± 0.8 U	1.27 ± 0.74 U
FIELD PARAM																	
Turbidity, Field	N	NTU	17.96[1]									19.1	18.3	26.5	37.3	38.7	21.6
GEN CHEM																	
Chloride	N	mg/L	200	12	11	11	11	11	11	10	11	12	10	11	10	12	9
Dissolved Solids, Total	N	mg/L	1200	460	484	452	472	492	514	424	528	430	436 H	446	416	432	476
pH, Lab	N	pH units	6.22-9.0[2]	7.31	7.33	7.31	7.42	7.32	7.33	7.25	7.2	7.41	7.51	7.34	7.21	7.39 H	7.56 H
METALS																	
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0013	0.0013	0.0021	0.0011	0.0014	0.0016
Arsenic	T	mg/L	0.01	0.0025	0.0018	0.0016	0.0018	0.0016	0.0014	0.0016	0.0015	0.0015	0.0029	0.0016	0.0017	0.002	0.0019
Barium	D	mg/L	2									0.116	0.132	0.13 B	0.116	0.122	0.138
Barium	T	mg/L	2	0.145	0.139	0.123	0.13	0.128	0.141	0.155	0.144	0.143	0.165	0.133	0.134	0.138	0.131
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									1.41	0.875	7.33	0.619	0.908	0.591
Boron	T	mg/L	2	2.37	2.16	2.12	2.21	2.03	1.7	1.33	1.18	1.88	0.973	0.653	0.65	0.876	0.572
Cadmium	D	mg/L	0.005									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2[1]									111	93.7	108	93.3 S	88.3	101 S
Calcium	T	mg/L	103.2[1]	101 S	105	89.4	97.5	107	107	113	113	97.8	108 S	102	100	97.5 B	87.9
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0041	0.0025	0.0017	0.001 U	0.001 U	0.0027	0.0037	0.001 U	0.0015 U	0.0251	0.0043	0.0016	0.0015 U	0.0023
Cobalt	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.0013	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0006 J	0.0025	0.001 U	0.001 U	0.001 U	0.001 U
Iron	T	mg/L	NS									0.563					
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0016	0.001 U	0.001 U	0.001 U	0.001 U
Lithium	D	mg/L	0.04									0.0264	0.0283	0.0355	0.0292	0.0311	0.0411
Lithium	T	mg/L	0.04	0.0404	0.0403	0.0412	0.0406	0.0424	0.0416	0.0411	0.0397	0.036	0.0322	0.0293	0.0326	0.0314	0.0299
Manganese	T	mg/L	NS									0.192					
Mercury	D	mg/L	0.002										0.0002 U				
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0653	0.0445	0.227	0.0383	0.0503	0.0367
Molybdenum	T	mg/L	0.1	0.0891	0.084	0.0793	0.0812	0.0748	0.0714	0.0592	0.057	0.0788	0.0494	0.0406	0.0377	0.0449	0.0299
Nickel	D	mg/L	NS									0.0019		0.0017			
Nickel	T	mg/L	NS	0.0065	0.0034	0.0029	0.002	0.002	0.0026	0.0039	0.003	0.0045		0.0051			
Selenium	D	mg/L	0.05									0.0134	0.0101	0.001 U	0.009	0.0165	0.0096
Selenium	T	mg/L	0.05	0.0158	0.015	0.0149	0.0161	0.014	0.013	0.0101	0.0102	0.0133	0.0111	0.0085	0.0099	0.0165	0.009
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled prior to closure of CCR Impoundment									Post-Closure Sampling											
			Sample ID	APW-5-20170907	APW-5-20170928	APW-5-20171019	APW-5-20171109	APW-5-20171129	APW-5-20171227	APW-5-20180118	APW-5-20180207	APW-05-WG-20220616	DUP-001-WG-20220616	APW-05-WG-20220914	DUP-001-WG-20220914	APW-05-WG-20221128	DUP-01-WG-20221128	APW-05-WG-20230201	DUP-01-WG-20230201	APW-05R-WG-20230627	DUP-01-WG-20230627	APW-05R-WG-20230920	DUP-01-WG-20230920
			Location ID	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05
			Sample Date	09/06/2017	09/28/2017	10/19/2017	11/09/2017	11/29/2017	12/27/2017	01/18/2018	02/07/2018	06/16/2022	06/16/2022	09/14/2022	09/14/2022	11/28/2022	11/28/2022	02/01/2023	02/01/2023	06/27/2023	06/27/2023	09/20/2023	09/20/2023
			Sample Type	N	N	N	N	N	N	N	N	N	FD	N	FD	N	FD	N	FD	N	FD	N	FD
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**																				
UNSPECIFIED																							
Fluoride	N	mg/L	4	0.34	0.34	0.32	0.32	0.32	0.33	0.36	0.32	0.35	0.33	0.33	0.31	0.37	0.38	0.33	0.33	0.3	0.32	0.35	0.34
Radium-226	N	pCi/L	NS	0.37 ± 0.14 U	0.19 ± 0.1 U	0.133 ± 0.370	0.48 ± 0.15 U		0.35 ± 0.12 U	0.13 ± 0.1 U	0.26 ± 0.13 U	0.649 ± 0.316	0.259 ± 0.27 J	0.17 ± 0.08 U	0.11 ± 0.07 U	0.11 ± 0.11 U	0.17 ± 0.08 U	0.209 ± 0.245 J	0.205 ± 0.241 J	0.23 ± 0.1 U	0.11 ± 0.08 U	0.49 ± 0.13 U	0.36 ± 0.13 U
Radium-228	N	pCi/L	NS	1.07 ± 0.8	0.89 ± 0.58 J	0.661 ± 0.418	1.17 ± 0.93		0.49 ± 0.42 U	1.04 ± 0.56	0.35 ± 0.4 U	1.1 ± 0.282	0.715 ± 0.31	0.82 ± 0.88 J	0.27 ± 0.55 U	0.49 ± 0.49 U	1.24 ± 0.71	0.399 ± 0.422 J	0.249 ± 0.228 J	0.31 ± 0.5 UQDR	0.61 ± 0.67 U	5.85 ± 1.14 [4]	0.42 ± 0.71 U
Sulfate	N	mg/L	400	407	460	399	413	381	394	438	378	224	239	379	403	324	338	325	305	335	326	343	333
CALC																							
Radium-226/228	N	pCi/L	5									1.75 ± 0.424	0.973 ± 0.411	0.99 ± 0.96 U	0.38 ± 0.62 U	0.6 ± 0.6 U	1.41 ± 0.79 U	0.608 ± 0.488 J	0.454 ± 0.332 J	0.54 ± 0.6 U	0.72 ± 0.75 U	6.34 ± 1.53	0.78 ± 0.84 U
FIELD PARAM																							
Turbidity, Field	N	NTU	17.96[3]									51.8		9.19		4.65		8.21		42.6		33.7	
GEN CHEM																							
Chloride	N	mg/L	200	15	15	15	14	16	16	16	16	19	19	15	15	19	19	18	18	17	18	14	14
Dissolved Solids, Total	N	mg/L	1200	842	832	804	826	790	792	552	804	650	690	750 H	774 H	714	728 H	696	670	740	695	680	710
pH, Lab	N	pH units	6.22-9.0[2]	7.37	7.3	7.26	7.3	7.26	7.31	7.23	7.18	7.35	7.49	7.55	7.57	7.24	7.27	7.31	7.33	7.27 H	7.3 H	7.36 H	7.36 H
METALS																							
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.002	0.0021	0.001	0.001	0.001 U	0.0019	0.0026	0.0018	0.0024	0.0025	0.0023	0.0024
Arsenic	T	mg/L	0.01	0.0031	0.0026	0.0015	0.0016	0.0016	0.0019	0.0021	0.0019	0.0048	0.0041	0.0025	0.0023	0.0022	0.0023	0.0024	0.0025	0.003	0.003	0.0028	0.0026
Barium	D	mg/L	2									0.133	0.132	0.13	0.128	0.172 B	0.13 B	0.175	0.135	0.168	0.167	0.167	0.172
Barium	T	mg/L	2	0.226	0.233	0.183	0.216	0.193	0.214	0.214	0.195	0.187	0.174	0.154	0.152	0.14	0.136	0.145	0.148	0.183	0.181	0.162	0.158
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									7.63	7.7	7.42	7.09	6.12	7.03 S	8.68 S	6.76	8.64	8.37	7.91	8.05
Boron	T	mg/L	2	9.3	10.3	8.89	9.98	9.1	9.83	9.25	8.73	7.67	8.24 S	7.76	7.62	7.48	7.97	7.35	7.59	8.76	8.68	7.12	8.33 S
Cadmium	D	mg/L	0.005									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2[1]									139	141	119	131	87.4	110 S	106 S	111	120	120	118	119
Calcium	T	mg/L	103.2[1]	136	142	119	131	123	125	121	124	127	129 S	127	137	117	118	112	114	136 B	133 B	105	126 S
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0137	0.001 U	0.0041	0.001 U	0.001 U	0.0084	0.0033	0.001 U	0.0016 J	0.003 U	0.0015 U	0.0015 U	0.0015 U	0.0016	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0031	0.0016
Cobalt	D	mg/L	0.006									0.0006 J	0.0005 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0013 J	0.0011 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Iron	T	mg/L	NS									2.77	1.89										
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011	0.001	0.0026	0.0021
Lithium	D	mg/L	0.04									0.0282	0.029	0.0381	0.0373	0.0338	0.0365	0.045	0.0375	0.0384	0.0398	0.0624	0.0509
Lithium	T	mg/L	0.04	0.0363	0.0443	0.0393	0.0405	0.0415	0.0433	0.0404	0.0397	0.0331	0.0363	0.0408	0.0397	0.0373	0.0371	0.0399	0.0402	0.0423	0.0415	0.0367	0.0425
Manganese	T	mg/L	NS									0.9	0.904										
Mercury	D	mg/L	0.002											0.0002 U	0.0002 U								
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.172	0.17	0.213	0.206	0.293	0.211 S	0.187	0.199	0.213	0.204	0.236	0.223
Molybdenum	T	mg/L	0.1	0.172	0.195	0.201	0.168	0.193	0.246	0.244	0.249	0.203	0.195	0.235	0.224	0.223	0.226	0.217	0.212	0.212	0.21	0.223	0.235
Nickel	D	mg/L	NS									0.0036	0.0035			0.0011	0.0024						
Nickel	T	mg/L	NS	0.0074	0.0012	0.0023	0.001 U	0.001 U	0.0043	0.0021	0.001 U	0.0037	0.0039			0.002	0.0029						
Selenium	D	mg/L	0.05									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	D	mg/L	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	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
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J3 = The associated batch QC was outside the established quality control range for precision
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U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling					
			Sample ID Location ID Sample Date Sample Type	APW-6D-20170907 APW-06D 09/06/2017 N	APW-6D-20170927 APW-06D 09/28/2017 N	APW-6D-20171019 APW-06D 10/19/2017 N	APW-6D-20171109 APW-06D 11/09/2017 N	APW-6D-20171128 APW-06D 11/28/2017 N	APW-6D-20171227 APW-06D 12/27/2017 N	APW-6D-20180118 APW-06D 01/18/2018 N	APW-6D-20180208 APW-06D 02/08/2018 N	N/A APW-06D 6/16/2022	APW-06D-WG-20220913 APW-06D 09/13/2022 N	APW-06D-WG-20221128 APW-06D 11/28/2022 N	APW-06D-WG-20230201 APW-06D 02/01/2023 N	APW-06D-WG-20230627 APW-06D 06/27/2023 N	APW-06D-WG-20230920 APW-06D 09/20/2023 N
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**									**Casing deflected, no sample collected during Q2 2022**					
UNSPECIFIED																	
Fluoride	N	mg/L	4	0.22	0.23	0.21	0.22	0.21	0.22	0.23	0.21	N/A	0.2	0.24	0.21	0.2	0.22
Radium-226	N	pCi/L	NS	0.62 ± 0.17 U	0.37 ± 0.11 U	1.22 ± 0.744	0.39 ± 0.15 U	0.38 ± 0.18 U	0.3 ± 0.12 U	0.03 ± 0.08 U	0.2 ± 0.13 U	N/A	0.31 ± 0.1 U	0.62 ± 0.15 U	0.355 ± 0.275	0.3 ± 0.12 U	0.18 ± 0.09 U
Radium-228	N	pCi/L	NS	1.07 ± 0.65	0.61 ± 0.33 U	0.549 ± 0.377	0.86 ± 0.37 J	1.4 ± 0.71	0.78 ± 0.48 J	0.74 ± 0.57 J	0.24 ± 0.34 U	N/A	1.46 ± 0.71	0.28 ± 0.43 U	1.02 ± 0.451	0.74 ± 0.54 J	2.62 ± 0.76
Sulfate	N	mg/L	400	215	228	206	222	230	236	211	189	N/A	272	254	269	270	218
CALC																	
Radium-226/228	N	pCi/L	5									N/A	1.77 ± 0.81 U	0.9 ± 0.58 U	1.38 ± 0.528	1.04 ± 0.66 U	2.8 ± 0.85
FIELD PARAM																	
Turbidity, Field	N	NTU	17.96[1]									N/A	18.5	74.4	26.9	181	65.5
GEN CHEM																	
Chloride	N	mg/L	200	17	17	16	16	16	16	17	17	N/A	14	17	16	15	16
Dissolved Solids, Total	N	mg/L	1200	558	560	562	564	590	516 R	482	584	N/A	670 H	580	582	735	565
pH, Lab	N	pH units	6.22-9.0[2]	7.23	7.25	7.23	7.19	7.2	7.22	7.21	7.2	N/A	7.42	7.21	7.29	7.39 H	7.3 H
METALS																	
Antimony	D	mg/L	0.006									N/A	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									N/A	0.004	0.0116	0.012	0.0102	0.01
Arsenic	T	mg/L	0.01	0.0068	0.0101	0.0075	0.0074	0.009	0.0095	0.0106	0.0096	N/A	0.0104	0.0111	0.0107	0.0115	0.0109
Barium	D	mg/L	2									N/A	0.129	0.118 B	0.152	0.13	0.121
Barium	T	mg/L	2	0.173	0.172	0.142	0.153	0.155	0.163	0.166	0.148	N/A	0.143	0.142	0.134	0.145	0.128
Beryllium	D	mg/L	0.004									N/A	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									N/A	5.32	4.14	4.39	5.01	3.77
Boron	T	mg/L	2	3.72	3.87	3.55	3.58	3.9	3.84	3.3	3.09	N/A	5.51	4.29	3.95	4.99	3.81
Cadmium	D	mg/L	0.005									N/A	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2[1]									N/A	118	105	109	118	114
Calcium	T	mg/L	103.2[1]	99.9	110	96.7	100	110	107	105 S	105	N/A	123	110	116	128 B	106
Chromium	D	mg/L	0.1									N/A	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.001 U	0.0013	0.001 U	0.001 U	0.001 U	0.0017	0.003	0.0014	N/A	0.0015 U	0.0063	0.0015 U	0.0057	0.0727
Cobalt	D	mg/L	0.006									N/A	0.0013	0.0012	0.001	0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.0012	0.001	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	0.001 U	0.0035	0.0013	0.0054	0.0035
Lead	D	mg/L	0.0075									N/A	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	0.001 U	0.0012	0.001 U	0.0016	0.001 U
Lithium	D	mg/L	0.04									N/A	0.0179	0.0155	0.0194	0.016	0.0197
Lithium	T	mg/L	0.04	0.016	0.0176	0.0161	0.0163	0.0178	0.0181	0.0165	0.0162	N/A	0.0185	0.0175	0.0172	0.0184	0.0169
Mercury	D	mg/L	0.002									N/A	0.0002 U				
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	N/A	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									N/A	0.0669	0.0796	0.0583	0.0643	0.0559
Molybdenum	T	mg/L	0.1	0.0646	0.0606	0.0582	0.0589	0.06	0.0584	0.0465	0.0463	N/A	0.0719	0.0696	0.0683	0.0602	0.0672
Nickel	D	mg/L	NS									N/A		0.002			
Nickel	T	mg/L	NS	0.0032	0.0028	0.0018	0.002	0.0017	0.0022	0.0032	0.0025	N/A		0.0093			
Selenium	D	mg/L	0.05									N/A	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	D	mg/L	0.002									N/A	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling					
			Sample ID	APW-6S-20170907	APW-6S-20170928	APW-6S-20171019	APW-6S-20171109	APW-6S-20171128	APW-6S-20171227	APW-6S-20180118	APW-6S-20180208	APW-6S-WG-20220616	APW-6S-WG-20220913	APW-6S-WG-20221128	APW-6S-WG-20230201	APW-6S-WG-20230627	APW-6S-WG-20230920
			Location ID	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S
			Sample Date	09/06/2017	09/28/2017	10/19/2017	11/09/2017	11/28/2017	12/27/2017	01/18/2018	02/08/2018	06/16/2022	09/13/2022	11/28/2022	02/01/2023	06/27/2023	09/20/2023
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**														
UNSPECIFIED																	
Fluoride	N	mg/L	4	0.41	0.26	0.25	0.26	0.25	0.25	0.27	0.24	0.29	0.28	0.32	0.29	0.26	0.3
Radium-226	N	pCi/L	NS	0.36 ± 0.14 U	0.09 ± 0.08 U	0.317 ± 0.331	0.22 ± 0.11 U	0.18 ± 0.13 U	0.11 ± 0.09 U	0.09 ± 0.09 U	0.15 ± 0.11 U	0.269 ± 0.182	0.2 ± 0.08 U	0.19 ± 0.09 U	0.0283 ± 0.232 U	0.11 ± 0.08 U	0.32 ± 0.11 U
Radium-228	N	pCi/L	NS	0.56 ± 0.77 U	1.06 ± 0.53	0.481 ± 0.316	0.9 ± 0.4 J	0.92 ± 0.6 J	0.44 ± 0.44 U	0.71 ± 0.53 J	0.89 ± 0.38 J	0.228 ± 0.248 J	2.73 ± 0.9	0.41 ± 0.5 U	1.44 ± 0.518	-0.03 ± 0.59 U	0.41 ± 0.38 U
Sulfate	N	mg/L	400	127	177	167	151	189	201	233	220	200	227	243	247	208	221
CALC																	
Radium-226/228	N	pCi/L	5									0.497 ± 0.308	2.93 ± 0.98	0.6 ± 0.59 U	1.47 ± 0.568	0.11 ± 0.67 U	0.73 ± 0.49 U
FIELD PARAM																	
Turbidity, Field	N	NTU	17.96[1]									30.5	15.1	5.56	6.67	9.06	8.99
GEN CHEM																	
Chloride	N	mg/L	200	31	28	27	27	26	27	26	25	24	25	24	24	23	20
Dissolved Solids, Total	N	mg/L	1200	500	546	574	528	566	588	598	666	600	630 H	605	638	615	565
pH, Lab	N	pH units	6.22-9.0[2]	7.16	7.06	7.18	7.23	7.09	7.13	7.09	7.02	7.24	7.38	7.04	7.12	7.05 H	7.21 H
METALS																	
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0009 J	0.001 U	0.001 U	0.0013	0.001	0.001 U
Arsenic	T	mg/L	0.01	0.0017	0.0016	0.0018	0.002	0.0013	0.0012	0.0011	0.0011	0.0009 J	0.0012	0.001	0.0011	0.001 U	0.0012
Barium	D	mg/L	2									0.233	0.146	0.19 B	0.219	0.21	0.216
Barium	T	mg/L	2	0.222	0.237	0.205	0.226	0.214	0.213	0.224	0.205	0.25	0.221	0.19	0.202	0.224	0.206
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									4.92	5.95	6.88	7.12	5.83	6.65
Boron	T	mg/L	2	4.65	5.93	5.83	5.64 S	5.8	6.93 S	7.42	6.66	4.77	6.61	6.31	6.84 S	5.84	5.79
Cadmium	D	mg/L	0.005									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2[1]									124	93.7	98	94.1	100	107
Calcium	T	mg/L	103.2[1]	101	97.2	87.5	96.8 S	99.5	98.1	98.7	97.4	115	105	103	97.1 S	109 B	92.7
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0027	0.0173	0.0028	0.001 U	0.001 U	0.0048	0.0012	0.001 U	0.0028	0.0015 U	0.0022	0.0015 U	0.0019	0.0067
Cobalt	D	mg/L	0.006									0.0002 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0002 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Iron	T	mg/L	0.0075									9.35					
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.04	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0028	0.001 U	0.001 U	0.001 U	0.001 U
Lithium	D	mg/L	0.04									0.0355	0.0384	0.0386	0.0406	0.0411	0.0487
Lithium	T	mg/L	0.002	0.0335	0.0413	0.04	0.0415	0.042	0.0458	0.0451	0.0417	0.0363	0.041	0.0393	0.0406	0.0412	0.0369
Manganese	T	mg/L	0.002									0.53					
Mercury	D	mg/L	0.1										0.0002 U				
Mercury	T	mg/L	0.1	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	NS									0.229	0.235	0.24	0.244	0.232	0.234
Molybdenum	T	mg/L	NS	0.249	0.287	0.272	0.243	0.274	0.314	0.324	0.323	0.237	0.271	0.259	0.265	0.235	0.225
Nickel	D	mg/L	0.05									0.0015		0.001 U			
Nickel	T	mg/L	0.05	0.0021	0.009	0.0021	0.0012	0.001 U	0.0031	0.0016	0.0012	0.0027		0.0023			
Selenium	D	mg/L	0.002									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Selenium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
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NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
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*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
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Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling					
Sample ID				**APW-7-20170907**	**APW-7-20170928**	**APW-7-20171019**	**APW-7-20171109**	**APW-7-20171128**	**APW-7-20171227**	**APW-7-20180118**	**APW-7-20180208**	**APW-07-WG-20220616**	**APW-07-WG-20220914**	**APW-07-WG-20221130**	**APW-07-WG-20230130**	**APW-07-WG-20230626**	**APW-07-WG-20230919**
Location ID				**APW-07**	**APW-07**	**APW-07**	**APW-07**	**APW-07**	**APW-07**	**APW-07**	**APW-07**	**APW-07**	**APW-07**	**APW-07**	**APW-07**	**APW-07**	**APW-07**
Sample Date				**09/07/2017**	**09/28/2017**	**10/19/2017**	**11/09/2017**	**11/28/2017**	**12/27/2017**	**01/18/2018**	**02/08/2018**	**06/16/2022**	**09/14/2022**	**11/30/2022**	**01/30/2023**	**06/26/2023**	**09/19/2023**
Sample Type				**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**														
UNSPECIFIED																	
Fluoride	N	mg/L	4	0.35	0.21	0.19	0.2	0.2	0.19	0.2	0.18	0.18	0.17	0.18	0.19	0.17	0.18
Radium-226	N	pCi/L	NS	0.47 ± 0.15 U	0 ± 0.06 U	0.505 ± 0.396	0.11 ± 0.08 U	0.16 ± 0.14 U	0.25 ± 0.1 U	0.14 ± 0.09 U	0.24 ± 0.14 U	0.333 ± 0.208	0.18 ± 0.09 U	0.2 ± 0.11 U	0.337 ± 0.265	-0.01 ± 0.06 U	0.11 ± 0.07 U
Radium-228	N	pCi/L	NS	-0.42 ± 0.79 U	0.76 ± 0.61 J	0.785 ± 0.412	1.13 ± 0.39	0.61 ± 0.51 U	0.14 ± 0.35 U	1.19 ± 0.55	0.53 ± 0.4 U	0.766 ± 0.234	1.45 ± 0.72	1.13 ± 0.66	1.77 ± 0.352	1.11 ± 0.74	0.99 ± 0.62 JQDR
Sulfate	N	mg/L	400	66	59	52	50	61	63	67	64	72	78	48	48	54	44
CALC																	
Radium-226/228	N	pCi/L	5									1.1 ± 0.313	1.63 ± 0.81 U	1.33 ± 0.77 U	2.1 ± 0.441	1.11 ± 0.8 U	1.1 ± 0.69 U
FIELD PARAM																	
Turbidity, Field	N	NTU	17.96[1]									66.2	34.8	10.5	79.2	14.8	42.9
GEN CHEM																	
Chloride	N	mg/L	200	15	15	14	15	16	15	15	15	11	12	12	14	10	9
Dissolved Solids, Total	N	mg/L	1200	762	786	624	730	742	736	720	740	780	815 H	800	824	665	740
pH, Lab	N	pH units	6.22-9.0[2]	6.84	6.84	6.86	6.87	6.83	6.96	6.97	6.88	6.88	7.02	6.78	7.23	6.79 H	6.94 H
METALS																	
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.0015	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0011	0.001 U	0.001 U	0.001 U	0.0012	0.0013
Arsenic	T	mg/L	0.01	0.0014	0.0012	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0023	0.0016	0.0011	0.0014	0.0014	0.0018
Barium	D	mg/L	2									0.334	0.255	0.354 B	0.411	0.303	0.336
Barium	T	mg/L	2	0.465	0.448	0.394	0.401	0.37	0.374	0.38	0.359	0.374	0.382	0.381	0.371	0.312	0.303
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									0.148	0.193	0.199	0.267	0.208	0.192
Boron	T	mg/L	2	0.235	0.308	0.302	0.3	0.278	0.342	0.298	0.318	0.168	0.208	0.217	0.246	0.237	0.181
Cadmium	D	mg/L	0.005									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2[1]									222	199	204	199	180 S	196
Calcium	T	mg/L	103.2[1]	192	204	171	187	196	193	191	185	238	210	209	200	183 BS	161
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0017	0.0063	0.0026	0.001 U	0.001 U	0.0329	0.001 U	0.001 U	0.0041	0.0021	0.0015 U	0.0034	0.0015 U	0.0057
Cobalt	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Iron	T	mg/L	NS									17.3					
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0074	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lithium	D	mg/L	0.04									0.0126	0.0148	0.0158	0.0191	0.0136	0.0184
Lithium	T	mg/L	0.04	0.0147	0.0181	0.0172	0.0176	0.0185	0.0191	0.0181	0.0178	0.0143	0.0161	0.0166	0.0181	0.0153	0.0141
Manganese	T	mg/L	NS									1.11					
Mercury	D	mg/L	0.002										0.0002 U				
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0026	0.0026	0.0021	0.0027	0.0027	0.0029
Molybdenum	T	mg/L	0.1	0.0046	0.0036	0.0033	0.0023	0.003	0.0044	0.0037	0.0036	0.0035	0.003	0.0029	0.0031	0.0028	0.0029
Nickel	D	mg/L	NS									0.0008 J		0.001 U			
Nickel	T	mg/L	NS	0.0014	0.0033	0.0013	0.001 U	0.001 U	0.015	0.001 U	0.001 U	0.0042		0.001 U			
Selenium	D	mg/L	0.05									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling					
Sample ID				**APW-8-20170907**	**APW-8-20170928**	**APW-8-20171018**	**APW-8-20171108**	**APW-8-20171127**	**APW-8-20171227**	**APW-8-20180117**	**APW-8-20180208**	**APW-08-WG-20220616**	**APW-08-WG-20220915**	**APW-08-WG-20221130**	**APW-08-WG-20230202**	**APW-08-WG-20230626**	**APW-08-WG-20230919**
Location ID				**APW-08**	**APW-08**	**APW-08**	**APW-08**	**APW-08**	**APW-08**	**APW-08**	**APW-08**	**APW-08**	**APW-08**	**APW-08**	**APW-08**	**APW-08**	**APW-08**
Sample Date				**09/07/2017**	**09/28/2017**	**10/18/2017**	**11/08/2017**	**11/27/2017**	**12/27/2017**	**01/17/2018**	**02/08/2018**	**06/16/2022**	**09/15/2022**	**11/30/2022**	**02/02/2023**	**06/26/2023**	**09/19/2023**
Sample Type				**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**														
UNSPECIFIED																	
Fluoride	N	mg/L	4	0.3	0.3	0.29	0.29	0.28	0.28	0.3	0.28	0.29	0.26	0.28	0.26	0.26	0.26
Radium-226	N	pCi/L	NS	0.22 ± 0.12 U	0.12 ± 0.08 U	0.2 ± 0.393	0.11 ± 0.1 U	0.35 ± 0.16 U	0.14 ± 0.08 U	0.21 ± 0.11 U	0.39 ± 0.15 U	0.208 ± 0.236 J	0.27 ± 0.1 U	0.4 ± 0.13 U	0.247 ± 0.244 J	0.34 ± 0.12 U	0.23 ± 0.09 U
Radium-228	N	pCi/L	NS	1.13 ± 0.63	0.88 ± 0.48 J	1.3 ± 0.545	0.37 ± 0.25 U	0.77 ± 0.55 J	1.31 ± 0.58	0.64 ± 0.49 U	0.49 ± 0.43 U	0.526 ± 0.224	0.86 ± 0.62 J	1.68 ± 0.77	-0.157 ± 0.282 U	0.11 ± 0.6 U	0.81 ± 0.49 JQDR
Sulfate	N	mg/L	400	43	40	38	40	39	38	39	37	39	39	34	29	31	23
CALC																	
Radium-226/228	N	pCi/L	5									0.735 ± 0.325	1.13 ± 0.72 U	2.08 ± 0.9	0.247 ± 0.373 J	0.45 ± 0.72 U	1.04 ± 0.58 U
FIELD PARAM																	
Turbidity, Field	N	NTU	17.96[1]									119	139	305	26.9	152	141
GEN CHEM																	
Chloride	N	mg/L	200	9	10	10	10	10	11	12	11	9	11	12	13	10	10
Dissolved Solids, Total	N	mg/L	1200	438	458	436	446	466	410	398	442	382	372 H	370	378	420	440
pH, Lab	N	pH units	6.22-9.0[2]	7.04	7.07	7	7.12	7.25	7.11	7.04	7.04	7.34	7.47	7.25	7.31	7.18 H	7.16 H
METALS																	
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0011	0.001 U	0.0012	0.001	0.001	0.0014
Arsenic	T	mg/L	0.01	0.001 U	0.0011	0.001 U	0.001 U	0.001 U	0.001	0.001 U	0.001 U	0.0022	0.0015	0.0017	0.0016	0.002	0.0018
Barium	D	mg/L	2									0.194	0.163	0.146 B	0.15	0.191	0.236
Barium	T	mg/L	2	0.207	0.256	0.219	0.24	0.217	0.223	0.226	0.215	0.235	0.19	0.179	0.167	0.225	0.199
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									0.0777	0.0993	0.0844	0.0895	0.124	0.117
Boron	T	mg/L	2	0.132	0.154	0.135	0.138	0.141	0.145	0.151	0.132	0.115	0.11	0.103	0.095	0.103	0.116
Cadmium	D	mg/L	0.005									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0002 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2[1]									108	79.7	75.4	72.1	92.6	94.1 S
Calcium	T	mg/L	103.2[1]	97.4	105	92.6	101	102	98.6	95	97.8	93.3	85.1	82.8	79.4	99.4 B	86.4
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0018	0.0023	0.001 U	0.0059	0.001 U	0.0021	0.001 U	0.001 U	0.0054	0.0016	0.0036	0.0027	0.0082	0.0031
Cobalt	D	mg/L	0.006									0.0013	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.0017	0.0013	0.001	0.0012	0.001 U	0.001 U	0.001 U	0.001 U	0.002	0.0013	0.0016	0.0012	0.0019	0.0014
Iron	T	mg/L	NS									3.14					
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0024	0.001 U	0.0012	0.001 U	0.0028	0.0015
Lithium	D	mg/L	0.04									0.0141	0.0142	0.0132	0.0131	0.0125	0.022
Lithium	T	mg/L	0.04	0.0196	0.0206	0.0207	0.0216	0.0223	0.0216	0.0192	0.0196	0.016	0.016	0.0147	0.0155	0.0157	0.0177
Manganese	T	mg/L	NS									0.202					
Mercury	D	mg/L	0.002										0.0002 U				
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0008 J	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Molybdenum	T	mg/L	0.1	0.0011	0.001 U	0.001 U	0.0011	0.001 U	0.001 U	0.001 U	0.001 U	0.0015 J	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Nickel	D	mg/L	NS									0.0023		0.0012			
Nickel	T	mg/L	NS	0.0039	0.0043	0.0029	0.0062	0.0026	0.0027	0.0026	0.0026	0.0054		0.0077			
Selenium	D	mg/L	0.05									0.0027	0.0068	0.0126	0.0128	0.0113	0.0121
Selenium	T	mg/L	0.05	0.008	0.0141	0.0132	0.0149	0.0135	0.0141	0.0149	0.013	0.0036	0.0077	0.011	0.0148	0.0129	0.0122
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling						
Sample ID				**APW-9-20170907**	**APW-9-20170927**	**APW-9-20171018**	**APW-9-20171108**	**APW-9-20171127**	**APW-9-20171228**	**APW-9-20180117**	**APW-9-20180208**	**APW-09-WG-20220615**	**APW-09-WG-20220913**	**APW-09-WG-20221130**	**APW-09-WG-20230201**	**APW-09-WG-20230627**	**APW-09-WG-20230920**	**DUP-02-WG-20230920**
Location ID				**APW-09**	**APW-09**	**APW-09**	**APW-09**	**APW-09**	**APW-09**	**APW-09**	**APW-09**	**APW-09**	**APW-09**	**APW-09**	**APW-09**	**APW-09**	**APW-09**	**APW-09**
Sample Date				**09/05/2017**	**09/27/2017**	**10/18/2017**	**11/08/2017**	**11/27/2017**	**12/28/2017**	**01/17/2018**	**02/08/2018**	**06/15/2022**	**09/13/2022**	**11/30/2022**	**02/01/2023**	**06/27/2023**	**09/20/2023**	**09/20/2023**
Sample Type				**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**FD**
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**															
UNSPECIFIED																		
Fluoride	N	mg/L	4	0.19	0.22	0.21	0.2	0.2	0.2	0.22	0.19	0.23	0.19	0.2	0.19	0.19	0.2	0.19
Radium-226	N	pCi/L	NS	0.17 ± .12 U	0.03 ± 0.07 U	-0.229 ± 0.389	0.14 ± 0.09 U	-0.06 ± 0.1 U	0.14 ± 0.08 U	0.05 ± 0.08 U	0.13 ± 0.13 U	0.267 ± 0.199	0.24 ± 0.09 U	0.06 ± 0.06 U	0.0975 ± 0.156 J	0.18 ± 0.09 U	0 ± 0.05 U	-0.02 ± 0.05 U
Radium-228	N	pCi/L	NS	0.91 ± .69 J	0.67 ± 0.56 U	0.275 ± 0.316	0.49 ± 0.29 U	1.07 ± 0.48 U	1.06 ± 0.51	0.46 ± 0.46 U	0.23 ± 0.37 U	-0.213 ± 0.244 U	0.22 ± 0.49 U	0.77 ± 0.55 J	0.023 ± 0.243 U	0.35 ± 0.65 U	1.17 ± 0.6	0.22 ± 0.41 U
Sulfate	N	mg/L	400	65	47	53	65	50	42	28	25	104	39	36	38	47	32	31
CALC																		
Radium-226/228	N	pCi/L	5									0.267 ± 0.315 J	0.46 ± 0.58 U	0.83 ± 0.61 U	0.12 ± 0.289 U	0.53 ± 0.74 U	1.17 ± 0.65 U	0.22 ± 0.46 U
FIELD PARAM																		
Turbidity, Field	N	NTU	17.96[1]									34.2	7.3	7.28	23.6	24.7	5.64	
GEN CHEM																		
Chloride	N	mg/L	200	13	13	13	13	13	13	13	768	13	12	12	13	12	11	11
Dissolved Solids, Total	N	mg/L	1200	364 R	372	324	366	392	278	348	3380	424	380 H	372	360	386	372	386
pH, Lab	N	pH units	6.22-9.0[2]	7.31	7.35	7.39	7.39	7.52	7.42	7.57	7.33	7.48	7.59	7.32	7.72	7.32 H	7.56 H	7.65 H
METALS																		
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0019	0.0021	0.0019	0.0019	0.0021	0.0022	0.0021
Arsenic	T	mg/L	0.01	0.0031	0.0024	0.0018	0.0022	0.002	0.002	0.0022	0.0022	0.0026	0.0025	0.0021	0.0024	0.0021	0.002	0.0023
Barium	D	mg/L	2									0.129	0.111	0.109 B	0.107	0.116	0.114	0.117
Barium	T	mg/L	2	0.227	0.171	0.118	0.133	0.121	0.129	0.133	0.125	0.186	0.134	0.124	0.122	0.123	0.12	0.125
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									1.32	0.327	0.24	0.239	0.572	0.234	0.236
Boron	T	mg/L	2	0.877	0.569	0.668	0.792	0.506	0.369	0.317	0.255	1.61	0.329	0.243	0.225	0.473	0.209	0.239
Cadmium	D	mg/L	0.005									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2[1]									107 S	76.5	78.3	76.3	82.8 S	81	81.1
Calcium	T	mg/L	103.2[1]	85.9	85.3	76.5	81.9	85.6	81.5 S	80.3	92	110	89.5	80.5	80.3	86.9 B	69.5	87.5
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0148	0.0021	0.001 U	0.001 U	0.001 U	0.0011	0.0016	0.001 U	0.0011 J	0.0015 U	0.0015	0.0015 U	0.0015 U	0.0018	0.0015 U
Cobalt	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.0031	0.0014	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Iron	T	mg/L	NS									0.496						
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0039	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lithium	D	mg/L	0.04									0.0184	0.0137	0.0131	0.0125	0.0163	0.0196	0.0184
Lithium	T	mg/L	0.04	0.0176	0.0173	0.0174	0.018	0.0167	0.0173	0.0155	0.0148	0.0246	0.0143	0.0131	0.0137	0.0157	0.0134	0.015
Manganese	T	mg/L	NS									0.599						
Mercury	D	mg/L	0.002										0.0002 U					
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0351	0.0182	0.0139	0.0165	0.0211	0.0167	0.0173
Molybdenum	T	mg/L	0.1	0.0223	0.0252	0.0327	0.0303	0.0247	0.0246	0.0223	0.0224	0.0455	0.0194	0.015	0.0173	0.0189	0.0162	0.0173
Nickel	D	mg/L	NS									0.0017		0.001 U				
Nickel	T	mg/L	NS	0.012	0.0032	0.001 U	0.001	0.001 U	0.001 U	0.0012	0.001 U	0.004		0.0019				
Selenium	D	mg/L	0.05									0.021	0.0142	0.0147	0.0179	0.0186	0.0155	0.0162
Selenium	T	mg/L	0.05	0.0126	0.0139	0.017	0.0186	0.0138	0.0143	0.0147	0.0134	0.0219	0.0151	0.0138	0.0196	0.0198	0.0153	0.0182
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled prior to closure of CCR Impoundment									Post-Closure Sampling					
			Sample ID	APW-10D-20170907	APW-10D-20170927	APW-10D-20171019	APW-10D-20171109	APW-10D-20171128	APW-10D-20171228	APW-10D-20180118	APW-10D-20180209	APW-10D-WG-20220615	APW-10D-WG-20220916	APW-10D-WG-20221129	APW-10D-WG-20230202	APW-10D-WG-20230626	APW-10D-WG-20230919
			Location ID	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D
			Sample Date	09/07/2017	09/27/2017	10/19/2017	11/09/2017	11/28/2017	12/28/2017	01/18/2018	02/09/2018	06/15/2022	09/16/2022	11/29/2022	02/02/2023	06/26/2023	09/19/2023
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**														
UNSPECIFIED																	
Fluoride	N	mg/L	4	0.1	0.12	0.1	0.1 U	0.11	0.1	0.11	0.1 U	0.12	0.1	0.12	0.12	0.11	0.11
Radium-226	N	pCi/L	NS	0.34 ± 0.12 U	-0.11 ± 0.1 U	0.121 ± 0.337	0.19 ± 0.12 U	0.16 ± 0.13 U	0.23 ± 0.1 U	0.08 ± 0.1 U	0 ± 0.07 U	0.249 ± 0.207	0.22 ± 0.09 U	0.31 ± 0.11 U	0.186 ± 0.157	0.31 ± 0.12 U	0.21 ± 0.09 U
Radium-228	N	pCi/L	NS	1.16 ± 0.52	1.72 ± 0.64	0.633 ± 0.366	0.98 ± 0.33 J	0.47 ± 0.55 U	0.34 ± 0.37 U	0.98 ± 0.6 J	0.59 ± 0.43 U	1.19 ± 0.311	0.56 ± 0.58 U	0.28 ± 0.43 U	0.847 ± 0.370	1.39 ± 0.76	0.61 ± 0.49 U
Sulfate	N	mg/L	400	38	44	43	42	42	44	44	44	41	43	42	39	44	31
CALC																	
Radium-226/228	N	pCi/L	5									1.44 ± 0.374	0.78 ± 0.67 U	0.59 ± 0.54 U	1.03 ± 0.402	1.7 ± 0.88 U	0.82 ± 0.58 U
FIELD PARAM																	
Turbidity, Field	N	NTU	17.95[1]									46.9	21.9	36.4	45.3	176	169
GEN CHEM																	
Chloride	N	mg/L	200	24	17	17	15	17	16	14	16	16	18	14	13	14	10
Dissolved Solids, Total	N	mg/L	1200	466	474	442	468	482	448	448	512	452	460 H	460	454	485	468
pH, Lab	N	pH units	6.22-9.0[2]	7.12	7.11	7.05	7.11	7.12	7.15	7.03	7.03	7.21	7.29	7.04	7.57	6.98 H	7.22 H
METALS																	
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0008 J	0.001 U	0.0012	0.0011	0.0011	0.0011
Arsenic	T	mg/L	0.01	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.001 U	0.0017	0.0057	0.0014	0.0017	0.0019	0.0016
Barium	D	mg/L	2									0.342	0.321	0.3 B	0.304	0.348	0.355
Barium	T	mg/L	2	0.437	0.304	0.363	0.325	0.284	0.295	0.391	0.357	0.407	0.418	0.276	0.343	0.485	0.339
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									0.0786	0.0711	0.0841	0.0579	0.0704	0.0639
Boron	T	mg/L	2	0.0999	0.101	0.0843	0.0713	0.0885	0.0922	0.0923	0.0906	0.118	0.0731	0.0522	0.073	0.0674	0.066
Cadmium	D	mg/L	0.005									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011	0.001 U
Calcium	D	mg/L	103.2[1]									143	124	113	114	114	116
Calcium	T	mg/L	103.2[1]	118	136	120	121	125	123	148 S	124 S	135	374	115	122	611 B	118
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0036	0.0078	0.0022	0.0011	0.001 U	0.001 U	0.0042	0.001 U	0.0015 U	0.0148	0.0024	0.0015 U	0.0015	0.0042
Cobalt	D	mg/L	0.006									0.0025	0.0021	0.0032	0.003	0.0026	0.0026
Cobalt	T	mg/L	0.006	0.0039	0.0024	0.0025	0.0032	0.0017	0.0013	0.0026	0.0026	0.0034	0.0049	0.003	0.0033	0.007	0.0031
Iron	T	mg/L	NS									0.758					
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.002	0.001 U	0.001 U	0.001 U	0.001 U
Lithium	D	mg/L	0.04									0.0135	0.0135	0.0133	0.012	0.0148	0.02
Lithium	T	mg/L	0.04	0.0147	0.0155	0.0146	0.0146	0.0153	0.0155	0.0142	0.014	0.018	0.0156	0.0126	0.0146	0.0158	0.0148
Manganese	T	mg/L	NS									1.16					
Mercury	D	mg/L	0.002										0.0002 U				
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Molybdenum	T	mg/L	0.1	0.0024	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Nickel	D	mg/L	NS									0.0054		0.0054			
Nickel	T	mg/L	NS	0.0095	0.0077	0.0065	0.0057	0.0035	0.0025	0.0072	0.0053	0.007		0.0063			
Selenium	D	mg/L	0.05									0.001 U	0.0016	0.0015	0.0024	0.0013	0.0016
Selenium	T	mg/L	0.05	0.001 U	0.0011	0.0012	0.0013	0.001 U	0.0014	0.0016	0.0016	0.001 U	0.0021	0.0013	0.0027	0.0016	0.0013
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling					
Sample ID				**APW-10S-20170907**	**APW-10S-20170927**	**APW-10S-20171019**	**APW-10S-20171109**	**APW-10S-20171128**	**APW-10S-20171228**	**APW-10S-20180118**	**APW-10S-20180209**	**APW-10S-WG-20220615**	**APW-10S-WG-20220915**	**APW-10S-WG-20221129**	**APW-10S-WG-20230202**	**APW-10S-WG-20230626**	**APW-10S-WG-20230919**
Location ID				**APW-10S**	**APW-10S**	**APW-10S**	**APW-10S**	**APW-10S**	**APW-10S**	**APW-10S**	**APW-10S**	**APW-10S**	**APW-10S**	**APW-10S**	**APW-10S**	**APW-10S**	**APW-10S**
Sample Date				**09/07/2017**	**09/27/2017**	**10/19/2017**	**11/09/2017**	**11/28/2017**	**12/28/2017**	**01/18/2018**	**02/09/2018**	**06/15/2022**	**09/15/2022**	**11/29/2022**	**02/02/2023**	**06/26/2023**	**09/19/2023**
Sample Type				**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**														
UNSPECIFIED																	
Fluoride	N	mg/L	4	0.19	0.21	0.16	0.16	0.16	0.17	0.17	0.16	0.17	0.15	0.17	0.15	0.15	0.16
Radium-226	N	pCi/L	NS	0.4 ± 0.14 U	0.19 ± 0.11 U	0.774 ± 0.430	0.16 ± 0.11 U	0.18 ± 0.16 U	0.23 ± 0.1 U	0.29 ± 0.12 U	0.24 ± 0.13 U	0.778 ± 0.324	0.3 ± 0.1 U	0.31 ± 0.11 U	1.08 ± 0.395	0.37 ± 0.13 U	0.59 ± 0.14 U
Radium-228	N	pCi/L	NS	0.38 ± 0.47 U	0.98 ± 0.7 J	0.856 ± 0.391	0.71 ± 0.33 J	0.66 ± 0.57 U	0.56 ± 0.43 U	2.71 ± 0.78	0.93 ± 0.52 J	0.475 ± 0.268 J	2.52 ± 0.91	1.64 ± 0.68	0.162 ± 0.371 U	-0.18 ± 0.47 U	4.24 ± 0.91
Sulfate	N	mg/L	400	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	21 S	10 U	10 U	10 U	10 SU
CALC																	
Radium-226/228	N	pCi/L	5									1.25 ± 0.42	2.82 ± 1.01	1.95 ± 0.79 U	1.24 ± 0.542	0.37 ± 0.6 U	4.83 ± 1.05
FIELD PARAM																	
Turbidity, Field	N	NTU	17.96[1]									61.5	34.3	52.6	37.3	57.2	63.6
GEN CHEM																	
Chloride	N	mg/L	200	10	7	6	6	6	6	6	6	12	15	18	21	14	15
Dissolved Solids, Total	N	mg/L	1200	708	720	678	708	734	770	680 R	762	735	770 H	750	780	725	775
pH, Lab	N	pH units	6.22-9.0[2]	6.99	6.96	6.95	6.98	6.97	6.98	7.06	6.91	7.09	7.2	6.95	7.2	7.01 H	7.17 H
METALS																	
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.0016	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.152	0.0612	0.0138	0.171	0.166	0.176
Arsenic	T	mg/L	0.01	0.186	0.189	0.18	0.209	0.183	0.193	0.23	0.198	0.185	0.187	0.182	0.191	0.194	0.174
Barium	D	mg/L	2									0.423	0.292	0.162 B	0.506	0.506	0.567
Barium	T	mg/L	2	0.613	0.634	0.543	0.668	0.565	0.598	0.703	0.585	0.575	0.612	0.536	0.575	0.589	0.591
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									0.57	0.541	7.48	0.497	0.578	0.571
Boron	T	mg/L	2	0.525	0.544	0.536	0.595	0.545	0.573	0.645	0.582	0.683	0.565	0.569	0.592	0.582	0.553
Cadmium	D	mg/L	0.005									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2[1]									169	156	142	145	142	151
Calcium	T	mg/L	103.2[1]	136	144	135	152	150	145	140	140	161	171 S	154	145	153 B	134
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0091	0.0019	0.001	0.0016	0.001 U	0.0016	0.0019	0.001 U	0.0015 J	0.015	0.0032	0.0023	0.0025	0.0087
Cobalt	D	mg/L	0.006									0.0001 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0006 J	0.0021	0.0013	0.001 U	0.001 U	0.0021
Iron	T	mg/L	NS									19.6					
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0007 J	0.0043	0.0014	0.001 U	0.0016	0.0031
Lithium	D	mg/L	0.04									0.0266	0.0286	0.0387 R	0.0268	0.0278	0.0349
Lithium	T	mg/L	0.04	0.0263	0.0278	0.0272	0.0289	0.0293	0.0308	0.0316	0.0297	0.0353	0.033	0.0307	0.0323	0.0291	0.0301
Manganese	T	mg/L	NS									0.243					
Mercury	D	mg/L	0.002										0.0002 U				
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Molybdenum	T	mg/L	0.1	0.0017	0.0016	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Nickel	D	mg/L	NS									0.001 U		0.001 U			
Nickel	T	mg/L	NS	0.0051	0.0012	0.001 U	0.0015	0.001 U	0.001 U	0.0014	0.001 U	0.0014		0.0031			
Selenium	D	mg/L	0.05									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

