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Illinois Environmental Protection Agency
BOW-Permits #15-CCR Coordinator
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DATE
04 September 2025

SUBJECT
Fourteenth Post-Closure
Groundwater Monitoring Report
Third Quarter 2025
Grand Tower Energy Center
Closed Coal Combustion Residuals
Impoundment
1820 Power Plant Rd
Grand Tower, IL 62942
BOW ID No. W0770400003

REFERENCE
ERM Project No. 0761817

To Whom it May Concern:

Environmental Resources Management Inc. (ERM) is submitting this report which provides the results and findings of the Grand Tower Energy Center (GTEC) quarterly post-closure groundwater sampling and closed coal combustion residuals (CCR) impoundment inspection event conducted during the third quarter 2025 at the GTEC facility located at 1820 Power Plant Rd, Grand Tower, Illinois (the “Site”). The third quarter groundwater sampling event took place between 03 September and 05 September 2025, and the closed impoundment inspection event was conducted on 05 September 2025. A Site location map is provided in Figure 1.

The third quarter 2025 groundwater sampling event was performed in accordance with the post-closure groundwater monitoring program presented within the Grand Tower Operating Permit Application (OPA) submitted to the Illinois Environmental Protection Administration (IEPA) on 28 October 2021, as modified in accordance with the Consolidated IEPA Comments dated 17 March 2022 and included in the updated Closure/Post-Closure Plan submitted to the IEPA with the 27 February 2024 response to the 23 January 2023 OPA comment letter from the IEPA. 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.

Third quarter 2025 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 closed CCR impoundment.
- Inspection of the groundwater monitoring well array; and
- Groundwater monitoring activities.

QUARTERLY CLOSED CCR IMPOUNDMENT INSPECTION

During the third quarter of 2025, an inspection of the closed CCR impoundment cover system and associated features was completed, and the full quarterly inspection report can be found in Appendix A. Woody vegetation (up to 1” diameter) was noted within the riprap around the toe of the side slope of the CCR impoundment cap faces. Additionally, woody vegetation was noted in the outfall channel, which allows discharge of water within the basin at the foot of the closed CCR side slope to the Mississippi River via an unnamed drainage ditch. Erosional channels on the west, south, and east faces were noted as less than 6” deep in the deepest locations and will be monitored during subsequent inspection events and recommendations made to repair these features, if necessary. No significant degradation or issues were noted associated with the overall closed CCR impoundment cover system.

QUARTERLY MONITORING WELL INPSECTION AND GAUGING

During the third quarter of 2025, 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 and/or the well casings. The inspection tasks also included gauging total depths as well as static groundwater elevations in all site wells. 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 2025. 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 gradient direction arrow(s), 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 2025 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 ProDSS 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 Pace Analytical located in Mt. Juliet, TN, which is an IEPA-approved laboratory. Samples were transported via FedEx under chain-of-custody procedures to the laboratory for analytical testing within laboratory provided coolers containing ice. The laboratory analytical reports for the third quarter 2025 sampling event are included in Appendices D & E.

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
- Chloride
- Chromium
- Cobalt
- Fluoride
- Mercury
- Molybdenum
- pH
- Selenium
- TDS
- Radium 226/228
- Calcium
- Turbidity

- Boron
- Cadmium
- Lead
- Lithium
- Sulfate
- Thallium

GROUNDWATER ANALYTICAL RESULTS

The analytical results for the post-closure groundwater sampling event conducted during the third quarter 2025 are presented in Table 1. During the third quarter 2025 sampling event, the following analytes and/or field parameters were detected in the listed wells above the GWPS:

- Arsenic: APW-6D, APW-10S,
- Boron: APW-02, APW-03, APW-05, APW-05R, APW-06D, APW-06S,
- Calcium: APW-02, APW-03, APW-05, APW-06D, APW-07, APW-10D, APW-10S
- Lead:
- Lithium: APW-02, APW-05,
- Molybdenum: APW-02, APW-05, APW-05R, APW-06S,
- Sulfate: APW-02
- Turbidity: APW-01R, APW-02, APW-04, 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, APW-09, and APW-10D) and APW-10S, do not exhibit arsenic concentration above the GWPS.

The GTEC closed CCR impoundment is currently in Corrective Action Monitoring (CAM). As reported in the *2024 Annual Groundwater Monitoring Report - Grand Tower Energy Center* submitted by ERM and dated January 2025, statistical analysis conducted on the data collected from the first eleven quarters of post-closure monitoring (2nd quarter 2022 through 4th quarter 2024) indicates that arsenic, boron, lithium, molybdenum, and sulfate exceed the calculated background concentrations and the IEPA GWPS established in 35 IAC Section 845.600 in monitoring wells at the Site. Statistical analysis of the groundwater sampling results will continue to be completed on an annual basis to evaluate if statistically significant increases or decreases have occurred after cap and closure occurred in 2020 in accordance with 35 IAC Section §845.640(f). In accordance with 35 IAC Section §845.550(a) an Annual Groundwater Monitoring and Corrective Action Report will be submitted for 2025 by or before 31 January 2026.

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 present 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 2025 groundwater sampling event, well inspection, and closed 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 13 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 13 post groundwater monitoring events, boron concentrations have shown a decreasing trend in Site monitoring wells.
- During the Q3 2025 event, woody vegetation was observed in the riprap, less than 1” thick in diameter. Continued monitoring of woody growth, and treatment recommendation will take place during subsequent quarterly sampling events.

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

Sincerely,

Randy Homburg
Managing Consultant

Wayne T. Sicora, P.E.
Principal Engineer

Attachments

cc: Mr. Bob Henderson, Perdomo - Grand Tower Energy Center (electronic)

FIGURES

DRAWN BY: S. Vickery

Grand Tower Energy Center (GTEC)

Closed Coal Combustion Residuals (CCR) Impoundment

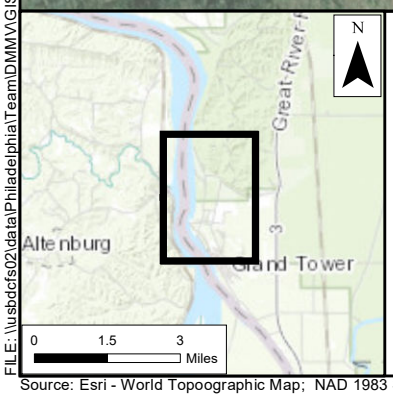
Mississippi River

Grand Tower

Bone Rd
Fountain Bluff
Power Plant Rd
Finger Rd
Perry St
2nd St
1st St
3rd Ave
5th Ave
4th Ave
25th Ave
22nd St
21st St
20th St
Trammel Ln
Brunkhorst Ave
County Road 460
Ford St
Park Rd
Walker Ln
Railroad St
2nd St
Market St
Wills Dr
Main St

N

0 840 1,680 Feet



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)

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

Environmental Resources Management
www.erm.com

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

FILE: \\usbdcfs02\data\PhiladelphiaTeam\DMMV\GIS\Projects\Grand Tower Energy Center\ MXD\FIGURE1-SITELOCATIONMAP_20221003.mxd | REVISED: 10/03/2022 | SCALE: 1:12,000 when printed at 11x17

DRAWN BY: ECLW

APW-1R
339.02

APW-05R
337.06

APW-02
339.00

APW-04
340.04

339.5

339

APW-06S
338.06

APW-06D
338.01

APW-03
338.18

338.5

APW-09
339.05

APW-07
336.26

337

337.5

338

APW-08
338.26

Mississippi River

*Mississippi River
Elevation = 345.80 Ft

APW-10D
338.61

APW-10S
338.52

0 240 480 Feet

N

0 0.425 0.85 Miles

Power R

3rd Ave

Legend

- Monitoring Well Location
- Groundwater Contour (0.5 Ft. Interval) - Dashed where inferred
- Groundwater Flow Direction
- 328.84 Groundwater Elevation

Notes:
1. CCR Surface Impoundment Closed Prior to July 31, 2021
2. Date of gauging - June 24, 2025
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. BING Imagery, 2022

Figure 2: Third Quarter 2025 Groundwater Contour Map
Grand Tower Energy Center, LLC
Grand Tower, Illinois
Jackson County

ERM

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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	APW-01R-WG-20231129	APW-01R-WG-20240110	APW-01R-WG-20240501	APW-01R-WG-20240905	APW-01R-WG-20241015	APW-01R-WG-20250115	APW-01R-WG-20250625	APW-01R-WG-20250904
			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	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	09/26/2023	11/29/2023	01/10/2024	05/01/2024	09/05/2024	10/15/2024	01/15/2025	06/25/2025	09/04/2025
			Sample Type	N	N	N	N	N	N	N	N	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	N	0.15	0.17	0.16	0.12	0.14	0.15	0.18	0.19	0.21	0.15	0.18	0.17	0.14	0.17	0.17	0.183	0.328	0.201	0.15 U	0.15 U	0.199	0.195
Radium-226	N	pCi/L	NS	0.25 ± 12 U	0.19 ± .09 U	0.307 ± .320	0.13 ± 0.43 U	0.87 ± 0.16 U	0.23 ± 0.1 U	0.03 ± 0.07 U	0.04 ± 0.08 U	0.0223 ± 0.141 U	0.24 ± 0.1 U	0.4 ± 0.12 U	0.18 ± 0.169 J	0.27 ± 0.11 U	0.32 ± 0.11 U	0.24 ± 0.08 U	0.738 ± 0.354	0.383 ± 0.294	0.167 ± 0.164 J	0.126 ± 0.144 J	0.0217 ± 0.0838 U	0.213 ± 0.216 J	0.00715 ± 0.137 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	0.97 ± 0.67 J	1.44 ± 0.229	0.671 ± 0.262	-0.199 ± 0.295 U	0.183 ± 0.206 J	0.924 ± 0.295	0.954 ± 0.609 J	0.852 ± 0.646 J
Sulfate	N	mg/L	400	61	60	65	64	68	68	78	79	73	73.5	69	74	67	79	73	68.9	61.7	64	68.5	61.4	56.1	63.3
CALC																									
Radium-226/228	N	pCi/L	7.002	2.54 ± 1.1	0.69 ± 0.48 U	0.427 ± 0.652	0.7 ± 0.76 U	0.47 ± 0.7 U	0.27 ± 0.44 U	1.01 ± 0.69 U	0.22 ± 0.42 U	0.893 ± 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	1.21 ± 0.75 U	2.18 ± 0.422	1.05 ± 0.334	0.167 ± 0.338 U	0.309 ± 0.251 J	0.946 ± 0.307	0.867 ± 0.646 J	0.859 ± 0.680 J
FIELD PARAM																									
Turbidity, Field	N	NTU	17.96									13.9	31.7	51.7	89.5	83.2	133	95.6	25.6	71.3	19.2	16.8	6.95	67.6	55.5
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	7	9.07	7.19	1.97	6.15	6.52	1.1	1.1
Dissolved Solids, Total	N	mg/L	1200	400	428	376	358 R	412	474	434	392	342	420 H	385	384	328	355	300	385	439	372	384	395	387	324
pH, Lab	N	pH units	9	6.84	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	6.46 H	6.59 H	7.19 T8	7.04 T8	6.88 T8	6.85 T8	7.25 T8	7.18 T8	6.79 T8
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	0.004 U	0.004 U F1	0.004 U	0.004 U	0.004 U	0.004 U	0.004 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	0.001 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Arsenic	D	mg/L	0.01									0.0012	0.001 U	0.001 U	0.001	0.0011	0.0016	0.0015	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
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	0.0033	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Barium	D	mg/L	2									0.16	0.153	0.182 B	0.155	0.164	0.21	0.245	0.159	0.154 F1	0.154	0.162	0.163	0.135	0.135
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	0.259	0.169	0.204	0.155	0.165	0.168	0.148	0.148
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	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 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	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Boron	D	mg/L	2									0.163	0.244	0.219	0.205	0.249	0.204	0.279		0.238 F1	0.205	0.238	0.261	0.2 U	0.2 U
Boron	T	mg/L	2	0.218	0.251	0.238	0.211	0.225	0.329	0.367	0.311	0.228	0.242	0.222	0.221	0.178	0.18	0.283	0.247	0.247	0.2 U	0.242	0.244	0.2 U	0.2 U
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 F1	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	0.001 U	0.001 U
Calcium	D	mg/L	103.2									85.6	83.8 S	73.9	71.4	68.4	72.1	57.6	76.8	101 F1	84.1	81.1	89.8	88.8	71.2
Calcium	T	mg/L	103.2	84.3 S	83 S	86.2 S	88.2	91.2 S	91	97.1	85.8 S	90.3	91.4	79.7	75.5 S	68.8 B	69.2 S	64.3	78.4	98	89.5	89.5	85.4	88.4	72.2
Chromium	D	mg/L	0.1									0.0009 J	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 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	0.0049	0.00248	0.00322	0.002 U	0.00208	0.002 U	0.00299	0.0027
Cobalt	D	mg/L	0.006									0.0002 J	0.001 U	0.001 U	0.001 U	0.001 U	0.0012	0.0013	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 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	0.0017	0.0017	0.0031	0.0013	0.0014	0.0041	0.0027	0.002 U	0.00225	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Iron	D	mg/L	NS																0.1 U						
Iron	T	mg/L	NS									1.42							0.405						
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	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 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	0.002	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Lithium	D	mg/L	0.04									0.0127	0.0156	0.0139	0.0135	0.015	0.0211	0.0193	0.014	0.0143 F1	0.013	0.0165	0.0145	0.0121	0.0114
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	0.0156	0.0157	0.0142	0.0147	0.0189	0.0153	0.015	0.0133	0.0152	0.0154	0.0124	0.0116
Manganese	D	mg/L	NS																0.0362						
Manganese	T	mg/L	NS									0.139							0.0791						
Mercury	D	mg/L	0.002										0.0002 U						0.0002 U	0.0002 U F1	0.0002	0.0002 U	0.0002 U	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	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	0.0015 U	0.00523	0.005 U F1	0.005 U	0.005 U	0.005 U	0.005 U	0.005 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	0.0015 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Nickel	D	mg/L	NS									0.0043		0.0061					0.00864						
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					0.00804						
Selenium	D	mg/L	0.05									0.0028	0.0032	0.0033	0.0032	0.0032	0.0037	0.0058	0.00435	0.00444 F1	0.00289	0.00341	0.0042	0.00289	0.00309
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	0.0054	0.00514	0.00437	0.00351	0.00327	0.00337	0.00316	0.00293
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 F1	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	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
J6 = The sample matrix interfered with the ability to make any accurate determination; spike value is low
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit
T8 = Sample received past/too close to holding time expiration

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
3 Eight episodes of groundwater sampling were conducted from September 2017 through February 2018 to establish background concentrations for the Site utilizing data from background wells APW-1R and APW-9. The final Groundwater Protection Standards (GPS) are the higher of the values provided in 35 IAC 845.600(a) and the final background concentrations as found in Table 6 of the 07/25/2019 GMZ Application with the exception of turbidity and pH. Radium 226+228 was the only value taken from Table 6.
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

Parameter/Analyte	Total or Dissolved	Units	35 IAC 845.600	APW-2-20170907	APW-2-20170927	APW-2-20171020	APW-2-20171109	APW-2-20171129	APW-2-20171227	APW-2-20180119	APW-2-20180207
Location ID				APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02
Sample Date				09/06/2017	09/28/2017	10/20/2017	11/09/2017	11/29/2017	12/27/2017	01/19/2018	02/07/2018
Sample Type				N	N	N	N	N	N	N	N
UNSPECIFIED											
Fluoride	N	mg/l	4	0.24	0.26	0.25	0.24	0.24	0.25	0.26	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
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
Sulfate	N	mg/l	400	462	460	472 S	479	472	426	443	416
CALC											
Radium-226/228	N	pCi/l	7.002	3.04 ± 1.16	0.03 ± 0.7 U	0.504 ± 0.788	2.38 ± 0.62		1.28 ± 0.64 U	1.55 ± 0.74 U	1.96 ± 0.73 U
FIELD PARAM											
Turbidity, Field	N	NTU	17.96								
GEN CHEM											
Chloride	N	mg/l	200	13	12	11	11	12	12	12	12
Dissolved Solids, Total	N	mg/l	1200	858	880	934	916	870	848	836	888
pH, Lab	N	pH units	9	7.09	7.05	7.08	7.07	7.05	7.14	7.06	6.96
METALS											
Antimony	D	mg/l	0.006								
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
Arsenic	D	mg/l	0.01								
Arsenic	T	mg/l	0.01	0.0199	0.0147	0.0212	0.017	0.0169	0.0157	0.0148	0.0243
Barium	D	mg/l	2								
Barium	T	mg/l	2	0.479	0.355	0.685	0.44	0.427	0.338	0.351	0.739
Beryllium	D	mg/l	0.004								
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
Boron	D	mg/l	2								
Boron	T	mg/l	2	8.16	8.73	8.94 S	9	8.98	8.39	8.19	8.24
Cadmium	D	mg/l	0.005								
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
Calcium	D	mg/l	103.2								
Calcium	T	mg/l	103.2	148	145	171 S	157	158	135	134	175
Chromium	D	mg/l	0.1								
Chromium	T	mg/l	0.1	0.0374	0.0455	0.0503	0.0235	0.014	0.0566	0.127	0.112
Cobalt	D	mg/l	0.006								
Cobalt	T	mg/l	0.006	0.0057	0.0023	0.0097	0.0041	0.0038	0.0018	0.0028	0.011
Iron	D	mg/l	NS								
Iron	T	mg/l	NS								
Lead	D	mg/l	0.0075								
Lead	T	mg/l	0.0075	0.0115	0.0054	0.0201	0.0096	0.0075	0.0031	0.0048	0.0239
Lithium	D	mg/l	0.04								
Lithium	T	mg/l	0.04	0.05	0.0455	0.0647	0.0521	0.0542	0.0474	0.045	0.0604
Manganese	D	mg/l	NS								
Manganese	T	mg/l	NS								
Mercury	D	mg/l	0.002								
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
Molybdenum	D	mg/l	0.1								
Molybdenum	T	mg/l	0.1	0.172	0.147	0.214	0.175	0.165	0.111	0.0951	0.131
Nickel	D	mg/l	NS								
Nickel	T	mg/l	NS	0.0288	0.0263	0.0412	0.0202	0.0135	0.0295	0.0631	0.0725
Selenium	D	mg/l	0.05								
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
Thallium	D	mg/l	0.002								
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

Post-Closure Sampling

Parameter/Analyte	Total or Dissolved	Units	35 IAC 845.600	APW-02-WG-20220616	APW-02-WG-20220914	DUP-002-WG-20220914	APW-02-WG-20221129	DUP-02-WG-20221129	APW-02-WG-20230201	DUP-02-WG-20230201	APW-02-WG-20230627	DUP-02-WG-20230627
Location ID				APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02
Sample Date				06/16/2022	09/14/2022	09/14/2022	11/29/2022	11/29/2022	02/01/2023	02/01/2023	06/27/2023	06/27/2023
Sample Type				N	N	FD	N	FD	N	FD	N	FD
UNSPECIFIED												
Fluoride	N	mg/l	4	0.25	0.22	0.22	0.25	0.26	0.23	0.22	0.22	0.22
Radium-226	N	pCi/l	NS	0.159 ± 0.181 J	0.27 ± 0.1 UODR	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
Radium-228	N	pCi/l	NS	0.308 ± 0.236 J3U	0.4 ± 0.48 UODR	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
Sulfate	N	mg/l	400	496	491	490	418	438	459	455	500	465
CALC												
Radium-226/228	N	pCi/l	7.002	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
FIELD PARAM												
Turbidity, Field	N	NTU	17.96	38	19.2		132		93.6		104.3	
GEN CHEM												
Chloride	N	mg/l	200	9	11	10	9	9	10	10	7	8
Dissolved Solids, Total	N	mg/l	1200	930	890 H	905 H	885	855	852	866	920	870
pH, Lab	N	pH units	9	7.21	7.32	7.25	7.01	7.02	6.98	7.05	6.9 H	7.03 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
Antimony	T	mg/l	0.006	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
Arsenic	D	mg/l	0.01	0.0117	0.0048	0.0049	0.0012	0.0187	0.016	0.0138	0.011	0.0107
Arsenic	T	mg/l	0.01	0.0158	0.026	0.0176	0.022	0.0173	0.0185	0.0175	0.0148	0.0146
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
Barium	T	mg/l	2	0.237	0.408	0.238	0.254	0.218	0.214	0.159	0.149	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	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/l	0.004	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
Boron	D	mg/l	2	8.17	7.49 S	7.9	0.656	6.63	8.21	7.39	8.97	9.24
Boron	T	mg/l	2	8.13	9.43	8.72	8.97 S	7.69	7.75	8.32 S	9.14	9.51 S
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
Cadmium	T	mg/l	0.005	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
Calcium	D	mg/l	103.2	175	136 S	165	96.1	129	108	144	147	148
Calcium	T	mg/l	103.2	189	198	178	145 S	149	144	149 S	161 B	167 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
Chromium	T	mg/l	0.1	0.0254	0.0148	0.0066	0.0064	0.0054	0.0052	0.0022	0.0024	0.0079
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
Cobalt	T	mg/l	0.006	0.0011 J	0.0044	0.0011	0.0015	0.0011	0.001 U	0.001 U	0.001 U	0.0016
Iron	D	mg/l	NS									
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
Lead	T	mg/l	0.0075	0.0022	0.0119	0.0033	0.0033	0.0034	0.0027	0.0023	0.0025	0.0029
Lithium	D	mg/l	0.04	0.037	0.0374	0.0404	0.028	0.0356	0.0425	0.0387	0.0442	0.0455
Lithium	T	mg/l	0.04	0.0507	0.0559	0.0456	0.0386	0.0411	0.0417	0.044	0.0459	0.048
Manganese	D	mg/l	NS									
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	0.00043	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	0.155	0.227	0.227
Molybdenum	T	mg/l	0.1	0.24	0.174	0.174	0.128	0.119	0.165	0.16	0.229	0.252
Nickel	D	mg/l	NS	0.0039			0.0022	0.001 U				
Nickel	T	mg/l	NS	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
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
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
Thallium	T	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

Parameter/Analyte	Total or Dissolved	Units	35 IAC 845.600	APW-02-WG-20230920	APW-02-WG-20231128	APW-02-WG-20240110	APW-02-WG-20240501	APW-02-WG-20240905	APW-02-WG-20241015	APW-02-WG-20250115	APW-02-WG-20250626	APW-02-WG-20250904
Location ID				APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02
Sample Date				09/20/2023	11/28/2023	01/10/2024	05/01/2024	09/05/2024	10/15/2024	01/15/2025	06/26/2025	09/04/2025
Sample Type				N	N	N	N	N	N	N	N	N
UNSPECIFIED												
Fluoride	N	mg/l	4	0.24	0.26	0.23	0.25	0.197	1.5 U	0.224	0.264	0.218
Radium-226	N	pCi/l	NS	0.38 ± 0.12 U	0.12 ± 0.06 U	0.0909 ± 0.186 U	0.326 ± 0.259	0.402 ± 0.233	1.29 ± 0.447	0.301 ± 0.253	0.497 ± 0.284	0.0586 ± 0.159 U
Radium-228	N	pCi/l	NS	3.71 ± 0.93	0.56 ± 0.64 U	0.243 ± 0.202 J	0.966 ± 0.329	1.15 ± 0.464	0.218 ± 0.450 U	1.89 ± 0.774	1.13 ± 0.873 J	0.56 ± 0.696 J
Sulfate	N	mg/l	400	460	440	411	510	376	385	509	432	402
CALC												
Radium-226/228	N	pCi/l	7.002	4.09 ± 1.05	0.68 ± 0.7 U	0.333 ± 0.275 J	1.29 ± 0.419	1.55 ± 0.519	1.51 ± 0.634	2.19 ± 0.814	1.62 ± 0.918	0.619 ± 0.714 J
FIELD PARAM												
Turbidity, Field	N	NTU	17.96	97	169	104	66.1	174	663	127	115	78.6
GEN CHEM												
Chloride	N	mg/l	200	7	8	7.78	5.38	7.55	10 U	8.58	8.99	8.16
Dissolved Solids, Total	N	mg/l	1200	845	920	820	845	783	816	861	801	799
pH, Lab	N	pH units	9	7.15 H	7.11 H	7.52 T8	7.14 T8	7.18 T8	7.2 T8	7.67 T8	7.41 T8	7.26 T8
METALS												
Antimony	D	mg/l	0.006	0.001 U	0.001 U	0.004 U	0.004 U F1	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Antimony	T	mg/l	0.006	0.001 U	0.001 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.04 U
Arsenic	D	mg/l	0.01	0.0072	0.0168	0.00409	0.00255 F1	0.00426	0.0028	0.00299	0.00214	0.00382
Arsenic	T	mg/l	0.01	0.0093	0.0237	0.0112	0.0101	0.0178	0.0267	0.00904	0.0284	0.02 U
Barium	D	mg/l	2	0.133	0.205	0.131	0.137 F1	0.124	0.141	0.125	0.127	0.127
Barium	T	mg/l	2	0.152	0.303	0.155	0.145	0.162	0.173	0.147	0.484	0.162
Beryllium	D	mg/l	0.004	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Beryllium	T	mg/l	0.004	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.02 U
Boron	D	mg/l	2	8.91	9.57 S		9.91 F1	8.28	8.21	9.11	10.4	9.56
Boron	T	mg/l	2	8.24	9.62		10.2	8.24	8.09	9.07	10.3	9.9
Cadmium	D	mg/l	0.005	0.001 U	0.001 U	0.001 U	0.001 U F1	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	0.00104	0.01 U
Calcium	D	mg/l	103.2	151	121 S	144	162 F1	156	155	150	151	145
Calcium	T	mg/l	103.2	132	132	146	161	156	170	165	185	151
Chromium	D	mg/l	0.1	0.0015 U	0.0015 U	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Chromium	T	mg/l	0.1	0.008	0.0092	0.002 U	0.002 U	0.00658	0.0191	0.00228	0.0361	0.02 U
Cobalt	D	mg/l	0.006	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt	T	mg/l	0.006	0.001 U	0.0027	0.002 U	0.002 U	0.00232	0.0057	0.002 U	0.0117	0.02 U
Iron	D	mg/l	NS			0.1 U						
Iron	T	mg/l	NS			7.63						
Lead	D	mg/l	0.0075	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Lead	T	mg/l	0.0075	0.002	0.0057	0.00235	0.002 U	0.00662	0.0176	0.00229	0.0323	0.02 U
Lithium	D	mg/l	0.04	0.0583	0.0506	0.0396	0.0432 F1	0.038	0.0444	0.0424	0.0402	0.0375
Lithium	T	mg/l	0.04	0.0422	0.056	0.0416	0.045	0.0408	0.048	0.0437	0.0513	0.0438
Manganese	D	mg/l	NS			0.616						
Manganese	T	mg/l	NS			0.669						
Mercury	D	mg/l	0.002			0.0002 U	0.0002 U F1	0.000214	0.0002 U	0.0002 U	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
Molybdenum	D	mg/l	0.1	0.214	0.205	0.157	0.34 F1	0.172	0.163	0.193	0.207	0.201
Molybdenum	T	mg/l	0.1	0.198	0.147	0.158	0.332	0.162	0.129	0.188	0.21	0.197
Nickel	D	mg/l	NS			0.002 U						
Nickel	T	mg/l	NS			0.00237						
Selenium	D	mg/l	0.05	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Selenium	T	mg/l	0.05	0.001 U	0.0015	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.02 U
Thallium	D	mg/l	0.002	0.002 U	0.002 U	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	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	0.02 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
J6 = The sample matrix interfered with the ability to make any accurate determination; spike value is low
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit
T8 = Sample received past/too close to holding time expiration

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
3 Eight episodes of groundwater sampling were conducted from September 2017 through February 2018 to establish background concentrations for the Site utilizing data from background wells APW-1R and APW-9. The final Groundwater Protection Standards (GPS) are the higher of the values provided in 35 IAC 845.600(a) and the final background concentrations as found in Table 6 of the 07/25/2019 GMZ Application with the exception of turbidity and pH. Radium 226+228 was the only value taken from Table 6.
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

Parameter/Analyte	Total or Dissolved	Units	35 IAC 845.600	APW-3-20170907 APW-03 09/06/2017 N	APW-3-20170929 APW-03 09/29/2017 N	APW-3-20171020 APW-03 10/20/2017 N	APW-3-20171110 APW-03 11/10/2017 N	APW-3-20171129 APW-03 11/29/2017 N	APW-3-20171228 APW-03 12/28/2017 N	APW-3-20180119 APW-03 01/19/2018 N	APW-3-20180208 APW-03 02/08/2018 N
UNSPECIFIED											
Fluoride	N	mg/L	4	0.28	0.29	0.29	0.31	0.27	0.29	0.29	0.34
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
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
Sulfate	N	mg/L	400	175	222	201	207	204	168	152	194
CALC											
Radium-226/228	N	pCi/L	7.002	2.58 + 1.14	1.05 + 0.66 U	0.901 + 0.799	0.9 + 0.48 U	0.64 + 0.66 U	0.57 + 0.54 U	1.42 + 0.78 U	0.37 + 0.51 U
FIELD PARAM											
Turbidity, Field	N	NTU	17.96								
GEN CHEM											
Chloride	N	mg/L	200	22	21	21	22	19	20	16	23
Dissolved Solids, Total	N	mg/L	1200	464	514	486	450	554	504	498	456
pH, Lab	N	pH units	9	7.88	7.46	7.65	7.93	7.5	7.48	7.26	7.78
METALS											
Antimony	D	mg/L	0.006								
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
Arsenic	D	mg/L	0.01								
Arsenic	T	mg/L	0.01	0.0022	0.0029	0.0021	0.0018	0.0023	0.0024	0.0028	0.0018
Barium	D	mg/L	2								
Barium	T	mg/L	2	0.111	0.146	0.104	0.0814	0.121	0.1	0.15	0.0806
Beryllium	D	mg/L	0.004								
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
Boron	D	mg/L	2								
Boron	T	mg/L	2	4.16	4.21 S	4.7	4.67	4.44 S	4.52	4.08	4.92
Cadmium	D	mg/L	0.005								
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
Calcium	D	mg/L	103.2								
Calcium	T	mg/L	103.2	86.3	104 S	88.1	74.9	116 S	95	101	77.1
Chromium	D	mg/L	0.1								
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
Cobalt	D	mg/L	0.006								
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
Iron	D	mg/L	NS								
Iron	T	mg/L	NS								
Lead	D	mg/L	0.0075								
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
Lithium	D	mg/L	0.04								
Lithium	T	mg/L	0.04	0.0258	0.0262	0.0259	0.0245	0.0308	0.027	0.035	0.0239
Manganese	D	mg/L	NS								
Manganese	T	mg/L	NS								
Mercury	D	mg/L	0.002								
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
Molybdenum	D	mg/L	0.1								
Molybdenum	T	mg/L	0.1	0.0778	0.0754	0.0761	0.0713	0.0684	0.0748	0.0824	0.0849
Nickel	D	mg/L	NS								
Nickel	T	mg/L	S	0.0055	0.0051	0.0019	0.001 U	0.001 U	0.0026	0.0025	0.001
Selenium	D	mg/L	0.05								
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
Thallium	D	mg/L	0.002								
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

Post-Closure Sampling

Parameter/Analyte	Total or Dissolved	Units	35 IAC 845.600	APW-03-WG-20220616 APW-03 06/16/2022 N	APW-03-WG-20220915 APW-03 09/15/2022 N	APW-03-WG-20221130 APW-03 11/30/2022 N	APW-03-WG-20230130 APW-03 01/30/2023 N	APW-03-WG-20230626 APW-03 06/26/2023 N	APW-03-WG-20230919 APW-03 09/19/2023 N	APW-03-WG-20231127 APW-03 11/27/2023 N	APW-03-WG-20240111 APW-03 01/11/2024 N	APW-03-WG-20240430 APW-03 04/30/2024 N	APW-03-WG-20240904 APW-03 09/04/2024 N	APW-03-WG-20241016 APW-03 10/16/2024 N	APW-03-WG-20250116 APW-03 01/16/2025 N	APW-03-WG-20250625 APW-03 06/25/2025 N	APW-03-WG-20250903 APW-03 09/03/2025 N
UNSPECIFIED																	
Fluoride	N	mg/L	4	0.26	0.2	0.26	0.23	0.23	0.25	0.24	0.202	0.37	0.285	0.15 U	0.254	0.263	0.75 U
Radium-226	N	pCi/L	NS	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	0.11 + 0.05 U	3.18 + 0.675	0.594 + 0.383	0.493 + 0.251	0.0651 + 0.146 U	0.096 + 0.120 J	0.451 + 0.313	0.302 + 0.356 J
Radium-228	N	pCi/L	NS	1.89 + 0.26 J3	0.4 + 0.5 UODR	0.67 + 0.59 U	0.119 + 0.430 U	0.61 + 0.54 U	0.85 + 0.52 J	0.66 + 0.58 JODR	-0.0217 + 0.241 U	0.585 + 0.256	1.4 + 0.319	1.09 + 0.261	0.698 + 0.382	0.702 + 0.515 J	0.597 + 0.557
Sulfate	N	mg/L	400	393	150	226	322	292	280	133	80.1	285	259	271	299	261	251
CALC																	
Radium-226/228	N	pCi/L	7.002	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	0.77 + 0.63 U	3.18 + 0.717	1.18 + 0.461	1.9 + 0.406	1.15 + 0.299	0.794 + 0.400	1.15 + 0.603	0.899 + 0.661
FIELD PARAM																	
Turbidity, Field	N	NTU	17.96	40.3	56.1	103	50.7	6.04	2.72	4	7.12	2.53	1.94	4.48	7.69	7.34	8.17
GEN CHEM																	
Chloride	N	mg/L	200	20	16	20	21	17	16	11	8.04	15	11.6	10.5	10.4	6.54	6.03
Dissolved Solids, Total	N	mg/L	1200	724	602 H	610	524	614	636	556	489	627	567	587	577	536	540
pH, Lab	N	pH units	9	7.85	7.46	7.21	7.45	7.77 H	7.84 H	7.24 H	7.4 T8	7.8 T8	7.88 T8	7.94 T8	8.08 T8	8.11 T8	8.03 T8
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	0.0018	0.004 U	0.004 U F1	0.004 U	0.004 U	0.004 U	0.004 U	0.004 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	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Arsenic	D	mg/L	0.01	0.0015	0.0014	0.0024	0.002	0.0016	0.0019	0.0013	0.002 U	0.00219 F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Arsenic	T	mg/L	0.01	0.002	0.0046	0.0059	0.003	0.004	0.0017	0.002	0.002 U	0.00254	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Barium	D	mg/L	2	0.139	0.124	0.108 B	0.139	0.13	0.136	0.122	0.122	0.122 F1	0.114	0.103	0.102	0.0973	0.0998
Barium	T	mg/L	2	0.158	0.181	0.19	0.135	0.155	0.137	0.167	0.123	0.119	0.116	0.108	0.11	0.107	0.116
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	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 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	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Boron	D	mg/L	2	4.23	1.49	2.99	4.98	4.64	4.11	1.69		4.2 F1	4.07	4.38	4.74	4.49	4.19
Boron	T	mg/L	2	4.27	1.84	3.59	4.94	4.67	4.19 S	2.22		4.28	4.22	4.41	4.83	4.52	4.36
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 F1	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.0002 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	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2	174	125	101	121	125	137	111	123	125 F1	122	121	116	115 V	107
Calcium	T	mg/L	103.2	153	143	115	111	139 B	124 S	115	122	121	125	123	124	116	111
Chromium	D	mg/L	0.1	0.0011 J	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Chromium	T	mg/L	0.1	0.0044	0.0083	0.0118	0.0019	0.0241	0.0015 U	0.0015 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.00203
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	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt	T	mg/L	0.006	0.0005 J	0.0014	0.0021	0.001 U	0.0014	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
Iron	D	mg/L	NS								0.1 U						
Iron	T	mg/L	NS	1.66							0.367						
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	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Lead	T	mg/L	0.0075	0.0013	0.0023	0.0029	0.001 U	0.0044	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
Lithium	D	mg/L	0.04	0.0338	0.0288	0.0266	0.0275	0.0262	0.0406	0.0256	0.0281	0.0289 F1	0.0314	0.0357	0.0297	0.0314	0.0294
Lithium	T	mg/L	0.04	0.0361	0.0329	0.029	0.0276	0.0352	0.0312	0.0324	0.0316	0.0327	0.0315	0.0328	0.0307	0.029	0.03
Manganese	D	mg/L	NS								0.438						
Manganese	T	mg/L	NS	0.321							0.435						
Mercury	D	mg/L	0.002		0.0002 U						0.0002 U	0.0002 U F1	0.0002 U	0.0002 U	0.0002 U	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
Molybdenum	D	mg/L	0.1	0.057	0.0342	0.0648	0.0521	0.0656	0.0487	0.0303	0.0274	0.0642 F1	0.0656	0.0626	0.0656	0.058	0.0596
Molybdenum	T	mg/L	0.1	0.0601	0.0413	0.0621	0.0528	0.0553	0.0558	0.0319	0.0262	0.0608	0.0656	0.0608	0.0673	0.06	0.0628
Nickel	D	mg/L	NS	0.0016		0.0011					0.002 U						
Nickel	T	mg/L	S	0.0033		0.01					0.002 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	0.0012	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 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	0.0019	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 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 F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	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	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
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mg/L = milligrams per liter
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NTU = nephelometric turbidity units
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U = Not Detected at the Reporting Limit
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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
3 Eight episodes of groundwater sampling were conducted from September 2017 through February 2018 to establish background concentrations for the Site utilizing data from background wells APW-1R and APW-9. The final Groundwater Protection Standards (GPS) are the higher of the values provided in 35 IAC 845.600(a) and the final background concentrations as found in Table 6 of the 07/25/2019 GMZ Application with the exception of turbidity and pH. Radium 226+228 was the only value taken from Table 6.
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-4-WG-20220615	APW-4-WG-20220915	APW-4-WG-20221128	APW-4-WG-20230202	APW-4-WG-20230627	APW-4-WG-20230920	APW-4-WG-20231129	APW-4-WG-20240110	APW-4-WG-20240501	APW-4-WG-20240904	APW-4-WG-20241017	APW-4-WG-20250114	APW-4-WG-20250625	APW-4-WG-20250904
			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	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	11/30/2023	01/10/2024	05/01/2024	09/04/2024	10/17/2024	01/14/2025	06/25/2025	09/04/2025
			Sample Type	N	N	N	N	N	N	N	N	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	0.18	0.17	0.201	0.178	0.15 U	0.15 U	0.167	0.163
Radium,226	N	pCi/L	NS	0.38 ± 0.161	0.02 ± 0.081 U	0.272 ± 0.328	0.15 ± 0.091 U	0.09 ± 0.131 U	0.17 ± 0.081	0.05 ± 0.081 U	0.13 ± 0.111 U	0.103 ± 0.164 U	0.5 ± 0.131 U	0.11 ± 0.081 U	0.352 ± 0.232	0.33 ± 0.121 U	0.08 ± 0.071 U	0.19 ± 0.071 U	0.223 ± 0.242 U	0.146 ± 0.275 U	0.302 ± 0.252	0.116 ± 0.132 U	0.0629 ± 0.125 U	0.0133 ± 0.154 U	0.501 ± 0.285
Radium,228	N	pCi/L	NS	0.95 ± 0.643	0.45 ± 0.681 U	0.53 ± 0.582	0.64 ± 0.311 U	0.88 ± 0.641	0.73 ± 0.563	0.34 ± 0.511 U	0.64 ± 0.481 U	0.745 ± 0.355 U	2.15 ± 0.78	1.47 ± 0.67	0.961 ± 0.396	0.97 ± 0.681	1.18 ± 0.67	0.66 ± 0.643	0.826 ± 0.280	0.451 ± 0.288 U	0.51 ± 0.309	0.376 ± 0.275 U	0.111 ± 0.567 U	1.08 ± 0.553	0.634 ± 0.668 U
CALC																									
Radium,226/228	N	pCi/L	7.009	1.33 ± 0.811 U	0.69 ± 0.761 U	0.53 ± 0.71	0.79 ± 0.411 U	0.97 ± 0.771 U	0.9 ± 0.651 U	0.34 ± 0.551 U	0.77 ± 0.591 U	0.848 ± 0.397 U	2.65 ± 0.91	1.58 ± 0.751 U	1.31 ± 0.576	1.3 ± 0.811 U	1.27 ± 0.741 U	0.85 ± 0.711 U	0.952 ± 0.376	0.597 ± 0.568 U	0.811 ± 0.337	0.492 ± 0.305 U	0.174 ± 0.680 U	1.09 ± 0.674	1.14 ± 0.736 U
FIELD PARAM																									
Turbidity, Field	N	NTU	17.96									10.1	18.3	26.5	37.3	38.7	21.6	27.8	28.8	81.7	30.2	81.4	15.7	81.5	21.7
GEN CHEM																									
Chloride	N	mg/L	200	12	11	11	11	11	11	10	11	12	10	11	10	12	9	11	9.21	11.6	9.98	10.1	10.4	11.1	9.92
Dissolved Solids, Total	N	mg/L	1200	460	484	452	472	492	514	424	528	430	436 H	446	416	432	476	430	418	464	-	418	440	445	436
pH, Lab	N	pH units	9	7.91	7.91	7.91	7.47	7.39	7.39	7.26	7.9	7.41	7.51	7.74	7.71	7.39 H	7.58 H	7.31 H	8.17 T8	7.5 T8	7.65 T8	7.46 T8	7.77 T8	7.83 T8	7.65 T8
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	0.004 U	0.004 U F1	0.004 U	0.004 U	0.004 U	0.004 U	0.004 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	0.001 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Arsenic	D	mg/L	0.01									0.0013	0.0013	0.0021	0.0011	0.0014	0.0016	0.002	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
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	0.0028	0.002 U	0.002 U	0.002 U	0.00219	0.002 U	0.002 U	0.002 U
Barium	D	mg/L	2									0.116	0.132	0.138	0.116	0.122	0.138	0.165	0.13	0.128 E1	0.154	0.126	0.132	0.127	0.128
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	0.153	0.139	0.12	0.14	0.142	0.139	0.133	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	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 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	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Boron	D	mg/L	2									1.41	0.875	2.23	0.619	0.908	0.591	0.645	-	0.556 F1	1.85	1.1	0.71	1.16	1.16
Boron	T	mg/L	2	2.37	2.16	2.12	2.21	2.03	1.7	1.33	1.18	1.48	0.973	0.653	0.65	0.876	0.572	0.559	-	0.578	1.79	1.07	0.733	1.14	1.21
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 F1	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	0.001 U	0.001 U
Calcium	D	mg/L	103.2									111	93.7	108	93.3 S	88.3	101 S	77.9	90.6	93.1 F1	110	102	105	102	97.7
Calcium	T	mg/L	103.2	101 S	105	99.4	97.5	107	107	113	113	97.8	108 S	102	100	97.5 S	87.9	134	94.1	93.4	107	101	105	98.8	102
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0023	0.0033	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.00293
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	0.0033	0.00267	0.002 U	0.002 U	0.00782	0.002 U	0.002 U	0.00293
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	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 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	0.0013	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Iron	D	mg/L	NS																0.11 U						
Iron	T	mg/L	NS									0.563							0.706						
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	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 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	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Lithium	D	mg/L	0.04									0.0264	0.0283	0.0355	0.0292	0.0311	0.0411	0.0333	0.0266	0.0264 F1	0.0277	0.0314	0.0275	0.0263	0.0263
Lithium	T	mg/L	0.04	0.0404	0.0403	0.0417	0.0406	0.0404	0.0416	0.0411	0.0397	0.026	0.0322	0.0293	0.0276	0.0314	0.0296	0.0298	0.026	0.0277	0.0284	0.0291	0.0291	0.0269	0.0267
Manganese	D	mg/L	NS																0.171						
Manganese	T	mg/L	NS									0.192							0.21						
Mercury	D	mg/L	0.002										0.0002 U						0.0002 U	0.0002 U F1	0.0002 U	0.0002 U	0.0002 U	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	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0653	0.0445	0.227	0.0383	0.0503	0.0367	0.0461	0.037	0.0511 F1	0.0543	0.0502	0.044	0.0499	0.0549
Molybdenum	T	mg/L	0.1	0.0691	0.084	0.0793	0.0817	0.0748	0.0714	0.0692	0.057	0.0788	0.0494	0.0456	0.0377	0.0449	0.0396	0.0347	0.0333	0.0494	0.0517	0.0458	0.0443	0.0535	0.0538
Nickel	D	mg/L	NS									0.0019		0.0017					0.00313						
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					0.00557						
Selenium	D	mg/L	0.05									0.0134	0.0101	0.001 U	0.006	0.0165	0.0096	0.0139	0.00962	0.0231 E1	0.0176	0.0172	0.0111	0.0152	0.0173
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	0.015	0.0105	0.0218	0.0186	0.0176	0.0117	0.0165	0.0179
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 F1	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	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Samole
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
U = Analyte detected below quantitation limits
J3 = The associated batch QC was outside the established quality control range for precision
J6 = The sample matrix interfered with the ability to make any accurate determination; spike value is low
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit
T8 = Sample received past/too close to holding time expiration

1 Standard is from the Upper Tolerance Limit (UTL) calculated from backround 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 backround well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
3 Eight episodes of groundwater sampling were conducted from September 2017 through February 2018 to establish backround concentrations for the Site utilizing data from backround wells APW-1R and APW-9. The final Groundwater Protection Standards (GPS) are the higher of the values provided in 35 IAC 845.600(a) and the final backround concentrations as found in Table 6 of the 07/25/2019 GMZ Application with the exception of turbidity and pH. Radium 226+228 was the only value taken from Table 6.
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
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
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
Sample Type				N	N	N	N	N	N	N	N	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
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
Radium-228	N	pCi/L	NS	1.07 ± 0.8	0.89 ± 0.55 J	0.661 ± 0.418	1.17 ± 0.33		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
Sulfate	N	mg/L	400	407	460	399	413	381	394	439	378	224	239	379	403	324	338	325	305
CALC																			
Radium-226/228	N	pCi/L	7.002	1.44 ± 0.94 U	1.08 ± 0.65 U	0.794 ± 0.78	1.65 ± 0.48 U		0.84 ± 0.54 U	1.17 ± 0.66 U	0.61 ± 0.53 U	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
FIELD PARAM																			
Turbidity, Field	N	NTU	17.96									51.8		9.19		4.65		8.21	
GEN CHEM																			
Chloride	N	mg/L	200	15	15	15	14	16	16	16	16	19	19	15	15	19	19	18	18
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
pH, Lab	N	pH units	9	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
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
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
Arsenic	D	mg/L	0.01									0.002	0.0021	0.001	0.001 U	0.001 U	0.0019	0.0026	0.0018
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
Barium	D	mg/L	2									0.133	0.132	0.13	0.128	0.172 B	0.13 B	0.175	0.135
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
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
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
Boron	D	mg/L	2									7.63	7.7	7.42	7.09	6.12	7.03 S	8.68 S	6.76
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
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
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
Calcium	D	mg/L	103.2									139	141	119	131	87.4	110 S	106 S	111
Calcium	T	mg/L	103.2	136	142	119	131	123	125	121	124	127	129 S	127	137	117	118	112	114
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
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
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
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
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
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
Lithium	D	mg/L	0.04									0.0282	0.029	0.0381	0.0373	0.0338	0.0365	0.045	0.0375
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
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
Molybdenum	D	mg/L	0.1									0.172	0.17	0.213	0.206	0.293	0.211 S	0.187	0.199
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
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
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
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
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

Notes:
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NA = not applicable
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J = Analyte detected below quantitation limits
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S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit
T8 = Sample received past/too close to holding time expiration

1 Standard is from the Upper Tolerance Limit (UTL)
2 Standard value 6.22 is from the Lower Tolerance Limit
3 Eight episodes of groundwater sampling were conducted
Highlighted values exceed action level
NS = No standard

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

Post-Closure Sampling

Parameter/Analyte	Total or Dissolved	Units	35 IAC 845.600	APW-05R-WG-20230627 APW-05R 06/27/2023 N	DUP-01-WG-20230627 APW-05R 06/27/2023 FD	APW-05R-WG-20230920 APW-05R 09/20/2023 N	DUP-01-WG-20230920 APW-05R 09/20/2023 FD	APW-05R-WG-20231128 APW-05R 11/28/2023 N	DUP-01-WG-20231128 APW-05R 11/28/2023 FD	APW-05R-WG-20240110 APW-05R 01/10/2024 N	DUP-01-WG-20240110 APW-05R 01/10/2024 FD
UNSPECIFIED											
Fluoride	N	mg/L	4	0.3	0.32	0.35	0.34	0.38	0.35	0.298	0.317
Radium-226	N	pCi/L	NS	0.23 + 0.1 U	0.11 + 0.08 U	0.49 + 0.13 U	0.36 + 0.13 U	0.15 + 0.06 U	0.05 + 0.04 U	0.303 + 0.271 J	0.297 + 0.208
Radium-228	N	pCi/L	NS	0.31 + 0.5 UODR	0.61 + 0.67 U	5.85 + 1.14 *	0.42 + 0.71 U	0.73 + 0.57 J	0.75 + 0.67 J	3.55 + 0.372	0.885 + 0.244
Sulfate	N	mg/L	400	335	326	343	333	330	321	306	305
CALC											
Radium-226/228	N	pCi/L	7.002	0.54 + 0.6 U	0.72 + 0.75 U	6.34 + 1.53	0.78 + 0.84 U	0.88 + 0.63 U	0.8 + 0.71 U	3.86 + 0.460	1.18 + 0.321
FIELD PARAM											
Turbidity, Field	N	NTU	17.96	42.6		33.7		76.1		38.9	
GEN CHEM											
Chloride	N	mg/L	200	17	18	14	14	16	16	16.9	17
Dissolved Solids, Total	N	mg/L	1200	740	695	680	710	705	690	677	691
pH, Lab	N	pH units	9	7.27 H	7.3 H	7.36 H	7.36 H	7.33 H	7.34 H	7.42 T8	7.82 T8
METALS											
Antimony	D	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 SU	0.004 U	0.004 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	0.004 U	0.004 U
Arsenic	D	mg/L	0.01	0.0024	0.0025	0.0023	0.0024	0.0029	0.0018	0.002 U	0.002 U
Arsenic	T	mg/L	0.01	0.003	0.003	0.0028	0.0026	0.0042	0.0031	0.0022	0.00228
Barium	D	mg/L	2	0.168	0.167	0.167	0.172	0.186	0.127	0.113	0.114
Barium	T	mg/L	2	0.183	0.181	0.162	0.158	0.225	0.158	0.151	0.153
Beryllium	D	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 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	0.002 U	0.002 U
Boron	D	mg/L	2	8.64	8.37	7.91	8.05	8.71	6.44 S		
Boron	T	mg/L	2	8.76	8.68	7.12	8.33 S	9.62	6.77		
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
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
Calcium	D	mg/L	103.2	120	120	118	119	98.4	91.9 S	112	111
Calcium	T	mg/L	103.2	136 B	133 B	105	126 S	97.1	134	114	115
Chromium	D	mg/L	0.1	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 SU	0.002 U	0.002 U
Chromium	T	mg/L	0.1	0.0015 U	0.0015 U	0.0031	0.0016	0.002	0.0023	0.002 U	0.002 U
Cobalt	D	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 SU	0.002 U	0.002 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	0.002 U	0.002 U
Iron	D	mg/L	NS							0.1 U	0.1 U
Iron	T	mg/L	NS							5.89	5.91
Lead	D	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U
Lead	T	mg/L	0.0075	0.0011	0.001	0.0026	0.0021	0.002	0.0014	0.002 U	0.002 U
Lithium	D	mg/L	0.04	0.0384	0.0398	0.0624	0.0509	0.0455	0.0343	0.0377	0.039
Lithium	T	mg/L	0.04	0.0423	0.0415	0.0367	0.0425	0.0523	0.0371	0.0388	0.0404
Manganese	D	mg/L	NS							0.548	0.537
Manganese	T	mg/L	NS							0.554 V	0.553
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
Molybdenum	D	mg/L	0.1	0.213	0.204	0.235	0.233	0.282	0.192	0.235	0.235
Molybdenum	T	mg/L	0.1	0.212	0.21	0.223	0.235	0.203	0.215	0.227	0.231
Nickel	D	mg/L	NS							0.002 U	0.002 U
Nickel	T	mg/L	NS							0.002 U	0.002 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	0.002 U	0.002 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	0.002 U	0.002 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
Thallium	T	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

Parameter/Analyte	Total or Dissolved	APW-05R-WG-20240501 APW-05R 05/01/2024 N	DUP-01-WG-20240501 APW-05R 05/01/2024 FD	APW-05R-WG-20240905 APW-05R 09/05/2024 N	DUP-01-WG-20240905 APW-05R 09/05/2024 FD	APW-05R-WG-20241016 APW-05R 10/16/2024 N	DUP-01-WG-20241016 APW-05R 10/16/2024 FD	APW-05R-WG-20250115 APW-05R 01/15/2025 N	DUP-01-WG-20250115 APW-05R 01/15/2025 FD	APW-05R-WG-20250626 APW-05R 06/26/2025 N	DUP-01-WG-20250626 APW-05R 06/26/2025 FD	APW-05R-WG-20250904 APW-05R 09/04/2025 N	DUP-01-WG-20250904 APW-05R 09/04/2025 FD
UNSPECIFIED													
Fluoride	N	0.15 U	0.301	0.347	0.342	0.199	0.177	0.289	0.295	0.369	0.355	0.257	0.301
Radium-226	N	0.18 + 0.189 J	0.427 + 0.329	0.0135 + 0.0835 U	1.33 + 0.415	0.261 + 0.188	0 + 0.130 U	0.71 + 0.394	0.356 + 0.228	-0.016 + 0.198 U	0.188 + 0.232 J	0.224 + 0.250 J	0.341 + 0.283
Radium-228	N	0.94 + 0.271	1.08 + 0.284	0.46 + 0.343 J	1.1 + 0.203	0.468 + 0.329 J	0.498 + 0.226	1.4 + 0.828	1.48 + 0.434	0.879 + 0.789 J	0.663 + 0.367	0.463 + 0.500 J	1.66 + 0.734
Sulfate	N	365	368	70.5	70.6	192	191	373	374	135	133	97.9	116
CALC													
Radium-226/228	N	1.12 + 0.330	1.5 + 0.435	0.473 + 0.353 J	2.43 + 0.462	0.73 + 0.379	0.498 + 0.261	2.1 + 0.917	1.83 + 0.490	0.879 + 0.813 J	0.85 + 0.434	0.687 + 0.559 J	2 + 0.787
FIELD PARAM													
Turbidity, Field	N	8.02		64.1		23.4		27.2		14.8		16.3	
GEN CHEM													
Chloride	N	15.8	16.1	28.1	28.1	18.9	18.7	16.1	16.2	24.1	23.6	20.2	24.1
Dissolved Solids, Total	N	764	740	354	359	560	543	700	688	504	509	485	479
pH, Lab	N	7.6 T8	7.62 T8	7.56 T8	7.56 T8	7.53 T8	7.54 T8	7.77 T8	7.82 T8	8 T8	7.82 T8	7.56 T8	7.53 T8
METALS													
Antimony	D	0.004 U F1	0.004 U F1	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Antimony	T	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Arsenic	D	0.002 U F1	0.002 U F1	0.00215	0.00201	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Arsenic	T	0.00228	0.00235	0.00305	0.003	0.00236	0.00374	0.00203	0.00206	0.00223	0.00227	0.00216	0.00218
Barium	D	0.161 F1	0.151 F1	0.0718	0.072	0.116	0.117	0.144	0.137	0.102	0.103	0.105	0.101
Barium	T	0.195	0.19	0.102	0.0999	0.158	0.166	0.194	0.198	0.147	0.146	0.139	0.141
Beryllium	D	0.002 U F1	0.002 U F1	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
Beryllium	T	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
Boron	D	8.86 F1	8.89 F1	2.23	2.22	6.29	6.28	8.2	8.17	5.58	5.47	4.02	4
Boron	T	9.28	9.26	2.18	2.17	6.19	6.23	8.37	8.28	5.49	5.53	4.18	4.2
Cadmium	D	0.001 U F1	0.001 U F1	0.001 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	0.001 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	142 F1	142 F1	76.7	76.5	111	112	132	134	104	102	98.1	97.4
Calcium	T	141	139	74	73.3	111	112	141	141	104	103	102	102
Chromium	D	0.002 U F1	0.002 U F1	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
Chromium	T	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.00211	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.00298
Cobalt	D	0.002 U F1	0.002 U F1	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
Cobalt	T	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
Iron	D												
Iron	T												
Lead	D	0.002 U F1	0.002 U F1	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
Lead	T	0.002 U	0.002 U	0.002 U	0.002 U	0.00237	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Lithium	D	0.0362 F1	0.0394 F1	0.0172	0.0175	0.0316	0.0303	0.0342	0.0326	0.0257	0.0263	0.0237	0.0229
Lithium	T	0.0385	0.0377	0.0179	0.0176	0.0314	0.0304	0.0373	0.0361	0.0248	0.0258	0.0262	0.0269
Manganese	D												
Manganese	T												
Mercury	D	0.0002 U F1	0.0002 U F1	0.0002 U	0.000207	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Mercury	T	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	0.213 F1	0.215 F1	0.11	0.111	0.168	0.165	0.182	0.172	0.139	0.14	0.134	0.132
Molybdenum	T	0.221	0.214	0.109	0.107	0.164	0.165	0.185	0.185	0.147	0.146	0.13	0.132
Nickel	D												
Nickel	T												
Selenium	D	0.002 U F1	0.002 U F1	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
Selenium	T	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	D	0.002 U F1	0.002 U F1	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	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
H = Holding times exceeded
J = Analyte detected below quantitation limits
F1 = Sample filtration was performed in the laboratory
J3 = The associated batch QC was outside the established quality control range for precision
J6 = The sample matrix interfered with the ability to make any accurate determination; spike value is low
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit
T8 = Sample received past/too close to holding time expiration

1 Standard is from the Upper Tolerance Limit (UTL)
2 Standard value 6.22 is from the Lower Tolerance Limit
3 Eight episodes of groundwater sampling were conducted
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-6D-20170907	APW-6D-20170927	APW-6D-20171019	APW-6D-20171109	APW-6D-20171128	APW-6D-20171227	APW-6D-20180118	APW-6D-20180208	APW-06D-WG-20220913	APW-06D-WG-20221128	APW-06D-WG-20230201	APW-06D-WG-20230627	APW-06D-WG-20230920	APW-06D-WG-20231128	APW-06D-WG-20240110	APW-06D-WG-20240501	APW-06D-WG-20240905	APW-06D-WG-20241016	APW-06D-WG-20250115	APW-06D-WG-20250624	APW-06D-WG-20250904
			Location ID	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D
			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	09/13/2022	11/28/2022	02/01/2023	06/27/2023	09/20/2023	11/28/2023	01/10/2024	05/01/2024	09/05/2024	10/16/2024	01/15/2025	06/24/2025	09/04/2025
			Sample Type	N	N	N	N	N	N	N	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	0.22	0.23	0.21	0.22	0.21	0.22	0.23	0.21	0.2	0.24	0.21	0.2	0.22	0.24	0.212	0.15 U	0.205	0.15 U	0.17	0.216	0.202
Radium,226	N	pCi/L	NS	0.62 ± 0.17 U	0.37 ± 0.11 U	1.22 ± 0.244	0.39 ± 0.15 U	0.98 ± 0.18 U	0.3 ± 0.12 U	0.03 ± 0.08 U	0.2 ± 0.13 U	0.31 ± 0.1 U	0.62 ± 0.15 U	0.355 ± 0.275	0.3 ± 0.12 U	0.18 ± 0.09 U	0.11 ± 0.05 U	0.582 ± 0.361	0.422 ± 0.235	0.447 ± 0.249	0.258 ± 0.255 U	0.227 ± 0.126	0.374 ± 0.274	0.548 ± 0.319
Radium,228	N	pCi/L	NS	1.67 ± 0.65	0.81 ± 0.33 U	0.549 ± 0.377	0.86 ± 0.37 U	1.4 ± 0.71	0.78 ± 0.48 U	0.74 ± 0.57 U	0.24 ± 0.34 U	1.46 ± 0.71	0.28 ± 0.43 U	1.87 ± 0.451	0.74 ± 0.54 U	0.67 ± 0.76	0.76 ± 0.6 U	1.74 ± 0.776	1.1 ± 0.585	1.81 ± 0.977	0.647 ± 0.545	0.46 ± 0.606	0.586 ± 0.483 U	0.968 ± 0.534
Sulfate	N	mg/L	400	215	228	206	222	230	236	211	189	272	254	269	270	218	184	180	184	242	214	266	211	201
CALC																								
Radium,226/228	N	pCi/L	7.060	1.69 ± 0.85 U	0.98 ± 0.44 U	1.77 ± 1.12	1.19 ± 0.51 U	1.78 ± 0.86 U	1.08 ± 0.61 U	0.77 ± 0.65 U	0.44 ± 0.47 U	1.77 ± 0.81 U	0.9 ± 0.58 U	1.98 ± 0.636	1.04 ± 0.66 U	0.8 ± 0.85	0.87 ± 0.65 U	1.83 ± 0.854	1.52 ± 0.569	2.27 ± 0.448	0.9 ± 0.479	0.68 ± 0.631	0.96 ± 0.555	1.55 ± 0.639
FIELD PARAM																								
Turbidity, Field	N	NTU	17.68									18.5	74.4	26.9	161	65.5	3.02	18.2	35.8	21.8	8.39	11	4.81	3.78
GEN CHEM																								
Chloride	N	mg/L	200	17	17	16	16	16	16	17	17	14	17	16	15	16	22	21.2	21.5	15	14.7	20.5	17.5	17.3
Dissolved Solids, Total	N	mg/L	1200	558	560	562	564	590	516 R	482	584	670 H	580	587	735	565	560	536	549	624	568	549	584	712
pH, Lab	N	pH units	9	7.35	7.35	7.33	7.38	7.3	7.33	7.31	7.3	7.47	7.31	7.36	7.38 H	7.3 H	7.56 H	7.73 T8	7.54 T8	7.44 T8	7.47 T8	7.64 T8	7.72 T8	7.55 T8
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	0.004 U	0.004 U F1	0.004 U	0.004 U	0.004 U	0.004 U	0.004 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	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Arsenic	D	mg/L	0.01									0.004	0.0116	0.012	0.0102	0.01	0.0161	0.00451	0.00585 F1	0.00479	0.00485	0.00414	0.0052	0.00467
Arsenic	T	mg/L	0.01	0.0068	0.0101	0.0075	0.0074	0.009	0.0095	0.0106	0.0096	0.0104	0.0111	0.0107	0.0115	0.0109	0.0135	0.0102	0.0108	0.0103	0.0103	0.00988	0.0109	0.0107
Barium	D	mg/L	2									0.129	0.118 R	0.142	0.13	0.121	0.185	0.106	0.115 F1	0.121	0.113	0.111	0.157	0.115
Barium	T	mg/L	2	0.173	0.172	0.142	0.153	0.155	0.163	0.166	0.148	0.143	0.142	0.134	0.145	0.128	0.151	0.115	0.119	0.129	0.119	0.124	0.123	0.123
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 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	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Boron	D	mg/L	2									5.32	4.14	4.39	5.01	3.77	4.67		3.98 F1	4.36	4.03	3.33	3.92	3.8
Boron	T	mg/L	2	3.72	3.87	3.55	3.58	3.9	3.84	3.3	3.09	5.51	4.29	3.95	4.99	3.81	3.8		4.12	4.31	3.99	3.46	3.89	3.83
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 F1	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	0.001 U
Calcium	D	mg/L	103.2									118	105	109	118	114	80.3	106	114 F1	120	118	114	118	118
Calcium	T	mg/L	103.2	98.9	118	96.7	100	110	107	106 R	105	101	110	116	108 R	106	98.4	111	114	124	120	120	119	113
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 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	0.0015 U	0.0063	0.0015 U	0.0057	0.0727	0.0015 U	0.00861	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.0045
Cobalt	D	mg/L	0.006									0.0013	0.0012	0.001	0.001 U	0.001 U	0.0012	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 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	0.001 U	0.0035	0.0013	0.0054	0.0035	0.0013	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.00223
Iron	D	mg/L	NS															0.1 U						
Iron	T	mg/L	NS															3.65						
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 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	0.0012	0.001 U	0.0016	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
Lithium	D	mg/L	0.04									0.0179	0.0155	0.0194	0.016	0.0197	0.0241	0.0161	0.0159 F1	0.0156	0.0173	0.0156	0.0152	0.0151
Lithium	T	mg/L	0.04	0.016	0.0176	0.0161	0.0163	0.0178	0.0181	0.0165	0.0169	0.0185	0.0176	0.0172	0.0184	0.0168	0.0196	0.0173	0.0171	0.0163	0.018	0.0167	0.0148	0.0167
Manganese	D	mg/L	NS															0.611						
Manganese	T	mg/L	NS															0.622						
Mercury	D	mg/L	0.002									0.0002 U						0.0002 U	0.0002 U E1	0.000209	0.0002 U	0.0002 U	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									0.0669	0.0796	0.0583	0.0643	0.0559	0.0949	0.0617	0.0748 F1	0.0647	0.0542	0.0524	0.0558	0.0538
Molybdenum	T	mg/L	0.1	0.0646	0.0606	0.0583	0.0586	0.06	0.0584	0.0465	0.0469	0.0719	0.0806	0.0683	0.0602	0.0573	0.0657	0.0605	0.073	0.0638	0.0637	0.0563	0.0606	0.0568
Nickel	D	mg/L	NS										0.002					0.00219						
Nickel	T	mg/L	NS	0.0032	0.0028	0.0018	0.002	0.0017	0.0022	0.0032	0.0025		0.0093					0.00825						
Selenium	D	mg/L	0.05									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 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	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 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 F1	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	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Samole
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
1 = Analyte detected below quantitation limits
J3 = The associated batch QC was outside the established quality control range for precision
J6 = The sample matrix interfered with the ability to make any accurate determination; spike value is low
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit
T8 = Sample received past/too close to holding time expiration