APPENDIX A THIRD QUARTER 2023 CCR IMPOUNDMENT INSPECTION REPORT

Grand Tower Energy Center
Closed CCR Impoundment
Quarterly Inspection Form

Date: 9/19/2023

Time: 9:00-10:30

Name: Marshall Arendell
(Inspector)

Weather:

Temperature:
70 deg. F

☒ Sunny
☐ Cloudy
☐ Raining
☐ Other

Conditions Limiting Visibility:

☐ Snow Cover
☒ Vegetation
☐ None
☐ Other

Observations:

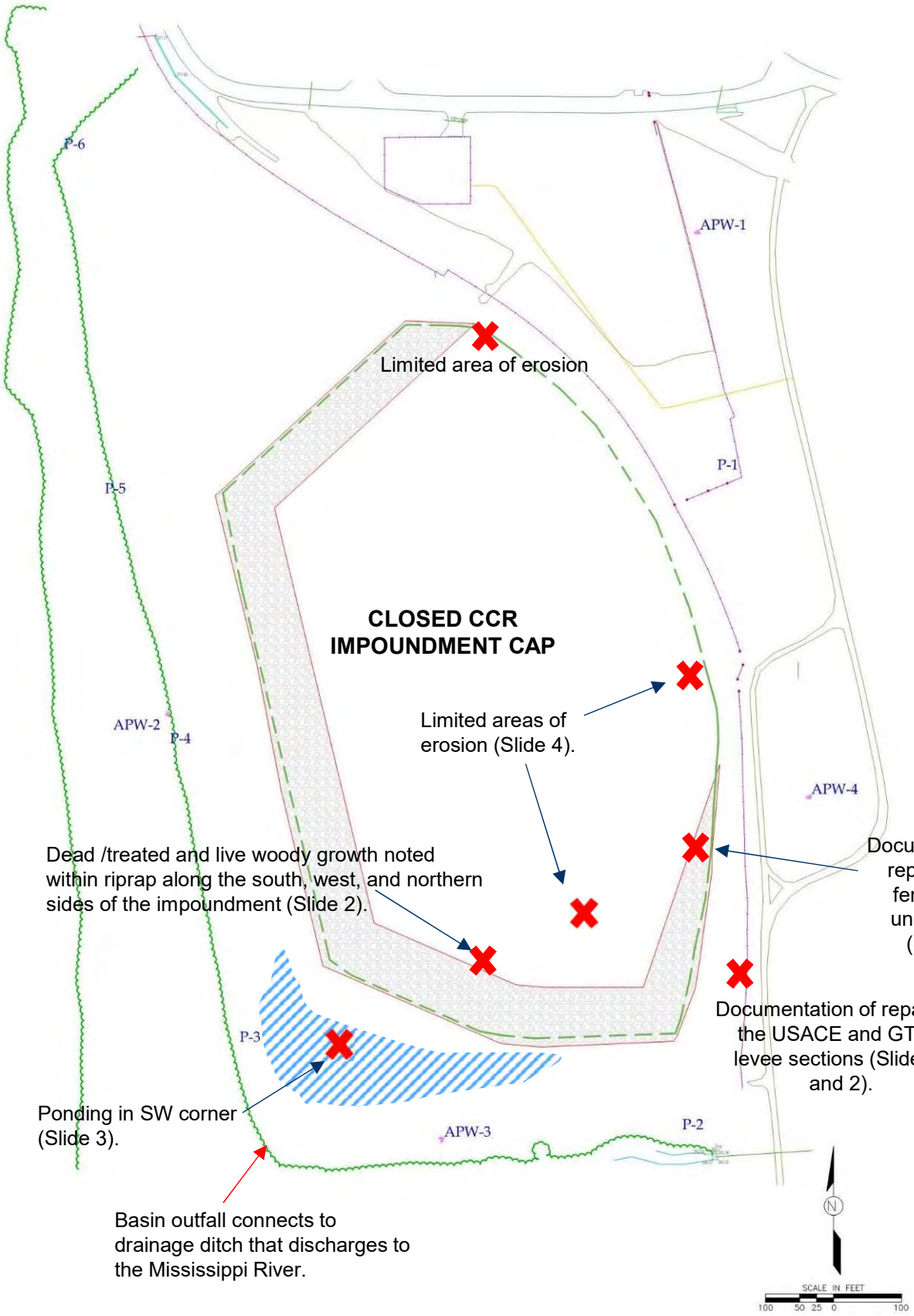
☒ Erosion / Gullies
☐ Cracking / Sloughing
☒ Ponding / Damp Areas
☐ No Problems Identified
☒ Woody Vegetation Growth
☐ Other

Observations in Detail Below:

- ERM onsite for the Q3 2023 inspection of the CCR impoundment and groundwater sampling event.
- Repairs to the United States Army Corps of Engineers (USACE) and GTEC levees continue to hold, and successful re-vegetation of levee face continues to progress.
- Erosion noted across north, west, and southern CCR impoundment cap faces up to 9” deep.
- Ponding continues to be noted in the SW corner of basin around the toe of the slope of the impoundment cap near the outfall.
- The impoundment cap was mowed during Q2 2023 and found to be in generally good condition.
- The inspector recommends continued treatment of woody growth within the riprap on the impoundment cap with appropriate management methods such as brushhogging, mowing, cutting, herbicide applications, and the filling of the erosional channels noted above.

Please see observation locations on figure on the following page.

Observation Locations Map



Grand Tower Energy Center Q3 2023 Closed CCR Impoundment Cap Inspection

Repairs to the Fenceline and Levee area on the SE Side of Closed CCR Impoundment Cap

Facing north along the repaired fence-line, riprap, and levee area. Levee has successfully revegetated since repairs were initiated during 2022.

Woody Growth Observations

Facing west towards impoundment cap.

Dead/herbicide treated woody vegetation noted within riprap up to 1” diameter. Limited amount of live woody growth remains.

Facing north towards impoundment cap.

Southern portion of the impoundment cap in foreground facing the southern perimeter berm and ponded water.

Ponding in the SW Corner of Site Basin Near the Outfall

Ponded area in southwest corner of basin near the outfall, as viewed from mowed impoundment cap.

Note: Mississippi River backwater enters the GTEC CCR Impoundment Basin when the river level gage operated by the U.S. Army Corps of Engineers at Grand Tower, IL reaches a stage of approximately 27 ft.

Erosional Channel Observations

Erosion facing southwest from southern side of impoundment cap.

APPENDIX B THIRD QUARTER 2023 GROUNDWATER MONITORING WELL INSPECTION FORMS

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-01R	Date:	9/19/2023
Total Depth (Actual):	58.38 ft (BTOC)	Time:	9:38
Total Depth (Measured):	58.21 ft (BTOC)	Collection Order:	6th
Depth to Water (Measured):	37.41 ft		

Is well screen occluded more than 10%? NO

If Yes, list steps for redevelopment:

LNAPL Present:	NO
If Yes, measured thickness =	
DNAPL Present:	NO
If Yes, measured thickness =	

Well Completion Type:

Condition of protector: INTACT	YES
Well ID present and readable:	YES
Locks intact:	YES
Weep hole present:	YES
Water present in protector:	NO
Are well "markers" (i.e.bumper posts) needed at this location:	NO
If yes, are current well "markers" adequate around well:	

Comments:

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	YES
Any observed ponding:	NO
Is surface run-off flow evident around well:	NO

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches

Marking point present:	YES
Well cap in place:	YES

Comments:

General Comments:

Hole in the ground around ballards.