1 Standard is from the Upper Tolerance Limit (UTL) calculated from backround 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 backround well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
3 Eight episodes of groundwater sampling were conducted from September 2017 through February 2018 to establish backround concentrations for the Site utilizing data from backround wells APW-1R and APW-9. The final Groundwater Protection Standards (GPS) are the higher of the values provided in 35 IAC 845.600(a) and the final backround concentrations as found in Table 6 of the 07/25/2019 GMZ Application with the exception of turbidity and pH. Radium 226+228 was the only value taken from Table 6.
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							
		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
		Location ID	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
		Sample Type	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
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
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
Sulfate	N	mg/l	400	127	177	167	151	189	201	233	220
CALC											
Radium-226/228	N	pCi/l	7.002	0.92 ± 0.91 U	1.15 ± 0.61 U	0.798 ± 0.647	1.25 ± 0.52 U	1.1 ± 0.73 U	0.55 ± 0.53 U	0.8 ± 0.62 U	1.04 ± 0.49 U
FIELD PARAM											
Turbidity, Field	N	NTU	17.96								
GEN CHEM											
Chloride	N	mg/l	200	31	28	27	27	26	27	26	25
Dissolved Solids, Total	N	mg/l	1200	500	546	574	528	566	588	598	666
pH, Lab	N	pH units	9	7.16	7.06	7.18	7.23	7.09	7.13	7.09	7.02
METALS											
Antimony	D	mg/l	0.006								
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
Arsenic	D	mg/l	0.01								
Arsenic	T	mg/l	0.01	0.0017	0.0016	0.0018	0.002	0.0013	0.0012	0.0011	0.0011
Barium	D	mg/l	2								
Barium	T	mg/l	2	0.222	0.237	0.205	0.226	0.214	0.213	0.224	0.205
Beryllium	D	mg/l	0.004								
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
Boron	D	mg/l	2								
Boron	T	mg/l	2	4.65	5.93	5.83	5.64 S	5.8	6.93 S	7.42	6.66
Cadmium	D	mg/l	0.005								
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
Calcium	D	mg/l	103.2								
Calcium	T	mg/l	103.2	101	97.2	87.5	96.8 S	99.5	98.1	98.7	97.4
Chromium	D	mg/l	0.1								
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
Cobalt	D	mg/l	0.006								
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
Iron	D	mg/l	NS								
Iron	T	mg/l	NS								
Lead	D	mg/l	0.0075								
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
Lithium	D	mg/l	0.04								
Lithium	T	mg/l	0.04	0.0335	0.0413	0.04	0.0415	0.042	0.0458	0.0451	0.0417
Manganese	D	mg/l	NS								
Manganese	T	mg/l	NS								
Mercury	D	mg/l	0.002								
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
Molybdenum	D	mg/l	0.1								
Molybdenum	T	mg/l	0.1	0.249	0.287	0.272	0.243	0.274	0.314	0.324	0.323
Nickel	D	mg/l	NS								
Nickel	T	mg/l	NS	0.0021	0.009	0.0021	0.0012	0.001 U	0.0031	0.0016	0.0012
Selenium	D	mg/l	0.05								
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
Thallium	D	mg/l	0.002								
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

		Post-Closure Sampling						
	Sample ID	APW-6S-WG-20220616	APW-06S-WG-20220913	APW-06S-WG-20221128	APW-06S-WG-20230201	APW-06S-WG-20230627	APW-06S-WG-20230920	APW-06S-WG-20231128
	Location ID	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S
	Sample Date	06/16/2022	09/13/2022	11/28/2022	02/01/2023	06/27/2023	09/20/2023	11/28/2023
Parameter/Analyte	Total or Dissolved / Sample Type	N	N	N	N	N	N	N
UNSPECIFIED								
Fluoride	N	0.29	0.28	0.32	0.29	0.26	0.3	0.33
Radium-226	N	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	0.09 ± 0.05 U
Radium-228	N	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	0.29 ± 0.51 U
Sulfate	N	200	227	243	247	208	221	237
CALC								
Radium-226/228	N	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	0.38 ± 0.56 U
FIELD PARAM								
Turbidity, Field	N	30.5	15.1	5.56	6.67	9.06	8.99	1.26
GEN CHEM								
Chloride	N	24	25	24	24	23	20	22
Dissolved Solids, Total	N	600	630 H	605	638	615	565	635
pH, Lab	N	7.24	7.38	7.04	7.12	7.05 H	7.21 H	7.12 H
METALS								
Antimony	D	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	0.0009 J	0.001 U	0.001 U	0.0013	0.001	0.001 U	0.0019
Arsenic	T	0.0009 J	0.0012	0.001	0.0011	0.001 U	0.0012	0.0016
Barium	D	0.233	0.146	0.19 B	0.219	0.21	0.216	0.269
Barium	T	0.25	0.221	0.19	0.202	0.224	0.206	0.305
Beryllium	D	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	4.92	5.95	6.88	7.12	5.83	6.65	8.41
Boron	T	4.77	6.61	6.31	6.84 S	5.84	5.79	9.19
Cadmium	D	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	124	93.7	98	94.1	100	107	88.8
Calcium	T	115	105	103	97.1 S	109 B	92.7	90
Chromium	D	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	0.0028	0.0015 U	0.0022	0.0015 U	0.0019	0.0067	0.0015 U
Cobalt	D	0.0002 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cobalt	T	0.0002 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Iron	D							
Iron	T	9.35						
Lead	D	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	0.001 U	0.0028	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lithium	D	0.0355	0.0384	0.0386	0.0406	0.0411	0.0487	0.0498
Lithium	T	0.0363	0.041	0.0393	0.0406	0.0412	0.0369	0.0564
Manganese	D							
Manganese	T	0.53						
Mercury	D		0.0002 U					
Mercury	T	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	0.229	0.235	0.24	0.244	0.232	0.234	0.309
Molybdenum	T	0.237	0.271	0.259	0.265	0.235	0.225	0.207
Nickel	D	0.0015		0.001 U				
Nickel	T	0.0027		0.0023				
Selenium	D	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Selenium	T	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	D	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

		Post-Closure Sampling						
	Sample ID	APW-06S-WG-20240110	APW-06S-WG-20240501	APW-06S-WG-20240905	APW-06S-WG-20241016	APW-06S-WG-20250115	APW-06S-WG-20250624	APW-06S-WG-20250904
	Location ID	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S
	Sample Date	01/10/2024	05/01/2024	09/05/2024	10/16/2024	01/15/2025	06/24/2025	09/04/2025
Parameter/Analyte	Total or Dissolved / Sample Type	N	N	N	N	N	N	N
UNSPECIFIED								
Fluoride	N	0.277	0.15 U	0.242	0.15 U	0.239	0.291	0.223
Radium-226	N	1.25 ± 0.411	0.707 ± 0.335	0.31 ± 0.217	0.0841 ± 0.233 U	0.262 ± 0.188	0.291 ± 0.247 J	0.339 ± 0.283
Radium-228	N	0.688 ± 0.243	0.951 ± 0.345	0.667 ± 0.386 J	0.895 ± 0.221	2.23 ± 0.613	1.01 ± 0.805 J	0.8 ± 0.516 J
Sulfate	N	240	211	133	148	246	116	92.6
CALC								
Radium-226/228	N	1.93 ± 0.477	1.66 ± 0.481	0.977 ± 0.443	0.979 ± 0.321	2.49 ± 0.641	1.3 ± 0.842 J	1.14 ± 0.589
FIELD PARAM								
Turbidity, Field	N	3.32	3.81	5.09	5.72	8.11	22.9	38.25
GEN CHEM								
Chloride	N	21.2	21.6	21.1	19.4	21	27.2	36.1
Dissolved Solids, Total	N	644	678 O	599	599	673	538	481
pH, Lab	N	7.67 T8	7.35 T8	7.2 T8	7.27 T8	7.39 T8	7.58 T8	7.65 T8
METALS								
Antimony	D	0.004 U	0.004 U F1	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Antimony	T	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Arsenic	D	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Arsenic	T	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Barium	D	0.155	0.199 F1	0.18	0.162	0.187	0.12	0.138
Barium	T	0.204	0.23	0.232	0.233	0.262	0.23	0.197
Beryllium	D	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Beryllium	T	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Boron	D		5.36 F1	4.1	4.6	5.34	3.1	3.56
Boron	T		5.54	4.05	4.58	5.34	3.66	3.78
Cadmium	D	0.001 U	0.001 U F1	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	100 V	120 F1	136	112	134	84.1	96
Calcium	T	101	120	131	126	139	109	101
Chromium	D	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Chromium	T	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.0326
Cobalt	D	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt	T	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Iron	D	0.1 U						
Iron	T	9.18						
Lead	D	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Lead	T	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Lithium	D	0.0383	0.038 F1	0.0318	0.0393	0.0386	0.0261	0.0278
Lithium	T	0.0421	0.0408	0.032	0.037	0.0409	0.0295	0.0311
Manganese	D	0.478						
Manganese	T	0.512						
Mercury	D	0.0002 U	0.0002 U F1	0.000221	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Mercury	T	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	0.26	0.24 F1	0.178	0.189	0.19	0.147	0.199
Molybdenum	T	0.255	0.231	0.176	0.187	0.195	0.185	0.203
Nickel	D	0.002 U						
Nickel	T	0.002 U						
Selenium	D	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Selenium	T	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	D	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

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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
3 Eight episodes of groundwater sampling were conducted from September 2017 through February 2018 to establish background concentrations for the Site utilizing data from background wells APW-1R and APW-9. The final Groundwater Protection Standards (GPS) are the higher of the values provided in 35 IAC 845.600(a) and the final background concentrations as found in Table 6 of the 07/25/2019 GMZ Application with the exception of turbidity and pH. Radium 226+228 was the only value taken from Table 6.
Highlighted values exceed action level
NS = No standard

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

			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
				Sampled prior to closure of CCR Impoundment							
			Location ID	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
			Sample Type	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
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
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
Sulfate	N	mg/L	400	66	59	52	50	61	63	67	64
CALC											
Radium-226/228	N	pCi/L	7.002	0.47 ± 0.94 U	0.76 ± 0.67 U	1.29 ± 0.808	1.24 ± 0.47 U	0.77 ± 0.65 U	0.39 ± 0.45 U	1.33 ± 0.64 U	0.77 ± 0.54 U
FIELD PARAM											
Turbidity, Field	N	NTU	17.96								
GEN CHEM											
Chloride	N	mg/L	200	15	15	14	15	16	15	15	15
Dissolved Solids, Total	N	mg/L	1200	762	786	624	730	742	736	720	740
pH, Lab	N	pH unit	9	6.84	6.84	6.86	6.87	6.83	6.96	6.97	6.88
METALS											
Antimony	D	mg/L	0.006								
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
Arsenic	D	mg/L	0.01								
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
Barium	D	mg/L	2								
Barium	T	mg/L	2	0.465	0.448	0.394	0.401	0.37	0.374	0.38	0.359
Beryllium	D	mg/L	0.004								
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
Boron	D	mg/L	2								
Boron	T	mg/L	2	0.235	0.308	0.302	0.3	0.278	0.342	0.298	0.318
Cadmium	D	mg/L	0.005								
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
Calcium	D	mg/L	103.2								
Calcium	T	mg/L	103.2	192	204	171	187	196	193	191	185
Chromium	D	mg/L	0.1								
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
Cobalt	D	mg/L	0.006								
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
Iron	D	mg/L	NS								
Iron	T	mg/L	NS								
Lead	D	mg/L	0.0075								
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
Lithium	D	mg/L	0.04								
Lithium	T	mg/L	0.04	0.0147	0.0181	0.0172	0.0176	0.0185	0.0191	0.0181	0.0178
Manganese	D	mg/L	NS								
Manganese	T	mg/L	NS								
Mercury	D	mg/L	0.002								
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
Molybdenum	D	mg/L	0.1								
Molybdenum	T	mg/L	0.1	0.0046	0.0036	0.0033	0.0023	0.003	0.0044	0.0037	0.0036
Nickel	D	mg/L	NS								
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
Selenium	D	mg/L	0.05								
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
Thallium	D	mg/L	0.002								
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

Sample ID		APW-07-WG-20220616	APW-07-WG-20220914	APW-07-WG-20221130	APW-07-WG-20230130	APW-07-WG-20230626	APW-07-WG-20230919	APW-07-WG-20231128	APW-07-WG-20240111	APW-07-WG-20240430	APW-07-WG-20240904	APW-07-WG-20241016	APW-07-WG-20250625	APW-07-WG-20250904
		Post-Closure Sampling												
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
Sample Date		06/16/2022	09/14/2022	11/30/2022	01/30/2023	06/26/2023	09/19/2023	11/28/2023	01/11/2024	04/30/2024	09/04/2024	10/16/2024	06/25/2025	09/04/2025
Sample Type		N	N	N	N	N	N	N	N	N	N	N	N	N
Parameter/Analyte	Total or Dissolved													
UNSPECIFIED														
Fluoride	N	0.18	0.17	0.18	0.19	0.17	0.18	0.2	0.172	0.15 U	0.199 P1	0.15 U	0.168	0.174
Radium-226	N	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	0.16 ± 0.06 U	0.775 ± 0.378	0.617 ± 0.356	0.197 ± 0.174	0.232 ± 0.212 J	0.127 ± 0.171 J	0.597 ± 0.399
Radium-228	N	0.766 ± 0.234	1.45 ± 0.72	1.13 ± 0.66	1.77 ± 0.352	1.11 ± 0.74	0.99 ± 0.62 JODR	0.45 ± 0.57 U	1.93 ± 0.264	0.803 ± 0.291	0.736 ± 0.361	1.77 ± 0.347	0.8 ± 0.610 J	1.32 ± 0.518
Sulfate	N	72	78	48	48	54	44	40	68.8	56.3	34.7 J6	46.3	39.4	37.4
CALC														
Radium-226/228	N	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	0.61 ± 0.63 U	2.7 ± 0.461	1.42 ± 0.460	0.933 ± 0.401	2.01 ± 0.407	0.927 ± 0.634 J	1.91 ± 0.654
FIELD PARAM														
Turbidity, Field	N	66.2	34.8	10.5	79.2	14.8	42.9	21	4.36	3.34	5.27	6.88	5.5	8.77
GEN CHEM														
Chloride	N	11	12	12	14	10	9	11	11.5	9.63	11.5	9.63	9.38	8.97
Dissolved Solids, Total	N	780	815 H	800	824	665	740	790	734	737	673	741	683	729
pH, Lab	N	6.88	7.02	6.78	7.23	6.79 H	6.94 H	6.86 H	7.31 T8	7.02 T8	7.03 T8	6.93 T8	7.22 T8	7.08 T8
METALS														
Antimony	D	0.001 U	0.001 U	0.001 U	0.0015	0.001 U	0.001 U	0.001 U	0.004 U	0.004 U F1	0.004 U	0.004 U	0.004 U	0.004 U
Antimony	T	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Arsenic	D	0.0011	0.001 U	0.001 U	0.001 U	0.0012	0.0013	0.0016	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U
Arsenic	T	0.0023	0.0016	0.0011	0.0014	0.0014	0.0018	0.0022	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Barium	D	0.334	0.255	0.354 B	0.411	0.303	0.336	0.465	0.256	0.28 F1	0.252	0.265	0.255	0.256
Barium	T	0.374	0.382	0.381	0.371	0.312	0.303	0.522	0.36	0.349	0.309	0.351	0.31	0.337
Beryllium	D	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 F1	0.002 U	0.002 U	0.002 U	0.002 U
Beryllium	T	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
Boron	D	0.148	0.193	0.199	0.267	0.208	0.192	0.243		0.2 U F1	0.505	0.225	0.217	0.204
Boron	T	0.168	0.208	0.217	0.246	0.237	0.181	0.274		0.2 U	0.526	0.228	0.204	0.215
Cadmium	D	0.001 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 F1	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	0.001 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	222	199	204	199	180 S	196	162	203	216 F1	185	171	195	201
Calcium	T	238	210	209	200	183 BS	161	177	209	213	192	219	199	212
Chromium	D	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U
Chromium	T	0.0041	0.0021	0.0015 U	0.0034	0.0015 U	0.0057	0.0024	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt	D	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 F1	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt	T	0.001 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0013	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Iron	D								0.1 U					
Iron	T	17.3							18.9					
Lead	D	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 F1	0.002 U	0.002 U	0.002 U	0.002 U
Lead	T	0.0074	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
Lithium	D	0.0126	0.0148	0.0158	0.0191	0.0136	0.0184	0.0212	0.0176	0.0167 F1	0.0151	0.0173	0.0138	0.0139
Lithium	T	0.0143	0.0161	0.0166	0.0181	0.0153	0.0141	0.0231	0.019	0.0174	0.0152	0.0169	0.0141	0.0154
Manganese	D								1.16					
Manganese	T	1.11							1.19					
Mercury	D		0.0002 U						0.0002 U	0.0002 U F1	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Mercury	T	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	0.0026	0.0026	0.0021	0.0027	0.0027	0.0029	0.004	0.005 U	0.005 U F1	0.005 U	0.005 U	0.005 U	0.005 U
Molybdenum	T	0.0035	0.003	0.0029	0.0031	0.0028	0.0029	0.0042	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Nickel	D	0.0008 J		0.001 U					0.002 U					
Nickel	T	0.0042		0.001 U					0.002 U					
Selenium	D	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 F1	0.002 U	0.002 U	0.002 U	0.002 U
Selenium	T	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
Thallium	D	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 F1	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	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	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
J6 = The sample matrix interfered with the ability to make any accurate determination; spike value is low
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit
T8 = Sample received past/too close to holding time expiration

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
3 Eight episodes of groundwater sampling were conducted from September 2017 through February 2018 to establish background concentrations for the Site utilizing data from background wells APW-1R and APW-9. The final Groundwater Protection Standards (GPS) are the higher of the values provided in 35 IAC 845.600(a) and the final background concentrations as found in Table 6 of the 07/25/2019 GMZ Application with the exception of turbidity and pH. Radium 226+228 was the only value taken from Table 6.
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	APW-08-WG-20231128	APW-08-WG-20240111	APW-08-WG-20240430	APW-08-WG-20240904	APW-08-WG-20241016	APW-08-WG-20250115	APW-08-WG-20250625	APW-08-WG-20250905
			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	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	11/28/2023	01/11/2024	04/30/2024	09/04/2024	10/16/2024	01/15/2025	06/25/2025	09/05/2025
			Sample Type	N	N	N	N	N	N	N	N	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	0.29	0.232	0.336	0.254	0.15 U	0.238 P1	0.25	0.253
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	0.1 + 0.05 U	1.71 + 0.459	0.341 + 0.271	0.296 + 0.206	0.171 + 0.182 J	0.382 + 0.233	0.258 + 0.193	0.273 + 0.291 J
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	0.576 + 0.374	0.86 + 0.62 J	1.68 + 0.77	0.157 + 0.382 U	0.11 + 0.6 U	0.81 + 0.49 UD58	0.15 + 0.54 U	0.687 + 0.315	0.254 + 0.268 U	0.959 + 0.246	0.674 + 0.414	1.1 + 0.445	0.546 + 0.543 J	0.95 + 0.568
Sulfate	N	mg/L	400	43	40	38	40	39	38	39	37	39	39	34	29	31	23	24	24.7	28.6	33.4 J6	29.4	28.5	28.6	27.7
CALC																									
Radium 226/228	N	pCi/L	7.002	1.35 + 0.75 U	1 + 0.66 U	1.5 + 1.61	0.48 + 0.35 U	1.12 + 0.71 U	1.45 + 0.66 U	0.85 + 0.6 U	0.88 + 0.58 U	0.735 + 0.535	1.13 + 0.73 U	2.08 + 0.9	0.247 + 0.373 J	0.45 + 0.73 U	1.04 + 0.68 U	0.25 + 0.59 U	2.39 + 0.507	0.941 + 0.381 J	1.26 + 0.512	1.04 + 0.452	1.48 + 0.559	0.804 + 0.576 J	1.22 + 0.638
FIELD PARAM																									
Turbidity, Field	N	NTU	17.66									119	139	305	26.5	152	141	169	23.1	136	97.4	47.5	8.97	6.7	12
GEN CHEM																									
Chloride	N	mg/L	200	9	10	10	10	10	11	12	11	9	11	12	13	10	10	11	10.6	10.2	8.97	8.61	8.85	8.66	8.39
Dissolved Solids, Total	N	mg/L	1200	438	458	436	446	466	410	398	447	382	372 H	370	378	420	440	395	370	321	393	403	418	422	426
pH, Lab	N	pH units	9	7.84	7.87	7	7.19	7.25	7.11	7.04	7.04	7.34	7.47	7.35	7.31	7.18 H	7.16 H	7.27 H	7.48 T9	7.43 T9	7.3 T9	7.53 T9	7.53 T9	7.43 T9	7.56 T9
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	0.004 U	0.004 U F1	0.004 U	0.004 U	0.004 U	0.004 U	0.004 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	0.001 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Arsenic	D	mg/L	0.01									0.0011	0.001 U	0.0012	0.001	0.001	0.0014	0.0019	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
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	0.0025	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Barium	D	mg/L	2									0.164	0.163	0.146 B	0.15	0.161	0.236	0.255	0.17	0.173 F1	0.164	0.188	0.181	0.181	0.185
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	0.261	0.17	0.173	0.197	0.192	0.199	0.206	0.2
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	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 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	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Boron	D	mg/L	2									0.0777	0.0993	0.0844	0.0895	0.124	0.117	0.154		0.2 U F1	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
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	0.155		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
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 F1	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	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									108	79.7	75.4	72.1	92.6	94.1 S	71.3	83.1	88.4 F1	94.9	99.9	102	104	100
Calcium	T	mg/L	103.2	97.4	106	97.6	101	102	98.6	95	97.8	93.5	85.1	82.8	79.4	99.4 B	86.4	81.2	92.8	87.8	98.3	100	104	104	102
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	0.002 U	0.002 U E1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 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	0.0049	0.002 U	0.002 U	0.002 U	0.00738	0.002 U	0.00204	0.002 U
Cobalt	D	mg/L	0.006									0.0013	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U E1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 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	0.0021	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Iron	D	mg/L	NS																0.1 U						
Iron	T	mg/L	NS									3.14							0.44						
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	0.002 U	0.002 U E1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 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	0.0018	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Lithium	D	mg/L	0.04									0.0141	0.0142	0.0132	0.0131	0.0125	0.022	0.0204	0.0134	0.0132 E1	0.0168	0.0196	0.017	0.018	0.017
Lithium	T	mg/L	0.04	0.0196	0.0206	0.0207	0.0216	0.0224	0.0216	0.0197	0.0196	0.016	0.016	0.0147	0.0155	0.0157	0.0177	0.0211	0.0147	0.0147	0.0173	0.0187	0.0181	0.018	0.018
Manganese	D	mg/L	NS																0.0443						
Manganese	T	mg/L	NS									0.202							0.0435						
Mercury	D	mg/L	0.002										0.0002 U						0.0002 U	0.0002 U E1	0.0002 U	0.0002 U	0.0002 U	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	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	0.0015 U	0.005 U	0.005 U F1	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Molybdenum	T	mg/L	0.1	0.0051	0.0051 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	0.0015 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Nickel	D	mg/L	NS									0.0023		0.0012					0.00227						
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					0.00354						
Selenium	D	mg/L	0.05									0.0077	0.0068	0.0176	0.0178	0.0133	0.0231	0.0231	0.0173	0.0185 E1	0.00435	0.0183	0.0201	0.0168	0.0168
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	0.0221	0.0169	0.0182	0.00529	0.0187	0.0196	0.0183	0.0166
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 F1	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	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Samole
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
1 = Analyte detected below quantitation limits
J3 = The associated batch QC was outside the established quality control range for precision
J6 = The sample matrix interfered with the ability to make any accurate determination; spike value is low
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit
T8 = Sample received past/too close to holding time expiration

1 Standard is from the Upper Tolerance Limit (UTL) calculated from backround 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 backround well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
3 Eight episodes of groundwater sampling were conducted from September 2017 through February 2018 to establish backround concentrations for the Site utilizing data from backround wells APW-1R and APW-9. The final Groundwater Protection Standards (GPS) are the higher of the values provided in 35 IAC 845.600(a) and the final backround concentrations as found in Table 6 of the 07/25/2019 GMZ Application with the exception of turbidity and pH. Radium 226+228 was the only value taken from Table 6.
Highlighted values exceed action level
NS = No standard

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

Parameter/Analyte	Total or Dissolved	Units	35 IAC 845.600	APW-9-20170907 APW-09 09/05/2017 N	APW-9-20170927 APW-09 09/27/2017 N	APW-9-2017101 APW-09 10/18/2017 N	APW-9-2017110 APW-09 11/08/2017 N	APW-9-20171127 APW-09 11/27/2017 N	APW-9-2017122 APW-09 12/28/2017 N	APW-9-20180117 APW-09 01/17/2018 N	APW-9-2018020 APW-09 02/08/2018 N	APW-09-WG-20220615 APW-09 06/15/2022 N
Sample ID / Location ID / Sample Date / Sample Type				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling
UNSPECIFIED												
Fluoride	N	mg/L	4	0.19	0.22	0.21	0.2	0.2	0.2	0.22	0.19	0.23
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
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
Sulfate	N	mg/L	400	65	47	53	65	50	42	28	25	104
CALC												
Radium-226/228	N	pCi/L	7.002	1.08 ± 0.81 U	0.7 ± 0.63 U	0.275 ± 0.705	0.63 ± 0.38 U	1.07 ± 0.58 U	1.2 ± 0.59 U	0.51 ± 0.54 U	0.36 ± 0.5 U	0.267 ± 0.315 J
FIELD PARAM												
Turbidity, Field	N	NTU	17.96									34.2
GEN CHEM												
Chloride	N	mg/L	200	13	13	13	13	13	13	13	768	13
Dissolved Solids, Total	N	mg/L	1200	364 R	372	324	366	392	278	348	3380	424
pH, Lab	N	pH units	9	7.31	7.35	7.39	7.39	7.52	7.42	7.57	7.33	7.48
METALS												
Antimony	D	mg/L	0.006									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
Arsenic	D	mg/L	0.01									0.0019
Arsenic	T	mg/L	0.01	0.0031	0.0024	0.0018	0.0022	0.002	0.002	0.0022	0.0022	0.0026
Barium	D	mg/L	2									0.129
Barium	T	mg/L	2	0.227	0.171	0.118	0.133	0.121	0.129	0.133	0.125	0.186
Beryllium	D	mg/L	0.004									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
Boron	D	mg/L	2									1.32
Boron	T	mg/L	2	0.877	0.569	0.668	0.792	0.506	0.369	0.317	0.255	1.61
Cadmium	D	mg/L	0.005									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
Calcium	D	mg/L	103.2									107 S
Calcium	T	mg/L	103.2	85.9	85.3	76.5	81.9	85.6	81.5 S	80.3	92	110
Chromium	D	mg/L	0.1									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
Cobalt	D	mg/L	0.006									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
Iron	D	mg/L	NS									
Iron	T	mg/L	NS									0.496
Lead	D	mg/L	0.0075									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
Lithium	D	mg/L	0.04									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
Manganese	D	mg/L	NS									
Manganese	T	mg/L	NS									0.599
Mercury	D	mg/L	0.002									
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
Molybdenum	D	mg/L	0.1									0.0351
Molybdenum	T	mg/L	0.1	0.0223	0.0252	0.0327	0.0303	0.0247	0.0246	0.0223	0.0224	0.0455
Nickel	D	mg/L	NS									0.0017
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
Selenium	D	mg/L	0.05									0.021
Selenium	T	mg/L	0.05	0.0126	0.0139	0.017	0.0186	0.0138	0.0143	0.0147	0.0134	0.0219
Thallium	D	mg/L	0.002									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

Parameter/Analyte	Total or Dissolved	APW-09-WG-20220913 APW-09 09/13/2022 N	APW-09-WG-2022113 APW-09 11/30/2022 N	APW-09-WG-20230201 APW-09 02/01/2023 N	APW-09-WG-20230627 APW-09 06/27/2023 N	APW-09-WG-2023092 APW-09 09/20/2023 N	DUP-02-WG-2023092 APW-09 09/20/2023 FD	APW-09-WG-2023112 APW-09 11/29/2023 N	DUP-02-WG-2023112 APW-09 11/29/2023 FD	APW-09-WG-20240111 APW-09 01/11/2024 N	DUP-02-WG-20240111 APW-09 01/11/2024 FD
UNSPECIFIED											
Fluoride	N	0.19	0.2	0.19	0.19	0.2	0.19	0.2	0.21	0.197	0.186
Radium-226	N	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	0 ± 0.02 U	0.03 ± 0.03 U	0.203 ± 0.210 J	0.459 ± 0.287
Radium-228	N	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	0.8 ± 0.65 J	0.2 ± 0.66 U	1.09 ± 0.251	0.723 ± 0.211
Sulfate	N	39	36	38	47	32	31	34	35	35.3	35.4
CALC											
Radium-226/228	N	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	0.8 ± 0.67 U	0.23 ± 0.69 U	1.29 ± 0.327	1.18 ± 0.356
FIELD PARAM											
Turbidity, Field	N	7.3	7.28	23.6	24.7	5.64		3.82		13.4	
GEN CHEM											
Chloride	N	12	12	13	12	11	11	12	12	12.1	12.1
Dissolved Solids, Total	N	380 H	372	360	386	372	386	380	376	354	361
pH, Lab	N	7.59	7.32	7.72	7.32 H	7.56 H	7.65 H	7.5 H	7.45 H	8.03 T8	8.1 T8
METALS											
Antimony	D	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011	0.001 U	0.004 U	0.004 U
Antimony	T	0.001 U	0.001 U	0.001 U	0.001	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.004 U
Arsenic	D	0.0021	0.0019	0.0019	0.0021	0.0022	0.0021	0.002	0.002	0.00216	0.00206
Arsenic	T	0.0025	0.0021	0.0024	0.0021	0.002	0.0023	0.0026	0.0028	0.00235	0.00214
Barium	D	0.111	0.109 B	0.107	0.116	0.114	0.117	0.109	0.108	0.118	0.12
Barium	T	0.134	0.124	0.122	0.123	0.12	0.125	0.131	0.143	0.138	0.136
Beryllium	D	0.001 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
Beryllium	T	0.001 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
Boron	D	0.327	0.24	0.239	0.572	0.234	0.236	0.169	0.166		
Boron	T	0.329	0.243	0.225	0.473	0.209	0.239	0.191	0.221		
Cadmium	D	0.001 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	0.001 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	76.5	78.3	76.3	82.8 S	81	81.1	73.5	73.6	80.2	78.4
Calcium	T	89.5	80.5	80.3	86.9 B	69.5	87.5	80.9	111	80.4	80.9
Chromium	D	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.002 U	0.002 U
Chromium	T	0.0015 U	0.0015	0.0015 U	0.0015 U	0.0018	0.0015 U	0.0015 U	0.0015 U	0.002 U	0.002 U
Cobalt	D	0.001 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
Cobalt	T	0.001 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
Iron	D									0.1 U	0.1 U
Iron	T									0.179	0.21
Lead	D	0.001 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
Lead	T	0.0039	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
Lithium	D	0.0137	0.0131	0.0125	0.0163	0.0196	0.0184	0.0121	0.012	0.0129	0.0142
Lithium	T	0.0143	0.0131	0.0137	0.0157	0.0134	0.015	0.0138	0.0163	0.0139	0.0143
Manganese	D									0.005 U	0.005 U
Manganese	T									0.124	0.119
Mercury	D	0.0002 U								0.0002 U	0.0002 U
Mercury	T	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	0.0182	0.0139	0.0165	0.0211	0.0167	0.0173	0.0154	0.0146	0.0186	0.0188
Molybdenum	T	0.0194	0.015	0.0173	0.0189	0.0162	0.0173	0.0188	0.0171	0.0163	0.0157
Nickel	D		0.001 U							0.002 U	0.002 U
Nickel	T		0.0019							0.002 U	0.002 U
Selenium	D	0.0142	0.0147	0.0179	0.0186	0.0155	0.0162	0.0163	0.0159	0.022	0.0216
Selenium	T	0.0151	0.0138	0.0196	0.0198	0.0153	0.0182	0.0214	0.0194	0.0225	0.0222
Thallium	D	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	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

Parameter/Analyte	Total or Dissolved	APW-09-WG-2024043 APW-09 04/30/2024 N	DUP-02-WG-2024043 APW-09 04/30/2024 FD	APW-09-WG-20240906 APW-09 09/06/2024 N	DUP-02-WG-20240906 APW-09 09/06/2024 FD	APW-09-WG-20241017 APW-09 10/17/2024 N	DUP-02-WG-20241017 APW-09 10/17/2024 FD	APW-09-WG-20250115 APW-09 01/15/2025 N	DUP-02-WG-20250115 APW-09 01/15/2025 FD	APW-09-WG-20250625 APW-09 06/25/2025 N	DUP-02-WG-20250625 APW-09 06/25/2025 FD	APW-09-WG-20250905 APW-09 09/05/2025 N	DUP-02-WG-20250905, APW-09 09/05/2025 FD
UNSPECIFIED													
Fluoride	N	0.339	0.23	0.215	0.198	0.15 U	0.203	0.15	0.162	0.204	0.208	0.211	0.201
Radium-226	N	0.252 ± 0.234 J	0.0618 ± 0.185 U	0.0956 ± 0.120 J	0.671 ± 0.288	0.0259 ± 0.0696 U	0.222 ± 0.187	0.246 ± 0.256 J	0.0607 ± 0.0981 J	0.132 ± 0.195 J	0.22 ± 0.272 J	-0.0072 ± 0.105 U	-0.0852 ± 0.181 U
Radium-228	N	0.614 ± 0.214	0.51 ± 0.220	0.997 ± 0.496	0.552 ± 0.263	-0.422 ± 0.295 U	0.314 ± 0.253 J	1.21 ± 0.764	0.63 ± 0.376 J	0.0472 ± 0.567 U	0.299 ± 0.463 U	0.0164 ± 0.480 U	0.551 ± 0.694 J
Sulfate	N	53.6	53.5 J6	56.1	55.7	40.8	41.5	46.8	41.7	48.6	49.4	44	43.3
CALC													
Radium-226/228	N	0.866 ± 0.317	0.572 ± 0.287	1.09 ± 0.510	1.22 ± 0.390	0.0259 ± 0.303 U	0.536 ± 0.315	1.46 ± 0.806	0.691 ± 0.389	0.179 ± 0.600 U	0.519 ± 0.537 J	0.0164 ± 0.491 U	0.551 ± 0.717 J
FIELD PARAM													
Turbidity, Field	N	5.69		13.8		13.9		19.4		31.8		4.92	
GEN CHEM													
Chloride	N	14.3	14	11	11	10.7	11.1	12.8	14.8	12.1	12.2	9.87	9.54
Dissolved Solids, Total	N	367	365	389	387	370	371	370	362	378	393	374	375
pH, Lab	N	7.7 T8	7.81 T8	7.45 T8	7.6 T8	7.51 T8	7.56 T8	7.81 T8	8.15 T8	7.91 T8	7.9 T8	7.73 T8	7.67 T8
METALS													
Antimony	D	0.004 U F1	0.004 U F1	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Antimony	T	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Arsenic	D	0.00222 F1	0.00223 F1	0.00211	0.00215	0.0021	0.00213	0.00202	0.002 U	0.00233	0.00221	0.00213	0.00209
Arsenic	T	0.00227	0.00216	0.0023	0.00204	0.00219	0.0021	0.00226	0.00211	0.00266	0.0024	0.00225	0.00203
Barium	D	0.114 F1	0.117 F1	0.112	0.109	0.111	0.114	0.113	0.106	0.101	0.101	0.106	0.106
Barium	T	0.113	0.109	0.117	0.119	0.116	0.121	0.125	0.124	0.132	0.117	0.108	0.107
Beryllium	D	0.002 U F1	0.002 U F1	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
Beryllium	T	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
Boron	D	0.481 F1	0.466 F1	0.833	0.834	0.466	0.469	0.311	0.318	0.642	0.624	0.504	0.505
Boron	T	0.501	0.493	0.829	0.833	0.471	0.466	0.301	0.31	0.614	0.608	0.523	0.53
Cadmium	D	0.001 U F1	0.001 U F1	0.001 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	0.001 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	88.5 F1	88.3 F1	94.7	95.2	89.4	89.7	88.2	86.1	91	89.4	86.6	86.3
Calcium	T	88.3	87.9	90.4	91.7	88.4	87.5	90	90.2	91.9	92	89	88.5
Chromium	D	0.002 U F1	0.002 U F1	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
Chromium	T	0.002 U	0.002 U	0.002 U	0.002 U	0.00338	0.0035	0.002 U	0.002 U	0.002 U	0.002 U	0.00268	0.002 U
Cobalt	D	0.002 U F1	0.002 U F1	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
Cobalt	T	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
Iron	D												
Iron	T												
Lead	D	0.002 U F1	0.002 U F1	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
Lead	T	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
Lithium	D	0.0159 F1	0.017 F1	0.0159	0.0159	0.0162	0.0151	0.0144	0.0128	0.0164	0.0163	0.0147	0.0141
Lithium	T	0.0163	0.0191	0.0163	0.0163	0.016	0.0149	0.0155	0.0146	0.0157	0.016	0.0166	0.0159
Manganese	D												
Manganese	T												
Mercury	D	0.0002 U F1	0.0002 U F1	0.000236	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
Mercury	T	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	0.0311 F1	0.0309 F1	0.0255	0.0256	0.0194	0.019	0.0213	0.0205	0.0298	0.0301	0.0252	0.025
Molybdenum	T	0.031	0.0295	0.0259	0.0251	0.0196	0.0191	0.0214	0.0213	0.0336	0.0314	0.0252	0.0238
Nickel	D												
Nickel	T												
Selenium	D	0.0319 F1	0.0354 F1	0.0186	0.0182	0.0191	0.0175	0.0208	0.0203	0.0227	0.0223	0.017	0.0173
Selenium	T	0.0334	0.0328	0.0178	0.0186	0.0182	0.019	0.0204	0.0216	0.0226	0.0225	0.0164	0.016
Thallium	D	0.002 U F1	0.002 U F1	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	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
H = Holding times exceeded
J = Analyte detected below quantitation limits
J3 = The associated batch QC was outside the established quality control range for precision
J6 = The sample matrix interfered with the ability to make any accurate determination; spike value is low
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit
T8 = Sample received past/too close to holding time expiration

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
3 Eight episodes of groundwater sampling were conducted from September 2017 through February 2018 to establish background concentrations for the Site utilizing data from background wells APW-1R and APW-9. The final Groundwater Protection Standards (GPS) are the higher of the values provided in 35 IAC 845.600(a) and the final background concentrations as found in Table 6 of the 07/25/2019 GMZ Application with the exception of turbidity and pH. Radium 226+228 was the only value taken from Table 6.
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

Parameter/Analyte	Total or Dissolved	Units	Sample ID / Location ID / Sample Date / Sample Type — 35 IAC 845.600	APW-10D-20170907 APW-10D 09/07/2017 N	APW-10D-20170927 APW-10D 09/27/2017 N	APW-10D-20171019 APW-10D 10/19/2017 N	APW-10D-20171109 APW-10D 11/09/2017 N	APW-10D-20171128 APW-10D 11/28/2017 N	APW-10D-20171228 APW-10D 12/28/2017 N	APW-10D-20180118 APW-10D 01/18/2018 N	APW-10D-20180209 APW-10D 02/09/2018 N
UNSPECIFIED											
Fluoride	N	mg/L	4	0.1	0.12	0.1	0.1 U	0.11	0.1	0.11	0.1 U
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
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
Sulfate	N	mg/L	400	38	44	43	42	42	44	44	44
CALC											
Radium-226/228	N	pCi/L	7.002	1.5 ± 0.64 U	1.72 ± 0.74 U	0.754 ± 0.703	1.17 ± 0.45 U	0.63 ± 0.68 U	0.57 ± 0.47 U	1.06 ± 0.7 U	0.59 ± 0.5 U
FIELD PARAM											
Turbidity, Field	N	NTU	17.96								
GEN CHEM											
Chloride	N	mg/L	200	24	17	17	15	17	16	14	16
Dissolved Solids, Total	N	mg/L	1200	466	474	442	468	482	448	448	512
pH, Lab	N	pH units	9	7.12	7.11	7.05	7.11	7.12	7.15	7.03	7.03
METALS											
Antimony	D	mg/L	0.006								
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
Arsenic	D	mg/L	0.01								
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
Barium	D	mg/L	2								
Barium	T	mg/L	2	0.437	0.304	0.363	0.325	0.284	0.295	0.391	0.357
Beryllium	D	mg/L	0.004								
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
Boron	D	mg/L	2								
Boron	T	mg/L	2	0.0999	0.101	0.0843	0.0713	0.0885	0.0922	0.0923	0.0906
Cadmium	D	mg/L	0.005								
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
Calcium	D	mg/L	103.2								
Calcium	T	mg/L	103.2	118	136	120	121	125	123	148 S	124 S
Chromium	D	mg/L	0.1								
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
Cobalt	D	mg/L	0.006								
Cobalt	T	mg/L	0.006	0.0039	0.0024	0.0025	0.0032	0.0017	0.0013	0.0026	0.0026
Iron	D	mg/L	NS								
Iron	T	mg/L	NS								
Lead	D	mg/L	0.0075								
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
Lithium	D	mg/L	0.04								
Lithium	T	mg/L	0.04	0.0147	0.0155	0.0146	0.0146	0.0153	0.0155	0.0142	0.014
Manganese	D	mg/L	NS								
Manganese	T	mg/L	NS								
Mercury	D	mg/L	0.002								
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
Molybdenum	D	mg/L	0.1								
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
Nickel	D	mg/L	NS								
Nickel	T	mg/L	NS	0.0095	0.0077	0.0065	0.0057	0.0035	0.0025	0.0072	0.0053
Selenium	D	mg/L	0.05								
Selenium	T	mg/L	0.05	0.001 U	0.0011	0.0012	0.0013	0.001 U	0.0014	0.0016	0.0016
Thallium	D	mg/L	0.002								
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

Post-Closure Sampling

Parameter/Analyte	Total or Dissolved	Units	APW-10D-WG-20220615 APW-10D 06/15/2022 N	APW-10D-WG-20220916 APW-10D 09/16/2022 N	APW-10D-WG-20221129 APW-10D 11/29/2022 N	APW-10D-WG-20230202 APW-10D 02/02/2023 N	APW-10D-WG-20230626 APW-10D 06/26/2023 N	APW-10D-WG-20230919 APW-10D 09/19/2023 N	APW-10D-WG-20231127 APW-10D 11/27/2023 N	APW-10D-WG-20240111 APW-10D 01/11/2024 N	APW-10D-WG-20240430 APW-10D 04/30/2024 N	APW-10D-WG-20240905 APW-10D 09/05/2024 N	APW-10D-WG-20241015 APW-10D 10/15/2024 N	APW-10D-WG-20250116 APW-10D 01/16/2025 N	APW-10D-WG-20250625 APW-10D 06/25/2025 N	APW-10D-WG-20250903 APW-10D 09/03/2025 N
UNSPECIFIED																
Fluoride	N	mg/L	0.12	0.1	0.12	0.12	0.11	0.11	0.14	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 P1
Radium-226	N	pCi/L	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	0.14 ± 0.06 U	0.04 ± 0.170 U	0.134 ± 0.199 J	0.163 ± 0.151	0.108 ± 0.274 U	0.114 ± 0.141 J	0.155 ± 0.161 J	0.185 ± 0.256 J
Radium-228	N	pCi/L	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	1.36 ± 0.77	1.49 ± 0.351	0.886 ± 0.294	-0.266 ± 0.253 U	0.282 ± 0.302 J	2.1 ± 0.605	0.987 ± 0.557	0.697 ± 0.553 J
Sulfate	N	mg/L	41	43	42	39	44	31	26	35.5	35.3	37.1	32.9	44.5	33	29.1
CALC																
Radium-226/228	N	pCi/L	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	1.5 ± 0.83 U	1.53 ± 0.390	1.02 ± 0.355	0.163 ± 0.295 U	0.39 ± 0.408 J	2.21 ± 0.621	1.14 ± 0.580	0.881 ± 0.609 J
FIELD PARAM																
Turbidity, Field	N	NTU	46.9	21.9	36.4	45.3	176	169	196	4.76	198	5.56	45.3	169	59.9	16.6
GEN CHEM																
Chloride	N	mg/L	16	18	14	13	14	10	10	15.4	10.9	25.5	15	13.3	16.2	20.8
Dissolved Solids, Total	N	mg/L	452	460 H	460	454	485	468	445	436	459	351	447	447	463	452
pH, Lab	N	pH units	7.21	7.29	7.04	7.57	6.98 H	7.22 H	7.08 H	7.66 T8	7.38 T8	7.28 T8	7.31 T8	7.37 T8	7.65 T8	7.57 T8
METALS																
Antimony	D	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0013	0.004 U	0.004 U F1	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Antimony	T	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Arsenic	D	mg/L	0.0008 J	0.001 U	0.0012	0.0011	0.0011	0.0011	0.0018	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.00355
Arsenic	T	mg/L	0.0017	0.0057	0.0014	0.0017	0.0019	0.0016	0.0021	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.00492
Barium	D	mg/L	0.342	0.321	0.3 B	0.304	0.348	0.355	0.448	0.336	0.369 F1	0.217	0.334	0.34	0.32	0.287
Barium	T	mg/L	0.407	0.418	0.276	0.343	0.485	0.339	0.398	0.341	0.351	0.22	0.342	0.354	0.344	0.315
Beryllium	D	mg/L	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 F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Beryllium	T	mg/L	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
Boron	D	mg/L	0.0786	0.0711	0.0841	0.0579	0.0704	0.0639	0.0823		0.2 U F1	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Boron	T	mg/L	0.118	0.0731	0.0522	0.073	0.0674	0.066	0.0754		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Cadmium	D	mg/L	0.001 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 F1	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	mg/L	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
Calcium	D	mg/L	143	124	113	114	114	116	83.4	119	121 F1	101	113	126	129	118
Calcium	T	mg/L	135	374	115	122	611 B	118	120	125	141	98.5	129	142	135	123
Chromium	D	mg/L	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Chromium	T	mg/L	0.0015 U	0.0148	0.0024	0.0015 U	0.0015	0.0042	0.0021	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt	D	mg/L	0.0025	0.0021	0.0032	0.003	0.0026	0.0026	0.0038	0.00228	0.00238 F1	0.002 U	0.002 U	0.00244	0.00253	0.00263
Cobalt	T	mg/L	0.0034	0.0049	0.003	0.0033	0.007	0.0031	0.0039	0.00261	0.00271	0.002 U	0.00242	0.00271	0.00295	0.0028
Iron	D	mg/L								0.1 U						
Iron	T	mg/L	0.758							0.175						
Lead	D	mg/L	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 F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Lead	T	mg/L	0.001	0.002	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
Lithium	D	mg/L	0.0135	0.0135	0.0133	0.012	0.0148	0.02	0.0176	0.0135	0.014 F1	0.0116	0.0156	0.0142	0.0149	0.0126
Lithium	T	mg/L	0.018	0.0156	0.0126	0.0146	0.0158	0.0148	0.0154	0.0152	0.0142	0.0113	0.0147	0.0152	0.0144	0.0142
Manganese	D	mg/L								0.857						
Manganese	T	mg/L	1.16							0.88						
Mercury	D	mg/L		0.0002 U						0.0002 U	0.0002 U F1	0.000229	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Mercury	T	mg/L	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	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0025	0.005 U	0.005 U F1	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Molybdenum	T	mg/L	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Nickel	D	mg/L	0.0054		0.0054					0.00474						
Nickel	T	mg/L	0.007		0.0063					0.00513						
Selenium	D	mg/L	0.001 U	0.0016	0.0015	0.0024	0.0013	0.0016	0.0043	0.00274	0.00238 F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Selenium	T	mg/L	0.001 U	0.0021	0.0013	0.0027	0.0016	0.0013	0.0033	0.00269	0.00264	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	D	mg/L	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 F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	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	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
J6 = The sample matrix interfered with the ability to make any accurate determination; spike value is low
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit
T8 = Sample received past/too close to holding time expiration

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
3 Eight episodes of groundwater sampling were conducted from September 2017 through February 2018 to establish background concentrations for the Site utilizing data from background wells APW-1R and APW-9. The final Groundwater Protection Standards (GPS) are the higher of the values provided in 35 IAC 845.600(a) and the final background concentrations as found in Table 6 of the 07/25/2019 GMZ Application with the exception of turbidity and pH. Radium 226+228 was the only value taken from Table 6.
Highlighted values exceed action level
NS = No standard
NS = No standard

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

				Sampled prior to closure of CCR Impoundment							
			Sample ID Location ID Sample Date Sample Type	APW-10S-20170907 APW-10S 09/07/2017 N	APW-10S-20170927 APW-10S 09/27/2017 N	APW-10S-20171019 APW-10S 10/19/2017 N	APW-10S-20171109 APW-10S 11/09/2017 N	APW-10S-20171128 APW-10S 11/28/2017 N	APW-10S-20171228 APW-10S 12/28/2017 N	APW-10S-20180118 APW-10S 01/18/2018 N	APW-10S-20180209 APW-10S 02/09/2018 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
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
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
Sulfate	N	mg/L	400	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
CALC											
Radium-226/228	N	pCi/L	7.002	0.78 ± 0.61	1.17 ± 0.81 U	1.63 ± 0.821	0.87 ± 0.44 U	0.84 ± 0.73 U	0.79 ± 0.54 U	3 ± 0.9	1.17 ± 0.65 U
FIELD PARAM											
Turbidity, Field	N	NTU	17.96								
GEN CHEM											
Chloride	N	mg/L	200	10	7	6	6	6	6	6	6
Dissolved Solids, Total	N	mg/L	1200	708	720	678	708	734	770	680 R	762
pH, Lab	N	pH unit	9	6.99	6.96	6.95	6.98	6.97	6.98	7.06	6.91
METALS											
Antimony	D	mg/L	0.006								
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
Arsenic	D	mg/L	0.01								
Arsenic	T	mg/L	0.01	0.186	0.189	0.18	0.209	0.183	0.193	0.23	0.198
Barium	D	mg/L	2								
Barium	T	mg/L	2	0.613	0.634	0.543	0.668	0.565	0.598	0.703	0.585
Beryllium	D	mg/L	0.004								
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
Boron	D	mg/L	2								
Boron	T	mg/L	2	0.525	0.544	0.536	0.595	0.545	0.573	0.645	0.582
Cadmium	D	mg/L	0.005								
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
Calcium	D	mg/L	103.2								
Calcium	T	mg/L	103.2	136	144	135	152	150	145	140	140
Chromium	D	mg/L	0.1								
Chromium	T	mg/L	0.1	0.0091	0.0019	0.001	0.0016	0.001 U	0.0016	0.0019	0.001 U
Cobalt	D	mg/L	0.006								
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
Iron	D	mg/L	NS								
Iron	T	mg/L	NS								
Lead	D	mg/L	0.0075								
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
Lithium	D	mg/L	0.04								
Lithium	T	mg/L	0.04	0.0263	0.0278	0.0272	0.0289	0.0293	0.0308	0.0316	0.0297
Manganese	D	mg/L	NS								
Manganese	T	mg/L	NS								
Mercury	D	mg/L	0.002								
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
Molybdenum	D	mg/L	0.1								
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
Nickel	D	mg/L	NS								
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
Selenium	D	mg/L	0.05								
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
Thallium	D	mg/L	0.002								
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

				Post-Closure Sampling						
			Sample ID Location ID Sample Date Sample Type	APW-10S-WG-20220615 APW-10S 06/15/2022 N	APW-10S-WG-20220915 APW-10S 09/15/2022 N	APW-10S-WG-20221129 APW-10S 11/29/2022 N	APW-10S-WG-20230202 APW-10S 02/02/2023 N	APW-10S-WG-20230626 APW-10S 06/26/2023 N	APW-10S-WG-20230919 APW-10S 09/19/2023 N	APW-10S-WG-20231127 APW-10S 11/27/2023 N
Parameter/Analyte	Total or Dissolved	Units	35 IAC 845.600							
UNSPECIFIED										
Fluoride	N	mg/L	4	0.17	0.15	0.17	0.15	0.15	0.16	0.18
Radium-226	N	pCi/L	NS	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	0.32 ± 0.09 U
Radium-228	N	pCi/L	NS	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	0.95 ± 0.66 J
Sulfate	N	mg/L	400	10 U	21 S	10 U	10 U	10 U	10 SU	10 U
CALC										
Radium-226/228	N	pCi/L	7.002	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	1.27 ± 0.75 U
FIELD PARAM										
Turbidity, Field	N	NTU	17.96	61.5	34.3	52.6	37.3	57.2	63.6	13.1
GEN CHEM										
Chloride	N	mg/L	200	12	15	18	21	14	15	20
Dissolved Solids, Total	N	mg/L	1200	735	770 H	750	780	725	775	900
pH, Lab	N	pH unit	9	7.09	7.2	6.95	7.2	7.01 H	7.17 H	7.01 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	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
Arsenic	D	mg/L	0.01	0.152	0.0612	0.0138	0.171	0.166	0.176	0.251
Arsenic	T	mg/L	0.01	0.185	0.187	0.182	0.191	0.194	0.174	0.276
Barium	D	mg/L	2	0.423	0.292	0.162 B	0.506	0.506	0.567	0.711
Barium	T	mg/L	2	0.575	0.612	0.536	0.575	0.589	0.591	0.804
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
Boron	D	mg/L	2	0.57	0.541	7.48	0.497	0.578	0.571	0.682
Boron	T	mg/L	2	0.683	0.565	0.569	0.592	0.582	0.553	0.555
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
Calcium	D	mg/L	103.2	169	156	142	145	142	151	137
Calcium	T	mg/L	103.2	161	171 S	154	145	153 B	134	129 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
Chromium	T	mg/L	0.1	0.0015 J	0.015	0.0032	0.0023	0.0025	0.0087	0.0016
Cobalt	D	mg/L	0.006	0.0001 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.0006 J	0.0021	0.0013	0.001 U	0.001 U	0.0021	0.0013
Iron	D	mg/L	NS							
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	0.001 U
Lead	T	mg/L	0.0075	0.0007 J	0.0043	0.0014	0.001 U	0.0016	0.0031	0.001 U
Lithium	D	mg/L	0.04	0.0266	0.0286	0.0387 R	0.0268	0.0278	0.0349	0.0359
Lithium	T	mg/L	0.04	0.0353	0.033	0.0307	0.0323	0.0291	0.0301	0.0401
Manganese	D	mg/L	NS							
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
Molybdenum	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
Molybdenum	T	mg/L	0.1	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0021
Nickel	D	mg/L	NS	0.001 U		0.001 U				
Nickel	T	mg/L	NS	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	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
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	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

				Post-Closure Sampling (continued)						
			Sample ID Location ID Sample Date Sample Type	APW-10S-WG-20240111 APW-10S 01/11/2024 N	APW-10S-WG-20240430 APW-10S 04/30/2024 N	APW-10S-WG-20240905 APW-10S 09/05/2024 N	APW-10S-WG-20241015 APW-10S 10/15/2024 N	APW-10S-WG-20250116 APW-10S 01/16/2025 N	APW-10S-WG-20250625 APW-10S 06/25/2025 N	APW-10S-WG-20250903 APW-10S 09/03/2025 N
Parameter/Analyte	Total or Dissolved	Units	35 IAC 845.600							
UNSPECIFIED										
Fluoride	N	mg/L	4	0.15 U	0.15 U	0.251	0.15 U	0.199	0.228	0.265
Radium-226	N	pCi/L	NS	0.313 ± 0.206	0.347 ± 0.299 J	0.498 ± 0.257	0.236 ± 0.267 J	0.331 ± 0.211	0.446 ± 0.231	0.869 ± 0.405
Radium-228	N	pCi/L	NS	2.1 ± 0.228	0.234 ± 0.289 U	-0.0143 ± 0.345 U	0.934 ± 0.351	1.69 ± 0.451	0.575 ± 0.588 J	1.19 ± 0.510
Sulfate	N	mg/L	400	5 U	5 U	5 U	5 U	5.15	5 U	5 U
CALC										
Radium-226/228	N	pCi/L	7.002	2.42 ± 0.307	0.582 ± 0.416 J	0.498 ± 0.430 J	1.17 ± 0.441	2.02 ± 0.498	1.02 ± 0.632	2.06 ± 0.651
FIELD PARAM										
Turbidity, Field	N	NTU	17.96	3.78	17.1	9.12	20.4	7.11	60.1	5.22
GEN CHEM										
Chloride	N	mg/L	200	17.2	11.4	10.3	13.2	14.4	12.4	10.4
Dissolved Solids, Total	N	mg/L	1200	692	744	751	758	758	770	780
pH, Lab	N	pH unit	9	7.58 T8	7.18 T8	6.96 T8	7.16 T8	7.28 T8	7.27 T8	7.29 T8
METALS										
Antimony	D	mg/L	0.006	0.004 U	0.004 U F1	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Antimony	T	mg/L	0.006	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Arsenic	D	mg/L	0.01	0.0628	0.0639 F1	0.062	0.0557	0.0637	0.0574	0.0694
Arsenic	T	mg/L	0.01	0.196	0.198	0.19	0.19	0.191	0.194	0.192
Barium	D	mg/L	2	0.288	0.339 F1	0.299	0.305	0.316	0.322	0.323
Barium	T	mg/L	2	0.597	0.559	0.567	0.474	0.593	0.596	0.601
Beryllium	D	mg/L	0.004	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Beryllium	T	mg/L	0.004	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Boron	D	mg/L	2		0.544 F1	0.535	0.562	0.563	0.592	0.553
Boron	T	mg/L	2		0.571	0.554	0.567	0.554	0.591	0.574
Cadmium	D	mg/L	0.005	0.001 U	0.001 U F1	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
Calcium	D	mg/L	103.2	152	160 F1	154	152	159	159	157
Calcium	T	mg/L	103.2	162	163	163	162	168	163	164
Chromium	D	mg/L	0.1	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Chromium	T	mg/L	0.1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt	D	mg/L	0.006	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt	T	mg/L	0.006	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Iron	D	mg/L	NS	0.1 U						
Iron	T	mg/L	NS	17.2						
Lead	D	mg/L	0.0075	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Lead	T	mg/L	0.0075	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Lithium	D	mg/L	0.04	0.0302	0.0284 F1	0.0268	0.0296	0.0285	0.0288	0.0259
Lithium	T	mg/L	0.04	0.0328	0.0293	0.0272	0.0297	0.031	0.0278	0.0297
Manganese	D	mg/L	NS	0.155						
Manganese	T	mg/L	NS	0.174						
Mercury	D	mg/L	0.002	0.0002 U	0.0002 U F1	0.0002 U	0.0002 U	0.0002 U	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
Molybdenum	D	mg/L	0.1	0.005 U	0.005 U F1	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Molybdenum	T	mg/L	0.1	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Nickel	D	mg/L	NS	0.002 U						
Nickel	T	mg/L	NS	0.002 U						
Selenium	D	mg/L	0.05	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Selenium	T	mg/L	0.05	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	D	mg/L	0.002	0.002 U	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	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

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
J6 = The sample matrix interfered with the ability to make any accurate determination; spike value is low
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit
T8 = Sample received past/too close to holding time expiration

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
3 Eight episodes of groundwater sampling were conducted from September 2017 through February 2018 to establish background concentrations for the Site utilizing data from background wells APW-1R and APW-9. The final Groundwater Protection Standards (GPS) are the higher of the values provided in 35 IAC 845.600(a) and the final background concentrations as found in Table 6 of the 07/25/2019 GMZ Application with the exception of turbidity and pH. Radium 226+228 was the only value taken from Table 6.
Highlighted values exceed action level
NS = No standard

APPENDIX A FOURTH QUARTER 2024 CCR IMPOUNDMENT INSPECTION REPORT

Grand Tower Energy Center
Closed CCR Impoundment
Quarterly Inspection Form

Date: 9/4/2025

Time: 13:30-14:45

Name: Marshall Arendell
(Inspector)

Weather:

Temperature:

80 deg. F

☒ Sunny

☐ Cloudy

☐ Raining

☐ Other

_____

Observations:

☒ Erosion / Gullies

☐ Cracking / Sloughing

☒ Ponding / Damp Areas

☐ No Problems Identified

☒ Woody Vegetation Growth

☐ Other

_____

_____

Conditions Limiting Visibility:

☐ Snow Cover

☒ Vegetation

☐ None

☐ Other

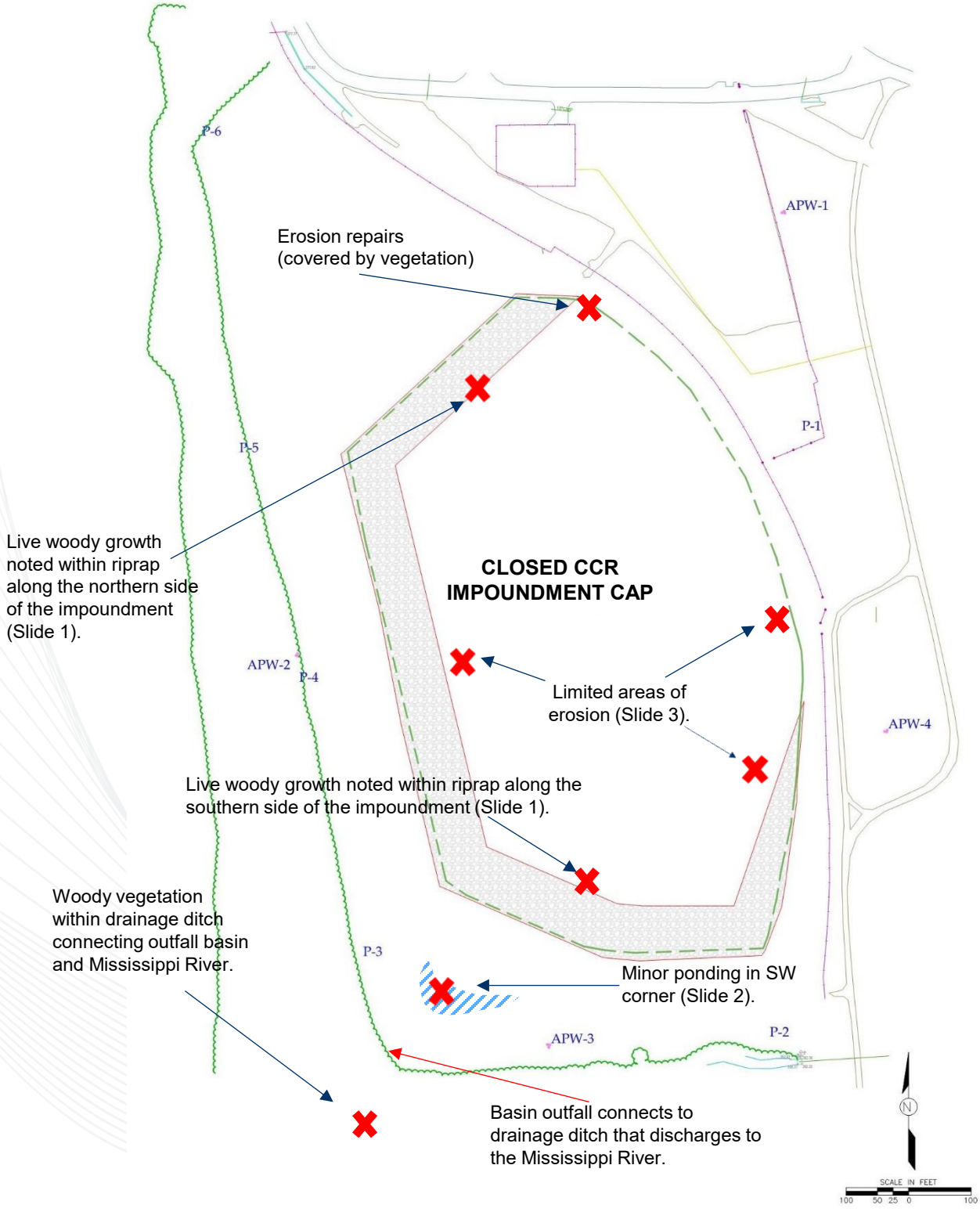
_____

Observations in Detail Below:

- ERM onsite for the September inspection of the CCR impoundment and 3Q25 groundwater sampling event.
- Repairs made to the erosional channel on the NE face of the impoundment cap in 2024 held. ERM will continue to monitor.
- Continued monitoring of additional erosional channels across the west, east, and southern faces of the closed CCR impoundment cap. No additional controls necessary currently. ERM will continue to monitor.
- Ponding continues to be noted in the SW corner of the basin near the outfall. No adverse effects to the impoundment cap are associated with the ponding. ERM will continue to monitor.
- Woody vegetation noted on the north and south face of the closed CCR impoundment cap. Vegetation produced foliage and was alive during the Q3 inspection. ERM recommends herbicide treatment in the summer of 2025.
- Woody vegetation noted in the outfall channel to the drainage ditch connected to the Mississippi River. Vegetation does not present an immediate issue to surface water flowing from the basin to the drainage ditch to the river. ERM will continue to monitor and recommend removal if necessary.

Attach additional pages if necessary.

Observation Locations Map



Grand Tower Energy Center Q3 2025 Closed CCR Impoundment Cap Inspection

Woody vegetation observed in the N and S side riprap

View facing N from the south of the impoundment cap

View facing west from the NE corner of the impoundment cap

Ponding in the SW Corner of Site Basin Near the Outfall

Ponded area in SW corner of site as viewed from APW-6D/S

Ponded area in SW corner of site as viewed from APW-6D/S

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.

Minor Erosional Channels

Erosion on the W side of impoundment cap. Photo taken facing east towards the impoundment cap. Approx. 4-6” deep.

Erosion on the E side of impoundment cap. Photo taken facing west towards the impoundment cap. Approx. 4-6” deep.

Erosion on the E side of impoundment cap. Photo taken facing west towards the impoundment cap. Approx. 6-8” deep.

APPENDIX B FOURTH QUARTER 2024 GROUDNWATER MONITORING WELL INSPECTION FORMS

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-01R		Date:	9/3/2025
Total Depth (Actual):	58.30	(BTOC)	Time:	1120
Total Depth (Measured):	58.20	(BTOC)	Collection Order:	5
Depth to Water (Measured):	27.80	(BTOC)		

Is well screen occluded more than 10%?	No
If Yes, list steps for redevelopment:	
LNAPL Present:	No
If Yes, measured thickness =	N/A
DNAPL Present:	No
If Yes, measured thickness =	N/A

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:	N/A

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-02		Date:	9/3/2025
Total Depth (Actual):	58.75	(BTOC)	Time:	1050
Total Depth (Measured):	58.05	(BTOC)	Collection Order:	3
Depth to Water (Measured):	25.61	(BTOC)		

Is well screen occluded more than 10%?	No
If Yes, list steps for redevelopment:	
LNAPL Present:	No
If Yes, measured thickness =	N/A
DNAPL Present:	No
If Yes, measured thickness =	N/A

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:	N/A

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:

Water in casing almost to well level

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-03		Date:	9/3/2025
Total Depth (Actual):	59.65	(BTOC)	Time:	1220
Total Depth (Measured):	60.25	(BTOC)	Collection Order:	12
Depth to Water (Measured):	27.61	(BTOC)		

Is well screen occluded more than 10%?	No
If Yes, list steps for redevelopment:	
LNAPL Present:	No
If Yes, measured thickness =	N/A
DNAPL Present:	No
If Yes, measured thickness =	N/A

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:	N/A
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:

No tubing present well. Replaced with new dedicated tubing during sampling.

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-04		Date:	9/3/2025
Total Depth (Actual):	60.40	(BTOC)	Time:	1140
Total Depth (Measured):	60.61	(BTOC)	Collection Order:	7
Depth to Water (Measured):	27.40	(BTOC)		

Is well screen occluded more than 10%?	No
If Yes, list steps for redevelopment:	
LNAPL Present:	No
If Yes, measured thickness =	N/A
DNAPL Present:	No
If Yes, measured thickness =	N/A

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:	N/A

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-05R		Date:	9/3/2025
Total Depth (Actual):	56.90	(BTOC)	Time:	1100
Total Depth (Measured):	62.83	(BTOC)	Collection Order:	4
Depth to Water (Measured):	26.74	(BTOC)		

Is well screen occluded more than 10%?	No
If Yes, list steps for redevelopment:	
LNAPL Present:	No
If Yes, measured thickness =	N/A
DNAPL Present:	No
If Yes, measured thickness =	N/A

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:	N/A

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-06S		Date:	9/3/2025
Total Depth (Actual):	63.98	(BTOC)	Time:	1037
Total Depth (Measured):	63.81	(BTOC)	Collection Order:	2
Depth to Water (Measured):	25.45	(BTOC)		

Is well screen occluded more than 10%?	No
If Yes, list steps for redevelopment:	
LNAPL Present:	No
If Yes, measured thickness =	N/A
DNAPL Present:	No
If Yes, measured thickness =	N/A

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:	No
Are well "markers" (i.e.bumper posts) needed at this location:	No
If yes, are current well "markers" adequate around well:	N/A
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:

No tubing present well. Replaced with new dedicated tubing during sampling.

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-06D		Date:	9/3/2025
Total Depth (Actual):	152.57	(BTOC)	Time:	1030
Total Depth (Measured):	154.08	(BTOC)	Collection Order:	1
Depth to Water (Measured):	25.55	(BTOC)		

Is well screen occluded more than 10%?	No
If Yes, list steps for redevelopment:	
LNAPL Present:	No
If Yes, measured thickness =	N/A
DNAPL Present:	No
If Yes, measured thickness =	N/A

Well Completion Type:

Condition of protector: INTACT	Yes
Well ID present and readable:	No
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:	N/A

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:

No tubing present well. Replaced with new dedicated tubing during sampling.

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-07		Date:	9/3/2025
Total Depth (Actual):	63.35	(BTOC)	Time:	1205
Total Depth (Measured):	64.30	(BTOC)	Collection Order:	10
Depth to Water (Measured):	24.35	(BTOC)		

Is well screen occluded more than 10%?	No
If Yes, list steps for redevelopment:	
LNAPL Present:	No
If Yes, measured thickness =	N/A
DNAPL Present:	No
If Yes, measured thickness =	N/A

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:	N/A

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:

Ants in well protector and tubing.

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-08		Date:	9/3/2025
Total Depth (Actual):	61.89	(BTOC)	Time:	1210
Total Depth (Measured):	62.85	(BTOC)	Collection Order:	11
Depth to Water (Measured):	24.48	(BTOC)		

Is well screen occluded more than 10%?	No
If Yes, list steps for redevelopment:	
LNAPL Present:	No
If Yes, measured thickness =	N/A
DNAPL Present:	No
If Yes, measured thickness =	N/A

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:	N/A

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:	9/3/2025
Total Depth (Actual):	63.40	(BTOC)	Time:	1130
Total Depth (Measured):	64.10	(BTOC)	Collection Order:	6
Depth to Water (Measured):	27.79	(BTOC)		

Is well screen occluded more than 10%?	No
If Yes, list steps for redevelopment:	
LNAPL Present:	No
If Yes, measured thickness =	N/A
DNAPL Present:	No
If Yes, measured thickness =	N/A

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:	N/A

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:	9/3/2025
Total Depth (Actual):	62.84	(BTOC)	Time:	1153
Total Depth (Measured):	62.76	(BTOC)	Collection Order:	8
Depth to Water (Measured):	20.95	(BTOC)		

Is well screen occluded more than 10%?	No
If Yes, list steps for redevelopment:	
LNAPL Present:	No
If Yes, measured thickness =	N/A
DNAPL Present:	No
If Yes, measured thickness =	N/A

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:	N/A

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:	9/3/2025
Total Depth (Actual):	98.19	(BTOC)	Time:	1156
Total Depth (Measured):	98.10	(BTOC)	Collection Order:	9
Depth to Water (Measured):	20.80	(BTOC)		

Is well screen occluded more than 10%?	No
If Yes, list steps for redevelopment:	
LNAPL Present:	No
If Yes, measured thickness =	N/A
DNAPL Present:	No
If Yes, measured thickness =	N/A

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:	N/A
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:

Ants in well protector and on tubing.

APPENDIX C FOURTH QUARTER 2024 FIELD DATA FORMS

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-01R
Well Permit No:

Date: 2025/09/04

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 53.2 (ft)	**Reference Elevation** 366.82 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 27.61 (ft) / None
Project Number 0761817	**Sample Equipment** NA	**Total Well Depth** 58.2 (ft)
Project Name 20250901-GWMonitor	**Average Purge Rate** 350 (mL/min)	**Well Diameter / Well Screen Interval** (in) / 48.3 - 58.3 ()
Sampler marshall arendell	**Volume of Water in Well / Total Volume Purged** (gal) / 2.5 (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 (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
14:30	27.61	350	0	17.1	6.11	274.6	NM	5.3	498.8	328	NM	
14:35	27.61	350	0.25	17	6.05	286.6	NM	3.69	568.2	245	NM	
14:40	27.61	350	0.5	17	5.93	299.7	NM	3.2	606.6	172	NM	
14:45	27.61	350	0.75	17.1	6.24	320.7	NM	2.73	636.8	106	NM	
14:50	27.61	350	1	17	6.12	336.1	NM	2.43	653.3	65	NM	
14:55	27.61	350	1.25	17.1	6.19	345.1	NM	2.28	662.8	44	NM	
15:00	27.61	350	1.5	17	6.19	351	NM	2.24	672.4	37.1	NM	
15:05	27.61	350	1.75	17	6.21	355.2	NM	2.16	685.1	30.6	NM	
15:10	27.61	350	2	16.8	6.2	360.6	NM	2.03	697	30.8	NM	
15:15	27.61	350	2.25	16.9	6.28	363.7	NM	2.06	704.1	31.5	NM	
15:20	27.61	350	2.5	16.9	6.24	364.5	NM	2.08	706.8	30.5	NM	

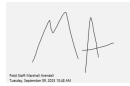
Sample ID(s): APW-01R-WG-20250904	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Marshall Arendell 	09/09/2025 15:26

Low Flow Groundwater Sampling Field Data Form	Well ID: APW-02 Well Permit No:	Date: 2025/09/04

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 53.05 (ft)	**Reference Elevation** 364.61 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 25.52 (ft) / None
Project Number 0761817	**Sample Equipment** NA	**Total Well Depth** 58.05 (ft)
Project Name 20250901-GWMonitor	**Average Purge Rate** 200 (mL/min)	**Well Diameter / Well Screen Interval** (in) / 47.2 - 57.2 ()
Sampler marshall arendell	**Volume of Water in Well / Total Volume Purged** (gal) / 0.6 (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 (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
12:55	25.52	200	0	18.8	7.02	910	NM	3	500	183	NM	
13:00	27.93	200	0.1	18.7	7.04	912	NM	1.14	474	72.1	NM	
13:05	30.01	200	0.2	18.6	7.03	919	NM	0.45	410	82.4	NM	
13:10	32.11	200	0.3	18.5	7.02	921	NM	0.44	406	79.6	NM	
13:15	33.9	200	0.4	21.3	7.02	930	NM	0.43	327	73	NM	
13:20	35.56	200	0.5	21.4	7.02	942	NM	0.42	322	76.2	NM	
13:25	37.48	200	0.6	21.5	7.02	945	NM	0.41	319	78.6	NM	

Sample ID(s):	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
APW-02-WG-20250904		Marshall Arendell 	09/09/2025 15:48
Analysis:			

Low Flow Groundwater Sampling Field Data Form

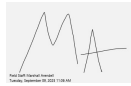
Well ID: APW-03
Well Permit No:

Date: 2025/09/03

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 55.25 (ft)	**Reference Elevation** 365.79 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 27.8 (ft) / None
Project Number 0761817	**Sample Equipment** NA	**Total Well Depth** 60.25 (ft)
Project Name 20250901-GWMonitor	**Average Purge Rate** 400 (mL/min)	**Well Diameter / Well Screen Interval** (in) / 45.7 - 55.7 ()
Sampler marshall arendell	**Volume of Water in Well / Total Volume Purged** (gal) / 0.75 (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 (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
13:15	27.8	400	0	17.4	7.61	506	NM	6.24	324	28.9	NM	
13:20	27.8	400	0.25	18.7	7.68	579	NM	4.8	319	18.8	NM	
13:25	27.8	400	0.5	19	7.76	575	NM	4.52	468	9.13	NM	
13:30	27.8	400	0.75	19	7.79	567	NM	2.9	500.7	8.17	NM	
13:35	27.8	400	1	18.8	7.82	562	NM	1.93	476.8	8.1	NM	
13:40	27.8	400	1.25	18.7	7.81	559	NM	1.66	442	7.27	NM	
13:45	27.8	400	1.5	18.3	7.81	554	NM	1.34	433	5.5	NM	Paused sampling after reading to troubleshoot equipment issues. Swapped monsoon pump.
14:15	27.8	400	1.75	18.6	7.81	600	NM	2.67	405	8.12	NM	
14:20	27.8	400	2	18.5	7.81	602	NM	2.65	409	7.63	NM	
14:25	27.8	400	2.25	18.4	7.81	605	NM	2.64	411	7.01	NM	

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
APW-03-WG-20250903		Marshall Arendell 	09/09/2025 16:06
Analysis:			

Low Flow Groundwater Sampling Field Data Form

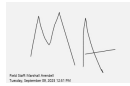
Well ID: APW-04
Well Permit No:

Date: 2025/09/04

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 55.61 (ft)	**Reference Elevation** 367.44 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 27.22 (ft) / None
Project Number 0761817	**Sample Equipment** NA	**Total Well Depth** 60.61 (ft)
Project Name 20250901-GWMonitor	**Average Purge Rate** 300 (mL/min)	**Well Diameter / Well Screen Interval** (in) / 45.7 - 55.7 ()
Sampler marshall arendell	**Volume of Water in Well / Total Volume Purged** (gal) / 1.5 (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 (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
07:35	27.22	300	0	15.3	6.98	467	NM	6.05	532	21.3	NM	
07:40	27.22	300	0.25	15.4	6.92	468	NM	4.13	546	25.8	NM	
07:45	27.22	300	0.5	15.6	7	486	NM	3.02	551	12.8	NM	
07:50	27.22	300	0.75	15.6	7.04	496	NM	2.02	550	15.8	NM	
07:55	27.22	300	1	15.6	7.06	500	NM	1.37	548	22.3	NM	
08:00	27.22	300	1.25	15.6	7.07	502	NM	1.33	546	21.2	NM	
08:05	27.22	300	1.5	15.7	7.07	504	NM	1.29	547	21.7	NM	

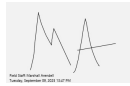
Sample ID(s): APW-04-WG-20250904	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Marshall Arendell 	09/09/2025 17:51

Low Flow Groundwater Sampling Field Data Form	Well ID: APW-05R Well Permit No:	Date: 2025/09/04

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 57.83 (ft)	**Reference Elevation** ()
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 26.6 (ft) / None
Project Number 0761817	**Sample Equipment** NA	**Total Well Depth** 62.83 (ft)
Project Name 20250901-GWMonitor	**Average Purge Rate** 450 (mL/min)	**Well Diameter / Well Screen Interval** (in) / - ()
Sampler marshall arendell	**Volume of Water in Well / Total Volume Purged** (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 (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
11:35	26.6	450	0	16.4	5.72	595	NM	6.15	436	543	NM	
11:40	26.6	450	0.5	16.2	7.36	592	NM	3.14	412	350	NM	
11:45	26.6	450	1	16.5	7.39	595	NM	1.02	315	125	NM	
11:50	26.6	450	1.5	16.4	7.36	596	NM	0.62	230	77.1	NM	
11:55	26.6	450	2	16.3	7.36	595	NM	0.52	185	59.8	NM	
12:00	26.6	450	2.5	16.4	7.33	594	NM	0.44	140	43.1	NM	
12:05	26.6	450	3	16.5	7.33	593	NM	0.4	91.6	27.7	NM	
12:10	26.6	450	3.5	16.6	7.32	601	NM	0.36	50.6	24.3	NM	
12:15	26.6	450	4	16.4	7.32	597	NM	0.37	-1.2	17.5	NM	
12:20	26.6	450	4.5	16.5	7.31	597	NM	0.34	-7.3	16.9	NM	
12:25	26.6	450	5	16.6	7.32	595	NM	0.34	-10.9	16.3	NM	

Sample ID(s): APW-05R-WG-20250904	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Marshall Arendell 	09/09/2025 18:47

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-06D
Well Permit No:

Date: 2025/09/04

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 149.08 (ft)	**Reference Elevation** 363.69 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 25.21 (ft) / None
Project Number 0761817	**Sample Equipment** NA	**Total Well Depth** 154.08 (ft)
Project Name 20250901-GWMonitor	**Average Purge Rate** 400 (mL/min)	**Well Diameter / Well Screen Interval** (in) / 140 - 150 (ft)
Sampler marshall arendell	**Volume of Water in Well / Total Volume Purged** (gal) / 2.5 (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 (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
09:00	25.22	400	0	16.5	7.09	595	NM	5.84	451	5.72	NM	
09:05	25.22	400	0.25	16.4	7.14	593	NM	2.69	283	6.52	NM	
09:10	25.22	400	0.5	16.4	7.15	594	NM	2.04	173	5.54	NM	
09:15	25.22	400	0.75	16.5	7.15	595	NM	1.75	123	4.74	NM	
09:20	25.22	400	1	16.8	7.15	599	NM	1.48	64.7	8.27	NM	
09:25	25.22	400	1.25	17.1	7.21	602	NM	1.47	36	5.21	NM	
09:30	25.22	400	1.5	17.4	7.21	604	NM	1.5	15.1	3.62	NM	
09:35	25.22	400	1.75	17.8	7.21	651	NM	1.46	-8.8	4.96	NM	
09:40	25.22	400	2	18	7.21	651	NM	1.36	-14.4	4.35	NM	
09:45	25.22	400	2.25	18.1	7.22	652	NM	1.38	-19.2	4.92	NM	
09:50	25.22	400	2.5	18.2	7.22	653	NM	1.37	-21.7	3.78	NM	

Sample ID(s): APW-06D-WG-20250904	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Marshall Arendell 	09/09/2025 20:08

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-06S
Well Permit No:

Date: 2025/09/04

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 58.81 (ft)	**Reference Elevation** 363.51 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 25.77 (ft) / None
Project Number 0761817	**Sample Equipment** NA	**Total Well Depth** 63.81 (ft)
Project Name 20250901-GWMonitor	**Average Purge Rate** 400 (mL/min)	**Well Diameter / Well Screen Interval** (in) / 50 - 60 (ft)
Sampler marshall arendell	**Volume of Water in Well / Total Volume Purged** (gal) / 2 (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 (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
10:10	25.77	400	0	16.5	7	577	NM	7.99	323	264	NM	
10:15	25.77	400	0.25	17.8	7.05	591	NM	1.64	137	254	NM	
10:20	25.77	400	0.5	18.3	7.06	595	NM	1.35	92	217	NM	
10:25	25.77	400	0.75	18.7	7.07	636	NM	1.15	36	162	NM	
10:30	25.77	400	1	19	7.08	639	NM	1.02	-27	126	NM	
10:35	25.77	400	1.25	19.3	7.09	641	NM	0.94	-54	47	NM	
10:40	25.77	400	1.5	19.6	7.09	649	NM	0.49	-79.1	39.91	NM	
10:45	25.77	400	1.75	19.7	7.09	652	NM	0.48	-81.9	39.11	NM	
10:50	25.77	400	1.75	19.8	7.09	655	NM	0.46	-82.2	38.25	NM	

Sample ID(s): APW-06S-WG-20250904	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Marshall Arendell 	09/09/2025 20:27

Low Flow Groundwater Sampling Field Data Form

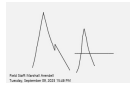
Well ID: APW-07
Well Permit No:

Date: 2025/09/04

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 59.3 (ft)	**Reference Elevation** 360.61 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 24.8 (ft) / None
Project Number 0761817	**Sample Equipment** NA	**Total Well Depth** 64.3 (ft)
Project Name 20250901-GWMonitor	**Average Purge Rate** 450 (mL/min)	**Well Diameter / Well Screen Interval** (in) / 50 - 60 (ft)
Sampler marshall arendell	**Volume of Water in Well / Total Volume Purged** (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 (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
15:45	24.8	450	0	16	6.65	997	NM	2.74	583	45.1	NM	
15:50	24.8	450	0.5	16.2	6.63	998	NM	1.63	561	51	NM	
15:55	24.8	450	1	16.7	6.62	1000	NM	1.17	535	62.2	NM	
16:00	24.8	450	1.5	15.5	6.62	1002	NM	0.65	447	50.1	NM	
16:05	24.8	450	2	15.4	6.62	1004	NM	0.47	405	25.4	NM	
16:10	24.8	450	2.5	15.3	6.62	1009	NM	0.41	386	11.7	NM	
16:15	24.8	450	3	15.2	6.64	1024	NM	0.34	360	9.9	NM	
16:20	24.8	450	3.5	15.2	6.63	1031	NM	0.33	343	7.08	NM	
16:25	24.8	450	4	15.2	6.63	1033	NM	0.32	340	7.15	NM	
16:30	24.8	450	4.5	15.2	6.63	1035	NM	0.31	337	8.77	NM	

Sample ID(s): APW-07-WG-20250904	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Marshall Arendell 	09/09/2025 20:46

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-08
Well Permit No:

Date: 2025/09/05

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 57.85 (ft)	**Reference Elevation** 362.71 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 25.09 (ft) / None
Project Number 0761817	**Sample Equipment** NA	**Total Well Depth** 62.85 (ft)
Project Name 20250901-GWMonitor	**Average Purge Rate** 450 (mL/min)	**Well Diameter / Well Screen Interval** (in) / 50 - 60 (ft)
Sampler marshall arendell	**Volume of Water in Well / Total Volume Purged** (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 (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
07:40	25.09	450	0	15.2	6.98	550	NM	5.1	591	1000	NM	turbidity was over 1000. Received "over-range" reading from HACH meter.
07:45	25.09	450	0.5	15.5	6.89	548	NM	3.23	606	552	NM	turbidity was over 1000. Received "over-range" reading from HACH meter.
07:50	25.09	450	1	15.6	6.89	549	NM	2.15	619	208	NM	turbidity was over 1000. Received "over-range" reading from HACH meter.
07:55	25.09	450	1.5	15.6	6.89	551	NM	1.53	623	122	NM	turbidity was over 1000. Received "over-range" reading from HACH meter.
08:00	25.09	450	2	15.6	6.9	553	NM	1.07	634	82.2	NM	turbidity was over 1000. Received "over-range" reading from HACH meter.
08:05	25.09	450	2.5	15.6	6.9	554	NM	0.76	644	47.9	NM	turbidity was over 1000. Received "over-range" reading from HACH meter.
08:10	25.09	450	3	15.7	6.9	554	NM	0.49	650	32.3	NM	turbidity was over 1000. Received "over-range" reading from HACH meter.
08:15	25.09	450	3.5	15.6	6.9	554	NM	0.42	656	19.1	NM	turbidity was over 1000. Received "over-range" reading from HACH meter.
08:20	25.09	450	4	15.6	6.9	554	NM	0.34	662	12.7	NM	turbidity was over 1000. Received "over-range" reading from HACH meter.
08:25	25.09	450	4.5	15.6	6.9	555	NM	0.3	667	12.5	NM	turbidity was over 1000. Received "over-range" reading from HACH meter.
08:30	25.09	450	5	15.6	6.9	556	NM	0.28	670	12	NM	turbidity was over 1000. Received "over-range" reading from HACH meter.