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-02	Date:	9/19/2023
Total Depth (Actual):	58.75 ft (BTOC)	Time:	9:12
Total Depth (Measured):	58.40 ft (BTOC)	Collection Order:	4th
Depth to Water (Measured):	36.81 ft (BTOC)		

Is well screen occluded more than 10%? NO

If Yes, list steps for redevelopment:

LNAPL Present:	NO
If Yes, measured thickness =	
DNAPL Present:	NO
If Yes, measured thickness =	

Well Completion Type:

Condition of protector: INTACT	YES
Well ID present and readable:	YES
Locks intact:	YES
Weep hole present:	NO
Water present in protector:	YES
Are well "markers" (i.e.bumper posts) needed at this location:	NO
If yes, are current well "markers" adequate around well:	

Comments:

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	YES
Any observed ponding:	NO
Is surface run-off flow evident around well:	NO

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches

Marking point present:	YES
Well cap in place:	YES

Comments:

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-03	Date:	9/19/2023
Total Depth (Actual):	59.65 ft (BTOC)	Time:	10:37
Total Depth (Measured):	59.42 ft (BTOC)	Collection Order:	12th
Depth to Water (Measured):	36.45 ft (BTOC)		

Is well screen occluded more than 10%? NO

If Yes, list steps for redevelopment:

LNAPL Present:	NO
If Yes, measured thickness =	
DNAPL Present:	NO
If Yes, measured thickness =	

Well Completion Type:

Condition of protector: INTACT	YES
Well ID present and readable:	YES
Locks intact:	YES
Weep hole present:	NO
Water present in protector:	YES
Are well "markers" (i.e.bumper posts) needed at this location:	NO
If yes, are current well "markers" adequate around well:	

Comments:

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	YES
Any observed ponding:	NO
Is surface run-off flow evident around well:	NO

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches

Marking point present:	YES
Well cap in place:	YES

Comments:

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-04	Date:	9/19/2023
Total Depth (Actual):	60.40 ft (BTOC)	Time:	9:51
Total Depth (Measured):	60.25 ft (BTOC)	Collection Order:	7th
Depth to Water (Measured):	38.03 ft (BTOC)		

Is well screen occluded more than 10%? NO

If Yes, list steps for redevelopment:

LNAPL Present:	NO
If Yes, measured thickness =	
DNAPL Present:	NO
If Yes, measured thickness =	

Well Completion Type:

Condition of protector: INTACT	YES
Well ID present and readable:	YES
Locks intact:	YES
Weep hole present:	YES
Water present in protector:	NO
Are well "markers" (i.e.bumper posts) needed at this location:	YES
If yes, are current well "markers" adequate around well:	NO

Comments: Only 2 well markers - both in bad condition

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	YES
Any observed ponding:	NO
Is surface run-off flow evident around well:	NO

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches

Marking point present:	YES
Well cap in place:	YES

Comments:

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-05R	Date:	9/19/2023
Total Depth (Actual):	62.98 ft (BTOC)	Time:	9:03
Total Depth (Measured):	62.93 ft (BTOC)	Collection Order:	3rd
Depth to Water (Measured):	36.11 ft (BTOC)		

Is well screen occluded more than 10%? NO

If Yes, list steps for redevelopment:

LNAPL Present:	NO
If Yes, measured thickness =	
DNAPL Present:	NO
If Yes, measured thickness =	

Well Completion Type:

Condition of protector: INTACT	YES
Well ID present and readable:	YES
Locks intact:	YES
Weep hole present:	YES
Water present in protector:	NO
Are well "markers" (i.e.bumper posts) needed at this location:	YES
If yes, are current well "markers" adequate around well:	NO

Comments: No well markers present

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	YES
Any observed ponding:	NO
Is surface run-off flow evident around well:	NO

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches

Marking point present:	YES
Well cap in place:	YES

Comments:

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-06D	Date:	9/19/2023
Total Depth (Actual):	152.57 ft (BTOC)	Time:	8:49
Total Depth (Measured):	154.80 ft (BTOC)	Collection Order:	1st
Depth to Water (Measured):	34.97 ft (BTOC)		

Is well screen occluded more than 10%? NO

If Yes, list steps for redevelopment:

LNAPL Present:	NO
If Yes, measured thickness =	
DNAPL Present:	NO
If Yes, measured thickness =	

Well Completion Type:

Condition of protector: INTACT	YES
Well ID present and readable:	NO
Locks intact:	YES
Weep hole present:	NO
Water present in protector:	NO
Are well "markers" (i.e.bumper posts) needed at this location:	NO
If yes, are current well "markers" adequate around well:	

Comments:

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	YES
Any observed ponding:	NO
Is surface run-off flow evident around well:	NO

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches

Marking point present:	YES
Well cap in place:	YES

Comments:

General Comments:

Sand surrounding the well and bumper posts

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-06S	Date:	9/19/2023
Total Depth (Actual):	63.98 ft (BTOC)	Time:	8:53
Total Depth (Measured):	63.80 ft (BTOC)	Collection Order:	2nd
Depth to Water (Measured):	35.31 ft (BTOC)		

Is well screen occluded more than 10%? NO

If Yes, list steps for redevelopment:

LNAPL Present:	NO
If Yes, measured thickness =	
DNAPL Present:	NO
If Yes, measured thickness =	

Well Completion Type:

Condition of protector: INTACT	YES
Well ID present and readable:	NO
Locks intact:	YES
Weep hole present:	NO
Water present in protector:	NO
Are well "markers" (i.e.bumper posts) needed at this location:	NO
If yes, are current well "markers" adequate around well:	

Comments:

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	YES
Any observed ponding:	NO
Is surface run-off flow evident around well:	NO

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches

Marking point present:	YES
Well cap in place:	YES

Comments:

General Comments:

Sand surrounding the well and bumper posts

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-07	Date:	9/19/2023
Total Depth (Actual):	63.35 ft (BTOC)	Time:	10:21
Total Depth (Measured):	63.17 ft (BTOC)	Collection Order:	10th
Depth to Water (Measured):	32.09 ft (BTOC)		

Is well screen occluded more than 10%? NO

If Yes, list steps for redevelopment:

LNAPL Present:	NO
If Yes, measured thickness =	
DNAPL Present:	NO
If Yes, measured thickness =	

Well Completion Type:

Condition of protector: INTACT	YES
Well ID present and readable:	YES
Locks intact:	YES
Weep hole present:	YES
Water present in protector:	NO
Are well "markers" (i.e.bumper posts) needed at this location:	NO
If yes, are current well "markers" adequate around well:	

Comments:

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	YES
Any observed ponding:	NO
Is surface run-off flow evident around well:	NO

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches

Marking point present:	YES
Well cap in place:	YES

Comments:

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-08	Date:	9/19/2023
Total Depth (Actual):	61.89 ft (BTOC)	Time:	10:29
Total Depth (Measured):	61.96 ft (BTOC)	Collection Order:	11th
Depth to Water (Measured):	33.09 ft (BTOC)		

Is well screen occluded more than 10%? NO

If Yes, list steps for redevelopment:

LNAPL Present:	NO
If Yes, measured thickness =	
DNAPL Present:	NO
If Yes, measured thickness =	

Well Completion Type:

Condition of protector: INTACT	YES
Well ID present and readable:	YES
Locks intact:	YES
Weep hole present:	YES
Water present in protector:	NO
Are well "markers" (i.e.bumper posts) needed at this location:	NO
If yes, are current well "markers" adequate around well:	

Comments:

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	YES
Any observed ponding:	NO
Is surface run-off flow evident around well:	NO

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches

Marking point present:	YES
Well cap in place:	YES

Comments:

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-09	Date:	9/19/2023
Total Depth (Actual):	63.40 ft (BTOC)	Time:	9:31
Total Depth (Measured):	63.15 ft (BTOC)	Collection Order:	5th
Depth to Water (Measured):	37.00 ft (BTOC)		

Is well screen occluded more than 10%? NO

If Yes, list steps for redevelopment:

LNAPL Present:	NO
If Yes, measured thickness =	
DNAPL Present:	NO
If Yes, measured thickness =	

Well Completion Type:

Condition of protector: INTACT	YES
Well ID present and readable:	YES
Locks intact:	YES
Weep hole present:	YES
Water present in protector:	NO
Are well "markers" (i.e.bumper posts) needed at this location:	NO
If yes, are current well "markers" adequate around well:	

Comments:

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	YES
Any observed ponding:	NO
Is surface run-off flow evident around well:	NO

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches

Marking point present:	YES
Well cap in place:	YES

Comments:

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-10D	Date:	9/19/2023
Total Depth (Actual):	98.19 ft (BTOC)	Time:	10:11
Total Depth (Measured):	98.08 ft (BTOC)	Collection Order:	9th
Depth to Water (Measured):	29.45 ft (BTOC)		

Is well screen occluded more than 10%? NO

If Yes, list steps for redevelopment:

LNAPL Present:	NO
If Yes, measured thickness =	
DNAPL Present:	NO
If Yes, measured thickness =	

Well Completion Type:

Condition of protector: INTACT	YES
Well ID present and readable:	YES
Locks intact:	YES
Weep hole present:	YES
Water present in protector:	NO
Are well "markers" (i.e.bumper posts) needed at this location:	NO
If yes, are current well "markers" adequate around well:	

Comments:

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	YES
Any observed ponding:	NO
Is surface run-off flow evident around well:	NO

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches

Marking point present:	YES
Well cap in place:	YES

Comments:

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-10S	Date:	9/19/2023
Total Depth (Actual):	62.84 ft (BTOC)	Time:	10:03
Total Depth (Measured):	62.75 ft (BTOC)	Collection Order:	8th
Depth to Water (Measured):	31.18 ft (BTOC)		

Is well screen occluded more than 10%? NO

If Yes, list steps for redevelopment:

LNAPL Present:	NO
If Yes, measured thickness =	
DNAPL Present:	NO
If Yes, measured thickness =	

Well Completion Type:

Condition of protector: INTACT	YES
Well ID present and readable:	YES
Locks intact:	YES
Weep hole present:	YES
Water present in protector:	NO
Are well "markers" (i.e.bumper posts) needed at this location:	NO
If yes, are current well "markers" adequate around well:	

Comments:

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	YES
Any observed ponding:	NO
Is surface run-off flow evident around well:	NO

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches

Marking point present:	YES
Well cap in place:	YES

Comments:

General Comments:

APPENDIX C THIRD QUARTER 2023 FIELD DATA FORMS

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-01R
Well Permit No:

Date: 2023/09/20
78 deg F Cloudy

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 53.21 (ft)	**Reference Elevation** 366.82 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 37.43 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 58.21 (ft)
Project Name 20230906-GWMonitor	**Average Purge Rate** 318.8 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 48.3 - 58.3 (ft)
Sampler Clay Sansoucie/ Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 11.13 (gal) / 3 (gal)	**Well Construction**

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
14:30	37.45	350	0	20.3	6.88	339	NM	6.86	142	314	NM	Turbid brown, no odor
14:35	37.45	350	0.5	17.9	6.16	452	NM	2.01	147.7	388	NM	Turbid brown, no odor
14:40	37.45	350	1	17.9	6.26	477	NM	0.89	135	297	NM	Turbid brown, no odor
14:45	37.45	300	1.25	17.9	6.33	489	NM	0.8	127.3	234	NM	Cloudy, no odor
14:50	37.45	300	1.75	17.9	6.34	502	NM	0.76	122.9	164	NM	Cloudy, no odor
14:55	37.45	300	2	17.9	6.36	509	NM	0.76	119.6	138	NM	Cloudy, no odor
15:00	37.45	300	2.5	17.7	6.36	517	NM	0.75	118.2	129	NM	Cloudy, no odor
15:05	37.45	300	3	17.7	6.35	517	NM	0.76	117.4	133	NM	Cloudy, no odor

Sample ID(s): APW-01R-WG-20230920	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Clay Sansoucie 	09/22/2023 14:45

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-02
Well Permit No:

Date: 2023/09/20
75 deg F Cloudy

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 53.4 (ft)	**Reference Elevation** 364.61 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 34.92 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 58.4 (ft)
Project Name 20230906-GWMonitor	**Average Purge Rate** 193.8 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 47.2 - 57.2 (ft)
Sampler Clay Sansoucie/ Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 12.57 (gal) / 1.75 (gal)	**Well Construction**

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
11:52	37	250	0	25.5	7.17	1113	NM	3.6	57.3	123	NM	Clear, no odor
11:57	38.19	100	0.25	20	7.03	1114	NM	1.89	61.6	379	NM	Cloudy, no odor
12:02	38.96	200	0.5	19.2	7.07	1118	NM	1.23	40.9	299	NM	Cloudy, no odor
12:07	39.61	200	0.75	19.7	7.1	1107	NM	1.11	25	173	NM	Cloudy, no odor
12:12	40.45	200	1	19.5	7.1	1108	NM	1.01	15.3	113	NM	Cloudy, no odor
12:17	40.98	200	1.25	20	7.09	1099	NM	0.95	8.4	105	NM	Cloudy, no odor
12:22	41.51	200	1.5	20.3	7.08	1101	NM	0.99	7.4	103.4	NM	Cloudy, no odor
12:27	41.8	200	1.75	20.3	7.08	1100	NM	0.96	7.3	97	NM	Cloudy, no odor

Sample ID(s): APW-02-WG-20230920	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Clay Sansoucie 	09/22/2023 15:11

Low Flow Groundwater Sampling Field Data Form

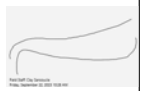
Well ID: APW-03
Well Permit No:

Date: 2023/09/19
75 deg F Sunny

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 54.42 (ft)	**Reference Elevation** 365.79 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 36.45 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 59.42 (ft)
Project Name 20230906-GWMonitor	**Average Purge Rate** 350 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 45.7 - 55.7 (ft)
Sampler Clay Sansoucie/ Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 12.3 (gal) / 3.25 (gal)	**Well Construction**

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
10:56	36.45	350	0	16.5	6.33	812	NM	4.51	319.3	66.9	NM	Cloudy, Sl. Rotten Egg Like Odor
11:01	36.45	350	0.5	15.5	7.07	827	NM	0.19	255.2	75.9	NM	Cloudy, No odor
11:06	36.45	350	0.75	15.5	7.51	842	NM	0.13	224.5	41.9	NM	Cloudy, No odor
11:11	36.45	350	1.25	15.5	7.74	843	NM	0.1	208.5	16.1	NM	Cloudy, No odor
11:16	36.45	350	1.75	15.4	7.83	845	NM	0.09	197.7	8.38	NM	Clear, No odor
11:21	36.45	350	2.25	15.4	7.85	845	NM	0.09	186.7	4.69	NM	Clear, No odor
11:26	36.45	350	2.75	15.5	7.8	845	NM	0.09	183.9	3.12	NM	Clear, No odor
11:31	36.45	350	3.25	15.5	7.8	846	NM	0.09	181.6	2.72	NM	Clear, No odor

Sample ID(s): APW-03-WG-20230919	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Clay Sansoucie 	09/22/2023 15:28

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-04
Well Permit No:

Date: 2023/09/20
78 deg F Cloudy

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 55.25 (ft)	**Reference Elevation** 367.44 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 38.07 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 60.25 (ft)
Project Name 20230906-GWMonitor	**Average Purge Rate** 378.1 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 45.7 - 55.7 (ft)
Sampler Clay Sansoucie/ Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 11.88 (gal) / 3.5 (gal)	**Well Construction**

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
15:30	38.07	400	0	18	7.05	512	NM	4.23	149.7	363	NM	Turbid brown, no odor
15:35	38.07	375	0.5	17	7.02	612	NM	0.43	137	147	NM	Cloudy, no odor
15:40	38.07	250	1	17.5	7.11	630	NM	0.26	122.7	50.6	NM	Cloudy, no odor
15:45	38.07	400	1.5	16.9	7.1	649	NM	0.14	116.5	25.3	NM	Clear, No odor
15:50	38.07	400	2	16.8	7.13	657	NM	0.11	110.6	33.6	NM	Clear, No odor
15:55	38.07	400	2.5	16.8	7.12	658	NM	0.08	106.4	23.8	NM	Clear, No odor
16:00	38.07	400	3	16.8	7.13	659	NM	0.08	104.1	22.7	NM	Clear, No odor
16:05	38.07	400	3.5	16.8	7.13	659	NM	0.08	101	21.6	NM	Clear, No odor

Sample ID(s): APW-04-WG-20230920	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Clay Sansoucie 	09/22/2023 16:13

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-05R
Well Permit No:

Date: 2023/09/20
68 deg F Cloudy

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 57.93 (ft)	**Reference Elevation** 363.8 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 36.19 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 62.93 (ft)
Project Name 20230906-GWMonitor	**Average Purge Rate** 400 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler Clay Sansoucie/ Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 14.32 (gal) / 5.5 (gal)	**Well Construction**

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
10:26	36.2	400	0	18	7.37	946	NM	4.16	66.6	861	NM	Turbid grey, No odor
10:31	36.2	400	0.5	17	7.29	954	NM	2.56	61.8	875	NM	Turbid grey, No odor
10:36	36.2	400	1	17.2	7.36	951	NM	1.28	45.3	858	NM	Turbid grey, No odor
10:41	36.2	400	1.5	17	7.35	951	NM	0.87	32.4	466	NM	Turbid grey, No odor
10:46	36.2	400	2	17	6.9	955	NM	0.7	17.6	225	NM	Cloudy Grey, Organic like odor
10:51	36.2	400	2.5	17.1	7.37	958	NM	0.63	8.6	138	NM	Cloudy Grey, Organic like odor
10:56	36.2	400	3	17.1	7.36	959	NM	0.54	-0.3	89.3	NM	Cloudy Grey, Organic like odor
11:01	36.2	400	3.5	17.2	7.37	960	NM	0.45	-8.1	57.5	NM	Clear, Organic like odor
11:06	36.2	400	4	17.3	7.36	961	NM	0.37	-14.9	46	NM	Clear, Organic like odor
11:11	36.2	400	4.5	17.4	7.37	961	NM	0.3	-20.4	35.9	NM	Clear, Organic like odor
11:16	36.2	400	5	17.4	7.37	962	NM	0.29	-21.5	34.2	NM	Clear, Organic like odor
11:21	36.2	400	5.5	17.4	7.36	962	NM	0.29	-20.9	33.7	NM	Clear, Organic like odor

Sample ID(s): APW-05R-WG-20230920,DUP-01-WG-20230920	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Clay Sansoucie 	09/22/2023 17:34

Low Flow Groundwater Sampling Field Data Form

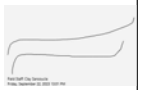
Well ID: APW-06D
Well Permit No:

Date: 2023/09/20
60 deg F Cloudy

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 149.8 (ft)	**Reference Elevation** 363.69 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 35.03 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 154.8 (ft)
Project Name 20230906-GWMonitor	**Average Purge Rate** 454.5 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 140 - 150 (ft)
Sampler Clay Sansoucie/ Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 64.13 (gal) / 5 (gal)	**Well Construction**

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
09:10	35.03	500	0	18	7.42	772	NM	4.57	47.3	7.01	NM	Clear, Organic Like Odor
09:15	35.03	450	0.5	16.1	7.24	793	NM	1.52	36.9	611	NM	Turbid grey, Organic Like Odor
09:20	35.03	450	1	16	7.28	800	NM	0.62	28.8	311	NM	Turbid grey, Organic Like Odor
09:25	35.03	450	1.5	16	7.31	804	NM	0.49	22.3	202	NM	Turbid grey, Organic Like Odor
09:30	35.03	450	2	15.9	7.3	805	NM	0.4	17.8	164	NM	Cloudy, Organic Like Odor
09:35	35.03	450	2.5	15.9	7.3	805	NM	0.33	13.4	120	NM	Cloudy, Organic Like Odor
09:40	35.03	450	3	15.9	7.3	804	NM	0.29	8.8	80.3	NM	Cloudy, Organic Like Odor
09:45	35.03	450	3.5	15.9	7.3	803	NM	0.26	4.3	57.8	NM	Clear, Sl. Organic Like Odor
09:50	35.03	450	4	16	7.3	802	NM	0.23	4.1	69.44	NM	Clear, Sl. Organic Like Odor
09:55	35.03	450	4.5	16	7.29	802	NM	0.23	3.9	67.1	NM	Clear, Sl. Organic Like Odor
10:00	35.03	450	5	16	7.3	802	NM	0.23	4.3	65.5	NM	Clear, Sl. Organic Like Odor

Sample ID(s): APW-06D-WG-20230920	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Clay Sansoucie 	09/22/2023 18:01

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-07
Well Permit No:

Date: 2023/09/19
75 deg F Sunny

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 58.17 (ft)	**Reference Elevation** 360.61 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 32.12 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 63.17 (ft)
Project Name 20230906-GWMonitor	**Average Purge Rate** 403.6 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler Clay Sansoucie/ Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 16.63 (gal) / 3 (gal)	**Well Construction**

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
13:16	32.12	425	0	20.1	6.93	1029	NM	5.49	206.7	61.8	NM	Cloudy, no odor
13:21	32.12	400	0.5	17.9	6.7	1155	NM	0.38	170.8	109	NM	Cloudy, no odor
13:26	32.12	400	1	17.8	6.74	1158	NM	0.27	139.9	76	NM	Cloudy, no odor
13:31	32.12	400	1.5	17.4	6.77	1165	NM	0.18	115.4	68.8	NM	Cloudy, no odor
13:36	32.12	400	2	17.3	6.78	1167	NM	0.13	98	45.2	NM	Clear, no odor
13:41	32.12	400	2.5	17.3	6.78	1167	NM	0.13	89.3	43.3	NM	Clear, no odor
13:46	32.12	400	3	17.3	6.78	1166	NM	0.13	91.5	42.9	NM	Clear, no odor

Sample ID(s): APW-07-WG-20230919	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Clay Sansoucie 	09/22/2023 18:38

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-08
Well Permit No:

Date: 2023/09/19
75 deg F Sunny

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 56.96 (ft)	**Reference Elevation** 362.71 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 33.08 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 61.96 (ft)
Project Name 20230906-GWMonitor	**Average Purge Rate** 339.6 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler Clay Sansoucie/ Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 15.46 (gal) / 5.25 (gal)	**Well Construction**

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
11:58	33.08	300	0	22.2	6.03	327	NM	4.52	190.4	1000	NM	Turbid Dark Grey, No odor
12:03	33.08	275	0.5	21.7	5.59	344.6	NM	1.6	185.6	1000	NM	Turbid Dark Grey, No odor
12:08	33.08	350	1	20.3	5.32	359.5	NM	2.57	179.4	1000	NM	Turbid Dark Grey, No odor
12:13	33.08	350	1.5	20.6	4.99	355.7	NM	1.99	172.6	638	NM	Turbid Dark Grey, No odor
12:18	33.08	350	1.75	21.2	4.74	354.9	NM	2.67	165.8	451	NM	Turbid Dark Grey, No odor
12:23	33.08	350	2.25	21.5	4.56	348	NM	2.87	155.6	313	NM	Turbid Dark Grey, No odor
12:28	33.08	350	2.75	21.5	4.5	345.4	NM	3.05	144.7	234	NM	Opaque Grey, No odor
12:33	33.08	350	3.25	21.3	4.48	342.1	NM	3.22	135.6	171	NM	Opaque Grey, No odor
12:38	33.08	350	3.75	22	4.47	267.8	NM	3.55	126.6	129	NM	Opaque Grey, No odor
12:43	33.08	350	4.25	19.6	6.89	660	NM	0.16	146.1	137	NM	Opaque Grey, No odor
12:48	33.08	350	4.75	19.6	6.89	656	NM	0.16	140.2	135	NM	Opaque Grey, No odor
12:53	33.08	350	5.25	19.5	6.91	653	NM	0.16	137.5	141	NM	Cloudy, No odor

Sample ID(s): APW-08-WG-20230919	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Clay Sansoucie 	09/22/2023 19:02

Low Flow Groundwater Sampling Field Data Form	Well ID: APW-09 Well Permit No:	Date: 2023/09/20 75 deg F Cloudy

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 58.15 (ft)	**Reference Elevation** 366.84 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 37.04 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 63.15 (ft)
Project Name 20230906-GWMonitor	**Average Purge Rate** 500 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler Clay Sansoucie/ Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 13.98 (gal) / 3.5 (gal)	**Well Construction**

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
13:19	37.04	500	0	18.1	7.23	553	NM	4.76	101.3	207	NM	Turbid Lt Brown, No odor
13:24	37.04	500	0.5	16.5	7.3	551	NM	3.18	94.1	108	NM	Cloudy, No odor
13:29	37.04	500	1	16.4	7.36	556	NM	1.79	88.5	39.3	NM	Clear, No odor
13:34	37.04	500	1.5	16.2	7.36	558	NM	0.78	83.2	18	NM	Clear, No odor
13:39	37.04	500	2	16.3	7.4	559	NM	0.52	78.6	13.3	NM	Clear, No odor
13:44	37.04	500	2.5	16.3	7.38	559	NM	0.46	76.1	6.94	NM	Clear, No odor
13:49	37.04	500	3	16.3	7.38	559	NM	0.45	74.7	5.81	NM	Clear, No odor
13:54	37.04	500	3.5	16.3	7.38	558	NM	0.45	73.3	5.64	NM	Clear, No odor

Sample ID(s):	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
APW-09-WG-20230920,DUP-02-WG-20230920		Clay Sansoucie 	09/22/2023 19:27
Analysis:			

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-10D
Well Permit No:

Date: 2023/09/19
78 deg F Sunny

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 93.08 (ft)	**Reference Elevation** 359.41 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 29.5 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 98.08 (ft)
Project Name 20230906-GWMonitor	**Average Purge Rate** 395 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 86 - 96 (ft)
Sampler Clay Sansoucie/ Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 36.72 (gal) / 4.5 (gal)	**Well Construction**

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
15:09	29.5	200	0	19.2	7.37	695	NM	2.86	41	42.8	NM	Clear, no odor
15:14	29.5	350	0.5	17.3	6.96	691	NM	0.96	57.8	1000	NM	Turbid Grey, No odor
15:19	29.5	250	1	17.5	7	689	NM	0.89	58.2	1000	NM	Turbid Grey, No odor
15:24	29.5	450	1.5	16.6	7	688	NM	0.65	59.8	721	NM	Turbid Grey, No odor
15:29	29.5	450	2	16.4	7.01	687	NM	0.49	59.1	389	NM	Turbid Grey, No odor
15:34	29.5	450	2.5	16.3	7	686	NM	0.36	58.2	277	NM	Turbid Grey, No odor
15:39	29.5	450	3	16.5	7.01	686	NM	0.3	57.3	199	NM	Turbid Grey, No odor
15:44	29.5	450	3.5	16.6	7.01	686	NM	0.24	56.1	171	NM	Cloudy, No odor
15:49	29.5	450	4	16.6	7	686	NM	0.24	55.6	175	NM	Cloudy, No odor
15:54	29.5	450	4.5	16.4	7	686	NM	0.24	55.7	169	NM	Cloudy, No odor

Sample ID(s): APW-10D-WG-20230919	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Clay Sansoucie 	09/22/2023 19:46

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-10S
Well Permit No:

Date: 2023/09/19
78 deg F Sunny

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 56.75 (ft)	**Reference Elevation** 359.47 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 31.1 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 62.75 (ft)
Project Name 20230906-GWMonitor	**Average Purge Rate** 356.3 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler Clay Sansoucie/ Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 16.95 (gal) / 3.5 (gal)	**Well Construction**

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
14:13	31.34	400	0	19.4	6.85	1283	NM	2.24	166.9	1000	NM	Turbid Grey, Sl. Rotten Egg Like Odor
14:18	31.3	350	0.5	17.1	6.96	1273	NM	0.19	127.4	1000	NM	Turbid Grey, Sl. Rotten Egg Like Odor
14:23	31.3	350	1	17.4	7	1274	NM	0.14	81	595	NM	Turbid Grey, Sl. Rotten Egg Like Odor
14:28	31.3	350	1.5	17	7	1273	NM	0.11	52.7	250	NM	Turbid Grey, Sl. Rotten Egg Like Odor
14:33	31.3	350	2	17.1	7	1275	NM	0.09	26.3	114	NM	Cloudy, Sl. Rotten Egg Like Odor
14:38	31.3	350	2.5	17.4	7	1274	NM	0.07	10.5	68.5	NM	Cloudy, Sl. Rotten Egg Like Odor
14:43	31.3	350	3	17	6.99	1275	NM	0.07	9.7	65.7	NM	Clear, Sl. Rotten Egg Like Odor
14:48	31.3	350	3.5	17	6.99	1274	NM	0.07	7.4	63.6	NM	Clear, Sl. Rotten Egg Like Odor

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
APW-10S-WG-20230919		Clay Sansoucie 	09/22/2023 20:03
Analysis:			

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-06S
Well Permit No:

Date: 2023/09/20
60 deg F Cloudy

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 58.8 (ft)	**Reference Elevation** 363.51 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 35.32 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 63.8 (ft)
Project Name 20230906-GWMonitor	**Average Purge Rate** 375 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler Clay Sansoucie/ Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 15.25 (gal) / 4.5 (gal)	**Well Construction**

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
08:02	35.4	375	0	15.7	7.34	838	NM	3	164.9	391	NM	Turbid Grey, No odor
08:07	35.4	375	0.5	15.7	7.23	886	NM	0.43	151.8	333	NM	Turbid Grey, Organic like odor
08:12	35.4	375	1	15.9	7.2	889	NM	0.31	126.6	175	NM	Turbid Grey, Organic like odor
08:17	35.4	375	1.5	16	7.2	889	NM	0.25	101.9	73.3	NM	Cloudy, Organic like odor
08:22	35.4	375	2	16.1	7.19	890	NM	0.22	78.9	38.2	NM	Clear, Organic like odor
08:27	35.4	375	2.5	16.1	7.19	891	NM	0.18	57	22.9	NM	Clear, Organic like odor
08:32	35.4	375	3	16.1	7.19	890	NM	0.15	41.1	16.2	NM	Clear, Organic like odor
08:37	35.4	375	3.5	16.2	7.2	890	NM	0.14	24.4	9.04	NM	Clear, Organic like odor
08:42	35.4	375	4	16.2	7.2	890	NM	0.14	23.8	9.78	NM	Clear, Organic like odor
08:47	35.4	375	4.5	16.2	7.2	890	NM	0.14	21.7	8.99	NM	Clear, Organic like odor

Sample ID(s): APW-06S-WG-20230920	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Clay Sansoucie 	09/22/2023 18:24

APPENDIX D – THIRD QUARTER 2023 LABORATORY ANALYTICAL REPORT

October 30, 2023

Clay Sansoucie
ERM
1968 Craig Road
Suite 100
St. Louis, MO 63146
TEL: (314) 956-0269
FAX:

Illinois	100226
Kansas	E-10374
Louisiana	05002
Louisiana	05003
Oklahoma	9978

RE: 0599247 **WorkOrder:** 23091500

Dear Clay Sansoucie:

TEKLAB, INC received 15 samples on 9/21/2023 9:45:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Elizabeth A. Hurley
Director of Customer Service
(618)344-1004 ex 33
ehurley@teklabinc.com

Report Contents

Client: ERM
Client Project: 0599247

Work Order: 23091500
Report Date: 30-Oct-23

This reporting package includes the following:

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

Abbr	Definition
*	Analytes on report marked with an asterisk are not NELAP accredited
CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
CRQL	A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
DNI	Did not ignite
DUP	Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample is a sample matrix, free from the analytes of interest,spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	"The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
NC	Data is not acceptable for compliance purposes
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Definitions

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

Qualifiers

# -	Unknown hydrocarbon	B -	Analyte detected in associated Method Blank
C -	RL shown is a Client Requested Quantitation Limit	E -	Value above quantitation range
H -	Holding times exceeded	I -	Associated internal standard was outside method criteria
J -	Analyte detected below quantitation limits	M -	Manual Integration used to determine area response
ND -	Not Detected at the Reporting Limit	R -	RPD outside accepted recovery limits
S -	Spike Recovery outside recovery limits	T -	TIC(Tentatively identified compound)
X -	Value exceeds Maximum Contaminant Level		

Client: ERM

Work Order: 23091500

Client Project: 0599247

Report Date: 30-Oct-23

Cooler Receipt Temp: 3.4 °C

Ra226/228 analyses were performed by Summit Environmental Technologies, Inc. See attached report for results and QC.