Sample ID(s): APW-08-WG-20250905	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Marshall Arendell 	09/09/2025 21:00

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-09
Well Permit No:

Date: 2025/09/05

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 58.4 (ft)	**Reference Elevation** 366.84 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 27.88 (ft) / None
Project Number 0761817	**Sample Equipment** NA	**Total Well Depth** 63.4 (ft)
Project Name 20250901-GWMonitor	**Average Purge Rate** 475 (mL/min)	**Well Diameter / Well Screen Interval** (in) / 50 - 60 (ft)
Sampler marshall arendell	**Volume of Water in Well / Total Volume Purged** (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 (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
08:55	27.88	475	0	15.9	7.27	453	NM	5.56	665	389	NM	
09:00	27.88	475	0.5	15.5	7.24	483	NM	1.59	683	39.2	NM	
09:05	27.88	475	1	15.5	7.22	496	NM	0.78	693	7.5	NM	
09:10	27.88	475	1.5	15.6	7.2	496	NM	0.64	698	6.8	NM	
09:15	27.88	475	2	15.6	7.2	496	NM	0.47	707	4.14	NM	
09:20	27.88	475	2.5	15.6	7.19	495	NM	0.42	711	4.02	NM	
09:25	27.88	475	3	15.6	7.19	495	NM	0.41	715	4.92	NM	

Sample ID(s): APW-09-WG-20250905	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Marshall Arendell 	09/09/2025 21:11

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-10D
Well Permit No:

Date: 2025/09/03

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 93.1 (ft)	**Reference Elevation** 359.41 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 20.8 (ft) / None
Project Number 0761817	**Sample Equipment** NA	**Total Well Depth** 98.1 (ft)
Project Name 20250901-GWMonitor	**Average Purge Rate** 450 (mL/min)	**Well Diameter / Well Screen Interval** (in) / 86 - 96 (ft)
Sampler marshall arendell	**Volume of Water in Well / Total Volume Purged** (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 (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
15:15	20.8	450	0	16.6	7.01	623	NM	16.02	383	17.6	NM	
15:20	20.8	450	0.5	15.9	6.98	525	NM	2.74	346	17	NM	
15:25	20.8	450	1	15.9	6.95	497	NM	1.23	265	16.1	NM	
15:30	20.8	450	1.5	15.9	6.93	496	NM	0.49	109	17.4	NM	
15:35	20.8	450	2	16	6.96	499	NM	0.48	78	16.6	NM	
15:40	20.8	450	2.5	16.1	6.95	501	NM	0.46	76	16.5	NM	
15:45	20.8	450	3	16.1	6.94	503	NM	0.44	79	16.6	NM	

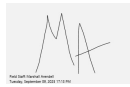
Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
APW-10D-WG-20250903		Marshall Arendell 	09/09/2025 21:30
Analysis:			

Low Flow Groundwater Sampling Field Data Form	Well ID: APW-10S Well Permit No:	Date: 2025/09/03

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 57.76 (ft)	**Reference Elevation** 359.47 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 21 (ft) / None
Project Number 0761817	**Sample Equipment** NA	**Total Well Depth** 62.76 (ft)
Project Name 20250901-GWMonitor	**Average Purge Rate** 450 (mL/min)	**Well Diameter / Well Screen Interval** (in) / 50 - 60 (ft)
Sampler marshall arendell	**Volume of Water in Well / Total Volume Purged** (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 (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
16:10	21	450	0	16.2	6.85	987	NM	8.54	-5.7	760	NM	
16:15	21	450	0.5	16.2	6.68	997	NM	1.71	-73.6	203	NM	
16:20	21	450	1	16.1	6.87	1000	NM	0.99	-98.3	84.2	NM	
16:25	21	450	1.5	16	6.87	1010	NM	0.73	-108.8	29.8	NM	
16:30	21	450	2	16.1	6.86	1014	NM	0.49	-116.6	9.21	NM	
16:35	21	450	2.5	16.1	6.86	1025	NM	0.44	-119.1	7.26	NM	
16:40	21	450	3	16	6.85	1022	NM	0.41	-120.6	5.22	NM	

Sample ID(s):	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
APW-10S-WG-20250903		Marshall Arendell 	09/09/2025 22:13
Analysis:			

APPENDIX D FOURTH QUARTER 2024 LABORATORY ANALYTICAL REPORT

ANALYTICAL REPORT

September 25, 2025

ERM - St. Louis, MO

Sample Delivery Group:	L1895667
Samples Received:	09/06/2025
Project Number:	0599247
Description:	Grand Tower Energy Center Groundwater 3Q25 Sampling
Report To:	Randy Homburg
	1968 Craig Road, Suite 100
	Saint Louis, MO 63146

Entire Report Reviewed By:

Jeff Carr
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

TABLE OF CONTENTS

APW-03-WG-20250903 L1895667-01

Collected by: Marshall Arendell | Collected date/time: 09/03/25 14:30 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2595642	1	09/06/25 22:27	09/08/25 14:01	BDC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2595823	5	09/09/25 05:50	09/09/25 05:50	AJC	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2598465	1	09/11/25 23:00	09/11/25 23:00	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2596032	1	09/12/25 16:12	09/13/25 18:24	SDG	Mt. Juliet, TN
Mercury by Method 7470A	WG2596881	1	09/11/25 09:35	09/11/25 17:47	SDG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597476	1	09/11/25 11:13	09/11/25 20:40	BAG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597498	1	09/10/25 11:03	09/10/25 18:54	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597487	1	09/10/25 14:09	09/22/25 22:47	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597639	1	09/10/25 11:15	09/24/25 16:13	TMT	Mt. Juliet, TN

APW-08-WG-20250905 L1895667-02

Collected by: Marshall Arendell | Collected date/time: 09/05/25 08:35 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2596320	1	09/08/25 11:43	09/09/25 11:54	KCB	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2595823	1	09/09/25 06:40	09/09/25 06:40	AJC	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2598465	1	09/11/25 23:00	09/11/25 23:00	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2596032	1	09/12/25 16:12	09/13/25 18:26	SDG	Mt. Juliet, TN
Mercury by Method 7470A	WG2596881	1	09/11/25 09:35	09/11/25 17:49	SDG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597476	1	09/11/25 11:13	09/11/25 20:42	BAG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597498	1	09/10/25 11:03	09/10/25 19:01	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597487	1	09/10/25 14:09	09/22/25 23:00	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597639	1	09/10/25 11:15	09/24/25 16:16	TMT	Mt. Juliet, TN

APW-07-WG-20250904 L1895667-03

Collected by: Marshall Arendell | Collected date/time: 09/04/25 16:35 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2596320	1	09/08/25 11:43	09/09/25 11:54	KCB	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2595823	1	09/09/25 07:06	09/09/25 07:06	AJC	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2598465	1	09/11/25 23:00	09/11/25 23:00	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2596032	1	09/12/25 16:12	09/13/25 18:29	SDG	Mt. Juliet, TN
Mercury by Method 7470A	WG2596881	1	09/11/25 09:35	09/11/25 17:52	SDG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597476	1	09/11/25 11:13	09/11/25 20:44	BAG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597498	1	09/10/25 11:03	09/10/25 19:03	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597487	1	09/10/25 14:09	09/22/25 23:03	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597639	1	09/10/25 11:15	09/24/25 16:20	TMT	Mt. Juliet, TN

APW-10S-WG-20250903 L1895667-04

Collected by: Marshall Arendell | Collected date/time: 09/03/25 16:45 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2595642	1	09/06/25 22:27	09/08/25 14:01	BDC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2595823	1	09/09/25 07:31	09/09/25 07:31	AJC	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2598465	1	09/11/25 23:00	09/11/25 23:00	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2596032	1	09/12/25 16:12	09/13/25 18:31	SDG	Mt. Juliet, TN
Mercury by Method 7470A	WG2596881	1	09/11/25 09:35	09/11/25 17:54	SDG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597476	1	09/11/25 11:13	09/11/25 20:45	BAG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597498	1	09/10/25 11:03	09/10/25 19:05	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597487	1	09/10/25 14:09	09/22/25 23:06	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597639	1	09/10/25 11:15	09/24/25 16:23	TMT	Mt. Juliet, TN

APW-10D-WG-20250903 L1895667-05

Collected by: Marshall Arendell | Collected date/time: 09/03/25 15:55 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2595642	1	09/06/25 22:27	09/08/25 14:01	BDC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2595826	1	09/08/25 23:37	09/08/25 23:37	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2598465	1	09/11/25 23:00	09/11/25 23:00	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2596032	1	09/12/25 16:12	09/13/25 18:33	SDG	Mt. Juliet, TN
Mercury by Method 7470A	WG2596881	1	09/11/25 09:35	09/11/25 17:57	SDG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597476	1	09/11/25 11:13	09/11/25 20:47	BAG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597498	1	09/10/25 11:03	09/10/25 19:07	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597487	1	09/10/25 14:09	09/22/25 23:09	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597639	1	09/10/25 11:15	09/24/25 16:26	TMT	Mt. Juliet, TN

APW-06S-WG-20250904 L1895667-06

Collected by: Marshall Arendell | Collected date/time: 09/04/25 10:55 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2596320	1	09/08/25 11:43	09/09/25 11:54	KCB	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2595826	1	09/09/25 00:29	09/09/25 00:29	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2595826	5	09/09/25 00:47	09/09/25 00:47	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2598465	1	09/11/25 23:00	09/11/25 23:00	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2596878	1	09/11/25 09:40	09/11/25 15:29	SDG	Mt. Juliet, TN
Mercury by Method 7470A	WG2597351	1	09/11/25 15:51	09/12/25 14:53	SDG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597476	1	09/11/25 11:12	09/11/25 20:49	BAG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597498	1	09/10/25 11:03	09/10/25 19:12	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597487	1	09/10/25 14:09	09/23/25 14:10	UNP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597639	1	09/10/25 11:15	09/24/25 16:29	TMT	Mt. Juliet, TN

APW-06D-WG-20250904 L1895667-07

Collected by: Marshall Arendell | Collected date/time: 09/04/25 09:55 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2596320	1	09/08/25 11:43	09/09/25 11:54	KCB	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2595826	1	09/09/25 01:04	09/09/25 01:04	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2595826	5	09/09/25 01:21	09/09/25 01:21	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2598465	1	09/11/25 23:00	09/11/25 23:00	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2596878	1	09/11/25 09:40	09/11/25 15:31	SDG	Mt. Juliet, TN
Mercury by Method 7470A	WG2597351	1	09/11/25 15:51	09/12/25 14:55	SDG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597476	1	09/11/25 11:12	09/11/25 20:51	BAG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597498	1	09/10/25 11:03	09/10/25 19:14	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597487	1	09/10/25 14:09	09/23/25 14:13	UNP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597639	1	09/10/25 11:15	09/24/25 16:32	TMT	Mt. Juliet, TN

APW-05R-WG-20250904 L1895667-08

Collected by: Marshall Arendell | Collected date/time: 09/04/25 12:30 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2596320	1	09/08/25 11:43	09/09/25 11:54	KCB	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2595826	1	09/09/25 01:39	09/09/25 01:39	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2595826	5	09/09/25 01:56	09/09/25 01:56	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2598478	1	09/12/25 14:40	09/12/25 14:40	RJP	Mt. Juliet, TN
Mercury by Method 7470A	WG2596878	1	09/11/25 09:40	09/11/25 15:33	SDG	Mt. Juliet, TN
Mercury by Method 7470A	WG2597351	1	09/11/25 15:51	09/12/25 14:58	SDG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597476	1	09/11/25 11:12	09/11/25 20:52	BAG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597498	1	09/10/25 11:03	09/10/25 19:15	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597487	1	09/10/25 14:09	09/23/25 14:16	UNP	Mt. Juliet, TN

APW-05R-WG-20250904 L1895667-08

Collected by: Marshall Arendell | Collected date/time: 09/04/25 12:30 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG2597639	1	09/10/25 11:15	09/24/25 16:36	TMT	Mt. Juliet, TN

APW-09-WG-20250605 L1895667-09

Collected by: Marshall Arendell | Collected date/time: 09/05/25 09:30 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2596320	1	09/08/25 11:43	09/09/25 11:54	KCB	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2595826	1	09/09/25 02:13	09/09/25 02:13	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2598478	1	09/12/25 14:40	09/12/25 14:40	RJP	Mt. Juliet, TN
Mercury by Method 7470A	WG2596878	1	09/11/25 09:40	09/11/25 15:36	SDG	Mt. Juliet, TN
Mercury by Method 7470A	WG2597351	1	09/11/25 15:51	09/12/25 15:00	SDG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597476	1	09/11/25 11:12	09/11/25 20:54	BAG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597498	1	09/10/25 11:03	09/10/25 19:17	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597487	1	09/10/25 14:09	09/23/25 14:19	UNP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597639	1	09/10/25 11:15	09/24/25 16:39	TMT	Mt. Juliet, TN

APW-02-WG-20250904 L1895667-10

Collected by: Marshall Arendell | Collected date/time: 09/04/25 13:30 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2599520	1	09/12/25 13:25	09/12/25 16:01	AMG	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2595826	1	09/09/25 02:31	09/09/25 02:31	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2595826	5	09/09/25 02:48	09/09/25 02:48	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2598478	1	09/12/25 14:40	09/12/25 14:40	RJP	Mt. Juliet, TN
Mercury by Method 7470A	WG2596878	1	09/11/25 09:40	09/11/25 15:38	SDG	Mt. Juliet, TN
Mercury by Method 7470A	WG2597351	1	09/11/25 15:51	09/12/25 15:03	SDG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597476	1	09/11/25 11:12	09/11/25 20:56	BAG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597498	1	09/10/25 11:03	09/10/25 19:19	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597487	1	09/10/25 14:09	09/23/25 14:22	UNP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597639	10	09/10/25 11:15	09/24/25 16:42	TMT	Mt. Juliet, TN

APW-01R-WG-20250904 L1895667-11

Collected by: Marshall Arendell | Collected date/time: 09/04/25 15:25 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2596935	1	09/09/25 11:49	09/09/25 18:50	KCB	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2595826	1	09/09/25 03:40	09/09/25 03:40	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2598478	1	09/12/25 14:40	09/12/25 14:40	RJP	Mt. Juliet, TN
Mercury by Method 7470A	WG2596878	1	09/11/25 09:40	09/11/25 15:41	SDG	Mt. Juliet, TN
Mercury by Method 7470A	WG2597351	1	09/11/25 15:51	09/12/25 15:05	SDG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597476	1	09/11/25 11:12	09/11/25 21:01	BAG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597498	1	09/10/25 11:03	09/10/25 19:21	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597487	1	09/10/25 14:09	09/23/25 14:26	UNP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597639	1	09/10/25 11:15	09/24/25 16:52	TMT	Mt. Juliet, TN

APW-04-WG-20250904 L1895667-12

Collected by: Marshall Arendell | Collected date/time: 09/04/25 08:10 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2599520	1	09/12/25 13:25	09/12/25 16:01	AMG	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2595826	1	09/09/25 03:58	09/09/25 03:58	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2598478	1	09/12/25 14:40	09/12/25 14:40	RJP	Mt. Juliet, TN

APW-04-WG-20250904 L1895667-12

Collected by: Marshall Arendell | Collected date/time: 09/04/25 08:10 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG2596878	1	09/11/25 09:40	09/11/25 15:43	SDG	Mt. Juliet, TN
Mercury by Method 7470A	WG2597351	1	09/11/25 15:51	09/12/25 15:13	SDG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597476	1	09/11/25 11:12	09/11/25 21:03	BAG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597498	1	09/10/25 11:03	09/10/25 19:22	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597487	1	09/10/25 14:09	09/23/25 14:29	UNP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597639	1	09/10/25 11:15	09/24/25 16:55	TMT	Mt. Juliet, TN

EB-01-WG-20250903 L1895667-13

Collected by: Marshall Arendell | Collected date/time: 09/03/25 10:00 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2595642	1	09/06/25 22:27	09/08/25 14:01	BDC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2595826	1	09/09/25 04:15	09/09/25 04:15	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2598478	1	09/12/25 14:40	09/12/25 14:40	RJP	Mt. Juliet, TN
Mercury by Method 7470A	WG2596878	1	09/11/25 09:40	09/11/25 15:46	SDG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597498	1	09/10/25 11:03	09/10/25 19:24	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597639	1	09/10/25 11:15	09/24/25 16:58	TMT	Mt. Juliet, TN

DUP-01-WG-20250904 L1895667-14

Collected by: Marshall Arendell | Collected date/time: 09/04/25 00:01 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2599520	1	09/12/25 13:25	09/12/25 16:01	AMG	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2595826	1	09/09/25 04:32	09/09/25 04:32	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2595826	5	09/09/25 19:36	09/09/25 19:36	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2598478	1	09/12/25 14:40	09/12/25 14:40	RJP	Mt. Juliet, TN
Mercury by Method 7470A	WG2596878	1	09/11/25 09:40	09/11/25 15:48	SDG	Mt. Juliet, TN
Mercury by Method 7470A	WG2597351	1	09/11/25 15:51	09/12/25 15:15	SDG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597476	1	09/11/25 11:12	09/11/25 21:04	BAG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597498	1	09/10/25 11:03	09/10/25 19:26	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597487	1	09/10/25 14:09	09/23/25 14:32	UNP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597639	1	09/10/25 11:15	09/24/25 17:02	TMT	Mt. Juliet, TN

DUP-02-WG-20250905 L1895667-15

Collected by: Marshall Arendell | Collected date/time: 09/05/25 00:02 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2599520	1	09/12/25 13:25	09/12/25 16:01	AMG	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2595826	1	09/09/25 04:50	09/09/25 04:50	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2598478	1	09/12/25 14:40	09/12/25 14:40	RJP	Mt. Juliet, TN
Mercury by Method 7470A	WG2596878	1	09/11/25 09:40	09/11/25 14:56	SDG	Mt. Juliet, TN
Mercury by Method 7470A	WG2597351	1	09/11/25 15:51	09/12/25 15:18	SDG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597476	1	09/11/25 11:12	09/11/25 21:06	BAG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2597498	1	09/10/25 11:03	09/10/25 19:28	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597487	1	09/10/25 14:09	09/23/25 14:35	UNP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2597639	1	09/10/25 11:15	09/24/25 17:05	TMT	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jeff Carr
Project Manager

Sample Delivery Group (SDG) Narrative

Analysis was filtered in the laboratory.

Lab Sample ID	Project Sample ID	Method
L1895667-01	APW-03-WG-20250903	6020B, 6010D, 7470A
L1895667-02	APW-08-WG-20250905	6020B, 6010D, 7470A
L1895667-03	APW-07-WG-20250904	6010D, 6020B, 7470A
L1895667-04	APW-10S-WG-20250903	6020B, 6010D, 7470A
L1895667-05	APW-10D-WG-20250903	6010D, 6020B, 7470A
L1895667-06	APW-06S-WG-20250904	7470A, 6020B, 6010D
L1895667-07	APW-06D-WG-20250904	6020B, 6010D, 7470A
L1895667-08	APW-05R-WG-20250904	6010D, 6020B, 7470A
L1895667-09	APW-09-WG-20250605	6020B, 6010D, 7470A
L1895667-10	APW-02-WG-20250904	6020B, 6010D, 7470A
L1895667-11	APW-01R-WG-20250904	6020B, 6010D, 7470A
L1895667-12	APW-04-WG-20250904	6010D, 7470A, 6020B
L1895667-14	DUP-01-WG-20250904	7470A, 6010D, 6020B
L1895667-15	DUP-02-WG-20250905	6010D, 7470A, 6020B
R4272290-3		6010D
R4277020-3		6020B

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	540		10.0	1	09/08/2025 14:01	WG2595642

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	6.03		5.00	5	09/09/2025 05:50	WG2595823
Fluoride	ND		0.750	5	09/09/2025 05:50	WG2595823
Sulfate	251		25.0	5	09/09/2025 05:50	WG2595823

Sample Narrative:

L1895667-01 WG2595823: Dilution due to matrix impact on instrumentation at lower dilution

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	8.03	T8	1	09/11/2025 23:00	WG2598465

Sample Narrative:

L1895667-01 WG2598465: 8.03 at 20.4C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	09/13/2025 18:24	WG2596032
Mercury,Dissolved	ND		0.000200	1	09/11/2025 17:47	WG2596881

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	4.36		0.200	1	09/10/2025 18:54	WG2597498
Boron,Dissolved	4.19		0.200	1	09/11/2025 20:40	WG2597476
Calcium	111		1.00	1	09/10/2025 18:54	WG2597498
Calcium,Dissolved	107		1.00	1	09/11/2025 20:40	WG2597476

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	09/24/2025 16:13	WG2597639
Antimony,Dissolved	ND		0.00400	1	09/22/2025 22:47	WG2597487
Arsenic	ND		0.00200	1	09/24/2025 16:13	WG2597639
Arsenic,Dissolved	ND		0.00200	1	09/22/2025 22:47	WG2597487
Barium	0.116		0.00200	1	09/24/2025 16:13	WG2597639
Barium,Dissolved	0.0998		0.00200	1	09/22/2025 22:47	WG2597487
Beryllium	ND		0.00200	1	09/24/2025 16:13	WG2597639
Beryllium,Dissolved	ND		0.00200	1	09/22/2025 22:47	WG2597487
Cadmium	ND		0.00100	1	09/24/2025 16:13	WG2597639
Cadmium,Dissolved	ND		0.00100	1	09/22/2025 22:47	WG2597487
Chromium	0.00203		0.00200	1	09/24/2025 16:13	WG2597639
Chromium,Dissolved	ND		0.00200	1	09/22/2025 22:47	WG2597487
Cobalt	ND		0.00200	1	09/24/2025 16:13	WG2597639
Cobalt,Dissolved	ND		0.00200	1	09/22/2025 22:47	WG2597487
Lead	ND		0.00200	1	09/24/2025 16:13	WG2597639
Lead,Dissolved	ND		0.00200	1	09/22/2025 22:47	WG2597487

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Lithium	0.0300		0.00200	1	09/24/2025 16:13	WG2597639
Lithium,Dissolved	0.0294		0.00200	1	09/22/2025 22:47	WG2597487
Molybdenum	0.0628		0.00500	1	09/24/2025 16:13	WG2597639
Molybdenum,Dissolved	0.0596		0.00500	1	09/22/2025 22:47	WG2597487
Selenium	ND		0.00200	1	09/24/2025 16:13	WG2597639
Selenium,Dissolved	ND		0.00200	1	09/22/2025 22:47	WG2597487
Thallium	ND		0.00200	1	09/24/2025 16:13	WG2597639
Thallium,Dissolved	ND		0.00200	1	09/22/2025 22:47	WG2597487

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	426		10.0	1	09/09/2025 11:54	WG2596320

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	8.39		1.00	1	09/09/2025 06:40	WG2595823
Fluoride	0.253		0.150	1	09/09/2025 06:40	WG2595823
Sulfate	27.7		5.00	1	09/09/2025 06:40	WG2595823

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.36	T8	1	09/11/2025 23:00	WG2598465

Sample Narrative:
L1895667-02 WG2598465: 7.36 at 20.4C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	09/13/2025 18:26	WG2596032
Mercury,Dissolved	ND		0.000200	1	09/11/2025 17:49	WG2596881

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	ND		0.200	1	09/10/2025 19:01	WG2597498
Boron,Dissolved	ND		0.200	1	09/11/2025 20:42	WG2597476
Calcium	102		1.00	1	09/10/2025 19:01	WG2597498
Calcium,Dissolved	100		1.00	1	09/11/2025 20:42	WG2597476

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	09/24/2025 16:16	WG2597639
Antimony,Dissolved	ND		0.00400	1	09/22/2025 23:00	WG2597487
Arsenic	ND		0.00200	1	09/24/2025 16:16	WG2597639
Arsenic,Dissolved	ND		0.00200	1	09/22/2025 23:00	WG2597487
Barium	0.200		0.00200	1	09/24/2025 16:16	WG2597639
Barium,Dissolved	0.185		0.00200	1	09/22/2025 23:00	WG2597487
Beryllium	ND		0.00200	1	09/24/2025 16:16	WG2597639
Beryllium,Dissolved	ND		0.00200	1	09/22/2025 23:00	WG2597487
Cadmium	ND		0.00100	1	09/24/2025 16:16	WG2597639
Cadmium,Dissolved	ND		0.00100	1	09/22/2025 23:00	WG2597487
Chromium	ND		0.00200	1	09/24/2025 16:16	WG2597639
Chromium,Dissolved	ND		0.00200	1	09/22/2025 23:00	WG2597487
Cobalt	ND		0.00200	1	09/24/2025 16:16	WG2597639
Cobalt,Dissolved	ND		0.00200	1	09/22/2025 23:00	WG2597487
Lead	ND		0.00200	1	09/24/2025 16:16	WG2597639
Lead,Dissolved	ND		0.00200	1	09/22/2025 23:00	WG2597487
Lithium	0.0180		0.00200	1	09/24/2025 16:16	WG2597639
Lithium,Dissolved	0.0170		0.00200	1	09/22/2025 23:00	WG2597487
Molybdenum	ND		0.00500	1	09/24/2025 16:16	WG2597639

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	ND		0.00500	1	09/22/2025 23:00	WG2597487
Selenium	0.0166		0.00200	1	09/24/2025 16:16	WG2597639
Selenium,Dissolved	0.0169		0.00200	1	09/22/2025 23:00	WG2597487
Thallium	ND		0.00200	1	09/24/2025 16:16	WG2597639
Thallium,Dissolved	ND		0.00200	1	09/22/2025 23:00	WG2597487

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	729		13.3	1	09/09/2025 11:54	WG2596320

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	8.97		1.00	1	09/09/2025 07:06	WG2595823
Fluoride	0.174		0.150	1	09/09/2025 07:06	WG2595823
Sulfate	37.4		5.00	1	09/09/2025 07:06	WG2595823

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.08	T8	1	09/11/2025 23:00	WG2598465

Sample Narrative:
L1895667-03 WG2598465: 7.08 at 20.5C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	09/13/2025 18:29	WG2596032
Mercury,Dissolved	ND		0.000200	1	09/11/2025 17:52	WG2596881

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	0.215		0.200	1	09/10/2025 19:03	WG2597498
Boron,Dissolved	0.204		0.200	1	09/11/2025 20:44	WG2597476
Calcium	212		1.00	1	09/10/2025 19:03	WG2597498
Calcium,Dissolved	201		1.00	1	09/11/2025 20:44	WG2597476

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	09/24/2025 16:20	WG2597639
Antimony,Dissolved	ND		0.00400	1	09/22/2025 23:03	WG2597487
Arsenic	ND		0.00200	1	09/24/2025 16:20	WG2597639
Arsenic,Dissolved	ND		0.00200	1	09/22/2025 23:03	WG2597487
Barium	0.337		0.00200	1	09/24/2025 16:20	WG2597639
Barium,Dissolved	0.256		0.00200	1	09/22/2025 23:03	WG2597487
Beryllium	ND		0.00200	1	09/24/2025 16:20	WG2597639
Beryllium,Dissolved	ND		0.00200	1	09/22/2025 23:03	WG2597487
Cadmium	ND		0.00100	1	09/24/2025 16:20	WG2597639
Cadmium,Dissolved	ND		0.00100	1	09/22/2025 23:03	WG2597487
Chromium	ND		0.00200	1	09/24/2025 16:20	WG2597639
Chromium,Dissolved	ND		0.00200	1	09/22/2025 23:03	WG2597487
Cobalt	ND		0.00200	1	09/24/2025 16:20	WG2597639
Cobalt,Dissolved	ND		0.00200	1	09/22/2025 23:03	WG2597487
Lead	ND		0.00200	1	09/24/2025 16:20	WG2597639
Lead,Dissolved	ND		0.00200	1	09/22/2025 23:03	WG2597487
Lithium	0.0154		0.00200	1	09/24/2025 16:20	WG2597639
Lithium,Dissolved	0.0139		0.00200	1	09/22/2025 23:03	WG2597487
Molybdenum	ND		0.00500	1	09/24/2025 16:20	WG2597639

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	ND		0.00500	1	09/22/2025 23:03	WG2597487
Selenium	ND		0.00200	1	09/24/2025 16:20	WG2597639
Selenium,Dissolved	ND		0.00200	1	09/22/2025 23:03	WG2597487
Thallium	ND		0.00200	1	09/24/2025 16:20	WG2597639
Thallium,Dissolved	ND		0.00200	1	09/22/2025 23:03	WG2597487

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	780		20.0	1	09/08/2025 14:01	WG2595642

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	10.4		1.00	1	09/09/2025 07:31	WG2595823
Fluoride	0.265		0.150	1	09/09/2025 07:31	WG2595823
Sulfate	ND		5.00	1	09/09/2025 07:31	WG2595823

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.29	T8	1	09/11/2025 23:00	WG2598465

Sample Narrative:
L1895667-04 WG2598465: 7.29 at 20.4C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	09/13/2025 18:31	WG2596032
Mercury,Dissolved	ND		0.000200	1	09/11/2025 17:54	WG2596881

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	0.574		0.200	1	09/10/2025 19:05	WG2597498
Boron,Dissolved	0.553		0.200	1	09/11/2025 20:45	WG2597476
Calcium	164		1.00	1	09/10/2025 19:05	WG2597498
Calcium,Dissolved	157		1.00	1	09/11/2025 20:45	WG2597476

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	09/24/2025 16:23	WG2597639
Antimony,Dissolved	ND		0.00400	1	09/22/2025 23:06	WG2597487
Arsenic	0.192		0.00200	1	09/24/2025 16:23	WG2597639
Arsenic,Dissolved	0.0694		0.00200	1	09/22/2025 23:06	WG2597487
Barium	0.601		0.00200	1	09/24/2025 16:23	WG2597639
Barium,Dissolved	0.323		0.00200	1	09/22/2025 23:06	WG2597487
Beryllium	ND		0.00200	1	09/24/2025 16:23	WG2597639
Beryllium,Dissolved	ND		0.00200	1	09/22/2025 23:06	WG2597487
Cadmium	ND		0.00100	1	09/24/2025 16:23	WG2597639
Cadmium,Dissolved	ND		0.00100	1	09/22/2025 23:06	WG2597487
Chromium	ND		0.00200	1	09/24/2025 16:23	WG2597639
Chromium,Dissolved	ND		0.00200	1	09/22/2025 23:06	WG2597487
Cobalt	ND		0.00200	1	09/24/2025 16:23	WG2597639
Cobalt,Dissolved	ND		0.00200	1	09/22/2025 23:06	WG2597487
Lead	ND		0.00200	1	09/24/2025 16:23	WG2597639
Lead,Dissolved	ND		0.00200	1	09/22/2025 23:06	WG2597487
Lithium	0.0297		0.00200	1	09/24/2025 16:23	WG2597639
Lithium,Dissolved	0.0259		0.00200	1	09/22/2025 23:06	WG2597487
Molybdenum	ND		0.00500	1	09/24/2025 16:23	WG2597639

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	ND		0.00500	1	09/22/2025 23:06	WG2597487
Selenium	ND		0.00200	1	09/24/2025 16:23	WG2597639
Selenium,Dissolved	ND		0.00200	1	09/22/2025 23:06	WG2597487
Thallium	ND		0.00200	1	09/24/2025 16:23	WG2597639
Thallium,Dissolved	ND		0.00200	1	09/22/2025 23:06	WG2597487

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	452		10.0	1	09/08/2025 14:01	WG2595642

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	20.8		1.00	1	09/08/2025 23:37	WG2595826
Fluoride	0.150	P1	0.150	1	09/08/2025 23:37	WG2595826
Sulfate	29.1		5.00	1	09/08/2025 23:37	WG2595826

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.57	T8	1	09/11/2025 23:00	WG2598465

Sample Narrative:
L1895667-05 WG2598465: 7.57 at 20.4C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	09/13/2025 18:33	WG2596032
Mercury,Dissolved	ND		0.000200	1	09/11/2025 17:57	WG2596881

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	ND		0.200	1	09/10/2025 19:07	WG2597498
Boron,Dissolved	ND		0.200	1	09/11/2025 20:47	WG2597476
Calcium	123		1.00	1	09/10/2025 19:07	WG2597498
Calcium,Dissolved	118		1.00	1	09/11/2025 20:47	WG2597476

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	09/24/2025 16:26	WG2597639
Antimony,Dissolved	ND		0.00400	1	09/22/2025 23:09	WG2597487
Arsenic	0.00492		0.00200	1	09/24/2025 16:26	WG2597639
Arsenic,Dissolved	0.00355		0.00200	1	09/22/2025 23:09	WG2597487
Barium	0.315		0.00200	1	09/24/2025 16:26	WG2597639
Barium,Dissolved	0.287		0.00200	1	09/22/2025 23:09	WG2597487
Beryllium	ND		0.00200	1	09/24/2025 16:26	WG2597639
Beryllium,Dissolved	ND		0.00200	1	09/22/2025 23:09	WG2597487
Cadmium	ND		0.00100	1	09/24/2025 16:26	WG2597639
Cadmium,Dissolved	ND		0.00100	1	09/22/2025 23:09	WG2597487
Chromium	ND		0.00200	1	09/24/2025 16:26	WG2597639
Chromium,Dissolved	ND		0.00200	1	09/22/2025 23:09	WG2597487
Cobalt	0.00280		0.00200	1	09/24/2025 16:26	WG2597639
Cobalt,Dissolved	0.00263		0.00200	1	09/22/2025 23:09	WG2597487
Lead	ND		0.00200	1	09/24/2025 16:26	WG2597639
Lead,Dissolved	ND		0.00200	1	09/22/2025 23:09	WG2597487
Lithium	0.0142		0.00200	1	09/24/2025 16:26	WG2597639
Lithium,Dissolved	0.0126		0.00200	1	09/22/2025 23:09	WG2597487
Molybdenum	ND		0.00500	1	09/24/2025 16:26	WG2597639

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	ND		0.00500	1	09/22/2025 23:09	WG2597487
Selenium	ND		0.00200	1	09/24/2025 16:26	WG2597639
Selenium,Dissolved	ND		0.00200	1	09/22/2025 23:09	WG2597487
Thallium	ND		0.00200	1	09/24/2025 16:26	WG2597639
Thallium,Dissolved	ND		0.00200	1	09/22/2025 23:09	WG2597487

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	481		10.0	1	09/09/2025 11:54	WG2596320

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	36.1		1.00	1	09/09/2025 00:29	WG2595826
Fluoride	0.223		0.150	1	09/09/2025 00:29	WG2595826
Sulfate	92.6		25.0	5	09/09/2025 00:47	WG2595826

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.65	T8	1	09/11/2025 23:00	WG2598465

Sample Narrative:
L1895667-06 WG2598465: 7.65 at 20.9C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	09/11/2025 15:29	WG2596878
Mercury,Dissolved	ND		0.000200	1	09/12/2025 14:53	WG2597351

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	3.78		0.200	1	09/10/2025 19:12	WG2597498
Boron,Dissolved	3.56		0.200	1	09/11/2025 20:49	WG2597476
Calcium	101		1.00	1	09/10/2025 19:12	WG2597498
Calcium,Dissolved	96.0		1.00	1	09/11/2025 20:49	WG2597476

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	09/24/2025 16:29	WG2597639
Antimony,Dissolved	ND		0.00400	1	09/23/2025 14:10	WG2597487
Arsenic	ND		0.00200	1	09/24/2025 16:29	WG2597639
Arsenic,Dissolved	ND		0.00200	1	09/23/2025 14:10	WG2597487
Barium	0.197		0.00200	1	09/24/2025 16:29	WG2597639
Barium,Dissolved	0.138		0.00200	1	09/23/2025 14:10	WG2597487
Beryllium	ND		0.00200	1	09/24/2025 16:29	WG2597639
Beryllium,Dissolved	ND		0.00200	1	09/23/2025 14:10	WG2597487
Cadmium	ND		0.00100	1	09/24/2025 16:29	WG2597639
Cadmium,Dissolved	ND		0.00100	1	09/23/2025 14:10	WG2597487
Chromium	0.0326		0.00200	1	09/24/2025 16:29	WG2597639
Chromium,Dissolved	ND		0.00200	1	09/23/2025 14:10	WG2597487
Cobalt	ND		0.00200	1	09/24/2025 16:29	WG2597639
Cobalt,Dissolved	ND		0.00200	1	09/23/2025 14:10	WG2597487
Lead	ND		0.00200	1	09/24/2025 16:29	WG2597639
Lead,Dissolved	ND		0.00200	1	09/23/2025 14:10	WG2597487
Lithium	0.0311		0.00200	1	09/24/2025 16:29	WG2597639
Lithium,Dissolved	0.0278		0.00200	1	09/23/2025 14:10	WG2597487
Molybdenum	0.203		0.00500	1	09/24/2025 16:29	WG2597639

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	0.199		0.00500	1	09/23/2025 14:10	WG2597487
Selenium	ND		0.00200	1	09/24/2025 16:29	WG2597639
Selenium,Dissolved	ND		0.00200	1	09/23/2025 14:10	WG2597487
Thallium	ND		0.00200	1	09/24/2025 16:29	WG2597639
Thallium,Dissolved	ND		0.00200	1	09/23/2025 14:10	WG2597487

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	712		13.3	1	09/09/2025 11:54	WG2596320

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	17.3		1.00	1	09/09/2025 01:04	WG2595826
Fluoride	0.202		0.150	1	09/09/2025 01:04	WG2595826
Sulfate	201		25.0	5	09/09/2025 01:21	WG2595826

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.55	T8	1	09/11/2025 23:00	WG2598465

Sample Narrative:
L1895667-07 WG2598465: 7.55 at 20.5C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	09/11/2025 15:31	WG2596878
Mercury,Dissolved	ND		0.000200	1	09/12/2025 14:55	WG2597351

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	3.63		0.200	1	09/10/2025 19:14	WG2597498
Boron,Dissolved	3.60		0.200	1	09/11/2025 20:51	WG2597476
Calcium	121		1.00	1	09/10/2025 19:14	WG2597498
Calcium,Dissolved	118		1.00	1	09/11/2025 20:51	WG2597476

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	09/24/2025 16:32	WG2597639
Antimony,Dissolved	ND		0.00400	1	09/23/2025 14:13	WG2597487
Arsenic	0.0107		0.00200	1	09/24/2025 16:32	WG2597639
Arsenic,Dissolved	0.00467		0.00200	1	09/23/2025 14:13	WG2597487
Barium	0.123		0.00200	1	09/24/2025 16:32	WG2597639
Barium,Dissolved	0.115		0.00200	1	09/23/2025 14:13	WG2597487
Beryllium	ND		0.00200	1	09/24/2025 16:32	WG2597639
Beryllium,Dissolved	ND		0.00200	1	09/23/2025 14:13	WG2597487
Cadmium	ND		0.00100	1	09/24/2025 16:32	WG2597639
Cadmium,Dissolved	ND		0.00100	1	09/23/2025 14:13	WG2597487
Chromium	0.0945		0.00200	1	09/24/2025 16:32	WG2597639
Chromium,Dissolved	ND		0.00200	1	09/23/2025 14:13	WG2597487
Cobalt	0.00223		0.00200	1	09/24/2025 16:32	WG2597639
Cobalt,Dissolved	ND		0.00200	1	09/23/2025 14:13	WG2597487
Lead	ND		0.00200	1	09/24/2025 16:32	WG2597639
Lead,Dissolved	ND		0.00200	1	09/23/2025 14:13	WG2597487
Lithium	0.0167		0.00200	1	09/24/2025 16:32	WG2597639
Lithium,Dissolved	0.0151		0.00200	1	09/23/2025 14:13	WG2597487
Molybdenum	0.0658		0.00500	1	09/24/2025 16:32	WG2597639

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	0.0598		0.00500	1	09/23/2025 14:13	WG2597487
Selenium	ND		0.00200	1	09/24/2025 16:32	WG2597639
Selenium,Dissolved	ND		0.00200	1	09/23/2025 14:13	WG2597487
Thallium	ND		0.00200	1	09/24/2025 16:32	WG2597639
Thallium,Dissolved	ND		0.00200	1	09/23/2025 14:13	WG2597487

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	485		10.0	1	09/09/2025 11:54	WG2596320

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	20.2		1.00	1	09/09/2025 01:39	WG2595826
Fluoride	0.257		0.150	1	09/09/2025 01:39	WG2595826
Sulfate	97.9		25.0	5	09/09/2025 01:56	WG2595826

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.56	T8	1	09/12/2025 14:40	WG2598478

Sample Narrative:
L1895667-08 WG2598478: 7.56 at 23C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	09/11/2025 15:33	WG2596878
Mercury,Dissolved	ND		0.000200	1	09/12/2025 14:58	WG2597351

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	4.18		0.200	1	09/10/2025 19:15	WG2597498
Boron,Dissolved	4.02		0.200	1	09/11/2025 20:52	WG2597476
Calcium	102		1.00	1	09/10/2025 19:15	WG2597498
Calcium,Dissolved	98.1		1.00	1	09/11/2025 20:52	WG2597476

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	09/24/2025 16:36	WG2597639
Antimony,Dissolved	ND		0.00400	1	09/23/2025 14:16	WG2597487
Arsenic	0.00216		0.00200	1	09/24/2025 16:36	WG2597639
Arsenic,Dissolved	ND		0.00200	1	09/23/2025 14:16	WG2597487
Barium	0.139		0.00200	1	09/24/2025 16:36	WG2597639
Barium,Dissolved	0.105		0.00200	1	09/23/2025 14:16	WG2597487
Beryllium	ND		0.00200	1	09/24/2025 16:36	WG2597639
Beryllium,Dissolved	ND		0.00200	1	09/23/2025 14:16	WG2597487
Cadmium	ND		0.00100	1	09/24/2025 16:36	WG2597639
Cadmium,Dissolved	ND		0.00100	1	09/23/2025 14:16	WG2597487
Chromium	ND		0.00200	1	09/24/2025 16:36	WG2597639
Chromium,Dissolved	ND		0.00200	1	09/23/2025 14:16	WG2597487
Cobalt	ND		0.00200	1	09/24/2025 16:36	WG2597639
Cobalt,Dissolved	ND		0.00200	1	09/23/2025 14:16	WG2597487
Lead	ND		0.00200	1	09/24/2025 16:36	WG2597639
Lead,Dissolved	ND		0.00200	1	09/23/2025 14:16	WG2597487
Lithium	0.0262		0.00200	1	09/24/2025 16:36	WG2597639
Lithium,Dissolved	0.0237		0.00200	1	09/23/2025 14:16	WG2597487
Molybdenum	0.130		0.00500	1	09/24/2025 16:36	WG2597639

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	0.134		0.00500	1	09/23/2025 14:16	WG2597487
Selenium	ND		0.00200	1	09/24/2025 16:36	WG2597639
Selenium,Dissolved	ND		0.00200	1	09/23/2025 14:16	WG2597487
Thallium	ND		0.00200	1	09/24/2025 16:36	WG2597639
Thallium,Dissolved	ND		0.00200	1	09/23/2025 14:16	WG2597487

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	374		10.0	1	09/09/2025 11:54	WG2596320

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	9.87		1.00	1	09/09/2025 02:13	WG2595826
Fluoride	0.211		0.150	1	09/09/2025 02:13	WG2595826
Sulfate	44.0		5.00	1	09/09/2025 02:13	WG2595826

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.73	T8	1	09/12/2025 14:40	WG2598478

Sample Narrative:
L1895667-09 WG2598478: 7.73 at 22.8C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	09/11/2025 15:36	WG2596878
Mercury,Dissolved	ND		0.000200	1	09/12/2025 15:00	WG2597351

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	0.523		0.200	1	09/10/2025 19:17	WG2597498
Boron,Dissolved	0.504		0.200	1	09/11/2025 20:54	WG2597476
Calcium	89.0		1.00	1	09/10/2025 19:17	WG2597498
Calcium,Dissolved	86.6		1.00	1	09/11/2025 20:54	WG2597476

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	09/24/2025 16:39	WG2597639
Antimony,Dissolved	ND		0.00400	1	09/23/2025 14:19	WG2597487
Arsenic	0.00225		0.00200	1	09/24/2025 16:39	WG2597639
Arsenic,Dissolved	0.00213		0.00200	1	09/23/2025 14:19	WG2597487
Barium	0.108		0.00200	1	09/24/2025 16:39	WG2597639
Barium,Dissolved	0.106		0.00200	1	09/23/2025 14:19	WG2597487
Beryllium	ND		0.00200	1	09/24/2025 16:39	WG2597639
Beryllium,Dissolved	ND		0.00200	1	09/23/2025 14:19	WG2597487
Cadmium	ND		0.00100	1	09/24/2025 16:39	WG2597639
Cadmium,Dissolved	ND		0.00100	1	09/23/2025 14:19	WG2597487
Chromium	0.00268		0.00200	1	09/24/2025 16:39	WG2597639
Chromium,Dissolved	ND		0.00200	1	09/23/2025 14:19	WG2597487
Cobalt	ND		0.00200	1	09/24/2025 16:39	WG2597639
Cobalt,Dissolved	ND		0.00200	1	09/23/2025 14:19	WG2597487
Lead	ND		0.00200	1	09/24/2025 16:39	WG2597639
Lead,Dissolved	ND		0.00200	1	09/23/2025 14:19	WG2597487
Lithium	0.0166		0.00200	1	09/24/2025 16:39	WG2597639
Lithium,Dissolved	0.0147		0.00200	1	09/23/2025 14:19	WG2597487
Molybdenum	0.0252		0.00500	1	09/24/2025 16:39	WG2597639

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	0.0252		0.00500	1	09/23/2025 14:19	WG2597487
Selenium	0.0164		0.00200	1	09/24/2025 16:39	WG2597639
Selenium,Dissolved	0.0170		0.00200	1	09/23/2025 14:19	WG2597487
Thallium	ND		0.00200	1	09/24/2025 16:39	WG2597639
Thallium,Dissolved	ND		0.00200	1	09/23/2025 14:19	WG2597487

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	799		13.3	1	09/12/2025 16:01	WG2599520

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	8.16		1.00	1	09/09/2025 02:31	WG2595826
Fluoride	0.218		0.150	1	09/09/2025 02:31	WG2595826
Sulfate	402		25.0	5	09/09/2025 02:48	WG2595826

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.26	T8	1	09/12/2025 14:40	WG2598478

Sample Narrative:
L1895667-10 WG2598478: 7.26 at 22.7C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	09/11/2025 15:38	WG2596878
Mercury,Dissolved	ND		0.000200	1	09/12/2025 15:03	WG2597351

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	9.90		0.200	1	09/10/2025 19:19	WG2597498
Boron,Dissolved	9.56		0.200	1	09/11/2025 20:56	WG2597476
Calcium	151		1.00	1	09/10/2025 19:19	WG2597498
Calcium,Dissolved	145		1.00	1	09/11/2025 20:56	WG2597476

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.0400	10	09/24/2025 16:42	WG2597639
Antimony,Dissolved	ND		0.00400	1	09/23/2025 14:22	WG2597487
Arsenic	ND		0.0200	10	09/24/2025 16:42	WG2597639
Arsenic,Dissolved	0.00382		0.00200	1	09/23/2025 14:22	WG2597487
Barium	0.162		0.0200	10	09/24/2025 16:42	WG2597639
Barium,Dissolved	0.127		0.00200	1	09/23/2025 14:22	WG2597487
Beryllium	ND		0.0200	10	09/24/2025 16:42	WG2597639
Beryllium,Dissolved	ND		0.00200	1	09/23/2025 14:22	WG2597487
Cadmium	ND		0.0100	10	09/24/2025 16:42	WG2597639
Cadmium,Dissolved	ND		0.00100	1	09/23/2025 14:22	WG2597487
Chromium	ND		0.0200	10	09/24/2025 16:42	WG2597639
Chromium,Dissolved	ND		0.00200	1	09/23/2025 14:22	WG2597487
Cobalt	ND		0.0200	10	09/24/2025 16:42	WG2597639
Cobalt,Dissolved	ND		0.00200	1	09/23/2025 14:22	WG2597487
Lead	ND		0.0200	10	09/24/2025 16:42	WG2597639
Lead,Dissolved	ND		0.00200	1	09/23/2025 14:22	WG2597487
Lithium	0.0438		0.0200	10	09/24/2025 16:42	WG2597639
Lithium,Dissolved	0.0375		0.00200	1	09/23/2025 14:22	WG2597487
Molybdenum	0.197		0.0500	10	09/24/2025 16:42	WG2597639

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	0.201		0.00500	1	09/23/2025 14:22	WG2597487
Selenium	ND		0.0200	10	09/24/2025 16:42	WG2597639
Selenium,Dissolved	ND		0.00200	1	09/23/2025 14:22	WG2597487
Thallium	ND		0.0200	10	09/24/2025 16:42	WG2597639
Thallium,Dissolved	ND		0.00200	1	09/23/2025 14:22	WG2597487

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	324		10.0	1	09/09/2025 18:50	WG2596935

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	1.10		1.00	1	09/09/2025 03:40	WG2595826
Fluoride	0.155		0.150	1	09/09/2025 03:40	WG2595826
Sulfate	23.3		5.00	1	09/09/2025 03:40	WG2595826

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	6.79	T8	1	09/12/2025 14:40	WG2598478

Sample Narrative:
L1895667-11 WG2598478: 6.79 at 22.7C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	09/11/2025 15:41	WG2596878
Mercury,Dissolved	ND		0.000200	1	09/12/2025 15:05	WG2597351

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	ND		0.200	1	09/10/2025 19:21	WG2597498
Boron,Dissolved	ND		0.200	1	09/11/2025 21:01	WG2597476
Calcium	72.2		1.00	1	09/10/2025 19:21	WG2597498
Calcium,Dissolved	71.2		1.00	1	09/11/2025 21:01	WG2597476

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	09/24/2025 16:52	WG2597639
Antimony,Dissolved	ND		0.00400	1	09/23/2025 14:26	WG2597487
Arsenic	ND		0.00200	1	09/24/2025 16:52	WG2597639
Arsenic,Dissolved	ND		0.00200	1	09/23/2025 14:26	WG2597487
Barium	0.148		0.00200	1	09/24/2025 16:52	WG2597639
Barium,Dissolved	0.135		0.00200	1	09/23/2025 14:26	WG2597487
Beryllium	ND		0.00200	1	09/24/2025 16:52	WG2597639
Beryllium,Dissolved	ND		0.00200	1	09/23/2025 14:26	WG2597487
Cadmium	ND		0.00100	1	09/24/2025 16:52	WG2597639
Cadmium,Dissolved	ND		0.00100	1	09/23/2025 14:26	WG2597487
Chromium	0.00270		0.00200	1	09/24/2025 16:52	WG2597639
Chromium,Dissolved	ND		0.00200	1	09/23/2025 14:26	WG2597487
Cobalt	ND		0.00200	1	09/24/2025 16:52	WG2597639
Cobalt,Dissolved	ND		0.00200	1	09/23/2025 14:26	WG2597487
Lead	ND		0.00200	1	09/24/2025 16:52	WG2597639
Lead,Dissolved	ND		0.00200	1	09/23/2025 14:26	WG2597487
Lithium	0.0136		0.00200	1	09/24/2025 16:52	WG2597639
Lithium,Dissolved	0.0114		0.00200	1	09/23/2025 14:26	WG2597487
Molybdenum	ND		0.00500	1	09/24/2025 16:52	WG2597639

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	ND		0.00500	1	09/23/2025 14:26	WG2597487
Selenium	0.00293		0.00200	1	09/24/2025 16:52	WG2597639
Selenium,Dissolved	0.00309		0.00200	1	09/23/2025 14:26	WG2597487
Thallium	ND		0.00200	1	09/24/2025 16:52	WG2597639
Thallium,Dissolved	ND		0.00200	1	09/23/2025 14:26	WG2597487

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	436		10.0	1	09/12/2025 16:01	WG2599520

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	9.92		1.00	1	09/09/2025 03:58	WG2595826
Fluoride	0.163		0.150	1	09/09/2025 03:58	WG2595826
Sulfate	69.1		5.00	1	09/09/2025 03:58	WG2595826

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.55	T8	1	09/12/2025 14:40	WG2598478

Sample Narrative:
L1895667-12 WG2598478: 7.55 at 22.7C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	09/11/2025 15:43	WG2596878
Mercury,Dissolved	ND		0.000200	1	09/12/2025 15:13	WG2597351

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	1.21		0.200	1	09/10/2025 19:22	WG2597498
Boron,Dissolved	1.16		0.200	1	09/11/2025 21:03	WG2597476
Calcium	102		1.00	1	09/10/2025 19:22	WG2597498
Calcium,Dissolved	97.7		1.00	1	09/11/2025 21:03	WG2597476

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	09/24/2025 16:55	WG2597639
Antimony,Dissolved	ND		0.00400	1	09/23/2025 14:29	WG2597487
Arsenic	ND		0.00200	1	09/24/2025 16:55	WG2597639
Arsenic,Dissolved	ND		0.00200	1	09/23/2025 14:29	WG2597487
Barium	0.131		0.00200	1	09/24/2025 16:55	WG2597639
Barium,Dissolved	0.128		0.00200	1	09/23/2025 14:29	WG2597487
Beryllium	ND		0.00200	1	09/24/2025 16:55	WG2597639
Beryllium,Dissolved	ND		0.00200	1	09/23/2025 14:29	WG2597487
Cadmium	ND		0.00100	1	09/24/2025 16:55	WG2597639
Cadmium,Dissolved	ND		0.00100	1	09/23/2025 14:29	WG2597487
Chromium	0.00293		0.00200	1	09/24/2025 16:55	WG2597639
Chromium,Dissolved	ND		0.00200	1	09/23/2025 14:29	WG2597487
Cobalt	ND		0.00200	1	09/24/2025 16:55	WG2597639
Cobalt,Dissolved	ND		0.00200	1	09/23/2025 14:29	WG2597487
Lead	ND		0.00200	1	09/24/2025 16:55	WG2597639
Lead,Dissolved	ND		0.00200	1	09/23/2025 14:29	WG2597487
Lithium	0.0297		0.00200	1	09/24/2025 16:55	WG2597639
Lithium,Dissolved	0.0253		0.00200	1	09/23/2025 14:29	WG2597487
Molybdenum	0.0538		0.00500	1	09/24/2025 16:55	WG2597639

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	0.0549		0.00500	1	09/23/2025 14:29	WG2597487
Selenium	0.0179		0.00200	1	09/24/2025 16:55	WG2597639
Selenium,Dissolved	0.0173		0.00200	1	09/23/2025 14:29	WG2597487
Thallium	ND		0.00200	1	09/24/2025 16:55	WG2597639
Thallium,Dissolved	ND		0.00200	1	09/23/2025 14:29	WG2597487

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	ND		10.0	1	09/08/2025 14:01	WG2595642

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	ND		1.00	1	09/09/2025 04:15	WG2595826
Fluoride	ND		0.150	1	09/09/2025 04:15	WG2595826
Sulfate	ND		5.00	1	09/09/2025 04:15	WG2595826

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	5.58	T8	1	09/12/2025 14:40	WG2598478

Sample Narrative:

L1895667-13 WG2598478: 5.58 at 22.8C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	09/11/2025 15:46	WG2596878

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	ND		0.200	1	09/10/2025 19:24	WG2597498
Calcium	ND		1.00	1	09/10/2025 19:24	WG2597498

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	09/24/2025 16:58	WG2597639
Arsenic	ND		0.00200	1	09/24/2025 16:58	WG2597639
Barium	ND		0.00200	1	09/24/2025 16:58	WG2597639
Beryllium	ND		0.00200	1	09/24/2025 16:58	WG2597639
Cadmium	ND		0.00100	1	09/24/2025 16:58	WG2597639
Chromium	ND		0.00200	1	09/24/2025 16:58	WG2597639
Cobalt	ND		0.00200	1	09/24/2025 16:58	WG2597639
Lead	ND		0.00200	1	09/24/2025 16:58	WG2597639
Lithium	ND		0.00200	1	09/24/2025 16:58	WG2597639
Molybdenum	ND		0.00500	1	09/24/2025 16:58	WG2597639
Selenium	ND		0.00200	1	09/24/2025 16:58	WG2597639
Thallium	ND		0.00200	1	09/24/2025 16:58	WG2597639

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	479		10.0	1	09/12/2025 16:01	WG2599520

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	24.1		1.00	1	09/09/2025 04:32	WG2595826
Fluoride	0.301		0.150	1	09/09/2025 04:32	WG2595826
Sulfate	116		25.0	5	09/09/2025 19:36	WG2595826

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.53	T8	1	09/12/2025 14:40	WG2598478

Sample Narrative:
L1895667-14 WG2598478: 7.53 at 22.7C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	09/11/2025 15:48	WG2596878
Mercury,Dissolved	ND		0.000200	1	09/12/2025 15:15	WG2597351

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	4.20		0.200	1	09/10/2025 19:26	WG2597498
Boron,Dissolved	4.00		0.200	1	09/11/2025 21:04	WG2597476
Calcium	102		1.00	1	09/10/2025 19:26	WG2597498
Calcium,Dissolved	97.4		1.00	1	09/11/2025 21:04	WG2597476

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	09/24/2025 17:02	WG2597639
Antimony,Dissolved	ND		0.00400	1	09/23/2025 14:32	WG2597487
Arsenic	0.00218		0.00200	1	09/24/2025 17:02	WG2597639
Arsenic,Dissolved	ND		0.00200	1	09/23/2025 14:32	WG2597487
Barium	0.141		0.00200	1	09/24/2025 17:02	WG2597639
Barium,Dissolved	0.101		0.00200	1	09/23/2025 14:32	WG2597487
Beryllium	ND		0.00200	1	09/24/2025 17:02	WG2597639
Beryllium,Dissolved	ND		0.00200	1	09/23/2025 14:32	WG2597487
Cadmium	ND		0.00100	1	09/24/2025 17:02	WG2597639
Cadmium,Dissolved	ND		0.00100	1	09/23/2025 14:32	WG2597487
Chromium	0.00298		0.00200	1	09/24/2025 17:02	WG2597639
Chromium,Dissolved	ND		0.00200	1	09/23/2025 14:32	WG2597487
Cobalt	ND		0.00200	1	09/24/2025 17:02	WG2597639
Cobalt,Dissolved	ND		0.00200	1	09/23/2025 14:32	WG2597487
Lead	ND		0.00200	1	09/24/2025 17:02	WG2597639
Lead,Dissolved	ND		0.00200	1	09/23/2025 14:32	WG2597487
Lithium	0.0269		0.00200	1	09/24/2025 17:02	WG2597639
Lithium,Dissolved	0.0229		0.00200	1	09/23/2025 14:32	WG2597487
Molybdenum	0.132		0.00500	1	09/24/2025 17:02	WG2597639

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	0.132		0.00500	1	09/23/2025 14:32	WG2597487
Selenium	ND		0.00200	1	09/24/2025 17:02	WG2597639
Selenium,Dissolved	ND		0.00200	1	09/23/2025 14:32	WG2597487
Thallium	ND		0.00200	1	09/24/2025 17:02	WG2597639
Thallium,Dissolved	ND		0.00200	1	09/23/2025 14:32	WG2597487

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	375		10.0	1	09/12/2025 16:01	WG2599520

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	9.54		1.00	1	09/09/2025 04:50	WG2595826
Fluoride	0.201		0.150	1	09/09/2025 04:50	WG2595826
Sulfate	43.3		5.00	1	09/09/2025 04:50	WG2595826

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.67	T8	1	09/12/2025 14:40	WG2598478

Sample Narrative:

L1895667-15 WG2598478: 7.67 at 22.7C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	09/11/2025 14:56	WG2596878
Mercury,Dissolved	ND		0.000200	1	09/12/2025 15:18	WG2597351

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	0.530		0.200	1	09/10/2025 19:28	WG2597498
Boron,Dissolved	0.505		0.200	1	09/11/2025 21:06	WG2597476
Calcium	88.5		1.00	1	09/10/2025 19:28	WG2597498
Calcium,Dissolved	86.3		1.00	1	09/11/2025 21:06	WG2597476

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	09/24/2025 17:05	WG2597639
Antimony,Dissolved	ND		0.00400	1	09/23/2025 14:35	WG2597487
Arsenic	0.00203		0.00200	1	09/24/2025 17:05	WG2597639
Arsenic,Dissolved	0.00209		0.00200	1	09/23/2025 14:35	WG2597487
Barium	0.107		0.00200	1	09/24/2025 17:05	WG2597639
Barium,Dissolved	0.106		0.00200	1	09/23/2025 14:35	WG2597487
Beryllium	ND		0.00200	1	09/24/2025 17:05	WG2597639
Beryllium,Dissolved	ND		0.00200	1	09/23/2025 14:35	WG2597487
Cadmium	ND		0.00100	1	09/24/2025 17:05	WG2597639
Cadmium,Dissolved	ND		0.00100	1	09/23/2025 14:35	WG2597487
Chromium	ND		0.00200	1	09/24/2025 17:05	WG2597639
Chromium,Dissolved	ND		0.00200	1	09/23/2025 14:35	WG2597487
Cobalt	ND		0.00200	1	09/24/2025 17:05	WG2597639
Cobalt,Dissolved	ND		0.00200	1	09/23/2025 14:35	WG2597487
Lead	ND		0.00200	1	09/24/2025 17:05	WG2597639
Lead,Dissolved	ND		0.00200	1	09/23/2025 14:35	WG2597487
Lithium	0.0159		0.00200	1	09/24/2025 17:05	WG2597639
Lithium,Dissolved	0.0141		0.00200	1	09/23/2025 14:35	WG2597487
Molybdenum	0.0238		0.00500	1	09/24/2025 17:05	WG2597639

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	0.0250		0.00500	1	09/23/2025 14:35	WG2597487
Selenium	0.0160		0.00200	1	09/24/2025 17:05	WG2597639
Selenium,Dissolved	0.0173		0.00200	1	09/23/2025 14:35	WG2597487
Thallium	ND		0.00200	1	09/24/2025 17:05	WG2597639
Thallium,Dissolved	ND		0.00200	1	09/23/2025 14:35	WG2597487

Method Blank (MB)

(MB) R4271613-1 09/08/25 14:01

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

L1895170-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1895170-01 09/08/25 14:01 • (DUP) R4271613-3 09/08/25 14:01

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	121	121	1	0.000		10

L1895667-13 Original Sample (OS) • Duplicate (DUP)

(OS) L1895667-13 09/08/25 14:01 • (DUP) R4271613-4 09/08/25 14:01

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	ND	ND	1	0.000		10

Laboratory Control Sample (LCS)

(LCS) R4271613-2 09/08/25 14:01

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8500	96.6	90.0-110	

Method Blank (MB)

(MB) R4272469-1 09/09/25 11:54

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

L1895647-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1895647-08 09/09/25 11:54 • (DUP) R4272469-3 09/09/25 11:54

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1090	1060	1	2.60		10

L1895695-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1895695-08 09/09/25 11:54 • (DUP) R4272469-4 09/09/25 11:54

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	59.0	58.0	1	1.71		10

Laboratory Control Sample (LCS)

(LCS) R4272469-2 09/09/25 11:54

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8570	97.4	90.0-110	

Method Blank (MB)

(MB) R4271943-1 09/09/25 18:50

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

L1895667-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1895667-11 09/09/25 18:50 • (DUP) R4271943-3 09/09/25 18:50

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	324	324	1	0.000		10

L1895882-19 Original Sample (OS) • Duplicate (DUP)

(OS) L1895882-19 09/09/25 18:50 • (DUP) R4271943-4 09/09/25 18:50

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	863	848	1	1.72		10

Laboratory Control Sample (LCS)

(LCS) R4271943-2 09/09/25 18:50

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8330	94.7	90.0-110	

Method Blank (MB)

(MB) R4273884-1 09/12/25 16:01

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

L1895658-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1895658-03 09/12/25 16:01 • (DUP) R4273884-3 09/12/25 16:01

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	396	401	1	1.25		10

L1895668-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1895668-06 09/12/25 16:01 • (DUP) R4273884-4 09/12/25 16:01

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	33100	32600	1	1.52		10

Laboratory Control Sample (LCS)

(LCS) R4273884-2 09/12/25 16:01

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8740	99.3	90.0-110	

Method Blank (MB)

(MB) R4270602-1 09/08/25 21:02

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chloride	U		0.547	1.00
Fluoride	U		0.0761	0.150
Sulfate	U		0.637	5.00

L1895467-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1895467-02 09/08/25 21:27 • (DUP) R4270602-3 09/08/25 21:52

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	7.03	7.26	1	3.16		15
Fluoride	0.218	0.204	1	6.92		15
Sulfate	52.1	54.0	1	3.46		15

L1895467-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1895467-03 09/08/25 22:43 • (DUP) R4270602-7 09/08/25 23:08

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	4.55	4.43	1	2.66		15
Fluoride	ND	ND	1	3.82		15
Sulfate	40.9	40.3	1	1.33		15

Laboratory Control Sample (LCS)

(LCS) R4270602-2 09/08/25 21:15

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40.0	38.7	96.7	80.0-120	
Fluoride	8.00	7.90	98.7	80.0-120	
Sulfate	40.0	40.0	100	80.0-120	

L1895467-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1895467-02 09/08/25 21:27 • (MS) R4270602-5 09/08/25 22:18 • (MSD) R4270602-6 09/08/25 22:30

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	40.0	7.03	44.4	42.8	93.3	89.4	1	80.0-120			3.60	15
Fluoride	8.00	0.218	8.19	7.92	99.7	96.3	1	80.0-120			3.38	15
Sulfate	40.0	52.1	82.5	79.2	75.9	67.7	1	80.0-120	J6	J6	4.09	15

L1895467-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1895467-03 09/08/25 22:43 • (MS) R4270602-9 09/08/25 23:33

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	40.0	4.55	41.4	92.1	1	80.0-120	
Fluoride	8.00	ND	7.94	97.5	1	80.0-120	
Sulfate	40.0	40.9	71.5	76.5	1	80.0-120	J6

Method Blank (MB)

(MB) R4270657-1 09/08/25 22:44

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chloride	U		0.547	1.00
Fluoride	U		0.0761	0.150
Sulfate	U		0.637	5.00

L1895667-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1895667-05 09/08/25 23:37 • (DUP) R4270657-3 09/08/25 23:55

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	20.8	19.5	1	6.09		15
Fluoride	0.150	ND	1	16.5	P1	15
Sulfate	29.1	27.0	1	7.46		15

L1895688-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1895688-02 09/09/25 05:24 • (DUP) R4270657-5 09/09/25 05:42

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	21.4	16.5	1	25.9	J3	15
Fluoride	0.467	0.379	1	20.9	P1	15
Sulfate	14.8	11.9	1	22.0	P1	15

Laboratory Control Sample (LCS)

(LCS) R4270657-2 09/08/25 23:20

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40.0	33.5	83.7	80.0-120	
Fluoride	8.00	6.97	87.2	80.0-120	
Sulfate	40.0	33.5	83.8	80.0-120	

L1895667-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1895667-05 09/08/25 23:37 • (MS) R4270657-4 09/09/25 00:12

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	40.0	20.8	60.7	99.9	1	80.0-120	
Fluoride	8.00	0.150	9.42	116	1	80.0-120	
Sulfate	40.0	29.1	68.8	99.3	1	80.0-120	

L1895688-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1895688-02 09/09/25 05:24 • (MS) R4270657-6 09/09/25 05:59 • (MSD) R4270657-7 09/09/25 06:16

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	40.0	21.4	58.2	58.8	91.9	93.4	1	80.0-120			1.03	15
Fluoride	8.00	0.467	9.51	9.95	113	119	1	80.0-120			4.53	15
Sulfate	40.0	14.8	52.0	55.7	93.1	102	1	80.0-120			6.83	15