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2024	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2024	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2024	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2024	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2024	Collinsville
Arkansas	ADEQ	88-0966		3/14/2024	Collinsville
Illinois	IDPH	17584		5/31/2025	Collinsville
Iowa	IDNR	430		6/1/2024	Collinsville
Kentucky	UST	0073		1/31/2024	Collinsville
Missouri	MDNR	00930		5/31/2023	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

Lab ID: 23091500-001 **Client Sample ID:** APW-03-WG-20230919

Matrix: GROUNDWATER **Collection Date:** 09/19/2023 11:35

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**636**	mg/L	1	09/21/2023 15:53	R336743
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**280**	mg/L	10	09/22/2023 17:36	R336796
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**7.84**		1	09/27/2023 14:06	R336927
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.25**	mg/L	1	09/26/2023 11:11	R336875
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**16**	mg/L	1	09/22/2023 17:30	R336801
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 18:04	212291
Arsenic	NELAP	0.0010		**0.0019**	mg/L	5	09/25/2023 18:04	212291
Barium	NELAP	0.0010		**0.136**	mg/L	5	09/25/2023 18:04	212291
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	10/02/2023 13:29	212291
Boron	NELAP	0.0250		**4.11**	mg/L	5	09/25/2023 18:04	212291
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 18:04	212291
Calcium	NELAP	0.125		**137**	mg/L	5	09/29/2023 14:29	212291
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/25/2023 18:04	212291
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 18:04	212291
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 18:04	212291
Lithium	*	0.0030		**0.0406**	mg/L	5	10/02/2023 13:29	212291
Molybdenum	*	0.0015		**0.0487**	mg/L	5	09/25/2023 18:04	212291
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 18:04	212291
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/25/2023 18:04	212291
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/26/2023 23:46	212304
Arsenic	NELAP	0.0010		**0.0017**	mg/L	5	09/26/2023 23:46	212304
Barium	NELAP	0.0010		**0.137**	mg/L	5	09/26/2023 23:46	212304
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/26/2023 23:46	212304
Boron	NELAP	0.0250	S	**4.19**	mg/L	5	09/28/2023 10:48	212304
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/26/2023 23:46	212304
Calcium	NELAP	0.125	S	**124**	mg/L	5	09/26/2023 23:46	212304
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/26/2023 23:46	212304
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/26/2023 23:46	212304
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/26/2023 23:46	212304
Lithium	*	0.0030		**0.0312**	mg/L	5	09/26/2023 23:46	212304
Molybdenum	*	0.0015		**0.0558**	mg/L	5	09/26/2023 23:46	212304
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/26/2023 23:46	212304
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/26/2023 23:46	212304
Matrix spike control limits are not applicable due to high sample/spike ratio.								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/26/2023 15:11	212412
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/13/2023 14:22	R338467
Radium-228	*	0		**See Attached**	pci/L	1	10/13/2023 14:22	R338467

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

Lab ID: 23091500-002 **Client Sample ID:** APW-08-WG-20230919

Matrix: GROUNDWATER **Collection Date:** 09/19/2023 12:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		**440**	mg/L	2.5	09/21/2023 15:54	R336743
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**23**	mg/L	1	09/22/2023 17:54	R336796
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**7.16**		1	09/27/2023 14:07	R336927
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.26**	mg/L	1	09/26/2023 11:13	R336875
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**10**	mg/L	1	09/22/2023 17:54	R336801
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 18:23	212291
Arsenic	NELAP	0.0010		**0.0014**	mg/L	5	09/25/2023 18:23	212291
Barium	NELAP	0.0010		**0.236**	mg/L	5	10/02/2023 14:13	212291
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	10/02/2023 14:13	212291
Boron	NELAP	0.0250		**0.117**	mg/L	5	09/25/2023 18:23	212291
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 18:23	212291
Calcium	NELAP	0.125	S	**94.1**	mg/L	5	09/29/2023 16:11	212291
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/25/2023 18:23	212291
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 18:23	212291
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 18:23	212291
Lithium	*	0.0030		**0.0220**	mg/L	5	10/02/2023 14:13	212291
Molybdenum	*	0.0015		**< 0.0015**	mg/L	5	09/25/2023 18:23	212291
Selenium	NELAP	0.0010		**0.0121**	mg/L	5	09/25/2023 18:23	212291
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/29/2023 16:11	212291
Matrix spike control limits are not applicable due to high sample/spike ratio.								
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/26/2023 23:29	212304
Arsenic	NELAP	0.0010		**0.0018**	mg/L	5	09/26/2023 23:29	212304
Barium	NELAP	0.0010		**0.199**	mg/L	5	09/26/2023 23:29	212304
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/26/2023 23:29	212304
Boron	NELAP	0.0250		**0.116**	mg/L	5	09/28/2023 9:13	212304
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/26/2023 23:29	212304
Calcium	NELAP	0.125		**86.4**	mg/L	5	09/26/2023 23:29	212304
Chromium	NELAP	0.0015		**0.0031**	mg/L	5	09/26/2023 23:29	212304
Cobalt	NELAP	0.0010		**0.0014**	mg/L	5	09/26/2023 23:29	212304
Lead	NELAP	0.0010		**0.0015**	mg/L	5	09/26/2023 23:29	212304
Lithium	*	0.0030		**0.0177**	mg/L	5	09/26/2023 23:29	212304
Molybdenum	*	0.0015		**< 0.0015**	mg/L	5	09/26/2023 23:29	212304
Selenium	NELAP	0.0010		**0.0122**	mg/L	5	09/26/2023 23:29	212304
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/26/2023 23:29	212304
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/26/2023 15:13	212412
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/13/2023 14:22	R338467
Radium-228	*	0		**See Attached**	pci/L	1	10/13/2023 14:22	R338467

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

Lab ID: 23091500-003 **Client Sample ID:** APW-07-WG-20230919

Matrix: GROUNDWATER **Collection Date:** 09/19/2023 13:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		**740**	mg/L	2.5	09/21/2023 15:54	R336743
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**44**	mg/L	1	09/22/2023 18:02	R336796
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**6.94**		1	09/27/2023 14:09	R336927
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.18**	mg/L	1	09/26/2023 11:15	R336875
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**9**	mg/L	1	09/22/2023 18:02	R336801
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 18:10	212291
Arsenic	NELAP	0.0010		**0.0013**	mg/L	5	09/29/2023 14:35	212291
Barium	NELAP	0.0010		**0.336**	mg/L	5	09/25/2023 18:10	212291
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	10/02/2023 13:35	212291
Boron	NELAP	0.0250		**0.192**	mg/L	5	09/25/2023 18:10	212291
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 18:10	212291
Calcium	NELAP	0.125		**196**	mg/L	5	09/29/2023 14:35	212291
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/25/2023 18:10	212291
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 18:10	212291
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 18:10	212291
Lithium	*	0.0030		**0.0184**	mg/L	5	10/02/2023 13:35	212291
Molybdenum	*	0.0015		**0.0029**	mg/L	5	09/25/2023 18:10	212291
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 18:10	212291
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/25/2023 18:10	212291
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/26/2023 23:35	212304
Arsenic	NELAP	0.0010		**0.0018**	mg/L	5	09/26/2023 23:35	212304
Barium	NELAP	0.0010		**0.303**	mg/L	5	09/26/2023 23:35	212304
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/26/2023 23:35	212304
Boron	NELAP	0.0250		**0.181**	mg/L	5	09/28/2023 9:18	212304
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/26/2023 23:35	212304
Calcium	NELAP	0.125		**161**	mg/L	5	09/26/2023 23:35	212304
Chromium	NELAP	0.0015		**0.0057**	mg/L	5	09/26/2023 23:35	212304
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/26/2023 23:35	212304
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/26/2023 23:35	212304
Lithium	*	0.0030		**0.0141**	mg/L	5	09/26/2023 23:35	212304
Molybdenum	*	0.0015		**0.0029**	mg/L	5	09/26/2023 23:35	212304
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/26/2023 23:35	212304
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/26/2023 23:35	212304
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/26/2023 15:20	212412
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/13/2023 14:22	R338467
Radium-228	*	0		**See Attached**	pci/L	1	10/13/2023 14:22	R338467

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

Lab ID: 23091500-004 **Client Sample ID:** APW-10S-WG-20230919

Matrix: GROUNDWATER **Collection Date:** 09/19/2023 14:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		**775**	mg/L	2.5	09/21/2023 16:05	R336743
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10	S	**< 10**	mg/L	1	09/22/2023 18:13	R336796
Matrix spike did not recover within control limits due to matrix interference.								
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**7.17**		1	09/27/2023 14:12	R336927
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.16**	mg/L	1	09/26/2023 11:16	R336875
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**15**	mg/L	1	09/22/2023 18:13	R336801
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 18:16	212291
Arsenic	NELAP	0.0010		**0.176**	mg/L	5	09/25/2023 18:16	212291
Barium	NELAP	0.0010		**0.567**	mg/L	5	09/25/2023 18:16	212291
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	10/02/2023 13:42	212291
Boron	NELAP	0.0250		**0.571**	mg/L	5	09/25/2023 18:16	212291
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 18:16	212291
Calcium	NELAP	0.125		**151**	mg/L	5	09/29/2023 15:26	212291
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/25/2023 18:16	212291
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 18:16	212291
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 18:16	212291
Lithium	*	0.0030		**0.0349**	mg/L	5	10/02/2023 13:42	212291
Molybdenum	*	0.0015		**< 0.0015**	mg/L	5	09/25/2023 18:16	212291
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 18:16	212291
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/25/2023 18:16	212291
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/26/2023 23:40	212304
Arsenic	NELAP	0.0010		**0.174**	mg/L	5	09/26/2023 23:40	212304
Barium	NELAP	0.0010		**0.591**	mg/L	5	09/26/2023 23:40	212304
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/26/2023 23:40	212304
Boron	NELAP	0.0250		**0.553**	mg/L	5	09/28/2023 9:22	212304
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/26/2023 23:40	212304
Calcium	NELAP	0.125		**134**	mg/L	5	09/26/2023 23:40	212304
Chromium	NELAP	0.0015		**0.0087**	mg/L	5	09/26/2023 23:40	212304
Cobalt	NELAP	0.0010		**0.0021**	mg/L	5	09/26/2023 23:40	212304
Lead	NELAP	0.0010		**0.0031**	mg/L	5	09/26/2023 23:40	212304
Lithium	*	0.0030		**0.0301**	mg/L	5	09/26/2023 23:40	212304
Molybdenum	*	0.0015		**< 0.0015**	mg/L	5	09/26/2023 23:40	212304
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/26/2023 23:40	212304
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/26/2023 23:40	212304
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/26/2023 15:22	212412
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/23/2023 14:46	R338467
Radium-228	*	0		**See Attached**	pci/L	1	10/23/2023 14:46	R338467

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

Lab ID: 23091500-005 **Client Sample ID:** APW-10D-WG-20230919

Matrix: GROUNDWATER **Collection Date:** 09/19/2023 16:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**468**	mg/L	1	09/21/2023 16:05	R336743
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**31**	mg/L	1	09/22/2023 18:48	R336796
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**7.22**		1	09/27/2023 14:13	R336927
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.11**	mg/L	1	09/26/2023 11:18	R336875
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**10**	mg/L	1	09/22/2023 18:47	R336801
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 20:48	212291
Arsenic	NELAP	0.0010		**0.0011**	mg/L	5	09/25/2023 20:48	212291
Barium	NELAP	0.0010		**0.355**	mg/L	5	09/25/2023 20:48	212291
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	10/02/2023 13:48	212291
Boron	NELAP	0.0250		**0.0639**	mg/L	5	09/29/2023 15:33	212291
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 20:48	212291
Calcium	NELAP	0.125		**116**	mg/L	5	09/29/2023 15:33	212291
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/25/2023 20:48	212291
Cobalt	NELAP	0.0010		**0.0026**	mg/L	5	09/25/2023 20:48	212291
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 20:48	212291
Lithium	*	0.0030		**0.0200**	mg/L	5	10/02/2023 13:48	212291
Molybdenum	*	0.0015		**< 0.0015**	mg/L	5	09/25/2023 20:48	212291
Selenium	NELAP	0.0010		**0.0016**	mg/L	5	09/25/2023 20:48	212291
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/25/2023 20:48	212291
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:31	212304
Arsenic	NELAP	0.0010		**0.0016**	mg/L	5	09/27/2023 0:31	212304
Barium	NELAP	0.0010		**0.339**	mg/L	5	09/27/2023 0:31	212304
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:31	212304
Boron	NELAP	0.0250		**0.0660**	mg/L	5	09/28/2023 9:26	212304
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:31	212304
Calcium	NELAP	0.125		**118**	mg/L	5	09/27/2023 0:31	212304
Chromium	NELAP	0.0015		**0.0042**	mg/L	5	09/27/2023 0:31	212304
Cobalt	NELAP	0.0010		**0.0031**	mg/L	5	09/27/2023 0:31	212304
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:31	212304
Lithium	*	0.0030		**0.0148**	mg/L	5	09/28/2023 9:26	212304
Molybdenum	*	0.0015		**< 0.0015**	mg/L	5	09/27/2023 0:31	212304
Selenium	NELAP	0.0010		**0.0013**	mg/L	5	09/27/2023 0:31	212304
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/27/2023 0:31	212304
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/26/2023 15:24	212412
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/13/2023 14:22	R338467
Radium-228	*	0		**See Attached**	pci/L	1	10/13/2023 14:22	R338467

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

Lab ID: 23091500-006 **Client Sample ID:** APW-06S-WG-20230920

Matrix: GROUNDWATER **Collection Date:** 09/20/2023 8:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		**565**	mg/L	2.5	09/22/2023 10:42	R336815
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**221**	mg/L	10	09/22/2023 19:00	R336796
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**7.21**		1	09/27/2023 14:47	R336927
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.30**	mg/L	1	09/26/2023 11:20	R336875
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**20**	mg/L	1	09/22/2023 18:55	R336801
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 20:54	212291
Arsenic	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 20:54	212291
Barium	NELAP	0.0010		**0.216**	mg/L	5	09/25/2023 20:54	212291
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	10/02/2023 13:54	212291
Boron	NELAP	0.0250		**6.65**	mg/L	5	09/29/2023 15:39	212291
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 20:54	212291
Calcium	NELAP	0.125		**107**	mg/L	5	09/29/2023 15:39	212291
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/25/2023 20:54	212291
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 20:54	212291
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 20:54	212291
Lithium	*	0.0030		**0.0487**	mg/L	5	10/02/2023 13:54	212291
Molybdenum	*	0.0015		**0.234**	mg/L	5	09/25/2023 20:54	212291
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 20:54	212291
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/25/2023 20:54	212291
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:37	212304
Arsenic	NELAP	0.0010		**0.0012**	mg/L	5	09/27/2023 0:37	212304
Barium	NELAP	0.0010		**0.206**	mg/L	5	09/27/2023 0:37	212304
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:37	212304
Boron	NELAP	0.0250		**5.79**	mg/L	5	09/28/2023 10:19	212304
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:37	212304
Calcium	NELAP	0.125		**92.7**	mg/L	5	09/27/2023 0:37	212304
Chromium	NELAP	0.0015		**0.0067**	mg/L	5	09/27/2023 0:37	212304
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:37	212304
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:37	212304
Lithium	*	0.0030		**0.0369**	mg/L	5	09/28/2023 10:19	212304
Molybdenum	*	0.0015		**0.225**	mg/L	5	09/27/2023 0:37	212304
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:37	212304
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/27/2023 0:37	212304
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/26/2023 15:26	212412
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/23/2023 14:46	R338467
Radium-228	*	0		**See Attached**	pci/L	1	10/23/2023 14:46	R338467

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

Lab ID: 23091500-007 **Client Sample ID:** APW-06D-WG-20230920

Matrix: GROUNDWATER **Collection Date:** 09/20/2023 10:05

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		**565**	mg/L	2.5	09/22/2023 10:42	R336815
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**218**	mg/L	10	09/22/2023 19:08	R336796
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**7.30**		1	09/27/2023 14:50	R336927
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.22**	mg/L	1	09/26/2023 11:22	R336875
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**16**	mg/L	1	09/22/2023 19:03	R336801
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 21:00	212291
Arsenic	NELAP	0.0010		**0.0100**	mg/L	5	09/25/2023 21:00	212291
Barium	NELAP	0.0010		**0.121**	mg/L	5	09/25/2023 21:00	212291
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	10/02/2023 14:01	212291
Boron	NELAP	0.0250		**3.77**	mg/L	5	09/29/2023 15:45	212291
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 21:00	212291
Calcium	NELAP	0.125		**114**	mg/L	5	09/29/2023 15:45	212291
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/25/2023 21:00	212291
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 21:00	212291
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 21:00	212291
Lithium	*	0.0030		**0.0197**	mg/L	5	10/02/2023 14:01	212291
Molybdenum	*	0.0015		**0.0559**	mg/L	5	09/25/2023 21:00	212291
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 21:00	212291
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/25/2023 21:00	212291
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:42	212304
Arsenic	NELAP	0.0010		**0.0109**	mg/L	5	09/27/2023 0:42	212304
Barium	NELAP	0.0010		**0.128**	mg/L	5	09/27/2023 0:42	212304
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:42	212304
Boron	NELAP	0.0250		**3.81**	mg/L	5	09/28/2023 10:23	212304
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:42	212304
Calcium	NELAP	0.125		**106**	mg/L	5	09/27/2023 0:42	212304
Chromium	NELAP	0.0015		**0.0727**	mg/L	5	09/27/2023 0:42	212304
Cobalt	NELAP	0.0010		**0.0035**	mg/L	5	09/27/2023 0:42	212304
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:42	212304
Lithium	*	0.0030		**0.0169**	mg/L	5	09/28/2023 10:23	212304
Molybdenum	*	0.0015		**0.0672**	mg/L	5	09/27/2023 0:42	212304
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:42	212304
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/27/2023 0:42	212304
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/26/2023 15:29	212412
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/13/2023 14:22	R338467
Radium-228	*	0		**See Attached**	pci/L	1	10/13/2023 14:22	R338467

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

Lab ID: 23091500-008 **Client Sample ID:** APW-05R-WG-20230920

Matrix: GROUNDWATER **Collection Date:** 09/20/2023 11:25

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		**680**	mg/L	2.5	09/22/2023 10:42	R336815
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**343**	mg/L	10	09/22/2023 19:17	R336796
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**7.36**		1	09/27/2023 14:52	R336927
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.35**	mg/L	1	09/26/2023 11:31	R336875
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**14**	mg/L	1	09/22/2023 19:11	R336801
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 21:07	212291
Arsenic	NELAP	0.0010		**0.0023**	mg/L	5	09/25/2023 21:07	212291
Barium	NELAP	0.0010		**0.167**	mg/L	5	09/25/2023 21:07	212291
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	10/02/2023 14:07	212291
Boron	NELAP	0.0250		**7.91**	mg/L	5	09/29/2023 15:52	212291
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 21:07	212291
Calcium	NELAP	0.125		**118**	mg/L	5	09/29/2023 15:52	212291
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/25/2023 21:07	212291
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 21:07	212291
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 21:07	212291
Lithium	*	0.0030		**0.0624**	mg/L	5	10/02/2023 14:07	212291
Molybdenum	*	0.0015		**0.235**	mg/L	5	09/25/2023 21:07	212291
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 21:07	212291
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/25/2023 21:07	212291
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:48	212304
Arsenic	NELAP	0.0010		**0.0028**	mg/L	5	09/27/2023 0:48	212304
Barium	NELAP	0.0010		**0.162**	mg/L	5	09/27/2023 0:48	212304
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:48	212304
Boron	NELAP	0.0250		**7.12**	mg/L	5	09/28/2023 10:27	212304
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:48	212304
Calcium	NELAP	0.125		**105**	mg/L	5	09/27/2023 0:48	212304
Chromium	NELAP	0.0015		**0.0031**	mg/L	5	09/27/2023 0:48	212304
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:48	212304
Lead	NELAP	0.0010		**0.0026**	mg/L	5	09/27/2023 0:48	212304
Lithium	*	0.0030		**0.0367**	mg/L	5	09/28/2023 10:27	212304
Molybdenum	*	0.0015		**0.223**	mg/L	5	09/27/2023 0:48	212304
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:48	212304
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/27/2023 0:48	212304
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/26/2023 15:31	212412
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/13/2023 14:22	R338467
Radium-228	*	0		**See Attached**	pci/L	1	10/13/2023 14:22	R338467

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

Lab ID: 23091500-009 **Client Sample ID:** APW-09-WG-20230920

Matrix: GROUNDWATER **Collection Date:** 09/20/2023 14:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**372**	mg/L	1	09/22/2023 11:08	R336815
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**32**	mg/L	1	09/22/2023 19:20	R336796
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**7.56**		1	09/27/2023 14:56	R336927
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.20**	mg/L	1	09/26/2023 11:33	R336875
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**11**	mg/L	1	09/22/2023 19:19	R336801
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 21:13	212291
Arsenic	NELAP	0.0010		**0.0022**	mg/L	5	09/25/2023 21:13	212291
Barium	NELAP	0.0010		**0.114**	mg/L	5	09/25/2023 21:13	212291
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	10/02/2023 15:17	212291
Boron	NELAP	0.0250		**0.234**	mg/L	5	09/29/2023 15:58	212291
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 21:13	212291
Calcium	NELAP	0.125		**81.0**	mg/L	5	09/29/2023 15:58	212291
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/25/2023 21:13	212291
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 21:13	212291
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 21:13	212291
Lithium	*	0.0030		**0.0196**	mg/L	5	10/02/2023 15:17	212291
Molybdenum	*	0.0015		**0.0167**	mg/L	5	09/25/2023 21:13	212291
Selenium	NELAP	0.0010		**0.0155**	mg/L	5	09/25/2023 21:13	212291
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/25/2023 21:13	212291
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:53	212304
Arsenic	NELAP	0.0010		**0.0020**	mg/L	5	09/27/2023 0:53	212304
Barium	NELAP	0.0010		**0.120**	mg/L	5	09/27/2023 0:53	212304
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:53	212304
Boron	NELAP	0.0250		**0.209**	mg/L	5	09/28/2023 10:31	212304
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:53	212304
Calcium	NELAP	0.125		**69.5**	mg/L	5	09/27/2023 0:53	212304
Chromium	NELAP	0.0015		**0.0018**	mg/L	5	09/27/2023 0:53	212304
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:53	212304
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:53	212304
Lithium	*	0.0030		**0.0134**	mg/L	5	09/28/2023 10:31	212304
Molybdenum	*	0.0015		**0.0162**	mg/L	5	09/27/2023 0:53	212304
Selenium	NELAP	0.0010		**0.0153**	mg/L	5	09/27/2023 0:53	212304
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/27/2023 0:53	212304
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/26/2023 15:33	212412
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/13/2023 14:22	R338467
Radium-228	*	0		**See Attached**	pci/L	1	10/13/2023 14:22	R338467

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

Lab ID: 23091500-010 **Client Sample ID:** APW-02-WG-20230920

Matrix: GROUNDWATER **Collection Date:** 09/20/2023 12:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		**845**	mg/L	2.5	09/22/2023 11:09	R336815
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**460**	mg/L	10	09/22/2023 19:49	R336796
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**7.15**		1	09/27/2023 14:58	R336927
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.24**	mg/L	1	09/26/2023 11:35	R336875
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**7**	mg/L	1	09/22/2023 19:43	R336801
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 21:19	212291
Arsenic	NELAP	0.0010		**0.0072**	mg/L	5	09/25/2023 21:19	212291
Barium	NELAP	0.0010		**0.133**	mg/L	5	09/25/2023 21:19	212291
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	10/02/2023 15:23	212291
Boron	NELAP	0.0250		**8.91**	mg/L	5	09/29/2023 16:04	212291
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 21:19	212291
Calcium	NELAP	0.125		**151**	mg/L	5	09/29/2023 16:04	212291
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/25/2023 21:19	212291
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 21:19	212291
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 21:19	212291
Lithium	*	0.0030		**0.0583**	mg/L	5	10/02/2023 15:23	212291
Molybdenum	*	0.0015		**0.214**	mg/L	5	09/25/2023 21:19	212291
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 21:19	212291
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/25/2023 21:19	212291
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:59	212304
Arsenic	NELAP	0.0010		**0.0093**	mg/L	5	09/27/2023 0:59	212304
Barium	NELAP	0.0010		**0.152**	mg/L	5	09/27/2023 0:59	212304
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:59	212304
Boron	NELAP	0.0250		**8.24**	mg/L	5	09/28/2023 10:35	212304
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:59	212304
Calcium	NELAP	0.125		**132**	mg/L	5	09/27/2023 0:59	212304
Chromium	NELAP	0.0015		**0.0080**	mg/L	5	09/27/2023 0:59	212304
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:59	212304
Lead	NELAP	0.0010		**0.0020**	mg/L	5	09/27/2023 0:59	212304
Lithium	*	0.0030		**0.0422**	mg/L	5	09/28/2023 10:35	212304
Molybdenum	*	0.0015		**0.198**	mg/L	5	09/27/2023 0:59	212304
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 0:59	212304
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/27/2023 0:59	212304
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/26/2023 15:35	212412
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/13/2023 14:22	R338467
Radium-228	*	0		**See Attached**	pci/L	1	10/13/2023 14:22	R338467

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

Lab ID: 23091500-011 **Client Sample ID:** APW-01R-WG-20230920

Matrix: GROUNDWATER **Collection Date:** 09/20/2023 15:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		**355**	mg/L	2.5	09/22/2023 11:09	R336815
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		**79**	mg/L	5	09/29/2023 16:21	R337145
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**6.66**		1	09/28/2023 9:40	R336991
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.17**	mg/L	1	09/26/2023 11:36	R336875
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**5**	mg/L	1	09/22/2023 19:51	R336801
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 21:25	212291
Arsenic	NELAP	0.0010		**0.0016**	mg/L	5	09/25/2023 21:25	212291
Barium	NELAP	0.0010		**0.210**	mg/L	5	09/25/2023 21:25	212291
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	10/02/2023 15:30	212291
Boron	NELAP	0.0250		**0.204**	mg/L	5	09/29/2023 17:14	212291
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 21:25	212291
Calcium	NELAP	0.125		**72.1**	mg/L	5	09/29/2023 17:14	212291
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/25/2023 21:25	212291
Cobalt	NELAP	0.0010		**0.0012**	mg/L	5	09/25/2023 21:25	212291
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 21:25	212291
Lithium	*	0.0030		**0.0211**	mg/L	5	10/02/2023 15:30	212291
Molybdenum	*	0.0015		**< 0.0015**	mg/L	5	09/25/2023 21:25	212291
Selenium	NELAP	0.0010		**0.0037**	mg/L	5	09/25/2023 21:25	212291
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/25/2023 21:25	212291
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 1:10	212304
Arsenic	NELAP	0.0010		**0.0029**	mg/L	5	09/27/2023 1:10	212304
Barium	NELAP	0.0010		**0.202**	mg/L	5	09/27/2023 1:10	212304
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 1:10	212304
Boron	NELAP	0.0250		**0.180**	mg/L	5	09/28/2023 11:29	212304
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 1:10	212304
Calcium	NELAP	0.125	S	**59.2**	mg/L	5	09/27/2023 1:10	212304
Chromium	NELAP	0.0015		**0.0085**	mg/L	5	09/27/2023 1:10	212304
Cobalt	NELAP	0.0010		**0.0041**	mg/L	5	09/27/2023 1:10	212304
Lead	NELAP	0.0010		**0.0026**	mg/L	5	09/27/2023 1:10	212304
Lithium	*	0.0030		**0.0147**	mg/L	5	09/28/2023 11:29	212304
Molybdenum	*	0.0015		**< 0.0015**	mg/L	5	09/27/2023 1:10	212304
Selenium	NELAP	0.0010		**0.0037**	mg/L	5	09/27/2023 1:10	212304
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/27/2023 1:10	212304
Matrix spike control limits are not applicable due to high sample/spike ratio.								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/26/2023 15:38	212412
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/13/2023 14:22	R338467
Radium-228	*	0		**See Attached**	pci/L	1	10/13/2023 14:22	R338467

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

Lab ID: 23091500-012 **Client Sample ID:** APW-04-WG-20230920

Matrix: GROUNDWATER **Collection Date:** 09/20/2023 16:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**476**	mg/L	1	09/22/2023 11:10	R336815
SW-846 9036 (TOTAL)								
Sulfate	NELAP	20		**66**	mg/L	2	09/27/2023 13:00	R337008
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**7.56**		1	09/28/2023 9:43	R336991
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.15**	mg/L	1	09/26/2023 11:38	R336875
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**9**	mg/L	1	09/22/2023 20:02	R336801
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 20:04	212291
Arsenic	NELAP	0.0010		**0.0016**	mg/L	5	09/25/2023 20:04	212291
Barium	NELAP	0.0010		**0.138**	mg/L	5	09/25/2023 20:04	212291
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	10/02/2023 15:49	212291
Boron	NELAP	0.0250		**0.591**	mg/L	5	09/25/2023 20:04	212291
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 20:04	212291
Calcium	NELAP	0.125	S	**101**	mg/L	5	09/29/2023 17:46	212291
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/25/2023 20:04	212291
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 20:04	212291
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 20:04	212291
Lithium	*	0.0030		**0.0411**	mg/L	5	10/02/2023 15:49	212291
Molybdenum	*	0.0015		**0.0367**	mg/L	5	09/25/2023 20:04	212291
Selenium	NELAP	0.0010		**0.0096**	mg/L	5	09/25/2023 20:04	212291
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/25/2023 20:04	212291
Matrix spike control limits are not applicable due to high sample/spike ratio.								
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 1:04	212304
Arsenic	NELAP	0.0010		**0.0019**	mg/L	5	09/27/2023 1:04	212304
Barium	NELAP	0.0010		**0.131**	mg/L	5	09/27/2023 1:04	212304
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 1:04	212304
Boron	NELAP	0.0250		**0.572**	mg/L	5	09/28/2023 10:39	212304
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 1:04	212304
Calcium	NELAP	0.125		**87.9**	mg/L	5	09/27/2023 1:04	212304
Chromium	NELAP	0.0015		**0.0023**	mg/L	5	09/27/2023 1:04	212304
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 1:04	212304
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 1:04	212304
Lithium	*	0.0030		**0.0299**	mg/L	5	09/28/2023 10:39	212304
Molybdenum	*	0.0015		**0.0299**	mg/L	5	09/27/2023 1:04	212304
Selenium	NELAP	0.0010		**0.0090**	mg/L	5	09/27/2023 1:04	212304
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/27/2023 1:04	212304
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/26/2023 15:40	212412
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/13/2023 14:22	R338467
Radium-228	*	0		**See Attached**	pci/L	1	10/13/2023 14:22	R338467

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

Lab ID: 23091500-013 **Client Sample ID:** EB-01-WQ-20230919

Matrix: GROUNDWATER **Collection Date:** 09/19/2023 8:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**< 20**	mg/L	1	09/21/2023 16:06	R336743
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**< 10**	mg/L	1	09/22/2023 20:36	R336796
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**5.50**		1	09/27/2023 15:03	R336927
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**< 0.10**	mg/L	1	09/26/2023 11:40	R336875
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**< 4**	mg/L	1	09/22/2023 20:37	R336801
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 19:19	212291
Arsenic	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 19:19	212291
Barium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 19:19	212291
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	10/02/2023 15:36	212291
Boron	NELAP	0.0250		**< 0.0250**	mg/L	5	09/25/2023 19:19	212291
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 19:19	212291
Calcium	NELAP	0.125		**0.464**	mg/L	5	09/29/2023 17:21	212291
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/25/2023 19:19	212291
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 19:19	212291
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 19:19	212291
Lithium	*	0.0030		**< 0.0030**	mg/L	5	10/02/2023 15:36	212291
Molybdenum	*	0.0015		**< 0.0015**	mg/L	5	09/25/2023 19:19	212291
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 19:19	212291
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/25/2023 19:19	212291
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 2:12	212304
Arsenic	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 2:12	212304
Barium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 2:12	212304
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 2:12	212304
Boron	NELAP	0.0250		**< 0.0250**	mg/L	5	09/28/2023 10:44	212304
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 2:12	212304
Calcium	NELAP	0.125		**< 0.125**	mg/L	5	09/27/2023 2:12	212304
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/27/2023 2:12	212304
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 2:12	212304
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 2:12	212304
Lithium	*	0.0030		**< 0.0030**	mg/L	5	09/27/2023 2:12	212304
Molybdenum	*	0.0015		**< 0.0015**	mg/L	5	09/27/2023 2:12	212304
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/27/2023 2:12	212304
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/27/2023 2:12	212304
CCV recovered outside the upper control limits for Li. Sample results are below the reporting limit. Data is reportable per the TNI standard.								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**0.00119**	mg/L	1	09/27/2023 9:48	212412
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/13/2023 14:22	R338467
Radium-228	*	0		**See Attached**	pci/L	1	10/13/2023 14:22	R338467

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

Lab ID: 23091500-014 **Client Sample ID:** DUP-01-WG-20230920

Matrix: GROUNDWATER **Collection Date:** 09/20/2023 0:01

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		**710**	mg/L	2.5	09/22/2023 11:10	R336815
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**333**	mg/L	10	09/22/2023 20:50	R336796
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**7.36**		1	09/27/2023 15:00	R336927
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.34**	mg/L	1	09/26/2023 11:43	R336875
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**14**	mg/L	1	09/22/2023 20:45	R336801
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 19:26	212291
Arsenic	NELAP	0.0010		**0.0024**	mg/L	5	09/25/2023 19:26	212291
Barium	NELAP	0.0010		**0.172**	mg/L	5	09/25/2023 19:26	212291
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	10/02/2023 15:42	212291
Boron	NELAP	0.0250		**8.05**	mg/L	5	09/25/2023 19:26	212291
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 19:26	212291
Calcium	NELAP	0.125		**119**	mg/L	5	09/29/2023 17:27	212291
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/25/2023 19:26	212291
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 19:26	212291
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 19:26	212291
Lithium	*	0.0030		**0.0509**	mg/L	5	10/02/2023 15:42	212291
Molybdenum	*	0.0015		**0.233**	mg/L	5	09/25/2023 19:26	212291
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 19:26	212291
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/25/2023 19:26	212291
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/23/2023 5:57	212305
Arsenic	NELAP	0.0010		**0.0026**	mg/L	5	09/26/2023 7:25	212305
Barium	NELAP	0.0010		**0.158**	mg/L	5	09/23/2023 5:57	212305
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/26/2023 7:25	212305
Boron	NELAP	0.0250	S	**8.33**	mg/L	5	09/29/2023 14:42	212305
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/23/2023 5:57	212305
Calcium	NELAP	0.125	S	**126**	mg/L	5	09/29/2023 14:42	212305
Chromium	NELAP	0.0015		**0.0016**	mg/L	5	10/02/2023 12:45	212305
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/26/2023 7:25	212305
Lead	NELAP	0.0010		**0.0021**	mg/L	5	09/28/2023 1:32	212305
Lithium	*	0.0030		**0.0425**	mg/L	5	10/02/2023 12:45	212305
Molybdenum	*	0.0015		**0.235**	mg/L	5	09/26/2023 7:25	212305
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/26/2023 7:25	212305
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/23/2023 5:57	212305

Matrix spike control limits are not applicable due to high sample/spike ratio.

CCV recovered outside the upper control limits for TL. Sample results are below the reporting limit. Data is reportable per the TNI standard.

SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/27/2023 9:50	212412
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/13/2023 14:22	R338467
Radium-228	*	0		**See Attached**	pci/L	1	10/13/2023 14:22	R338467

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

Lab ID: 23091500-015 **Client Sample ID:** DUP-02-WG-20230920

Matrix: GROUNDWATER **Collection Date:** 09/20/2023 0:02

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**386**	mg/L	1	09/22/2023 11:31	R336815
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**31**	mg/L	1	09/22/2023 20:53	R336796
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**7.65**		1	09/27/2023 15:05	R336927
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.19**	mg/L	1	09/26/2023 11:46	R336875
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**11**	mg/L	1	09/22/2023 20:53	R336801
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 19:32	212291
Arsenic	NELAP	0.0010		**0.0021**	mg/L	5	09/25/2023 19:32	212291
Barium	NELAP	0.0010		**0.117**	mg/L	5	09/25/2023 19:32	212291
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	10/02/2023 16:33	212291
Boron	NELAP	0.0250		**0.236**	mg/L	5	09/25/2023 19:32	212291
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 19:32	212291
Calcium	NELAP	0.125		**81.1**	mg/L	5	09/29/2023 17:33	212291
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/25/2023 19:32	212291
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 19:32	212291
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/25/2023 19:32	212291
Lithium	*	0.0030		**0.0184**	mg/L	5	10/02/2023 16:33	212291
Molybdenum	*	0.0015		**0.0173**	mg/L	5	09/25/2023 19:32	212291
Selenium	NELAP	0.0010		**0.0162**	mg/L	5	09/25/2023 19:32	212291
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/25/2023 19:32	212291
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/23/2023 5:35	212305
Arsenic	NELAP	0.0010		**0.0023**	mg/L	5	09/26/2023 7:06	212305
Barium	NELAP	0.0010		**0.125**	mg/L	5	09/23/2023 5:35	212305
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/26/2023 7:06	212305
Boron	NELAP	0.0250		**0.239**	mg/L	5	09/29/2023 14:23	212305
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/23/2023 5:35	212305
Calcium	NELAP	0.125		**87.5**	mg/L	5	09/29/2023 14:23	212305
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/23/2023 5:35	212305
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/26/2023 7:06	212305
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/26/2023 7:06	212305
Lithium	*	0.0030		**0.0150**	mg/L	5	10/02/2023 12:38	212305
Molybdenum	*	0.0015		**0.0173**	mg/L	5	09/26/2023 7:06	212305
Selenium	NELAP	0.0010		**0.0182**	mg/L	5	09/26/2023 7:06	212305
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/23/2023 5:35	212305

LCS recovered outside upper control limits for Pb. Sample results are below the reporting limit. Data is reportable per the TNI Standard.

CCV recovered outside the upper control limits for TL. Sample results are below the reporting limit. Data is reportable per the TNI standard.

SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/29/2023 9:48	212516
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/23/2023 14:46	R338467
Radium-228	*	0		**See Attached**	pci/L	1	10/23/2023 14:46	R338467

Client: ERM
Client Project: 0599247

Work Order: 23091500
Report Date: 30-Oct-23

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
23091500-001	APW-03-WG-20230919	Groundwater	4	09/19/2023 11:35
23091500-002	APW-08-WG-20230919	Groundwater	4	09/19/2023 12:55
23091500-003	APW-07-WG-20230919	Groundwater	4	09/19/2023 13:50
23091500-004	APW-10S-WG-20230919	Groundwater	4	09/19/2023 14:50
23091500-005	APW-10D-WG-20230919	Groundwater	4	09/19/2023 16:00
23091500-006	APW-06S-WG-20230920	Groundwater	4	09/20/2023 8:50
23091500-007	APW-06D-WG-20230920	Groundwater	4	09/20/2023 10:05
23091500-008	APW-05R-WG-20230920	Groundwater	4	09/20/2023 11:25
23091500-009	APW-09-WG-20230920	Groundwater	4	09/20/2023 14:00
23091500-010	APW-02-WG-20230920	Groundwater	4	09/20/2023 12:30
23091500-011	APW-01R-WG-20230920	Groundwater	4	09/20/2023 15:10
23091500-012	APW-04-WG-20230920	Groundwater	4	09/20/2023 16:10
23091500-013	EB-01-WQ-20230919	Groundwater	4	09/19/2023 8:40
23091500-014	DUP-01-WG-20230920	Groundwater	4	09/20/2023 0:01
23091500-015	DUP-02-WG-20230920	Groundwater	4	09/20/2023 0:02

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
23091500-001A	APW-03-WG-20230919	09/19/2023 11:35	09/21/2023 9:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/21/2023 15:53
	SW-846 9036 (Total)				09/22/2023 17:36
	SW-846 9040B, Laboratory Analyzed				09/27/2023 14:06
	SW-846 9214 (Total)				09/26/2023 11:11
	SW-846 9251 (Total)				09/22/2023 17:30
23091500-001B	APW-03-WG-20230919	09/19/2023 11:35	09/21/2023 9:45		
	EPA 903.0/904.0, Radium 226/228				10/13/2023 14:22
23091500-001C	APW-03-WG-20230919	09/19/2023 11:35	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/25/2023 23:39
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/26/2023 23:46
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/27/2023 18:12
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/28/2023 10:48
	SW-846 7470A (Total)			09/26/2023 8:27	09/26/2023 15:11
23091500-001D	APW-03-WG-20230919	09/19/2023 11:35	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/25/2023 18:04
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/29/2023 14:29
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	10/02/2023 13:29
23091500-002A	APW-08-WG-20230919	09/19/2023 12:55	09/21/2023 9:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/21/2023 15:54
	SW-846 9036 (Total)				09/22/2023 17:54
	SW-846 9040B, Laboratory Analyzed				09/27/2023 14:07
	SW-846 9214 (Total)				09/26/2023 11:13
	SW-846 9251 (Total)				09/22/2023 17:54
23091500-002B	APW-08-WG-20230919	09/19/2023 12:55	09/21/2023 9:45		
	EPA 903.0/904.0, Radium 226/228				10/13/2023 14:22
23091500-002C	APW-08-WG-20230919	09/19/2023 12:55	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/25/2023 23:28
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/26/2023 23:29
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/27/2023 17:49
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/28/2023 9:13
	SW-846 7470A (Total)			09/26/2023 8:27	09/26/2023 15:13
23091500-002D	APW-08-WG-20230919	09/19/2023 12:55	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/25/2023 18:23
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/29/2023 16:11
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	10/02/2023 14:13

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
23091500-003A	APW-07-WG-20230919	09/19/2023 13:50	09/21/2023 9:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/21/2023 15:54
	SW-846 9036 (Total)				09/22/2023 18:02
	SW-846 9040B, Laboratory Analyzed				09/27/2023 14:09
	SW-846 9214 (Total)				09/26/2023 11:15
	SW-846 9251 (Total)				09/22/2023 18:02
23091500-003B	APW-07-WG-20230919	09/19/2023 13:50	09/21/2023 9:45		
	EPA 903.0/904.0, Radium 226/228				10/13/2023 14:22
23091500-003C	APW-07-WG-20230919	09/19/2023 13:50	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/25/2023 23:34
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/26/2023 23:35
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/27/2023 17:55
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/28/2023 9:18
	SW-846 7470A (Total)			09/26/2023 8:27	09/26/2023 15:20
23091500-003D	APW-07-WG-20230919	09/19/2023 13:50	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/25/2023 18:10
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/29/2023 14:35
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	10/02/2023 13:35
23091500-004A	APW-10S-WG-20230919	09/19/2023 14:50	09/21/2023 9:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/21/2023 16:05
	SW-846 9036 (Total)				09/22/2023 18:13
	SW-846 9040B, Laboratory Analyzed				09/27/2023 14:12
	SW-846 9214 (Total)				09/26/2023 11:16
	SW-846 9251 (Total)				09/22/2023 18:13
23091500-004B	APW-10S-WG-20230919	09/19/2023 14:50	09/21/2023 9:45		
	EPA 903.0/904.0, Radium 226/228				10/23/2023 14:46
23091500-004C	APW-10S-WG-20230919	09/19/2023 14:50	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/26/2023 0:19
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/26/2023 23:40
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/27/2023 18:01
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/28/2023 9:22
	SW-846 7470A (Total)			09/26/2023 8:27	09/26/2023 15:22
23091500-004D	APW-10S-WG-20230919	09/19/2023 14:50	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/25/2023 18:16
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/29/2023 15:26
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	10/02/2023 13:42

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
23091500-005A	APW-10D-WG-20230919	09/19/2023 16:00	09/21/2023 9:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/21/2023 16:05
	SW-846 9036 (Total)				09/22/2023 18:48
	SW-846 9040B, Laboratory Analyzed				09/27/2023 14:13
	SW-846 9214 (Total)				09/26/2023 11:18
	SW-846 9251 (Total)				09/22/2023 18:47
23091500-005B	APW-10D-WG-20230919	09/19/2023 16:00	09/21/2023 9:45		
	EPA 903.0/904.0, Radium 226/228				10/13/2023 14:22
23091500-005C	APW-10D-WG-20230919	09/19/2023 16:00	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/26/2023 0:25
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/27/2023 0:31
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/27/2023 18:06
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/28/2023 9:26
	SW-846 7470A (Total)			09/26/2023 8:27	09/26/2023 15:24
23091500-005D	APW-10D-WG-20230919	09/19/2023 16:00	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/25/2023 20:48
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/29/2023 15:33
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	10/02/2023 13:48
23091500-006A	APW-06S-WG-20230920	09/20/2023 8:50	09/21/2023 9:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/22/2023 10:42
	SW-846 9036 (Total)				09/22/2023 19:00
	SW-846 9040B, Laboratory Analyzed				09/27/2023 14:47
	SW-846 9214 (Total)				09/26/2023 11:20
	SW-846 9251 (Total)				09/22/2023 18:55
23091500-006B	APW-06S-WG-20230920	09/20/2023 8:50	09/21/2023 9:45		
	EPA 903.0/904.0, Radium 226/228				10/23/2023 14:46
23091500-006C	APW-06S-WG-20230920	09/20/2023 8:50	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/26/2023 0:30
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/27/2023 0:37
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/27/2023 18:56
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/28/2023 10:19
	SW-846 7470A (Total)			09/26/2023 8:27	09/26/2023 15:26
23091500-006D	APW-06S-WG-20230920	09/20/2023 8:50	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/25/2023 20:54
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/29/2023 15:39
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	10/02/2023 13:54

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
23091500-007A	APW-06D-WG-20230920	09/20/2023 10:05	09/21/2023 9:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/22/2023 10:42
	SW-846 9036 (Total)				09/22/2023 19:08
	SW-846 9040B, Laboratory Analyzed				09/27/2023 14:50
	SW-846 9214 (Total)				09/26/2023 11:22
	SW-846 9251 (Total)				09/22/2023 19:03
23091500-007B	APW-06D-WG-20230920	09/20/2023 10:05	09/21/2023 9:45		
	EPA 903.0/904.0, Radium 226/228				10/13/2023 14:22
23091500-007C	APW-06D-WG-20230920	09/20/2023 10:05	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/26/2023 0:36
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/27/2023 0:42
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/27/2023 19:02
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/28/2023 10:23
	SW-846 7470A (Total)			09/26/2023 8:27	09/26/2023 15:29
23091500-007D	APW-06D-WG-20230920	09/20/2023 10:05	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/25/2023 21:00
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/29/2023 15:45
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	10/02/2023 14:01
23091500-008A	APW-05R-WG-20230920	09/20/2023 11:25	09/21/2023 9:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/22/2023 10:42
	SW-846 9036 (Total)				09/22/2023 19:17
	SW-846 9040B, Laboratory Analyzed				09/27/2023 14:52
	SW-846 9214 (Total)				09/26/2023 11:31
	SW-846 9251 (Total)				09/22/2023 19:11
23091500-008B	APW-05R-WG-20230920	09/20/2023 11:25	09/21/2023 9:45		
	EPA 903.0/904.0, Radium 226/228				10/13/2023 14:22
23091500-008C	APW-05R-WG-20230920	09/20/2023 11:25	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/26/2023 0:41
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/27/2023 0:48
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/27/2023 19:08
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/28/2023 10:27
	SW-846 7470A (Total)			09/26/2023 8:27	09/26/2023 15:31
23091500-008D	APW-05R-WG-20230920	09/20/2023 11:25	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/25/2023 21:07
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/29/2023 15:52
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	10/02/2023 14:07

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
23091500-009A	APW-09-WG-20230920	09/20/2023 14:00	09/21/2023 9:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/22/2023 11:08
	SW-846 9036 (Total)				09/22/2023 19:20
	SW-846 9040B, Laboratory Analyzed				09/27/2023 14:56
	SW-846 9214 (Total)				09/26/2023 11:33
	SW-846 9251 (Total)				09/22/2023 19:19
23091500-009B	APW-09-WG-20230920	09/20/2023 14:00	09/21/2023 9:45		
	EPA 903.0/904.0, Radium 226/228				10/13/2023 14:22
23091500-009C	APW-09-WG-20230920	09/20/2023 14:00	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/26/2023 0:47
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/27/2023 0:53
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/27/2023 19:13
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/28/2023 10:31
	SW-846 7470A (Total)			09/26/2023 8:27	09/26/2023 15:33
23091500-009D	APW-09-WG-20230920	09/20/2023 14:00	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/25/2023 21:13
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/29/2023 15:58
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	10/02/2023 15:17
23091500-010A	APW-02-WG-20230920	09/20/2023 12:30	09/21/2023 9:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/22/2023 11:09
	SW-846 9036 (Total)				09/22/2023 19:49
	SW-846 9040B, Laboratory Analyzed				09/27/2023 14:58
	SW-846 9214 (Total)				09/26/2023 11:35
	SW-846 9251 (Total)				09/22/2023 19:43
23091500-010B	APW-02-WG-20230920	09/20/2023 12:30	09/21/2023 9:45		
	EPA 903.0/904.0, Radium 226/228				10/13/2023 14:22
23091500-010C	APW-02-WG-20230920	09/20/2023 12:30	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/26/2023 0:53
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/27/2023 0:59
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/27/2023 19:19
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/28/2023 10:35
	SW-846 7470A (Total)			09/26/2023 8:27	09/26/2023 15:35
23091500-010D	APW-02-WG-20230920	09/20/2023 12:30	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/25/2023 21:19
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/29/2023 16:04
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	10/02/2023 15:23

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
23091500-011A	APW-01R-WG-20230920	09/20/2023 15:10	09/21/2023 9:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/22/2023 11:09
	SW-846 9036 (Total)				09/29/2023 16:21
	SW-846 9040B, Laboratory Analyzed				09/28/2023 9:40
	SW-846 9214 (Total)				09/26/2023 11:36
	SW-846 9251 (Total)				09/22/2023 19:51
23091500-011B	APW-01R-WG-20230920	09/20/2023 15:10	09/21/2023 9:45		
	EPA 903.0/904.0, Radium 226/228				10/13/2023 14:22
23091500-011C	APW-01R-WG-20230920	09/20/2023 15:10	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/26/2023 0:58
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/27/2023 1:10
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/27/2023 19:35
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/28/2023 11:29
	SW-846 7470A (Total)			09/26/2023 8:27	09/26/2023 15:38
23091500-011D	APW-01R-WG-20230920	09/20/2023 15:10	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/25/2023 21:25
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/29/2023 17:14
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	10/02/2023 15:30
23091500-012A	APW-04-WG-20230920	09/20/2023 16:10	09/21/2023 9:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/22/2023 11:10
	SW-846 9036 (Total)				09/27/2023 13:00
	SW-846 9040B, Laboratory Analyzed				09/28/2023 9:43
	SW-846 9214 (Total)				09/26/2023 11:38
	SW-846 9251 (Total)				09/22/2023 20:02
23091500-012B	APW-04-WG-20230920	09/20/2023 16:10	09/21/2023 9:45		
	EPA 903.0/904.0, Radium 226/228				10/13/2023 14:22
23091500-012C	APW-04-WG-20230920	09/20/2023 16:10	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/26/2023 1:55
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/27/2023 1:04
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/27/2023 19:24
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/28/2023 10:39
	SW-846 7470A (Total)			09/26/2023 8:27	09/26/2023 15:40
23091500-012D	APW-04-WG-20230920	09/20/2023 16:10	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/25/2023 20:04
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/29/2023 17:46
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	10/02/2023 15:49

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
23091500-013A	EB-01-WQ-20230919	09/19/2023 8:40	09/21/2023 9:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/21/2023 16:06
	SW-846 9036 (Total)				09/22/2023 20:36
	SW-846 9040B, Laboratory Analyzed				09/27/2023 15:03
	SW-846 9214 (Total)				09/26/2023 11:40
	SW-846 9251 (Total)				09/22/2023 20:37
23091500-013B	EB-01-WQ-20230919	09/19/2023 8:40	09/21/2023 9:45		
	EPA 903.0/904.0, Radium 226/228				10/13/2023 14:22
23091500-013C	EB-01-WQ-20230919	09/19/2023 8:40	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/26/2023 2:00
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/27/2023 2:12
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/27/2023 19:30
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:37	09/28/2023 10:44
	SW-846 7470A (Total)			09/26/2023 8:27	09/27/2023 9:48
23091500-013D	EB-01-WQ-20230919	09/19/2023 8:40	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/25/2023 19:19
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/29/2023 17:21
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	10/02/2023 15:36
23091500-014A	DUP-01-WG-20230920	09/20/2023 0:01	09/21/2023 9:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/22/2023 11:10
	SW-846 9036 (Total)				09/22/2023 20:50
	SW-846 9040B, Laboratory Analyzed				09/27/2023 15:00
	SW-846 9214 (Total)				09/26/2023 11:43
	SW-846 9251 (Total)				09/22/2023 20:45
23091500-014B	DUP-01-WG-20230920	09/20/2023 0:01	09/21/2023 9:45		
	EPA 903.0/904.0, Radium 226/228				10/13/2023 14:22
23091500-014C	DUP-01-WG-20230920	09/20/2023 0:01	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:38	09/23/2023 5:57
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:38	09/26/2023 7:25
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:38	09/28/2023 1:32
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:38	09/29/2023 14:42
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:38	10/02/2023 12:45
	SW-846 7470A (Total)			09/26/2023 8:27	09/27/2023 9:50
23091500-014D	DUP-01-WG-20230920	09/20/2023 0:01	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/25/2023 19:26
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/29/2023 17:27
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	10/02/2023 15:42

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
23091500-015A	DUP-02-WG-20230920	09/20/2023 0:02	09/21/2023 9:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/22/2023 11:31
	SW-846 9036 (Total)				09/22/2023 20:53
	SW-846 9040B, Laboratory Analyzed				09/27/2023 15:05
	SW-846 9214 (Total)				09/26/2023 11:46
	SW-846 9251 (Total)				09/22/2023 20:53
23091500-015B	DUP-02-WG-20230920	09/20/2023 0:02	09/21/2023 9:45		
	EPA 903.0/904.0, Radium 226/228				10/23/2023 14:46
23091500-015C	DUP-02-WG-20230920	09/20/2023 0:02	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:38	09/23/2023 5:35
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:38	09/26/2023 7:06
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:38	09/28/2023 1:26
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:38	09/29/2023 14:23
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2023 18:38	10/02/2023 12:38
	SW-846 7470A (Total)			09/27/2023 11:50	09/29/2023 9:48
23091500-015D	DUP-02-WG-20230920	09/20/2023 0:02	09/21/2023 9:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/25/2023 19:32
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	09/29/2023 17:33
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/21/2023 14:04	10/02/2023 16:33

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

STANDARD METHODS 2540 C (TOTAL) 1997, 2011

Batch R336743 **SampType:** MBLK Units **mg/L**
SampID: MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids		20		**< 20**	16.00	0	0	-100	100	09/21/2023
Total Dissolved Solids		20		**< 20**	16.00	0	0	-100	100	09/21/2023

Batch R336743 **SampType:** LCS Units **mg/L**
SampID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids		20		**940**	1000	0	94.0	90	110	09/21/2023
Total Dissolved Solids		20		**948**	1000	0	94.8	90	110	09/21/2023

Batch R336743 **SampType:** DUP Units **mg/L** RPD Limit **10**
SampID: 23091500-001ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids		20		**660**				636.0	3.70	09/21/2023

Batch R336815 **SampType:** MBLK Units **mg/L**
SampID: MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids		20		**< 20**	16.00	0	0	-100	100	09/22/2023
Total Dissolved Solids		20		**< 20**	16.00	0	0	-100	100	09/22/2023
Total Dissolved Solids		20		**< 20**	16.00	0	0	-100	100	09/22/2023

Batch R336815 **SampType:** LCS Units **mg/L**
SampID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids		20		**950**	1000	0	95.0	90	110	09/22/2023
Total Dissolved Solids		20		**964**	1000	0	96.4	90	110	09/22/2023
Total Dissolved Solids		20		**962**	1000	0	96.2	90	110	09/22/2023

Batch R336815 **SampType:** DUP Units **mg/L** RPD Limit **10**
SampID: 23091500-006ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids		50		**585**				565.0	3.48	09/22/2023

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

STANDARD METHODS 2540 C (TOTAL) 1997, 2011

Batch R336815 **SampType:** DUP Units **mg/L** RPD Limit **10**

SampID: 23091500-015ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids		20		**380**				386.0	1.57	09/22/2023

SW-846 9036 (TOTAL)

Batch R336796 **SampType:** MBLK Units **mg/L**

SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**< 10**	6.140	0	0	-100	100	09/22/2023

Batch R336796 **SampType:** MBLK Units **mg/L**

SampID: MB-R336796

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**< 10**	6.140	0	0	-100	100	09/22/2023

Batch R336796 **SampType:** LCS Units **mg/L**

SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**18**	20.00	0	90.1	90	110	09/22/2023

Batch R336796 **SampType:** LCS Units **mg/L**

SampID: LCS-R336796

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**18**	20.00	0	90.1	90	110	09/22/2023

Batch R336796 **SampType:** MS Units **mg/L**

SampID: 23091500-004AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10	S	**12**	20.00	0	60.6	85	115	09/22/2023

Batch R336796 **SampType:** MSD Units **mg/L** RPD Limit **10**

SampID: 23091500-004AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate		10	S	**13**	20.00	0	63.8	12.11	5.15	09/22/2023

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

SW-846 9036 (TOTAL)

Batch R336910 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**< 10**	6.140	0	0	-100	100	09/26/2023

Batch R336910 **SampType:** MBLK Units **mg/L**
SampID: MB-R336910

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**< 10**	7.620	0	0	-100	100	09/26/2023

Batch R336910 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**18**	20.00	0	90.5	90	110	09/26/2023

Batch R336910 **SampType:** LCS Units **mg/L**
SampID: LCS-R336910

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**18**	20.00	0	90.5	90	110	09/26/2023

Batch R337008 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**< 10**	6.140	0	0	-100	100	09/27/2023

Batch R337008 **SampType:** MBLK Units **mg/L**
SampID: MB-R337008

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**< 10**	6.140	0	0	-100	100	09/27/2023

Batch R337008 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**19**	20.00	0	93.6	90	110	09/27/2023

Batch R337008 **SampType:** LCS Units **mg/L**
SampID: LCS-R337008

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**19**	20.00	0	93.6	90	110	09/27/2023

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

SW-846 9036 (TOTAL)

Batch R337008 **SampType:** MS Units **mg/L**
SampID: 23091500-012AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		20	E	**103**	40.00	66.47	92.1	85	115	09/27/2023

Batch R337008 **SampType:** MSD Units **mg/L** RPD Limit **10**
SampID: 23091500-012AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate		20	E	**105**	40.00	66.47	96.3	103.3	1.63	09/27/2023

Batch R337145 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**< 10**	6.280	0	100.0	-100	100	09/29/2023

Batch R337145 **SampType:** MBLK Units **mg/L**
SampID: MB-R337145

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**< 10**	6.280	0	100.0	-100	100	09/29/2023

Batch R337145 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**19**	20.00	0	92.8	90	110	09/29/2023

Batch R337145 **SampType:** LCS Units **mg/L**
SampID: LCS-R337145

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**19**	20.00	0	92.8	90	110	09/29/2023

SW-846 9040B, LABORATORY ANALYZED

Batch R336927 **SampType:** LCS Units
SampID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lab pH		1.00		**6.99**	7.000	0	99.9	99.29	100.7	09/27/2023

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

SW-846 9040B, LABORATORY ANALYZED

Batch R336927 **SampType:** DUP Units RPD Limit **10**

SampID: 23091500-001ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**7.84**				7.840	0.00	09/27/2023

Batch R336927 **SampType:** DUP Units RPD Limit **10**

SampID: 23091500-002ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**7.17**				7.160	0.14	09/27/2023

Batch R336927 **SampType:** DUP Units RPD Limit **10**

SampID: 23091500-003ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**6.95**				6.940	0.14	09/27/2023

Batch R336927 **SampType:** DUP Units RPD Limit **10**

SampID: 23091500-004ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**7.18**				7.170	0.14	09/27/2023

Batch R336927 **SampType:** DUP Units RPD Limit **10**

SampID: 23091500-005ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**7.21**				7.220	0.14	09/27/2023

Batch R336927 **SampType:** DUP Units RPD Limit **10**

SampID: 23091500-006ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**7.23**				7.210	0.28	09/27/2023

Batch R336927 **SampType:** DUP Units RPD Limit **10**

SampID: 23091500-007ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**7.30**				7.300	0.00	09/27/2023

Batch R336927 **SampType:** DUP Units RPD Limit **10**

SampID: 23091500-008ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**7.36**				7.360	0.00	09/27/2023

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

SW-846 9040B, LABORATORY ANALYZED

Batch R336927 **SampType:** DUP Units RPD Limit **10**

SampID: 23091500-009ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**7.55**				7.560	0.13	09/27/2023

Batch R336927 **SampType:** DUP Units RPD Limit **10**

SampID: 23091500-010ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**7.16**				7.150	0.14	09/27/2023

Batch R336927 **SampType:** DUP Units RPD Limit **10**

SampID: 23091500-013ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**5.48**				5.500	0.36	09/27/2023

Batch R336927 **SampType:** DUP Units RPD Limit **10**

SampID: 23091500-014ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**7.36**				7.360	0.00	09/27/2023

Batch R336927 **SampType:** DUP Units RPD Limit **10**

SampID: 23091500-015ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**7.67**				7.650	0.26	09/27/2023

Batch R336991 **SampType:** LCS Units

SampID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lab pH		1.00		**6.99**	7.000	0	99.9	99.29	100.7	09/28/2023

Batch R336991 **SampType:** DUP Units RPD Limit **10**

SampID: 23091500-011ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**6.68**				6.660	0.30	09/28/2023

Batch R336991 **SampType:** DUP Units RPD Limit **10**

SampID: 23091500-012ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**7.59**				7.560	0.40	09/28/2023

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

SW-846 9214 (TOTAL)

Batch R336875 **SampType:** MBLK Units **mg/L**
SampID: MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**< 0.10**	0.0500	0	0	-100	100	09/26/2023

Batch R336875 **SampType:** LCS Units **mg/L**
SampID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**1.03**	1.000	0	103.3	90	110	09/26/2023

Batch R336875 **SampType:** MS Units **mg/L**
SampID: 23091500-007AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**2.25**	2.000	0.2180	101.5	75	125	09/26/2023

Batch R336875 **SampType:** MSD Units **mg/L** RPD Limit **15**
SampID: 23091500-007AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		**2.23**	2.000	0.2180	100.7	2.247	0.67	09/26/2023

Batch R336875 **SampType:** MS Units **mg/L**
SampID: 23091500-015AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**2.36**	2.000	0.1890	108.4	75	125	09/26/2023

Batch R336875 **SampType:** MSD Units **mg/L** RPD Limit **15**
SampID: 23091500-015AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		**2.24**	2.000	0.1890	102.6	2.358	5.09	09/26/2023

SW-846 9251 (TOTAL)

Batch R336801 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**< 4**	0.5000	0	0	-100	100	09/22/2023

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

SW-846 9251 (TOTAL)

Batch R336801 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**19**	20.00	0	93.4	90	110	09/22/2023

Batch R336801 **SampType:** MS Units **mg/L**
SampID: 23091500-004AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**33**	20.00	14.98	87.7	85	115	09/22/2023

Batch R336801 **SampType:** MSD Units **mg/L** RPD Limit **15**
SampID: 23091500-004AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		4		**33**	20.00	14.98	89.0	32.52	0.80	09/22/2023

Batch R336801 **SampType:** MS Units **mg/L**
SampID: 23091500-012AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**27**	20.00	9.220	90.3	85	115	09/22/2023

Batch R336801 **SampType:** MSD Units **mg/L** RPD Limit **15**
SampID: 23091500-012AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		4		**28**	20.00	9.220	94.3	27.28	2.89	09/22/2023

Batch R336945 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**< 4**	0.5000	0	0	-100	100	09/26/2023

Batch R336945 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**21**	20.00	0	105.2	90	110	09/26/2023

Batch R337023 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**< 4**	0.5000	0	0	-100	100	09/27/2023

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

SW-846 9251 (TOTAL)

Batch R337023 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**20**	20.00	0	99.6	90	110	09/27/2023

Batch R337157 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**< 4**	0.5000	0	0	-100	100	09/29/2023

Batch R337157 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**20**	20.00	0	100.0	90	110	09/29/2023

SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)

Batch 212291 **SampType:** MBLK Units **mg/L**
SampID: MBLK-212291

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**< 0.0010**	0.0004	0	0	-100	100	09/25/2023
Arsenic		0.0010		**< 0.0010**	0.0004	0	0	-100	100	09/25/2023
Barium		0.0010		**< 0.0010**	0.0007	0	0	-100	100	09/25/2023
Beryllium		0.0010		**< 0.0010**	0.0002	0	0	-100	100	09/25/2023
Boron		0.0250		**< 0.0250**	0.0093	0	0	-100	100	09/25/2023
Cadmium		0.0010		**< 0.0010**	0.0001	0	0	-100	100	09/25/2023
Calcium		0.125		**< 0.125**	0.0700	0	0	-100	100	09/25/2023
Chromium		0.0015		**< 0.0015**	0.0007	0	0	-100	100	09/25/2023
Cobalt		0.0010		**< 0.0010**	0.0001	0	0	-100	100	09/25/2023
Lead		0.0010		**< 0.0010**	0.0006	0	0	-100	100	09/25/2023
Lithium	*	0.0030		**< 0.0030**	0.0015	0	0	-100	100	09/25/2023
Molybdenum	*	0.0015		**< 0.0015**	0.0006	0	0	-100	100	09/25/2023
Selenium		0.0010		**< 0.0010**	0.0006	0	0	-100	100	09/25/2023
Thallium		0.0020		**< 0.0020**	0.0010	0	0	-100	100	09/25/2023

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)

Batch 212291 **SampType:** LCS Units **mg/L**

SampID: LCS-212291

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.492**	0.5000	0	98.5	80	120	09/25/2023
Arsenic		0.0010		**0.477**	0.5000	0	95.4	80	120	09/25/2023
Barium		0.0010		**2.00**	2.000	0	100.2	80	120	09/25/2023
Beryllium		0.0010		**0.0476**	0.0500	0	95.3	80	120	10/02/2023
Boron		0.0250		**0.502**	0.5000	0	100.5	80	120	09/25/2023
Cadmium		0.0010		**0.0487**	0.0500	0	97.3	80	120	09/25/2023
Calcium		0.125		**2.47**	2.500	0	99.0	80	120	09/29/2023
Chromium		0.0015		**0.199**	0.2000	0	99.6	80	120	09/25/2023
Cobalt		0.0010		**0.510**	0.5000	0	102.0	80	120	09/25/2023
Lead		0.0010		**0.520**	0.5000	0	104.0	80	120	09/25/2023
Lithium	*	0.0030		**0.497**	0.5000	0	99.4	80	120	10/02/2023
Molybdenum	*	0.0015		**0.476**	0.5000	0	95.1	80	120	09/25/2023
Selenium		0.0010		**0.434**	0.5000	0	86.9	80	120	09/25/2023
Thallium		0.0020		**0.245**	0.2500	0	98.0	80	120	09/25/2023

Batch 212291 **SampType:** MS Units **mg/L**

SampID: 23091500-002DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.508**	0.5000	0	101.6	75	125	09/25/2023
Arsenic		0.0010		**0.518**	0.5000	0.001392	103.2	75	125	09/25/2023
Barium		0.0010		**2.28**	2.000	0.2358	102.1	75	125	10/02/2023
Beryllium		0.0010		**0.0516**	0.0500	0	103.2	75	125	10/02/2023
Boron		0.0250		**0.629**	0.5000	0.1174	102.3	75	125	09/25/2023
Cadmium		0.0010		**0.0503**	0.0500	0	100.5	75	125	09/25/2023
Calcium		0.125	S	**95.9**	2.500	94.13	70.4	75	125	09/29/2023
Chromium		0.0015		**0.205**	0.2000	0	102.6	75	125	09/25/2023
Cobalt		0.0010		**0.509**	0.5000	0.0007075	101.6	75	125	09/25/2023
Lead		0.0010		**0.524**	0.5000	0	104.8	75	125	09/25/2023
Lithium	*	0.0030		**0.539**	0.5000	0.02205	103.4	75	125	10/02/2023
Molybdenum	*	0.0015		**0.500**	0.5000	0	100.0	75	125	09/25/2023
Selenium		0.0010		**0.476**	0.5000	0.01213	92.9	75	125	09/25/2023
Thallium		0.0020		**0.251**	0.2500	0	100.5	75	125	09/29/2023

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)

Batch 212291 **SampType:** MSD Units **mg/L** RPD Limit **20**

SampID: 23091500-002DMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		**0.440**	0.5000	0	88.0	0.5079	14.32	09/25/2023
Arsenic		0.0010		**0.472**	0.5000	0.001392	94.2	0.5175	9.14	09/25/2023
Barium		0.0010		**2.25**	2.000	0.2358	100.8	2.277	1.12	10/02/2023
Beryllium		0.0010		**0.0514**	0.0500	0	102.8	0.05159	0.34	10/02/2023
Boron		0.0250		**0.592**	0.5000	0.1174	95.0	0.6287	5.95	09/25/2023
Cadmium		0.0010		**0.0433**	0.0500	0	86.6	0.05025	14.83	09/25/2023
Calcium		0.125	S	**90.6**	2.500	94.13	-140.5	95.89	5.65	09/29/2023
Chromium		0.0015		**0.169**	0.2000	0	84.3	0.2052	19.61	09/25/2023
Cobalt		0.0010		**0.422**	0.5000	0.0007075	84.2	0.5086	18.70	09/25/2023
Lead		0.0010		**0.446**	0.5000	0	89.3	0.5242	16.01	09/25/2023
Lithium	*	0.0030		**0.533**	0.5000	0.02205	102.3	0.5392	1.10	10/02/2023
Molybdenum	*	0.0015		**0.437**	0.5000	0	87.5	0.4998	13.32	09/25/2023
Selenium		0.0010		**0.454**	0.5000	0.01213	88.4	0.4765	4.82	09/25/2023
Thallium		0.0020		**0.213**	0.2500	0	85.2	0.2513	16.50	09/29/2023

Batch 212291 **SampType:** MS Units **mg/L**

SampID: 23091500-012DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.495**	0.5000	0	99.0	75	125	09/25/2023
Arsenic		0.0010		**0.489**	0.5000	0.001563	97.5	75	125	09/25/2023
Barium		0.0010		**2.14**	2.000	0.1383	100.3	75	125	09/25/2023
Beryllium		0.0010		**0.0500**	0.0500	0	100.0	75	125	10/02/2023
Boron		0.0250		**1.06**	0.5000	0.5910	93.8	75	125	09/25/2023
Cadmium		0.0010		**0.0494**	0.0500	0	98.8	75	125	09/25/2023
Calcium		0.125	S	**105**	2.500	101.4	148.5	75	125	09/29/2023
Chromium		0.0015		**0.195**	0.2000	0	97.3	75	125	09/25/2023
Cobalt		0.0010		**0.494**	0.5000	0.0001230	98.7	75	125	09/25/2023
Lead		0.0010		**0.511**	0.5000	0	102.2	75	125	09/25/2023
Lithium	*	0.0030		**0.544**	0.5000	0.04106	100.6	75	125	10/02/2023
Molybdenum	*	0.0015		**0.520**	0.5000	0.03666	96.6	75	125	09/25/2023
Selenium		0.0010		**0.452**	0.5000	0.009604	88.5	75	125	09/25/2023
Thallium		0.0020		**0.255**	0.2500	0	101.9	75	125	09/25/2023

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)

Batch 212291 **SampType:** MSD Units **mg/L** RPD Limit **20**

SampID: 23091500-012DMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		**0.506**	0.5000	0	101.2	0.4952	2.19	09/25/2023
Arsenic		0.0010		**0.480**	0.5000	0.001563	95.7	0.4892	1.89	09/25/2023
Barium		0.0010		**2.21**	2.000	0.1383	103.4	2.144	2.88	09/25/2023
Beryllium		0.0010		**0.0477**	0.0500	0	95.3	0.04999	4.77	10/02/2023
Boron		0.0250		**1.09**	0.5000	0.5910	100.7	1.060	3.18	09/25/2023
Cadmium		0.0010		**0.0496**	0.0500	0	99.2	0.04938	0.40	09/25/2023
Calcium		0.125	S	**102**	2.500	101.4	38.9	105.1	2.64	09/29/2023
Chromium		0.0015		**0.195**	0.2000	0	97.7	0.1945	0.47	09/25/2023
Cobalt		0.0010		**0.497**	0.5000	0.0001230	99.3	0.4936	0.66	09/25/2023
Lead		0.0010		**0.515**	0.5000	0	103.0	0.5111	0.76	09/25/2023
Lithium	*	0.0030		**0.534**	0.5000	0.04106	98.7	0.5440	1.79	10/02/2023
Molybdenum	*	0.0015		**0.524**	0.5000	0.03666	97.4	0.5198	0.77	09/25/2023
Selenium		0.0010		**0.445**	0.5000	0.009604	87.2	0.4519	1.44	09/25/2023
Thallium		0.0020		**0.257**	0.2500	0	102.8	0.2547	0.93	09/25/2023

SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)

Batch 212304 **SampType:** MBLK Units **mg/L**

SampID: MBLK-212304

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**< 0.0010**	0.0004	0	0	-100	100	09/26/2023
Arsenic		0.0010		**< 0.0010**	0.0004	0	0	-100	100	09/26/2023
Barium		0.0010		**< 0.0010**	0.0007	0	0	-100	100	09/26/2023
Beryllium		0.0010		**< 0.0010**	0.0002	0	0	-100	100	09/26/2023
Boron	*	0.0250		**< 0.0250**	0.0093	0	0	-100	100	09/28/2023
Cadmium		0.0010		**< 0.0010**	0.0001	0	0	-100	100	09/26/2023
Calcium	*	0.125		**< 0.125**	0.0700	0	0	-100	100	09/26/2023
Chromium		0.0015		**< 0.0015**	0.0007	0	0	-100	100	09/26/2023
Cobalt		0.0010		**< 0.0010**	0.0001	0	0	-100	100	09/26/2023
Lead		0.0010		**< 0.0010**	0.0006	0	0	-100	100	09/26/2023
Lithium	*	0.0030		**< 0.0030**	0.0015	0	0	-100	100	09/26/2023
Molybdenum	*	0.0015		**< 0.0015**	0.0006	0	0	-100	100	09/26/2023
Selenium		0.0010		**< 0.0010**	0.0006	0	0	-100	100	09/26/2023
Thallium		0.0020		**< 0.0020**	0.0010	0	0	-100	100	09/26/2023

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)

Batch 212304 **SampType:** LCS Units **mg/L**

SampID: LCS-212304

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.504**	0.5000	0	100.9	85	115	09/26/2023
Arsenic		0.0010		**0.517**	0.5000	0	103.5	85	115	09/26/2023
Barium		0.0010		**1.99**	2.000	0	99.4	85	115	09/26/2023
Beryllium		0.0010		**0.0509**	0.0500	0	101.9	85	115	09/26/2023
Boron	*	0.0250		**0.509**	0.5000	0	101.8	85	115	09/28/2023
Cadmium		0.0010		**0.0508**	0.0500	0	101.7	85	115	09/26/2023
Calcium	*	0.125		**2.32**	2.500	0	92.7	85	115	09/26/2023
Chromium		0.0015		**0.207**	0.2000	0	103.7	85	115	09/26/2023
Cobalt		0.0010		**0.535**	0.5000	0	106.9	85	115	09/26/2023
Lead		0.0010		**0.516**	0.5000	0	103.2	85	115	09/26/2023
Lithium	*	0.0030		**0.487**	0.5000	0	97.5	85	115	09/28/2023
Lithium	*	0.0030		**0.532**	0.5000	0	106.3	85	115	09/26/2023
Molybdenum	*	0.0015		**0.505**	0.5000	0	101.0	85	115	09/26/2023
Selenium		0.0010		**0.454**	0.5000	0	90.8	85	115	09/26/2023
Thallium		0.0020		**0.255**	0.2500	0	101.9	85	115	09/26/2023

Batch 212304 **SampType:** MS Units **mg/L**

SampID: 23091500-001CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.501**	0.5000	0	100.2	75	125	09/26/2023
Arsenic		0.0010		**0.520**	0.5000	0.001745	103.6	75	125	09/26/2023
Barium		0.0010		**2.16**	2.000	0.1367	100.9	75	125	09/26/2023
Beryllium		0.0010		**0.0498**	0.0500	0	99.5	75	125	09/26/2023
Boron		0.0250		**4.70**	0.5000	4.185	102.8	75	125	09/28/2023
Cadmium		0.0010		**0.0494**	0.0500	0	98.7	75	125	09/26/2023
Calcium		0.125	S	**124**	2.500	124.1	1.5	75	125	09/26/2023
Chromium		0.0015		**0.199**	0.2000	0.0008581	99.1	75	125	09/26/2023
Cobalt		0.0010		**0.509**	0.5000	0	101.7	75	125	09/26/2023
Lead		0.0010		**0.521**	0.5000	0	104.3	75	125	09/26/2023
Lithium	*	0.0030		**0.534**	0.5000	0.03125	100.6	75	125	09/26/2023
Molybdenum	*	0.0015		**0.552**	0.5000	0.05583	99.2	75	125	09/26/2023
Selenium		0.0010		**0.462**	0.5000	0	92.4	75	125	09/26/2023
Thallium		0.0020		**0.255**	0.2500	0	101.8	75	125	09/26/2023

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)

Batch 212304 **SampType:** MSD Units **mg/L** RPD Limit **20**

SampID: 23091500-001CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		**0.501**	0.5000	0	100.2	0.5011	0.01	09/26/2023
Arsenic		0.0010		**0.525**	0.5000	0.001745	104.7	0.5198	1.09	09/26/2023
Barium		0.0010		**2.16**	2.000	0.1367	100.9	2.156	0.01	09/26/2023
Beryllium		0.0010		**0.0500**	0.0500	0	100.0	0.04977	0.49	09/26/2023
Boron		0.0250	S	**4.86**	0.5000	4.185	135.0	4.699	3.37	09/28/2023
Cadmium		0.0010		**0.0492**	0.0500	0	98.5	0.04937	0.25	09/26/2023
Calcium		0.125	S	**128**	2.500	124.1	158.0	124.1	3.10	09/26/2023
Chromium		0.0015		**0.195**	0.2000	0.0008581	97.0	0.1990	2.13	09/26/2023
Cobalt		0.0010		**0.492**	0.5000	0	98.5	0.5087	3.25	09/26/2023
Lead		0.0010		**0.514**	0.5000	0	102.7	0.5213	1.49	09/26/2023
Lithium	*	0.0030		**0.543**	0.5000	0.03125	102.4	0.5344	1.67	09/26/2023
Molybdenum	*	0.0015		**0.540**	0.5000	0.05583	96.8	0.5520	2.26	09/26/2023
Selenium		0.0010		**0.468**	0.5000	0	93.6	0.4621	1.31	09/26/2023
Thallium		0.0020		**0.241**	0.2500	0	96.3	0.2546	5.56	09/26/2023

Batch 212304 **SampType:** MS Units **mg/L**

SampID: 23091500-011CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.483**	0.5000	0	96.7	75	125	09/27/2023
Arsenic		0.0010		**0.497**	0.5000	0.002886	98.9	75	125	09/27/2023
Barium		0.0010		**2.26**	2.000	0.2016	102.9	75	125	09/27/2023
Beryllium		0.0010		**0.0522**	0.0500	0	104.5	75	125	09/27/2023
Boron		0.0250		**0.699**	0.5000	0.1801	103.8	75	125	09/28/2023
Cadmium		0.0010		**0.0497**	0.0500	0	99.5	75	125	09/27/2023
Calcium		0.125	S	**70.6**	2.500	59.21	454.3	75	125	09/27/2023
Chromium		0.0015		**0.214**	0.2000	0.008548	102.6	75	125	09/27/2023
Cobalt		0.0010		**0.504**	0.5000	0.004115	100.0	75	125	09/27/2023
Lead		0.0010		**0.504**	0.5000	0.002599	100.4	75	125	09/27/2023
Lithium	*	0.0030		**0.498**	0.5000	0.01467	96.6	75	125	09/28/2023
Molybdenum	*	0.0015		**0.482**	0.5000	0.0007717	96.2	75	125	09/27/2023
Selenium		0.0010		**0.465**	0.5000	0.003654	92.3	75	125	09/27/2023
Thallium		0.0020		**0.251**	0.2500	0	100.5	75	125	09/27/2023

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)

Batch 212304 **SampType:** MSD Units **mg/L** RPD Limit **20**

SampID: 23091500-011CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		**0.487**	0.5000	0	97.4	0.4834	0.75	09/27/2023
Arsenic		0.0010		**0.521**	0.5000	0.002886	103.7	0.4975	4.70	09/27/2023
Barium		0.0010		**2.25**	2.000	0.2016	102.5	2.259	0.29	09/27/2023
Beryllium		0.0010		**0.0524**	0.0500	0	104.9	0.05225	0.38	09/27/2023
Boron		0.0250		**0.748**	0.5000	0.1801	113.6	0.6993	6.77	09/28/2023
Cadmium		0.0010		**0.0514**	0.0500	0	102.8	0.04975	3.26	09/27/2023
Calcium		0.125	S	**70.9**	2.500	59.21	465.9	70.57	0.41	09/27/2023
Chromium		0.0015		**0.207**	0.2000	0.008548	99.4	0.2137	2.99	09/27/2023
Cobalt		0.0010		**0.499**	0.5000	0.004115	98.9	0.5040	1.04	09/27/2023
Lead		0.0010		**0.513**	0.5000	0.002599	102.1	0.5045	1.72	09/27/2023
Lithium	*	0.0030		**0.525**	0.5000	0.01467	102.0	0.4978	5.24	09/28/2023
Molybdenum	*	0.0015		**0.495**	0.5000	0.0007717	98.8	0.4816	2.65	09/27/2023
Selenium		0.0010		**0.486**	0.5000	0.003654	96.5	0.4650	4.44	09/27/2023
Thallium		0.0020		**0.246**	0.2500	0	98.5	0.2512	2.02	09/27/2023

Batch 212305 **SampType:** MBLK Units **mg/L**

SampID: MBLK-212305

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**< 0.0010**	0.0004	0	0	-100	100	09/23/2023
Arsenic		0.0010		**< 0.0010**	0.0004	0	0	-100	100	09/26/2023
Barium		0.0010		**< 0.0010**	0.0007	0	0	-100	100	09/23/2023
Beryllium		0.0010		**< 0.0010**	0.0002	0	0	-100	100	09/26/2023
Boron		0.0250		**< 0.0250**	0.0093	0	0	-100	100	09/29/2023
Cadmium		0.0010		**< 0.0010**	0.0001	0	0	-100	100	09/23/2023
Calcium	*	0.125		**< 0.125**	0.0700	0	0	-100	100	09/23/2023
Chromium		0.0015		**< 0.0015**	0.0007	0	0	-100	100	09/23/2023
Cobalt		0.0010		**< 0.0010**	0.0001	0	0	-100	100	09/26/2023
Lead		0.0010		**< 0.0010**	0.0006	0	0	-100	100	09/26/2023
Lithium	*	0.0030		**< 0.0030**	0.0015	0	0	-100	100	09/29/2023
Molybdenum	*	0.0015		**< 0.0015**	0.0006	0	0	-100	100	09/26/2023
Molybdenum	*	0.0015		**< 0.0015**	0.0006	0	0	-100	100	09/23/2023
Selenium		0.0010		**< 0.0010**	0.0006	0	0	-100	100	09/26/2023
Thallium		0.0020		**< 0.0020**	0.0010	0	0	-100	100	09/23/2023

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)

Batch 212305 **SampType:** LCS Units **mg/L**

SampID: LCS-212305

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.475**	0.5000	0	95.0	85	115	09/23/2023
Arsenic		0.0010		**0.560**	0.5000	0	111.9	85	115	09/26/2023
Barium		0.0010		**1.96**	2.000	0	97.9	85	115	09/23/2023
Beryllium		0.0010		**0.0529**	0.0500	0	105.8	85	115	09/26/2023
Boron		0.0250		**0.535**	0.5000	0	107.1	80	120	09/29/2023
Cadmium		0.0010		**0.0475**	0.0500	0	94.9	85	115	09/23/2023
Calcium		0.125		**2.63**	2.500	0	105.3	80	120	09/29/2023
Chromium		0.0015		**0.188**	0.2000	0	94.0	85	115	09/23/2023
Cobalt		0.0010		**0.564**	0.5000	0	112.9	85	115	09/26/2023
Lead		0.0010		**0.516**	0.5000	0	103.2	80	120	09/28/2023
Lead		0.0010	SE	**0.591**	0.5000	0	118.2	85	115	09/26/2023
Lithium	*	0.0030		**0.541**	0.5000	0	108.1	80	120	10/02/2023
Molybdenum	*	0.0015		**0.475**	0.5000	0	94.9	85	115	09/23/2023
Molybdenum	*	0.0015		**0.542**	0.5000	0	108.4	85	115	09/26/2023
Selenium		0.0010		**0.509**	0.5000	0	101.8	85	115	09/26/2023
Thallium		0.0020		**0.244**	0.2500	0	97.6	85	115	09/23/2023

Batch 212305 **SampType:** MS Units **mg/L**

SampID: 23091500-014CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.479**	0.5000	0	95.9	75	125	09/23/2023
Arsenic		0.0010		**0.556**	0.5000	0.002554	110.7	75	125	09/26/2023
Barium		0.0010		**2.17**	2.000	0.1579	100.4	75	125	09/23/2023
Beryllium		0.0010		**0.0548**	0.0500	0	109.6	75	125	09/26/2023
Boron		0.0250	S	**9.34**	0.5000	8.327	202.8	75	125	09/29/2023
Cadmium		0.0010		**0.0477**	0.0500	0	95.4	75	125	09/23/2023
Calcium		0.125	S	**132**	2.500	125.9	241.4	75	125	09/29/2023
Chromium		0.0015		**0.211**	0.2000	0.001567	104.7	75	125	10/02/2023
Cobalt		0.0010		**0.567**	0.5000	0.0003208	113.4	75	125	09/26/2023
Lead		0.0010		**0.528**	0.5000	0.002105	105.2	75	125	09/28/2023
Lithium	*	0.0030		**0.585**	0.5000	0.04248	108.5	75	125	10/02/2023
Molybdenum	*	0.0015		**0.793**	0.5000	0.2350	111.7	75	125	09/26/2023
Selenium		0.0010		**0.499**	0.5000	0	99.8	75	125	09/26/2023
Thallium		0.0020		**0.247**	0.2500	0	98.9	75	125	09/23/2023

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)

Batch 212305 **SampType:** MSD Units **mg/L** RPD Limit **20**

SampID: 23091500-014CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		**0.500**	0.5000	0	100.0	0.4795	4.23	09/23/2023
Arsenic		0.0010		**0.541**	0.5000	0.002554	107.7	0.5563	2.73	09/26/2023
Barium		0.0010		**2.16**	2.000	0.1579	99.9	2.166	0.46	09/23/2023
Beryllium		0.0010		**0.0561**	0.0500	0	112.2	0.05478	2.35	09/26/2023
Boron		0.0250	S	**9.13**	0.5000	8.327	160.2	9.342	2.31	09/29/2023
Cadmium		0.0010		**0.0490**	0.0500	0	98.0	0.04770	2.71	09/23/2023
Calcium		0.125		**129**	2.500	125.9	122.9	131.9	2.27	09/29/2023
Chromium		0.0015		**0.208**	0.2000	0.001567	103.2	0.2110	1.39	10/02/2023
Cobalt		0.0010		**0.535**	0.5000	0.0003208	107.0	0.5673	5.78	09/26/2023
Lead		0.0010		**0.526**	0.5000	0.002105	104.8	0.5279	0.35	09/28/2023
Lithium	*	0.0030		**0.592**	0.5000	0.04248	109.9	0.5848	1.25	10/02/2023
Molybdenum	*	0.0015		**0.787**	0.5000	0.2350	110.5	0.7932	0.76	09/26/2023
Selenium		0.0010		**0.480**	0.5000	0	96.1	0.4988	3.77	09/26/2023
Thallium		0.0020		**0.246**	0.2500	0	98.4	0.2472	0.46	09/23/2023

SW-846 7470A (TOTAL)

Batch 212412 **SampType:** MBLK Units **mg/L**

SampID: MBLK-212412

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.00020		**< 0.00020**	0.0001	0	0	-100	100	09/26/2023

Batch 212412 **SampType:** LCS Units **mg/L**

SampID: LCS-212412

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.00020		**0.00505**	0.0050	0	100.9	85	115	09/26/2023

Batch 212412 **SampType:** MS Units **mg/L**

SampID: 23091500-012CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.00020		**0.00521**	0.0050	0	104.1	75	125	09/27/2023

Batch 212412 **SampType:** MSD Units **mg/L** RPD Limit **15**

SampID: 23091500-012CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury		0.00020		**0.00537**	0.0050	0	107.4	0.005206	3.08	09/27/2023

Client: ERM **Work Order:** 23091500

Client Project: 0599247 **Report Date:** 30-Oct-23

SW-846 7470A (TOTAL)

Batch 212516 **SampType:** MBLK Units **mg/L**

SampID: MBLK-212516

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.00020		**< 0.00020**	0.0001	0	0	-100	100	09/29/2023

Batch 212516 **SampType:** LCS Units **mg/L**

SampID: LCS-212516

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.00020		**0.00522**	0.0050	0	104.3	85	115	09/29/2023

Batch 212516 **SampType:** MS Units **mg/L**

SampID: 23091500-015CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.00020		**0.00518**	0.0050	0	103.5	75	125	09/29/2023

Batch 212516 **SampType:** MSD Units **mg/L** RPD Limit **15**

SampID: 23091500-015CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury		0.00020		**0.00489**	0.0050	0	97.8	0.005176	5.69	09/29/2023

Receiving Check List

http://www.teklabinc.com/

Client: ERM
Client Project: 0599247

Work Order: 23091500
Report Date: 30-Oct-23

Carrier: Marshall Arendell

Received By: MBP

Completed by: Amber Dilallo
On: 21-Sep-23

Reviewed by: Ellie Hopkins
On: 21-Sep-23

Pages to follow: Chain of custody 2 Extra pages included 34

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C	3.4		
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐			
Chain of custody present?	Yes ☑	No ☐					
Chain of custody signed when relinquished and received?	Yes ☑	No ☐					
Chain of custody agrees with sample labels?	Yes ☑	No ☐					
Samples in proper container/bottle?	Yes ☑	No ☐					
Sample containers intact?	Yes ☑	No ☐					
Sufficient sample volume for indicated test?	Yes ☑	No ☐					
All samples received within holding time?	Yes ☐	No ☑					
Reported field parameters measured:	Field ☐	Lab ☑	NA ☐				

Sample analyses to be measured in the field and/or within 15 minutes of collection were analyzed in the lab as soon as practicable. These analyses include Chlorine (demand, free and/or residual), Carbon Dioxide, Dissolved Oxygen, Ferrous Iron, pH, and Sulfite.

Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☑	NA ☐
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

pH strip #90719. - amberdilallo - 9/21/2023 12:08:50 PM

Additional Nitric Acid (92447) was needed in APW-07-WG-20230919 and APW-105-WG-20230919 upon arrival at the laboratory. - CET/amberdilallo - 9/21/2023 12:09:03 PM

EB-01-WQ-20230919 was filtered and preserved with Nitric Acid (92447) for the dissolved parameters upon arrival at the laboratory. - amberdilallo - 9/21/2023 12:10:41 PM

CHAIN OF CUSTODY

pg. 1 of 2 Work order # 23091500

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client: ERM
Address: 1968 Craig Road
City / State / Zip St. Louis, MO 63146
Contact: Matt Halley **Phone:** (314) 952-2760
E-Mail: matt.halley@erm.com **Fax:**

Samples on: ☒ ICE ☐ BLUE ICE ☐ NO ICE 3.4 °C LTG# 3
Preserved in: ☒ LAB ☐ FIELD **FOR LAB USE ONLY**
Lab Notes Ph 4071a. Added HNO3 (82447) to all 2 liters from APW-07 and APW-05. CF 9-21-23.

Are these samples known to be involved in litigation? If yes, a surcharge will apply ☐ Yes ☐ No
Are these samples known to be hazardous? If yes, include details of the hazard. ☐ Yes ☐ No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section. ☐ Yes ☐ No

Client Comments:
Total Metals: Sb As Ba Be B Cd Ca Cr Co Pb Li Mo Se Tl and Hg
Dissolved Metals: Sb As Ba Be B Cd Ca Cr Co Pb Li Mo Se and Tl
SUB Ra226/228 to Summit-OH.

Project Name/Number: 0599247
Sample Collector's Name: Clay Sansoucre / Marshall Arendell

Results Requested
☒ Standard ☐ 1-2 Day (100% Surcharge)
☐ Other ____ ☐ 3 Day (50% Surcharge)

Billing Instructions: 0599247

Lab Use Only	Sample Identification	Date/Time Sampled	UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	OTHER	Aqueous	Drinking Water	Soil	Sludge	Special Waste	Groundwater	Chloride	Dissolved Metals	Fluoride	pH	Ra226/228	Sulfate	TDS	Total Metals
23091500-001	APW-03-WG-20230919	9/19/23; 1135	1	2		2										X	X	X	X	X	X	X	X	X
002	APW-08-WG-20230919	9/19/23; 1255	1	2		2										↓	↓	↓	↓	↓	↓	↓	↓	↓
003	APW-07-WG-20230919	9/19/23; 1350	1	2		2										↓	↓	↓	↓	↓	↓	↓	↓	↓
004	APW-13B-WG-20230919	9/19/23; 1450	1	2		2										↓	↓	↓	↓	↓	↓	↓	↓	↓
005	APW-10D-WG-20230919	9/19/23; 1600	1	2		2										↓	↓	↓	↓	↓	↓	↓	↓	↓
006	APW-06S-WG-20230920	9/20/23; 0850	1	2		2										↓	↓	↓	↓	↓	↓	↓	↓	↓
007	APW-06D-WG-20230920	9/20/23; 1005	1	2		2										↓	↓	↓	↓	↓	↓	↓	↓	↓
008	APW-05R-WG-20230920	9/20/23; 1125	1	2		2										↓	↓	↓	↓	↓	↓	↓	↓	↓
009	APW-09-WG-20230920	9/20/23; 1400	1	2		2										↓	↓	↓	↓	↓	↓	↓	↓	↓
010	APW-02-WG-20230920	9/20/23; 1230	1	2		2										↓	↓	↓	↓	↓	↓	↓	↓	↓

Relinquished By	Date/Time	Received By	Date/Time
Marshall Arendell [signature]	9/21/23 0945	[signature]	9/21/23 0945

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 82816

CF 9-21-23

CHAIN OF CUSTODY

pg. 2 of 2 Work order # 23091500

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client:	ERM
Address:	1968 Craig Road
City / State / Zip	St. Louis, MO 63146
Contact:	Matt Halley
Phone:	(314) 952-2760
E-Mail:	matt.halley@erm.com
Fax:	

Samples on: [X] ICE [ ] BLUE ICE [ ] NO ICE 3.4 °C LTG# 3

Preserved in: [X] LAB [ ] FIELD

FOR LAB USE ONLY

Lab Notes

Are these samples known to be involved in litigation? If yes, a surcharge will apply [ ] Yes [ ] No

Are these samples known to be hazardous? If yes, include details of the hazard. [ ] Yes [ ] No

Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section. [ ] Yes [ ] No

Client Comments:

Total Metals: Sb As Ba Be B Cd Ca Cr Co Pb Li Mo Se Tl and Hg

Dissolved Metals: Sb As Ba Be B Cd Ca Cr Co Pb Li Mo Se and Tl

SUB Ra226/228 to Summit-OH.

Project Name/Number: 0599247

Sample Collector's Name: Clay Sansoucie/Marshall Arendell

Results Requested: [X] Standard [ ] 1-2 Day (100% Surcharge) [ ] Other ____ [ ] 3 Day (50% Surcharge)

Billing Instructions: 0599247

Lab Use Only	Sample Identification	Date/Time Sampled	# and Type of Containers: UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	OTHER	MATRIX: Aqueous	Drinking Water	Soil	Sludge	Special Waste	Groundwater	INDICATE ANALYSIS REQUESTED: Chloride	Dissolved Metals	Fluoride	pH	Ra226/228	Sulfate	TDS	Total Metals
23091500 011	APW-DUP-WG-20230920	9/20/23; 1510	1	2		2										X	X	X	X	X	X	X	X	X
012	APW-04-WG-20230920	9/20/23; 1610	1	2		2																		
013	EB-01-WG-20230919	9/19/23; 0840	1	1		2																		
014	DUP-01-WG-20230920	9/20/23; 0001	1	2		2																		
015	DUP-02-WG-20230920	9/20/23; 0002	1	2		2																		

Relinquished By	Date/Time	Received By	Date/Time
Marshall Arendell	9/21/23 0945	Maureen Peter	9/21/23 0945

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 82816

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

October 30, 2023

Elizabeth Hurley
TEKLAB Inc,
5445 Horseshoe lake Road
Collinsville, IL 62234
TEL:
FAX:

RE: 23091500

Order No.: 23091975

Dear Elizabeth Hurley:

Summit Environmental Technologies, Inc. received 15 sample(s) on 9/28/2023 for the analyses presented in the following report.

There were no problems with the analytical events associated with this report unless noted in the Case Narrative.

Quality control data is within laboratory defined or method specified acceptance limits except where noted.

If you have any questions regarding these tests results, please feel free to call the laboratory.

Sincerely,

Jennifer Woolf

Project Manager

3310 Win St.
Cuyahoga Falls, Ohio 44223

Arkansas 88-0735, California 2943, Colorado, Connecticut PH-0108, Florida NELAC E87688, Idaho OH00923, Illinois 200061, Indiana C-OH-13, ISO/IEC 17025:2017 119125 L22-544, Kansas E-10347, Kentucky (Underground Storage Tank) 3, Kentucky 90146, Maryland 339, Michigan 9988, Minnesota 1780279, Nevada OH009232020-1, New Hampshire 2996, New Jersey OH006, New York 11777, North Carolina 39705 and 631, North Dakota R-201, Ohio DW, Ohio VAP CL0052, Oklahoma 2019-155, Oregon OH200001, Pennsylvania 68-01335, Rhode Island LA000317, South Carolina 92016001, Texas T104704466-19-16, Utah OH009232020-12, Virginia VELAP 10381, West Virginia 9957C

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Case Narrative

WO#: **23091975**
Date: **10/30/2023**

CLIENT: TEKLAB Inc,
Project: 23091500

WorkOrder Narrative:
23091975: This report in its entirety consists of the following documents: Cover Letter, Case Narrative, Analytical Results, QC Summary Report, Applicable Accreditation Information, Chain-of-Custody, Cooler Receipt Form, and other applicable forms as necessary. All documents contain the Summit Environmental Technologies, Inc., Work Order Number assigned to this report.

Summit Environmental Technologies, Inc., holds the accreditations/certifications listed at the bottom of the cover letter that may or may not pertain to this report. Please refer to the "Accreditation Program Analytes Report" for accredited analytes list.

 The results contained in this report are only representative of the samples received. Conditions can vary at different times and at different sampling conditions. Summit Environmental Technologies, Inc. is not responsible for use or interpretation of the data included herein.

All results for Solid Samples are reported on an "as received" or "wet weight" basis unless indicated as "dry weight" using the "-dry" designation on the reporting units.

This report is believed to meet all of the requirements of the accrediting agency, where applicable. Any comments or problems with the analytical events associated with this report are noted below.

Analytical Sequence Sample Notes:
23091975-002A Radium-228_NPW(904.0): Sample and Sample Duplicate exhibited high RPD for Radium-228. Both samples exhibit detections < PQL.
23091975-003A Radium-228_NPW(904.0): Sample and Sample Duplicate exhibited high RPD for Radium-228. Both samples exhibit detections < PQL.

SUMMIT ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

Summit Environmental Technologies, In
3310 Win S
Cuyahoga Falls, Ohio 4422
TEL: (330) 253-8211 FAX: (330) 253-44
Website: http://www.settek.co

Qualifiers and Acronyms

WO#: **23091975**
Date: **10/30/2023**

These commonly used Qualifiers and Acronyms may or may not be present in this report.

Qualifiers

U	The compound was analyzed for but was not detected above the MDL.
J	The reported value is greater than the Method Detection Limit but less than the Reporting Limit.
H	The hold time for sample preparation and/or analysis was exceeded. Not Clean Water Act compliant.
D	The result is reported from a dilution.
E	The result exceeded the linear range of the calibration or is estimated due to interference.
MC	The result is below the Minimum Compound Limit.
*****	The result exceeds the Regulatory Limit or Maximum Contamination Limit.
m	Manual integration was used to determine the area response.
d	Manual integration in which peak was deleted
N	The result is presumptive based on a Mass Spectral library search assuming a 1:1 response.
P	The second column confirmation exceeded 25% difference.
C	The result has been confirmed by GC/MS.
X	The result was not confirmed when GC/MS Analysis was performed.
B	The analyte was detected in the Method Blank at a concentration greater than the RL.
MB+	The analyte was detected in the Method Blank at a concentration greater than the MDL.
G	The ICB or CCB contained reportable amounts of analyte.
QC-/+	The CCV recovery failed low (-) or high (+).
R/QDR	The RPD was outside of accepted recovery limits.
QL-/+	The LCS or LCSD recovery failed low (-) or high (+).
QLR	The LCS/LCSD RPD was outside of accepted recovery limits.
QM-/+	The MS or MSD recovery failed low (-) or high (+).
QMR	The MS/MSD RPD was outside of accepted recovery limits.
QV-/+	The ICV recovery failed low (-) or high (+).
S	The spike result was outside of accepted recovery limits.
W	Samples were received outside temperature limits (0° – 6° C). Not Clean Water Act compliant.
Z	Deviation; A deviation from the method was performed; Please refer to the Case Narrative for additional information

Acronyms

ND	Not Detected	**RL**	Reporting Limit
QC	Quality Control	**MDL**	Method Detection Limit
MB	Method Blank	**LOD**	Level of Detection
LCS	Laboratory Control Sample	**LOQ**	Level of Quantitation
LCSD	Laboratory Control Sample Duplicate	**PQL**	Practical Quantitation Limit
QCS	Quality Control Sample	**CRQL**	Contract Required Quantitation Limit
DUP	Duplicate	**PL**	Permit Limit
MS	Matrix Spike	**RegLvl**	Regulatory Limit
MSD	Matrix Spike Duplicate	**MCL**	Maximum Contamination Limit
RPD	Relative Percent Different	**MinCL**	Minimum Compound Limit
ICV	Initial Calibration Verification	**RA**	Reanalysis
ICB	Initial Calibration Blank	**RE**	Reextraction
CCV	Continuing Calibration Verification	**TIC**	Tentatively Identified Compound
CCB	Continuing Calibration Blank	**RT**	Retention Time
RLC	Reporting Limit Check	**CF**	Calibration Factor

This list of Qualifiers and Acronyms reflects the most commonly utilized Qualifiers and Acronyms for reporting. Please refer to the Analytical Notes in the Case Narrative for any Qualifiers or Acronyms that do not appear in this list or for additional information regarding the use of these Qualifiers on reported data.

Summit Environmental Technologies, Inc.
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Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

Workorder Sample Summary

WO#: **23091975**

30-Oct-23

CLIENT: TEKLAB Inc,
Project: 23091500

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
23091975-001	23091500-001		9/19/2023 11:35:00 AM	9/28/2023 12:45:00 PM	Non-Potable Water
23091975-002	23091500-002		9/19/2023 12:55:00 PM	9/28/2023 12:45:00 PM	Non-Potable Water
23091975-003	23091500-003		9/19/2023 1:50:00 PM	9/28/2023 12:45:00 PM	Non-Potable Water
23091975-004	23091500-004		9/19/2023 2:50:00 PM	9/28/2023 12:45:00 PM	Non-Potable Water
23091975-005	23091500-005		9/19/2023 4:00:00 PM	9/28/2023 12:45:00 PM	Non-Potable Water
23091975-006	23091500-006		9/20/2023 8:50:00 AM	9/28/2023 12:45:00 PM	Non-Potable Water
23091975-007	23091500-007		9/20/2023 10:05:00 AM	9/28/2023 12:45:00 PM	Non-Potable Water
23091975-008	23091500-008		9/20/2023 11:25:00 AM	9/28/2023 12:45:00 PM	Non-Potable Water
23091975-009	23091500-009		9/20/2023 2:00:00 PM	9/28/2023 12:45:00 PM	Non-Potable Water
23091975-010	23091500-010		9/20/2023 12:30:00 PM	9/28/2023 12:45:00 PM	Non-Potable Water
23091975-011	23091500-011		9/20/2023 3:10:00 PM	9/28/2023 12:45:00 PM	Non-Potable Water
23091975-012	23091500-012		9/20/2023 4:10:00 PM	9/28/2023 12:45:00 PM	Non-Potable Water
23091975-013	23091500-013		9/19/2023 8:40:00 AM	9/28/2023 12:45:00 PM	Non-Potable Water
23091975-014	23091500-014		9/20/2023 12:01:00 AM	9/28/2023 12:45:00 PM	Non-Potable Water
23091975-015	23091500-015		9/20/2023 12:02:00 AM	9/28/2023 12:45:00 PM	Non-Potable Water

Summit Environmental Technologies, Inc.
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DATES REPORT

WO#: **23091975**

30-Oct-23

Client: TEKLAB Inc,
Project: 23091500

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
23091975-001A	23091500-001	9/19/2023 11:35:00 AM	Non-Potable Water	Combined Radium (EPA903+904)			10/27/2023 8:17:34 AM
				Radium-226 (EPA 903.0)		10/3/2023 12:20:13 PM	10/16/2023 10:09:00 AM
				Radium-228 (EPA 904.0)		10/3/2023 12:20:13 PM	10/13/2023 2:22:00 PM
23091975-002A	23091500-002	9/19/2023 12:55:00 PM		Combined Radium (EPA903+904)			10/27/2023 8:17:34 AM
				Radium-226 (EPA 903.0)		10/3/2023 12:20:13 PM	10/16/2023 10:09:00 AM
				Radium-228 (EPA 904.0)		10/3/2023 12:20:13 PM	10/13/2023 2:22:00 PM
23091975-003A	23091500-003	9/19/2023 1:50:00 PM		Combined Radium (EPA903+904)			10/27/2023 8:17:34 AM
				Radium-226 (EPA 903.0)		10/3/2023 12:20:13 PM	10/16/2023 10:09:00 AM
				Radium-228 (EPA 904.0)		10/3/2023 12:20:13 PM	10/13/2023 2:22:00 PM
23091975-004A	23091500-004	9/19/2023 2:50:00 PM		Combined Radium (EPA903+904)			10/27/2023 8:17:34 AM
				Radium-226 (EPA 903.0)		10/3/2023 12:20:13 PM	10/16/2023 10:09:00 AM
				Radium-228 (EPA 904.0)		10/17/2023 1:42:45 PM	10/23/2023 2:46:00 PM
				Radium-228 (EPA 904.0)		10/3/2023 12:20:13 PM	10/13/2023 2:22:00 PM
23091975-005A	23091500-005	9/19/2023 4:00:00 PM		Combined Radium (EPA903+904)			10/27/2023 8:17:34 AM
				Radium-226 (EPA 903.0)		10/3/2023 12:20:13 PM	10/16/2023 10:09:00 AM
				Radium-228 (EPA 904.0)		10/3/2023 12:20:13 PM	10/13/2023 2:22:00 PM
23091975-006A	23091500-006	9/20/2023 8:50:00 AM		Combined Radium (EPA903+904)			10/27/2023 8:17:34 AM
				Radium-226 (EPA 903.0)		10/3/2023 12:20:13 PM	10/16/2023 10:09:00 AM
				Radium-228 (EPA 904.0)		10/3/2023 12:20:13 PM	10/13/2023 2:22:00 PM
				Radium-228 (EPA 904.0)		10/17/2023 1:42:45 PM	10/23/2023 2:46:00 PM
23091975-007A	23091500-007	9/20/2023 10:05:00 AM		Combined Radium (EPA903+904)			10/27/2023 8:17:34 AM
				Radium-226 (EPA 903.0)		10/3/2023 12:20:13 PM	10/16/2023 10:09:00 AM
				Radium-228 (EPA 904.0)		10/3/2023 12:20:13 PM	10/13/2023 2:22:00 PM

Original

Summit Environmental Technologies, Inc.
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Cuyahoga Falls, Ohio 44223
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Website: http://www.settek.com

DATES REPORT

WO#: **23091975**

30-Oct-23

Client: TEKLAB Inc,
Project: 23091500

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
23091975-008A	23091500-008	9/20/2023 11:25:00 AM	Non-Potable Water	Combined Radium (EPA903+904)			10/27/2023 8:17:34 AM
				Radium-226 (EPA 903.0)		10/3/2023 12:20:13 PM	10/16/2023 10:09:00 AM
				Radium-228 (EPA 904.0)		10/3/2023 12:20:13 PM	10/13/2023 2:22:00 PM
23091975-009A	23091500-009	9/20/2023 2:00:00 PM		Combined Radium (EPA903+904)			10/27/2023 8:17:34 AM
				Radium-226 (EPA 903.0)		10/3/2023 12:20:13 PM	10/16/2023 10:09:00 AM
				Radium-228 (EPA 904.0)		10/3/2023 12:20:13 PM	10/13/2023 2:22:00 PM
23091975-010A	23091500-010	9/20/2023 12:30:00 PM		Combined Radium (EPA903+904)			10/27/2023 8:17:34 AM
				Radium-226 (EPA 903.0)		10/3/2023 12:20:13 PM	10/16/2023 10:09:00 AM
				Radium-228 (EPA 904.0)		10/3/2023 12:20:13 PM	10/13/2023 2:22:00 PM
23091975-011A	23091500-011	9/20/2023 3:10:00 PM		Combined Radium (EPA903+904)			10/27/2023 8:17:34 AM
				Radium-226 (EPA 903.0)		10/3/2023 12:20:13 PM	10/16/2023 10:09:00 AM
				Radium-228 (EPA 904.0)		10/3/2023 12:20:13 PM	10/13/2023 2:22:00 PM
23091975-012A	23091500-012	9/20/2023 4:10:00 PM		Combined Radium (EPA903+904)			10/27/2023 8:17:34 AM
				Radium-226 (EPA 903.0)		10/3/2023 12:20:13 PM	10/16/2023 10:09:00 AM
				Radium-228 (EPA 904.0)		10/3/2023 12:20:13 PM	10/13/2023 2:22:00 PM
23091975-013A	23091500-013	9/19/2023 8:40:00 AM		Combined Radium (EPA903+904)			10/27/2023 8:17:34 AM
				Radium-226 (EPA 903.0)		10/3/2023 12:20:13 PM	10/16/2023 10:09:00 AM
				Radium-228 (EPA 904.0)		10/3/2023 12:20:13 PM	10/13/2023 2:22:00 PM
23091975-014A	23091500-014	9/20/2023 12:01:00 AM		Combined Radium (EPA903+904)			10/27/2023 8:17:34 AM
				Radium-226 (EPA 903.0)		10/3/2023 12:20:13 PM	10/16/2023 10:09:00 AM
				Radium-228 (EPA 904.0)		10/3/2023 12:20:13 PM	10/13/2023 2:22:00 PM
23091975-015A	23091500-015	9/20/2023 12:02:00 AM		Combined Radium (EPA903+904)			10/27/2023 8:17:34 AM
				Radium-226 (EPA 903.0)		10/3/2023 12:20:13 PM	10/16/2023 10:09:00 AM

Original

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Cuyahoga Falls, Ohio 44223
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DATES REPORT

WO#: **23091975**

30-Oct-23

Client: TEKLAB Inc,

Project: 23091500

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
23091975-015A	23091500-015	9/20/2023 12:02:00 AM	Non-Potable Water	Radium-228 (EPA 904.0)		10/17/2023 1:42:45 PM	10/23/2023 2:46:00 PM
				Radium-228 (EPA 904.0)		10/3/2023 12:20:13 PM	10/13/2023 2:22:00 PM

Original

Summit Environmental Technologies, Inc.
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Analytical Report

(consolidated)

WO#: **23091975**

Date Reported: **10/30/2023**

CLIENT: TEKLAB Inc,
Project: 23091500
Lab ID: 23091975-001
Client Sample ID: 23091500-001

Collection Date: 9/19/2023 11:35:00 AM
Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
COMBINED RADIUM (EPA903+904)					**CALCULATION**		Analyst: **CXS**
Radium-226/Radium-228	1.05	2.00	U	pCi/L	± 0.61	1	10/27/2023 8:17:34 AM
RADIUM-226 (EPA 903.0)					**E903.0**	**E903-904**	Analyst: **HDJ**
Radium-226	0.2	1.00	U	pCi/L	± 0.09	1	10/16/2023 10:09:00 A
Yield	1					1	10/16/2023 10:09:00 A
RADIUM-228 (EPA 904.0)					**E904.0**	**E903-904**	Analyst: **HDJ**
Radium-228	0.85	1.00	J	pCi/L	± 0.52	1	10/13/2023 2:22:00 PM
Yield	1					1	10/13/2023 2:22:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
	ND	Not Detected	OG1	
	P	Second column confirmation exceeds	PL	Permit Limit

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

Analytical Report

(consolidated)

WO#: **23091975**

Date Reported: **10/30/2023**

CLIENT: TEKLAB Inc,
Collection Date: 9/19/2023 12:55:00 PM
Project: 23091500
Lab ID: 23091975-002
Matrix: NON-POTABLE WATER
Client Sample ID: 23091500-002

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
COMBINED RADIUM (EPA903+904)				**CALCULATION**			Analyst: **CXS**
Radium-226/Radium-228	1.04	2.00	U	pCi/L	± 0.58	1	10/27/2023 8:17:34 AM
RADIUM-226 (EPA 903.0)					**E903.0**	**E903-904**	Analyst: **HDJ**
Radium-226	0.23	1.00	U	pCi/L	± 0.09	1	10/16/2023 10:09:00 A
Yield	1					1	10/16/2023 10:09:00 A
RADIUM-228 (EPA 904.0)					**E904.0**	**E903-904**	Analyst: **HDJ**
Radium-228	0.81	1.00	JQDR	pCi/L	± 0.49	1	10/13/2023 2:22:00 PM
Yield	0.97					1	10/13/2023 2:22:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

Analytical Report

(consolidated)

WO#: **23091975**

Date Reported: **10/30/2023**

CLIENT: TEKLAB Inc,
Collection Date: 9/19/2023 1:50:00 PM
Project: 23091500
Lab ID: 23091975-003
Matrix: NON-POTABLE WATER
Client Sample ID: 23091500-003

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
COMBINED RADIUM (EPA903+904)				**CALCULATION**			Analyst: **CXS**
Radium-226/Radium-228	1.1	2.00	U	pCi/L	± 0.69	1	10/27/2023 8:17:34 AM
RADIUM-226 (EPA 903.0)					**E903.0**	**E903-904**	Analyst: **HDJ**
Radium-226	0.11	1.00	U	pCi/L	± 0.07	1	10/16/2023 10:09:00 A
Yield	1					1	10/16/2023 10:09:00 A
RADIUM-228 (EPA 904.0)					**E904.0**	**E903-904**	Analyst: **HDJ**
Radium-228	0.99	1.00	JQDR	pCi/L	± 0.62	1	10/13/2023 2:22:00 PM
Yield	0.94					1	10/13/2023 2:22:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

Analytical Report

(consolidated)

WO#: **23091975**

Date Reported: **10/30/2023**

CLIENT: TEKLAB Inc,
Collection Date: 9/19/2023 2:50:00 PM
Project: 23091500
Lab ID: 23091975-004
Matrix: NON-POTABLE WATER
Client Sample ID: 23091500-004

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
COMBINED RADIUM (EPA903+904)				**CALCULATION**			Analyst: **CXS**
Radium-226/Radium-228	4.83	2.00		pCi/L	± 1.05	1	10/27/2023 8:17:34 AM
RADIUM-226 (EPA 903.0)					**E903.0**	**E903-904**	Analyst: **HDJ**
Radium-226	0.59	1.00	U	pCi/L	± 0.14	1	10/16/2023 10:09:00 A
Yield	1					1	10/16/2023 10:09:00 A
RADIUM-228 (EPA 904.0)					**E904.0**	**E903-904**	Analyst: **HDJ**
Radium-228	4.24	1.00		pCi/L	± 0.91	1	10/23/2023 2:46:00 PM
Yield	1					1	10/23/2023 2:46:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

Summit Environmental Technologies, Inc.
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Analytical Report

(consolidated)

WO#: **23091975**

Date Reported: **10/30/2023**

CLIENT: TEKLAB Inc,
Project: 23091500
Lab ID: 23091975-005
Client Sample ID: 23091500-005

Collection Date: 9/19/2023 4:00:00 PM
Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
COMBINED RADIUM (EPA903+904)					**CALCULATION**		Analyst: **CXS**
Radium-226/Radium-228	0.82	2.00	U	pCi/L	± 0.58	1	10/27/2023 8:17:34 AM
RADIUM-226 (EPA 903.0)					**E903.0**	**E903-904**	Analyst: **HDJ**
Radium-226	0.21	1.00	U	pCi/L	± 0.09	1	10/16/2023 10:09:00 A
Yield	1					1	10/16/2023 10:09:00 A
RADIUM-228 (EPA 904.0)					**E904.0**	**E903-904**	Analyst: **HDJ**
Radium-228	0.61	1.00	U	pCi/L	± 0.49	1	10/13/2023 2:22:00 PM
Yield	1					1	10/13/2023 2:22:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
	ND	Not Detected	OG1	
	P	Second column confirmation exceeds	PL	Permit Limit

Summit Environmental Technologies, Inc.
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Analytical Report

(consolidated)

WO#: **23091975**

Date Reported: **10/30/2023**

CLIENT: TEKLAB Inc,
Project: 23091500
Lab ID: 23091975-006
Client Sample ID: 23091500-006

Collection Date: 9/20/2023 8:50:00 AM
Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
COMBINED RADIUM (EPA903+904)					**CALCULATION**		Analyst: **CXS**
Radium-226/Radium-228	0.73	2.00	U	pCi/L	± 0.49	1	10/27/2023 8:17:34 AM
RADIUM-226 (EPA 903.0)					**E903.0**	**E903-904**	Analyst: **HDJ**
Radium-226	0.32	1.00	U	pCi/L	± 0.11	1	10/16/2023 10:09:00 A
Yield	0.98					1	10/16/2023 10:09:00 A
RADIUM-228 (EPA 904.0)					**E904.0**	**E903-904**	Analyst: **HDJ**
Radium-228	0.41	1.00	U	pCi/L	± 0.38	1	10/23/2023 2:46:00 PM
Yield	1					1	10/23/2023 2:46:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
	ND	Not Detected	OG1	
	P	Second column confirmation exceeds	PL	Permit Limit

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Analytical Report

(consolidated)

WO#: **23091975**

Date Reported: **10/30/2023**

CLIENT: TEKLAB Inc,
Collection Date: 9/20/2023 10:05:00 AM
Project: 23091500
Lab ID: 23091975-007
Matrix: NON-POTABLE WATER
Client Sample ID: 23091500-007

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
COMBINED RADIUM (EPA903+904)				**CALCULATION**			Analyst: **CXS**
Radium-226/Radium-228	2.8	2.00		pCi/L	± 0.85	1	10/27/2023 8:17:34 AM
RADIUM-226 (EPA 903.0)					**E903.0**	**E903-904**	Analyst: **HDJ**
Radium-226	0.18	1.00	U	pCi/L	± 0.09	1	10/16/2023 10:09:00 A
Yield	0.98					1	10/16/2023 10:09:00 A
RADIUM-228 (EPA 904.0)					**E904.0**	**E903-904**	Analyst: **HDJ**
Radium-228	2.62	1.00		pCi/L	± 0.76	1	10/13/2023 2:22:00 PM
Yield	1					1	10/13/2023 2:22:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

Summit Environmental Technologies, Inc.
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Analytical Report

(consolidated)

WO#: **23091975**

Date Reported: **10/30/2023**

CLIENT: TEKLAB Inc,
Collection Date: 9/20/2023 11:25:00 AM
Project: 23091500
Lab ID: 23091975-008
Matrix: NON-POTABLE WATER
Client Sample ID: 23091500-008

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
COMBINED RADIUM (EPA903+904)				**CALCULATION**			Analyst: **CXS**
Radium-226/Radium-228	6.34	2.00		pCi/L	± 1.53	1	10/27/2023 8:17:34 AM
RADIUM-226 (EPA 903.0)					**E903.0**	**E903-904**	Analyst: **HDJ**
Radium-226	0.49	1.00	U	pCi/L	± 0.13	1	10/16/2023 10:09:00 A
Yield	0.96					1	10/16/2023 10:09:00 A
RADIUM-228 (EPA 904.0)					**E904.0**	**E903-904**	Analyst: **HDJ**
Radium-228	5.85	1.00	*	pCi/L	± 1.14	1	10/13/2023 2:22:00 PM
Yield	0.97					1	10/13/2023 2:22:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

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Analytical Report

(consolidated)

WO#: **23091975**

Date Reported: **10/30/2023**

CLIENT: TEKLAB Inc,
Project: 23091500
Lab ID: 23091975-009
Client Sample ID: 23091500-009

Collection Date: 9/20/2023 2:00:00 PM
Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
COMBINED RADIUM (EPA903+904)					**CALCULATION**		Analyst: **CXS**
Radium-226/Radium-228	1.17	2.00	U	pCi/L	± 0.65	1	10/27/2023 8:17:34 AM
RADIUM-226 (EPA 903.0)					**E903.0**	**E903-904**	Analyst: **HDJ**
Radium-226	0	1.00	U	pCi/L	± 0.05	1	10/16/2023 10:09:00 A
Yield	0.97					1	10/16/2023 10:09:00 A
RADIUM-228 (EPA 904.0)					**E904.0**	**E903-904**	Analyst: **HDJ**
Radium-228	1.17	1.00		pCi/L	± 0.6	1	10/13/2023 2:22:00 PM
Yield	0.96					1	10/13/2023 2:22:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

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Analytical Report

(consolidated)

WO#: **23091975**

Date Reported: **10/30/2023**

CLIENT: TEKLAB Inc,
Collection Date: 9/20/2023 12:30:00 PM
Project: 23091500
Lab ID: 23091975-010
Matrix: NON-POTABLE WATER
Client Sample ID: 23091500-010

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
COMBINED RADIUM (EPA903+904)				**CALCULATION**			Analyst: **CXS**
Radium-226/Radium-228	4.09	2.00		pCi/L	± 1.05	1	10/27/2023 8:17:34 AM
RADIUM-226 (EPA 903.0)					**E903.0**	**E903-904**	Analyst: **HDJ**
Radium-226	0.38	1.00	U	pCi/L	± 0.12	1	10/16/2023 10:09:00 A
Yield	0.97					1	10/16/2023 10:09:00 A
RADIUM-228 (EPA 904.0)					**E904.0**	**E903-904**	Analyst: **HDJ**
Radium-228	3.71	1.00		pCi/L	± 0.93	1	10/13/2023 2:22:00 PM
Yield	0.99					1	10/13/2023 2:22:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

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Analytical Report

(consolidated)

WO#: **23091975**

Date Reported: **10/30/2023**

CLIENT: TEKLAB Inc,
Collection Date: 9/20/2023 3:10:00 PM
Project: 23091500
Lab ID: 23091975-011
Matrix: NON-POTABLE WATER
Client Sample ID: 23091500-011

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
COMBINED RADIUM (EPA903+904)					**CALCULATION**		Analyst: **CXS**
Radium-226/Radium-228	0.64	2.00	U	pCi/L	± 0.67	1	10/27/2023 8:17:34 AM
RADIUM-226 (EPA 903.0)					**E903.0**	**E903-904**	Analyst: **HDJ**
Radium-226	0.32	1.00	U	pCi/L	± 0.11	1	10/16/2023 10:09:00 A
Yield	0.93					1	10/16/2023 10:09:00 A
RADIUM-228 (EPA 904.0)					**E904.0**	**E903-904**	Analyst: **HDJ**
Radium-228	0.32	1.00	U	pCi/L	± 0.56	1	10/13/2023 2:22:00 PM
Yield	0.94					1	10/13/2023 2:22:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

Summit Environmental Technologies, Inc.
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Analytical Report

(consolidated)

WO#: **23091975**

Date Reported: **10/30/2023**

CLIENT: TEKLAB Inc,
Collection Date: 9/20/2023 4:10:00 PM
Project: 23091500
Lab ID: 23091975-012
Matrix: NON-POTABLE WATER
Client Sample ID: 23091500-012

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
COMBINED RADIUM (EPA903+904)				**CALCULATION**			Analyst: **CXS**
Radium-226/Radium-228	1.27	2.00	U	pCi/L	± 0.74	1	10/27/2023 8:17:34 AM
RADIUM-226 (EPA 903.0)					**E903.0**	**E903-904**	Analyst: **HDJ**
Radium-226	0.09	1.00	U	pCi/L	± 0.07	1	10/16/2023 10:09:00 A
Yield	0.91					1	10/16/2023 10:09:00 A
RADIUM-228 (EPA 904.0)					**E904.0**	**E903-904**	Analyst: **HDJ**
Radium-228	1.18	1.00		pCi/L	± 0.67	1	10/13/2023 2:22:00 PM
Yield	0.93					1	10/13/2023 2:22:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

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Analytical Report

(consolidated)

WO#: **23091975**

Date Reported: **10/30/2023**

CLIENT: TEKLAB Inc,

Collection Date: 9/19/2023 8:40:00 AM

Project: 23091500

Lab ID: 23091975-013

Matrix: NON-POTABLE WATER

Client Sample ID: 23091500-013

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
COMBINED RADIUM (EPA903+904)				**CALCULATION**			Analyst: **CXS**
Radium-226/Radium-228	0.94	2.00	U	pCi/L	± 0.73	1	10/27/2023 8:17:34 AM
RADIUM-226 (EPA 903.0)					**E903.0**	**E903-904**	Analyst: **HDJ**
Radium-226	-0.02	1.00	U	pCi/L	± 0.05	1	10/16/2023 10:09:00 A
Yield	0.97					1	10/16/2023 10:09:00 A
RADIUM-228 (EPA 904.0)					**E904.0**	**E903-904**	Analyst: **HDJ**
Radium-228	0.94	1.00	J	pCi/L	± 0.68	1	10/13/2023 2:22:00 PM
Yield	0.98					1	10/13/2023 2:22:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

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Analytical Report

(consolidated)

WO#: **23091975**

Date Reported: **10/30/2023**

CLIENT: TEKLAB Inc,
Project: 23091500
Lab ID: 23091975-014
Client Sample ID: 23091500-014

Collection Date: 9/20/2023 12:01:00 AM
Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
COMBINED RADIUM (EPA903+904)					**CALCULATION**		Analyst: **CXS**
Radium-226/Radium-228	0.78	2.00	U	pCi/L	± 0.84	1	10/27/2023 8:17:34 AM
RADIUM-226 (EPA 903.0)					**E903.0**	**E903-904**	Analyst: **HDJ**
Radium-226	0.36	1.00	U	pCi/L	± 0.13	1	10/16/2023 10:09:00 A
Yield	0.79					1	10/16/2023 10:09:00 A
RADIUM-228 (EPA 904.0)					**E904.0**	**E903-904**	Analyst: **HDJ**
Radium-228	0.42	1.00	U	pCi/L	± 0.71	1	10/13/2023 2:22:00 PM
Yield	0.76					1	10/13/2023 2:22:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

Summit Environmental Technologies, Inc.
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Analytical Report

(consolidated)

WO#: **23091975**

Date Reported: **10/30/2023**

CLIENT: TEKLAB Inc,
Project: 23091500
Lab ID: 23091975-015
Client Sample ID: 23091500-015

Collection Date: 9/20/2023 12:02:00 AM
Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
COMBINED RADIUM (EPA903+904)					**CALCULATION**		Analyst: **CXS**
Radium-226/Radium-228	0.22	2.00	U	pCi/L	± 0.46	1	10/27/2023 8:17:34 AM
RADIUM-226 (EPA 903.0)					**E903.0**	**E903-904**	Analyst: **HDJ**
Radium-226	-0.02	1.00	U	pCi/L	± 0.05	1	10/16/2023 10:09:00 A
Yield	0.96					1	10/16/2023 10:09:00 A
RADIUM-228 (EPA 904.0)					**E904.0**	**E903-904**	Analyst: **HDJ**
Radium-228	0.22	1.00	U	pCi/L	± 0.41	1	10/23/2023 2:46:00 PM
Yield	1					1	10/23/2023 2:46:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

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QC SUMMARY REPORT

WO#: **23091975**

30-Oct-23

Client: TEKLAB Inc,
Project: 23091500 **BatchID:** **69189**

Sample ID: **23091975-001AMS** SampType: **MS** TestCode: **Radium-228_** Units: **pCi/L** Prep Date: **10/3/2023** RunNo: **172738**
Client ID: **23091500-001** Batch ID: **69189** TestNo: **E904.0** **E903-904** Analysis Date: **10/13/2023** SeqNo: **4657493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	4.70	1.00	5.000	0.8500	77.0	70	130				
Yield	0.970			1.000	0						

Sample ID: **23091975-002ADUP** SampType: **DUP** TestCode: **Radium-228_** Units: **pCi/L** Prep Date: **10/3/2023** RunNo: **172738**
Client ID: **23091500-002** Batch ID: **69189** TestNo: **E904.0** **E903-904** Analysis Date: **10/13/2023** SeqNo: **4657496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	0.24	1.00		0	0			0.8100	200	30	RU
Yield	1			0	0			0.9700	3.05		

Sample ID: **23091975-003ADUP** SampType: **DUP** TestCode: **Radium-228_** Units: **pCi/L** Prep Date: **10/3/2023** RunNo: **172738**
Client ID: **23091500-003** Batch ID: **69189** TestNo: **E904.0** **E903-904** Analysis Date: **10/13/2023** SeqNo: **4657498**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	0.69	1.00		0	0			0.9900	35.7	30	JR
Yield	0.97			0	0			0.9400	3.14		

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Original

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3310 Win St.
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QC SUMMARY REPORT

WO#: **23091975**

30-Oct-23

Client: TEKLAB Inc,
Project: 23091500 **BatchID:** **69189**

Sample ID: **MB-69189** SampType: **MBLK** TestCode: **Radium-228_** Units: **pCi/L** Prep Date: **10/3/2023** RunNo: **172738**
Client ID: **PBW** Batch ID: **69189** TestNo: **E904.0** **E903-904** Analysis Date: **10/13/2023** SeqNo: **4657487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	0.910	1.00		0	0						J
Yield	1.00			0	0						

Sample ID: **LCS-69189** SampType: **LCS** TestCode: **Radium-228_** Units: **pCi/L** Prep Date: **10/3/2023** RunNo: **172738**
Client ID: **LCSW** Batch ID: **69189** TestNo: **E904.0** **E903-904** Analysis Date: **10/13/2023** SeqNo: **4657488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	3.60	1.00	5.000	0	72.0	70	130				
Yield	0.970			0	0						

Sample ID: **RLC-69189** SampType: **RLC** TestCode: **Radium-228_** Units: **pCi/L** Prep Date: **10/3/2023** RunNo: **172738**
Client ID: **BatchQC** Batch ID: **69189** TestNo: **E904.0** **E903-904** Analysis Date: **10/13/2023** SeqNo: **4657491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	0.830	1.00	1.000	0	83.0	50	150				J
Yield	1.00			0	0						

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Original

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

QC SUMMARY REPORT

WO#: **23091975**

30-Oct-23

Client: TEKLAB Inc,
Project: 23091500 **BatchID:** **69189**

Sample ID: **RLCD-69189** SampType: **RLC** TestCode: **Radium-228_** Units: **pCi/L** Prep Date: **10/3/2023** RunNo: **172738**
Client ID: **BatchQC** Batch ID: **69189** TestNo: **E904.0** **E903-904** Analysis Date: **10/13/2023** SeqNo: **4657492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	0.710	1.00	1.000	0	71.0	50	150				J
Yield	1.00			0	0						

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

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Website: http://www.settek.com

QC SUMMARY REPORT

WO#: **23091975**

30-Oct-23

Client: TEKLAB Inc,
Project: 23091500 **BatchID:** **69189**

Sample ID: **23091975-001AMS** SampType: **MS** TestCode: **Radium-226_** Units: **pCi/L** Prep Date: **10/3/2023** RunNo: **172765**
Client ID: **23091500-001** Batch ID: **69189** TestNo: **E903.0** **E903-904** Analysis Date: **10/16/2023** SeqNo: **4658312**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	4.71	1.00	5.000	0	94.2	70	130				

Sample ID: **23091975-002ADUP** SampType: **DUP** TestCode: **Radium-226_** Units: **pCi/L** Prep Date: **10/3/2023** RunNo: **172765**
Client ID: **23091500-002** Batch ID: **69189** TestNo: **E903.0** **E903-904** Analysis Date: **10/16/2023** SeqNo: **4658315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	0.19	1.00						0	0	30	U
Yield	0.99							1.000	1.01	0	

Sample ID: **23091975-003ADUP** SampType: **DUP** TestCode: **Radium-226_** Units: **pCi/L** Prep Date: **10/3/2023** RunNo: **172765**
Client ID: **23091500-003** Batch ID: **69189** TestNo: **E903.0** **E903-904** Analysis Date: **10/16/2023** SeqNo: **4658317**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	0.24	1.00						0	0	30	U
Yield	0.99							1.000	1.01	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Original

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QC SUMMARY REPORT

WO#: **23091975**

30-Oct-23

Client: TEKLAB Inc,
Project: 23091500 **BatchID:** **69189**

Sample ID: **MB-69189**	SampType: **MBLK**	TestCode: **Radium-226_**	Units: **pCi/L**	Prep Date: **10/3/2023**	RunNo: **172765**
Client ID: **PBW**	Batch ID: **69189**	TestNo: **E903.0**	**E903-904**	Analysis Date: **10/16/2023**	SeqNo: **4658306**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	ND	1.00									U
Yield	0.920										

Sample ID: **LCS-69189**	SampType: **LCS**	TestCode: **Radium-226_**	Units: **pCi/L**	Prep Date: **10/3/2023**	RunNo: **172765**
Client ID: **LCSW**	Batch ID: **69189**	TestNo: **E903.0**	**E903-904**	Analysis Date: **10/16/2023**	SeqNo: **4658307**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	5.06	1.00	5.000	0	101	70	130				

Sample ID: **LCSD-69189**	SampType: **LCSD**	TestCode: **Radium-226_**	Units: **pCi/L**	Prep Date: **10/3/2023**	RunNo: **172765**
Client ID: **LCSS02**	Batch ID: **69189**	TestNo: **E903.0**	**E903-904**	Analysis Date: **10/16/2023**	SeqNo: **4658308**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	4.60	1.00	5.000	0	92.0	70	130	5.060	9.52	20	

Sample ID: **RLC-69189**	SampType: **RLC**	TestCode: **Radium-226_**	Units: **pCi/L**	Prep Date: **10/3/2023**	RunNo: **172765**
Client ID: **BatchQC**	Batch ID: **69189**	TestNo: **E903.0**	**E903-904**	Analysis Date: **10/16/2023**	SeqNo: **4658310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Original

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Website: http://www.settek.com

QC SUMMARY REPORT

WO#: **23091975**

30-Oct-23

Client: TEKLAB Inc,
Project: 23091500 **BatchID:** **69189**

Sample ID: **RLC-69189**	SampType: **RLC**	TestCode: **Radium-226_**	Units: **pCi/L**	Prep Date: **10/3/2023**	RunNo: **172765**
Client ID: **BatchQC**	Batch ID: **69189**	TestNo: **E903.0**	**E903-904**	Analysis Date: **10/16/2023**	SeqNo: **4658310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	0.980	1.00	1.000	0	98.0	50	150				J

Sample ID: **RLCD-69189**	SampType: **RLC**	TestCode: **Radium-226_**	Units: **pCi/L**	Prep Date: **10/3/2023**	RunNo: **172765**
Client ID: **BatchQC**	Batch ID: **69189**	TestNo: **E903.0**	**E903-904**	Analysis Date: **10/16/2023**	SeqNo: **4658311**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	1.06	1.00	1.000	0	106	50	150				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Original

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QC SUMMARY REPORT

WO#: **23091975**

30-Oct-23

Client: TEKLAB Inc,
Project: 23091500 **BatchID:** **69650**

Sample ID: **MB-69650**	SampType: **MBLK**	TestCode: **Radium-228_**	Units: **pCi/L**	Prep Date: **10/17/2023**	RunNo: **173444**
Client ID: **PBW**	Batch ID: **69650**	TestNo: **E904.0**	**E903-904**	Analysis Date: **10/23/2023**	SeqNo: **4682310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	ND	1.00		0	0						U
Yield	1.00			0	0						

Sample ID: **LCS-69650**	SampType: **LCS**	TestCode: **Radium-228_**	Units: **pCi/L**	Prep Date: **10/17/2023**	RunNo: **173444**
Client ID: **LCSW**	Batch ID: **69650**	TestNo: **E904.0**	**E903-904**	Analysis Date: **10/23/2023**	SeqNo: **4682311**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	5.99	1.00	5.000	0	120	70	130				
Yield	1.00			0	0						

Sample ID: **RLCD-69650**	SampType: **RLC**	TestCode: **Radium-228_**	Units: **pCi/L**	Prep Date: **10/17/2023**	RunNo: **173444**
Client ID: **BatchQC**	Batch ID: **69650**	TestNo: **E904.0**	**E903-904**	Analysis Date: **10/23/2023**	SeqNo: **4682315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	1.24	1.00	1.000	0	124	50	150				
Yield	1.00			0	0						

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Original

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Website: http://www.settek.com

QC SUMMARY REPORT

WO#: **23091975**
30-Oct-23

Client: TEKLAB Inc,
Project: 23091500 **BatchID:** **69650**

Sample ID: **23101248-001AMS** SampType: **MS** TestCode: **Radium-228_** Units: **pCi/L** Prep Date: **10/17/2023** RunNo: **173444**
Client ID: **BatchQC** Batch ID: **69650** TestNo: **E904.0** **E903-904** Analysis Date: **10/23/2023** SeqNo: **4682316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	2.36	1.00	5.000	1.290	21.4	70	130				S
Yield	1.00			1.000	0						

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Original

Pg ___ of ___

TEKLAB, INC. Chain of Custody

5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

23091975

Are the samples chilled? YES ☐ NO ☑ With: ☐ Ice ☐ Blue Ice Preserved in: ☐ Lab ☐ Field

Teklab Inc
5445 Horseshoe Lake Road
Collinsville, IL 62234

Cooler Temp: ___ Sampler: ___ QC Level: 3

Comments: **Please Issue reports and invoices via email only**
Please analyze for Radium (226, 228, and combined) by method EPA903.0/904.0 on standard TAT Please include negative values (no ND).
Batch QC and CCR EDD are required. Receipt summary requested.

Project# 23091500

Contact: Elizabeth Hurley
Email: ehurley@teklabinc.com
Requested Due Date: 20 business days or less
Billing/PO: 35072
Phone: 618-344-1004 ext 33
State of Origin: MO

PLEASE NOTE:

NELAP accreditation is required on the requested analytes and must be documented as such on the final report. If your laboratory does not currently hold a NELAP accreditation for the requested method and/or analytes, please contact Teklab immediately. If your laboratory loses accreditation or is suspended for any analyte/method during the life of the contract, you must contact Teklab immediately.

Changes to analysis/methods must be approved by Teklab, Inc.

Lab Use	Sample ID	Sample Date/Time	Preservative	Matrix	Radium 226	Radium 228	Combined Radium
	23091500-001	9/19/23 11:35	HNO3	Groundwater	✓	✓	✓
	23091500-002	9/19/23 12:55	HNO3	Groundwater	✓	✓	✓
	23091500-003	9/19/23 13:50	HNO3	Groundwater	✓	✓	✓
	23091500-004	9/19/23 14:50	HNO3	Groundwater	✓	✓	✓
	23091500-005	9/19/23 16:00	HNO3	Groundwater	✓	✓	✓
	23091500-006	9/20/23 08:50	HNO3	Groundwater	✓	✓	✓
	23091500-007	9/20/23 10:05	HNO3	Groundwater	✓	✓	✓
	23091500-008	9/20/23 11:25	HNO3	Groundwater	✓	✓	✓
	23091500-009	9/20/23 14:00	HNO3	Groundwater	✓	✓	✓
	23091500-010	9/20/23 12:30	HNO3	Groundwater	✓	✓	✓
	23091500-011	9/20/23 15:10	HNO3	Groundwater	✓	✓	✓

pH   CPM

*Relinquished By	Date/Time	Received By	Date/Time
[signature]	9/21/23 1700		
		[signature]	9-28-23/1245

Teklab maintains a strict policy of client confidentiality and as such does not provide client/sampler information without proper authorization, and proprietary rights. Teklab, Inc. protects clients' confidential information as directed by local, state or federal laws. (Teklab QAM Section 9.1, TNI V1 M2 Section 4.1.5 c)

SubCocRevA 3/2/2016

TEKLAB, INC. Chain of Custody

5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Are the samples chilled? YES ☐ NO ☑ With: ☐ Ice ☐ Blue Ice Preserved in: ☐ Lab ☐ Field

Teklab Inc
5445 Horseshoe Lake Road
Collinsville, IL 62234

Cooler Temp: ____ Sampler: ____ QC Level: 3

Comments: **Please Issue reports and invoices via email only**
Please analyze for Radium (226, 228, and combined) by method EPA903.0/904.0
on standard TAT Please include negative values (no ND).
Batch QC and CCR EDD are required. Receipt summary requested.

Project#: 23091500

Contact: Elizabeth Hurley
Email: ehurley@teklabinc.com
Requested Due Date: 20 business days or less
Billing/PO: 35072
Phone: 618-344-1004 ext 33

State of Origin: MO

PLEASE NOTE:

NELAP accreditation is required on the requested analytes and must be documented as such on the final report. If your laboratory does not currently hold a NELAP accreditation for the requested method and/or analytes, please contact Teklab immediately. If your laboratory loses accreditation or is suspended for any analyte/method during the life of the contract, you must contact Teklab immediately.

Changes to analysis/methods must be approved by Teklab, Inc.

Lab Use	Sample ID	Sample Date/Time	Preservative	Matrix	Radium 226	Radium 228	Combined Radium	pH	CPM
	23091500-012	9/20/23 16:10	HNO3	Groundwater	✔	✔	✔	✔	31 / 29
	23091500-013	9/19/23 08.40	HNO3	Groundwater	✔	✔	✔	✔	37 / 15
	23091500-014	9/20/23 00:01	HNO3	Groundwater	✔	✔	✔	✔	21 / 23
	23091500-015	9/20/23 00:02	HNO3	Groundwater	✔	✔	✔	✔	33 / 26
			HNO3	Groundwater					
			HNO3	Groundwater					
			HNO3	Groundwater					
			HNO3	Groundwater					
			HNO3	Groundwater					
			HNO3	Groundwater					
			HNO3	Groundwater					

*Relinquished By	Date/Time	Received By	Date/Time
[signature]	9/21/23 noon		
		[signature]	9-28-23/12:45

SubCocRevA 3/2/2016

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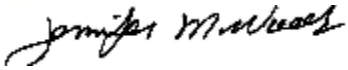
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

Sample Log-In Check List

Client Name: **TEK-IL-62234-A** Work Order Number: **23091975** RcptNo: **1**

Logged by:	**Anthony W. Britton**	**9/28/2023 12:45:00 PM**	
Completed By:	**Anthony W. Britton**	**9/29/2023 8:19:46 AM**	
Reviewed By:	**Jennifer Woolf**	**9/29/2023 12:20:29 PM**	

Chain of Custody

1.	Were seals intact?	Yes ☑	No ☐	Not Present ☐
2.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3.	How was the sample delivered?	FedEx		

Log In

4.	Coolers are present?	Yes ☐	No ☑	NA ☐
5.	Was an attempt made to cool the samples?	Yes ☐	No ☑	NA ☐
6.	Were all samples received at a temperature of >0° C to 6.0°C	Yes ☐	No ☑	NA ☐
		Not required		
7.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
8.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
9.	Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
10.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
11.	Is the headspace in the VOA vials less than 1/4 inch or 6 mm?	Yes ☐	No ☐	No VOA Vials ☑
12.	Were any sample containers received broken?	Yes ☐	No ☑	
13.	Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
14.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
15.	Is it clear what analyses were requested?	Yes ☑	No ☐	
16.	Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

18. Additional remarks:

Cooler Information

Cooler No	Temp ºC	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	18.7	Good	Not Present			
2	18.9	Good	Not Present			
3	19.0	Good	Not Present			

Summit Environmental Technologies, Inc.
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Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

Sample Log-In Check List

Client Name: **TEK-IL-62234-A** Work Order Number: **23091975** RcptNo: **1**

Cooler No	Temp ºC	Condition	Seal Intact	Seal No	Seal Date	Signed By
4	19.3	Good	Not Present			