L1895051-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1895051-02 09/11/25 23:00 • (DUP) R4272273-2 09/11/25 23:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	SU	su		%		%
pH	8.42	8.42	1	0.000		1

Sample Narrative:

OS: 8.42 at 21.2C

DUP: 8.42 at 21.1C

L1895667-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1895667-07 09/11/25 23:00 • (DUP) R4272273-3 09/11/25 23:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.55	7.56	1	0.132		1

Sample Narrative:

OS: 7.55 at 20.5C

DUP: 7.56 at 20.3C

Laboratory Control Sample (LCS)

(LCS) R4272273-1 09/11/25 23:00

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10.01 at 20.3C

L1895667-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1895667-08 09/12/25 14:40 • (DUP) R4272664-2 09/12/25 14:40

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.56	7.53	1	0.398		1

Sample Narrative:

OS: 7.56 at 23C

DUP: 7.53 at 23C

L1896799-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1896799-01 09/12/25 14:40 • (DUP) R4272664-3 09/12/25 14:40

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	6.86	6.81	1	0.732		1

Sample Narrative:

OS: 6.86 at 23.4C

DUP: 6.81 at 23.1C

Laboratory Control Sample (LCS)

(LCS) R4272664-1 09/12/25 14:40

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10 at 22.4C

Method Blank (MB)

(MB) R4272957-1 09/13/25 17:23

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Mercury	U		0.0000700	0.000200

Laboratory Control Sample (LCS)

(LCS) R4272957-2 09/13/25 17:26

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.00300	0.00284	94.6	80.0-120	

L1895618-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1895618-01 09/13/25 17:28 • (MS) R4272957-4 09/13/25 17:33 • (MSD) R4272957-5 09/13/25 17:36

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.00300	ND	0.00249	0.00280	83.1	93.4	1	75.0-125			11.6	20

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R4272341-1 09/11/25 14:51

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Mercury	U		0.0000700	0.000200

Laboratory Control Sample (LCS)

(LCS) R4272341-2 09/11/25 14:53

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.00300	0.00275	91.7	80.0-120	

L1895667-15 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1895667-15 09/11/25 14:56 • (MS) R4272341-4 09/11/25 15:01 • (MSD) R4272341-5 09/11/25 15:04

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.00300	ND	0.00286	0.00275	95.4	91.8	1	75.0-125			3.88	20

QUALITY CONTROL SUMMARY

L1895667-01,02,03,04,05

Method Blank (MB)

(MB) R4272340-1 09/11/25 16:16

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Mercury,Dissolved	U		0.0000700	0.000200

Laboratory Control Sample (LCS)

(LCS) R4272340-2 09/11/25 16:18

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury,Dissolved	0.00300	0.00267	88.9	80.0-120	

L1894910-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1894910-03 09/11/25 16:21 • (MS) R4272340-4 09/11/25 16:43 • (MSD) R4272340-5 09/11/25 16:45

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury,Dissolved	0.00300	ND	0.00177	0.00309	59.0	103	1	75.0-125	J6	J3	54.3	20

Method Blank (MB)

(MB) R4272616-1 09/12/25 14:23

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Mercury,Dissolved	U		0.0000700	0.000200

Laboratory Control Sample (LCS)

(LCS) R4272616-2 09/12/25 14:25

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury,Dissolved	0.00300	0.00297	98.8	80.0-120	

L1895456-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1895456-02 09/12/25 14:28 • (MS) R4272616-4 09/12/25 14:33 • (MSD) R4272616-5 09/12/25 14:43

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury,Dissolved	0.00300	ND	0.00300	0.00300	100	99.9	1	75.0-125			0.258	20

QUALITY CONTROL SUMMARY

L1895667-01,02,03,04,05,06,07,08,09,10,11,12,14,15

Method Blank (MB)

(MB) R4272290-1 09/11/25 20:19

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Boron,Dissolved	U		0.0233	0.200
Calcium,Dissolved	U		0.153	1.00

Laboratory Control Sample (LCS)

(LCS) R4272290-2 09/11/25 20:21

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron,Dissolved	1.00	0.954	95.4	80.0-120	
Calcium,Dissolved	10.0	9.92	99.2	80.0-120	

L1895360-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1895360-03 09/11/25 20:23 • (MS) R4272290-4 09/11/25 20:26 • (MSD) R4272290-5 09/11/25 20:28

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron,Dissolved	1.00	ND	1.00	0.986	97.8	96.3	1	75.0-125			1.48	20
Calcium,Dissolved	10.0	17.0	26.8	26.5	97.5	95.1	1	75.0-125			0.904	20

Method Blank (MB)

(MB) R4271862-1 09/10/25 18:51

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Boron	U		0.0233	0.200
Calcium	U		0.153	1.00

Laboratory Control Sample (LCS)

(LCS) R4271862-2 09/10/25 18:52

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1.00	0.975	97.5	80.0-120	
Calcium	10.0	10.2	102	80.0-120	

L1895667-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1895667-01 09/10/25 18:54 • (MS) R4271862-4 09/10/25 18:58 • (MSD) R4271862-5 09/10/25 19:00

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1.00	4.36	5.28	5.30	92.0	94.1	1	75.0-125			0.404	20
Calcium	10.0	111	120	120	86.7	90.7	1	75.0-125			0.330	20

QUALITY CONTROL SUMMARY

L1895667-01,02,03,04,05,06,07,08,09,10,11,12,14,15

Method Blank (MB)

(MB) R4277020-1 09/22/25 22:41

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Antimony,Dissolved	U		0.000310	0.00400
Arsenic,Dissolved	U		0.000120	0.00200
Barium,Dissolved	U		0.000500	0.00200
Beryllium,Dissolved	U		0.000200	0.00200
Cadmium,Dissolved	U		0.000120	0.00100
Chromium,Dissolved	U		0.000900	0.00200
Cobalt,Dissolved	U		0.000100	0.00200
Lead,Dissolved	U		0.000500	0.00200
Lithium,Dissolved	U		0.000600	0.00200
Molybdenum,Dissolved	U		0.000500	0.00500
Selenium,Dissolved	U		0.000250	0.00200
Thallium,Dissolved	U		0.000130	0.00200

Laboratory Control Sample (LCS)

(LCS) R4277020-2 09/22/25 22:44

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony,Dissolved	0.0500	0.0461	92.3	80.0-120	
Arsenic,Dissolved	0.0500	0.0471	94.2	80.0-120	
Barium,Dissolved	0.0500	0.0467	93.5	80.0-120	
Beryllium,Dissolved	0.0500	0.0477	95.5	80.0-120	
Cadmium,Dissolved	0.0500	0.0505	101	80.0-120	
Chromium,Dissolved	0.0500	0.0493	98.6	80.0-120	
Cobalt,Dissolved	0.0500	0.0493	98.6	80.0-120	
Lead,Dissolved	0.0500	0.0455	91.1	80.0-120	
Lithium,Dissolved	0.0500	0.0478	95.5	80.0-120	
Molybdenum,Dissolved	0.0500	0.0463	92.6	80.0-120	
Selenium,Dissolved	0.0500	0.0469	93.9	80.0-120	
Thallium,Dissolved	0.0500	0.0462	92.4	80.0-120	

L1895667-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1895667-01 09/22/25 22:47 • (MS) R4277020-4 09/22/25 22:54 • (MSD) R4277020-5 09/22/25 22:57

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony,Dissolved	0.0500	ND	0.0495	0.0477	99.0	95.5	1	75.0-125			3.62	20
Arsenic,Dissolved	0.0500	ND	0.0519	0.0522	101	102	1	75.0-125			0.662	20
Barium,Dissolved	0.0500	0.0998	0.146	0.144	92.4	88.0	1	75.0-125			1.52	20

L1895667-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1895667-01 09/22/25 22:47 • (MS) R4277020-4 09/22/25 22:54 • (MSD) R4277020-5 09/22/25 22:57

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Beryllium,Dissolved	0.0500	ND	0.0510	0.0493	102	98.6	1	75.0-125			3.42	20
Cadmium,Dissolved	0.0500	ND	0.0491	0.0463	98.1	92.7	1	75.0-125			5.69	20
Chromium,Dissolved	0.0500	ND	0.0488	0.0473	97.7	94.6	1	75.0-125			3.20	20
Cobalt,Dissolved	0.0500	ND	0.0488	0.0473	97.6	94.6	1	75.0-125			3.15	20
Lead,Dissolved	0.0500	ND	0.0461	0.0452	92.2	90.5	1	75.0-125			1.93	20
Lithium,Dissolved	0.0500	0.0294	0.0777	0.0738	96.6	88.8	1	75.0-125			5.15	20
Molybdenum,Dissolved	0.0500	0.0596	0.110	0.106	99.8	92.4	1	75.0-125			3.42	20
Selenium,Dissolved	0.0500	ND	0.0515	0.0493	103	98.6	1	75.0-125			4.35	20
Thallium,Dissolved	0.0500	ND	0.0462	0.0455	92.3	90.9	1	75.0-125			1.58	20

Method Blank (MB)

(MB) R4277935-1 09/24/25 15:18

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Antimony	0.000918	J	0.000310	0.00400
Arsenic	U		0.000120	0.00200
Barium	0.000814	J	0.000500	0.00200
Beryllium	U		0.000200	0.00200
Cadmium	U		0.000120	0.00100
Chromium	U		0.000900	0.00200
Cobalt	U		0.000100	0.00200
Lead	0.000844	J	0.000500	0.00200
Lithium	U		0.000600	0.00200
Molybdenum	U		0.000500	0.00500
Selenium	U		0.000250	0.00200
Thallium	U		0.000130	0.00200

Laboratory Control Sample (LCS)

(LCS) R4277935-2 09/24/25 15:21

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony	0.0500	0.0552	110	80.0-120	
Arsenic	0.0500	0.0496	99.2	80.0-120	
Barium	0.0500	0.0480	95.9	80.0-120	
Beryllium	0.0500	0.0491	98.2	80.0-120	
Cadmium	0.0500	0.0528	106	80.0-120	
Chromium	0.0500	0.0520	104	80.0-120	
Cobalt	0.0500	0.0511	102	80.0-120	
Lead	0.0500	0.0502	100	80.0-120	
Lithium	0.0500	0.0496	99.2	80.0-120	
Molybdenum	0.0500	0.0515	103	80.0-120	
Selenium	0.0500	0.0519	104	80.0-120	
Thallium	0.0500	0.0511	102	80.0-120	

L1895549-20 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1895549-20 09/24/25 15:25 • (MS) R4277935-4 09/24/25 15:31 • (MSD) R4277935-5 09/24/25 15:35

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony	0.0500	ND	0.0529	0.0540	104	106	1	75.0-125			2.06	20
Arsenic	0.0500	ND	0.0484	0.0490	96.7	97.9	1	75.0-125			1.20	20
Barium	0.0500	ND	0.0499	0.0493	99.8	98.6	1	75.0-125			1.21	20

L1895549-20 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1895549-20 09/24/25 15:25 • (MS) R4277935-4 09/24/25 15:31 • (MSD) R4277935-5 09/24/25 15:35

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Beryllium	0.0500	ND	0.0493	0.0495	98.7	98.9	1	75.0-125			0.240	20
Cadmium	0.0500	ND	0.0535	0.0530	107	106	1	75.0-125			0.871	20
Chromium	0.0500	ND	0.0520	0.0522	104	104	1	75.0-125			0.435	20
Cobalt	0.0500	ND	0.0515	0.0519	103	104	1	75.0-125			0.656	20
Lead	0.0500	ND	0.0493	0.0507	98.6	101	1	75.0-125			2.83	20
Lithium	0.0500	ND	0.0498	0.0492	99.7	98.4	1	75.0-125			1.32	20
Molybdenum	0.0500	ND	0.0505	0.0502	101	100	1	75.0-125			0.695	20
Selenium	0.0500	ND	0.0512	0.0519	102	104	1	75.0-125			1.30	20
Thallium	0.0500	ND	0.0501	0.0511	100	102	1	75.0-125			1.97	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
U (Radiochemistry)	Result + Error < MDA.
J (Radiochemistry)	Result < MDA; Result + Error > MDA.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	Sample(s) received past/too close to holding time expiration.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
ERM - St. Louis, MO

1968 Craig Road, Suite 100
Saint Louis, MO 63146

Billing Information:
Accounts Payable Dept.
1701 Golf Road, Suite 1-1000
Rolling Meadows, IL 60008-4242

Report to:
Randy Homburg 314-682-3980

Email To:
Randy.Homburg@erm.com;Tim.Wilson@erm.co

Project Description:
Grand Tower Energy Center Groundwater 3Q25

City/State Collected: Grand Tower, IL

Please Circle: PT MT CT ET

Regulatory Program(DOD,RCRA,DW,etc):

Client Project #
0599247

Lab Project #
ERMSCMO-0599247

Collected by (print):
Marshall Arendell

Site/Facility ID #

P.O. #

Collected by (signature):
Immediately
Packed on Ice N ____ Y X

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day X STD TAT

Quote #

Date Results Needed

Analysis / Container / Preservative

Pres Chk

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Anions 125mlHDPE-NoPres	Dissolved Metals 250mlHDPE-NoPres	TDS 1L-HDPE NoPres	Total Metals 250mlHDPE-HNO3	pH 125mlHDPE-NoPres	Remarks	Sample # (lab only)
APW-03-WG-2025 0903		GW		9/3/2025	1430	5	X	X	X	X	X		01
APW-08-WG-2025 0905		GW		9/5/2025	0835	5	X	X	X	X	X		02
APW-07-WG-2025 0904		GW		9/4/2025	1635	5	X	X	X	X	X		03
APW-10S-WG-2025 0903		GW		9/3/2025	1645	5	X	X	X	X	X		04
APW-10D-WG-2025 0903		GW		9/3/2025	1555	5	X	X	X	X	X		05
APW-06S-WG-2025 0904		GW		9/4/2025	1055	5	X	X	X	X	X		06
APW-06D-WG-2025 0904		GW		9/4/2025	0955	5	X	X	X	X	X		07
APW-05R-WG-2025 0904		GW		9/4/2025	1230	5	X	X	X	X	X		08
APW-09-WG-2025 0905		GW		9/5/2025	0930	5	X	X	X	X	X		09
APW-02-WG-2025 0904		GW		9/4/2025	1330	5	X	X	X	X	X		10

Chain of Custody Page 1 of 2

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1695267

F015

Acctnum: **ERMSCMO**
Template: **T243415**
Prelogin: **P1171954**
PM: **206 - Jeff Carr**
PB:

Shipped Via: **FedEX Ground**

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
	9/5/2025	1200	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: °C Bottles Received: 74

Date: 090625 Time: 0900

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Company Name/Address:
ERM - St. Louis, MO

1968 Craig Road, Suite 100
Saint Louis, MO 63146

Billing Information:
Accounts Payable Dept.
1701 Golf Road, Suite 1-1000
Rolling Meadows, IL 60008-4242

Pres Chk

Report to:
Randy Homburg 314-682-3980

Email To:
Randy.Homburg@erm.com;Tim.Wilson@erm.co

Project Description:
Grand Tower Energy Center Groundwater 3Q25

City/State Collected: **Grand Tower, IL**

Please Circle: PT MT CT ET

Regulatory Program(DOD,RCRA,DW,etc):

Client Project #
0599247

Lab Project #
ERMSCMO-0599247

Collected by (print):
Marshall Amendell

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ____ Y X

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day X STD TAT

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Anions 125mlHDPE-NoPres	Dissolved Metals 250mlHDPE-NoPres	TDS 1L-HDPE NoPres	Total Metals 250mlHDPE-HNO3	pH 125mlHDPE-NoPres	Remarks	Sample # (lab only)
APW-01R-WG-2025 0904	Grab	GW		9/4/2025	1525	5	X	X	X	X	X		11
APW-04-WG-2025 0904		GW		9/4/2025	0810	5	X	X	X	X	X		12
EB-01-WG-2025 0903		GW		9/3/2025	1000	4 (2)	X	X	X	X	X	No diss. collected for EB-01	13
DUP-01-WG-2025 0904		GW		9/4/2025	0001	5	X	X	X	X	X		14
DUP-02-WG-2025 0905		GW		9/5/2025	0002	5	X	X	X	X	X		15

Chain of Custody Page 2 of 2

Pace
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MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1895007

Table #

Acctnum: **ERMSCMO**
Template: **T243415**
Prelogin: **P1171954**
PM: **206 - Jeff Carr**
PB:

Shipped Via: **FedEX Ground**

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	9/5/2025	1200	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			CROBERTS

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: °C Bottles Received: 74

Date: 090625 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

L# L1895067

Multiple Parcel Form

Parcel Tracking Number	Infrared Thermometer ID	Temperature Reading (°C)	Correction Factor (°C)	Corrected Temperature (°C)	Custody Seal Intact
4580 6312 5225	THA9	2.3	-0.1	2.2	Yes / No / Not Present
4580 6312 5236		0.4	-0.1	0.3	Yes / No / Not Present
9102 9167 4331		4.7	-0.1	4.6	Yes / No / Not Present
9416 7188 8478		3.4	-0.1	3.3	Yes / No / Not Present
4718 2716 7417		0.2	-0.1	0.1	Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present

CReyes
Name

09.06.25
Date

APPENDIX E FOURTH QUARTER 2024 RADIOLOGICAL LABORATORY ANALYTICAL REPORT

ANALYTICAL REPORT

October 06, 2025

ERM - St. Louis, MO

Sample Delivery Group:	L1895679
Samples Received:	09/06/2025
Project Number:	0599247
Description:	Grand Tower Energy Center Groundwater 2Q25 Sampling
Report To:	Randy Homburg
	1968 Craig Road, Suite 100
	Saint Louis, MO 63146

Entire Report Reviewed By:

Jeff Carr
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

TABLE OF CONTENTS

APW-03-WG-20250903 L1895679-01

Collected by: Marshall Arendell | Collected date/time: 09/03/25 14:30 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2604016	1	09/22/25 10:09	09/26/25 11:51	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2608656	1	09/29/25 08:57	09/30/25 21:48	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2608656	1	09/29/25 08:57	09/30/25 21:48	RGT	Mt. Juliet, TN

APW-08-WG-20250905 L1895679-02

Collected by: Marshall Arendell | Collected date/time: 09/05/25 08:35 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2604016	1	09/22/25 10:09	09/26/25 11:51	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2608656	1	09/29/25 08:57	09/30/25 21:48	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2608656	1	09/29/25 08:57	09/30/25 21:48	RGT	Mt. Juliet, TN

APW-07-WG-20250904 L1895679-03

Collected by: Marshall Arendell | Collected date/time: 09/04/25 16:35 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2605695	1	09/23/25 06:41	09/29/25 12:30	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2608656	1	09/29/25 08:57	09/30/25 21:48	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2608656	1	09/29/25 08:57	09/30/25 21:48	RGT	Mt. Juliet, TN

APW-10S-WG-20250903 L1895679-04

Collected by: Marshall Arendell | Collected date/time: 09/03/25 16:45 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2605695	1	09/23/25 06:41	09/29/25 12:30	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2608656	1	09/29/25 08:57	09/30/25 21:48	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2608656	1	09/29/25 08:57	09/30/25 21:48	RGT	Mt. Juliet, TN

APW-10D-WG-20250903 L1895679-05

Collected by: Marshall Arendell | Collected date/time: 09/03/25 15:55 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2603155	1	09/18/25 07:05	09/22/25 11:19	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2608656	1	09/29/25 08:57	09/30/25 21:48	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2608656	1	09/29/25 08:57	09/30/25 21:48	RGT	Mt. Juliet, TN

APW-06S-WG-20250904 L1895679-06

Collected by: Marshall Arendell | Collected date/time: 09/04/25 10:55 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2603155	1	09/18/25 07:05	09/22/25 11:19	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2608656	1	09/29/25 08:57	09/30/25 21:48	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2608656	1	09/29/25 08:57	09/30/25 21:48	RGT	Mt. Juliet, TN

APW-06D-WG-20250904 L1895679-07

Collected by: Marshall Arendell | Collected date/time: 09/04/25 09:55 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2603155	1	09/18/25 07:05	09/22/25 11:19	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2608656	1	09/29/25 08:57	09/30/25 21:48	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2608656	1	09/29/25 08:57	09/30/25 21:48	RGT	Mt. Juliet, TN

APW-05R-WG-20250904 L1895679-08

Collected by: Marshall Arendell | Collected date/time: 09/04/25 12:30 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2603155	1	09/18/25 07:05	09/22/25 11:19	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2608656	1	09/29/25 08:57	09/30/25 21:48	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2608656	1	09/29/25 08:57	09/30/25 21:48	RGT	Mt. Juliet, TN

APW-09-WG-20250905 L1895679-09

Collected by: Marshall Arendell | Collected date/time: 09/05/25 09:30 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2603155	1	09/18/25 07:05	09/22/25 11:19	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2608656	1	09/29/25 08:57	09/30/25 21:48	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2608656	1	09/29/25 08:57	09/30/25 21:48	RGT	Mt. Juliet, TN

APW-02-WG-20250904 L1895679-10

Collected by: Marshall Arendell | Collected date/time: 09/04/25 13:30 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2603155	1	09/18/25 07:05	09/22/25 11:19	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2608656	1	09/29/25 08:57	09/30/25 21:48	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2608656	1	09/29/25 08:57	09/30/25 21:48	RGT	Mt. Juliet, TN

APW-01R-WG-20250904 L1895679-11

Collected by: Marshall Arendell | Collected date/time: 09/04/25 15:25 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2603155	1	09/18/25 07:05	09/22/25 11:19	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2610081	1	09/30/25 09:02	10/03/25 16:09	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2610081	1	09/30/25 09:02	10/03/25 16:09	ZRG	Mt. Juliet, TN

APW-04-WG-20250904 L1895679-12

Collected by: Marshall Arendell | Collected date/time: 09/04/25 08:10 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2603155	1	09/18/25 07:05	09/22/25 11:19	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2610081	1	09/30/25 09:02	10/01/25 17:27	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2610081	1	09/30/25 09:02	10/01/25 17:27	ZRG	Mt. Juliet, TN

EB-01-WG-20250903 L1895679-13

Collected by: Marshall Arendell | Collected date/time: 09/03/25 10:00 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2603155	1	09/18/25 07:05	09/22/25 11:19	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2610081	1	09/30/25 09:02	10/01/25 17:27	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2610081	1	09/30/25 09:02	10/01/25 17:27	ZRG	Mt. Juliet, TN

DUP-01-WG-20250904 L1895679-14

Collected by: Marshall Arendell | Collected date/time: 09/04/25 00:01 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2603155	1	09/18/25 07:05	09/22/25 11:19	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2610081	1	09/30/25 09:02	10/01/25 17:27	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2610081	1	09/30/25 09:02	10/01/25 17:27	ZRG	Mt. Juliet, TN

DUP-02-WG-20250905 L1895679-15

Collected by: Marshall Arendell | Collected date/time: 09/05/25 00:02 | Received date/time: 09/06/25 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2603155	1	09/18/25 07:05	09/22/25 11:19	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2610081	1	09/30/25 09:02	10/01/25 17:27	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2610081	1	09/30/25 09:02	10/01/25 17:27	ZRG	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jeff Carr
Project Manager

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.597		0.557	0.593	0.551	0.297	09/26/2025 11:51	WG2604016
(T) Barium	*95.0*					*30.0-110*	*09/26/2025 11:51*	WG2604016
(T) Yttrium	*97.5*					*30.0-110*	*09/26/2025 11:51*	WG2604016

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.899		0.661	0.739	09/30/2025 21:48	WG2608656

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.302	J	0.356	0.469	0.492	0.168	09/30/2025 21:48	WG2608656
(T) Barium-133	*74.6*					*30.0-110*	*09/30/2025 21:48*	WG2608656

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.950		0.568	0.613	0.543	0.293	09/26/2025 11:51	WG2604016
(T) Barium	*123*	C1				*30.0-110*	*09/26/2025 11:51*	WG2604016
(T) Yttrium	*96.4*					*30.0-110*	*09/26/2025 11:51*	WG2604016

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.22		0.638	0.664	09/30/2025 21:48	WG2608656

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.273	J	0.291	0.397	0.382	0.116	09/30/2025 21:48	WG2608656
(T) Barium-133	*82.0*					*30.0-110*	*09/30/2025 21:48*	WG2608656

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	1.32		0.518	0.568	0.787	0.251	09/29/2025 12:30	WG2605695
(T) Barium	*122*	C1				*30.0-110*	*09/29/2025 12:30*	WG2605695
(T) Yttrium	*104*					*30.0-110*	*09/29/2025 12:30*	WG2605695

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.91		0.654	0.893	09/30/2025 21:48	WG2608656

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.597		0.399	0.553	0.423	0.136	09/30/2025 21:48	WG2608656
(T) Barium-133	*77.8*					*30.0-110*	*09/30/2025 21:48*	WG2608656

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	1.19		0.510	0.558	0.782	0.249	09/29/2025 12:30	WG2605695
(T) Barium	*105*					*30.0-110*	*09/29/2025 12:30*	WG2605695
(T) Yttrium	*97.9*					*30.0-110*	*09/29/2025 12:30*	WG2605695

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.06		0.651	0.855	09/30/2025 21:48	WG2608656

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.869		0.405	0.571	0.345	0.113	09/30/2025 21:48	WG2608656
(T) Barium-133	*97.8*					*30.0-110*	*09/30/2025 21:48*	WG2608656

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.697	J	0.553	0.592	0.906	0.282	09/22/2025 11:19	WG2603155
(T) Barium	*125*	C1				*30.0-110*	*09/22/2025 11:19*	WG2603155
(T) Yttrium	*92.1*					*30.0-110*	*09/22/2025 11:19*	WG2603155

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.881	J	0.609	0.980	09/30/2025 21:48	WG2608656

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.185	J	0.256	0.348	0.374	0.118	09/30/2025 21:48	WG2608656
(T) Barium-133	*87.8*					*30.0-110*	*09/30/2025 21:48*	WG2608656

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.800	J	0.516	0.557	0.832	0.259	09/22/2025 11:19	WG2603155
(T) Barium	*116*	C1				*30.0-110*	*09/22/2025 11:19*	WG2603155
(T) Yttrium	*100*					*30.0-110*	*09/22/2025 11:19*	WG2603155

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.14		0.589	0.898	09/30/2025 21:48	WG2608656

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.339		0.283	0.394	0.338	0.110	09/30/2025 21:48	WG2608656
(T) Barium-133	*106*					*30.0-110*	*09/30/2025 21:48*	WG2608656

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.998		0.534	0.580	0.843	0.263	09/22/2025 11:19	WG2603155
(T) Barium	*114*	C1				*30.0-110*	*09/22/2025 11:19*	WG2603155
(T) Yttrium	*101*					*30.0-110*	*09/22/2025 11:19*	WG2603155

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.55		0.622	0.895	09/30/2025 21:48	WG2608656

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.548		0.319	0.453	0.302	0.0935	09/30/2025 21:48	WG2608656
(T) Barium-133	*99.5*					*30.0-110*	*09/30/2025 21:48*	WG2608656

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.463	J	0.500	0.532	0.838	0.261	09/22/2025 11:19	WG2603155
(T) Barium	*112*	C1				*30.0-110*	*09/22/2025 11:19*	WG2603155
(T) Yttrium	*101*					*30.0-110*	*09/22/2025 11:19*	WG2603155

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.687	J	0.559	0.903	09/30/2025 21:48	WG2608656

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.224	J	0.250	0.333	0.337	0.104	09/30/2025 21:48	WG2608656
(T) Barium-133	*104*					*30.0-110*	*09/30/2025 21:48*	WG2608656

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.0164	U	0.480	0.486	0.854	0.265	09/22/2025 11:19	WG2603155
(T) Barium	*109*					*30.0-110*	*09/22/2025 11:19*	WG2603155
(T) Yttrium	*93.8*					*30.0-110*	*09/22/2025 11:19*	WG2603155

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.0164	U	0.491	0.890	09/30/2025 21:48	WG2608656

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	-0.00720	U	0.105	0.121	0.250	0.0713	09/30/2025 21:48	WG2608656
(T) Barium-133	*94.4*					*30.0-110*	*09/30/2025 21:48*	WG2608656

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.560	J	0.696	0.731	1.17	0.371	09/22/2025 11:19	WG2603155
(T) Barium	*102*					*30.0-110*	*09/22/2025 11:19*	WG2603155
(T) Yttrium	*95.6*					*30.0-110*	*09/22/2025 11:19*	WG2603155

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.619	J	0.714	1.20	09/30/2025 21:48	WG2608656

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.0586	U	0.159	0.205	0.272	0.0873	09/30/2025 21:48	WG2608656
(T) Barium-133	*96.6*					*30.0-110*	*09/30/2025 21:48*	WG2608656

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.852	J	0.646	0.687	1.06	0.336	09/22/2025 11:19	WG2603155
(T) Barium	*111*	C1				*30.0-110*	*09/22/2025 11:19*	WG2603155
(T) Yttrium	*95.7*					*30.0-110*	*09/22/2025 11:19*	WG2603155

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.859	J	0.660	1.10	10/03/2025 16:09	WG2610081

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.00715	U	0.137	0.151	0.280	0.0866	10/03/2025 16:09	WG2610081
(T) Barium-133	*99.9*					*30.0-110*	*10/03/2025 16:09*	WG2610081

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.634	J	0.668	0.705	1.12	0.353	09/22/2025 11:19	WG2603155
(T) Barium	*103*					*30.0-110*	*09/22/2025 11:19*	WG2603155
(T) Yttrium	*106*					*30.0-110*	*09/22/2025 11:19*	WG2603155

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.14	J	0.726	1.15	10/01/2025 17:27	WG2610081

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.501		0.285	0.398	0.270	0.0853	10/01/2025 17:27	WG2610081
(T) Barium-133	*95.9*					*30.0-110*	*10/01/2025 17:27*	WG2610081

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	-0.0186	U	0.698	0.704	1.22	0.386	09/22/2025 11:19	WG2603155
(T) Barium	*110*					*30.0-110*	*09/22/2025 11:19*	WG2603155
(T) Yttrium	*100*					*30.0-110*	*09/22/2025 11:19*	WG2603155

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.000	U	0.717	1.28	10/01/2025 17:27	WG2610081

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	-0.0553	U	0.162	0.203	0.385	0.124	10/01/2025 17:27	WG2610081
(T) Barium-133	*84.8*					*30.0-110*	*10/01/2025 17:27*	WG2610081

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	1.66		0.734	0.796	1.15	0.363	09/22/2025 11:19	WG2603155
(T) Barium	*107*					*30.0-110*	*09/22/2025 11:19*	WG2603155
(T) Yttrium	*92.7*					*30.0-110*	*09/22/2025 11:19*	WG2603155

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.00		0.787	1.20	10/01/2025 17:27	WG2610081

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.341		0.283	0.406	0.326	0.0959	10/01/2025 17:27	WG2610081
(T) Barium-133	*94.3*					*30.0-110*	*10/01/2025 17:27*	WG2610081

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.551	J	0.694	0.729	1.17	0.369	09/22/2025 11:19	WG2603155
(T) Barium	*135*	C1				*30.0-110*	*09/22/2025 11:19*	WG2603155
(T) Yttrium	*92.1*					*30.0-110*	*09/22/2025 11:19*	WG2603155

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.551	J	0.717	1.25	10/01/2025 17:27	WG2610081

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	-0.0852	U	0.181	0.233	0.427	0.143	10/01/2025 17:27	WG2610081
(T) Barium-133	*88.8*					*30.0-110*	*10/01/2025 17:27*	WG2610081

Method Blank (MB)

(MB) R4278089-1 09/22/25 11:19

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	0.315	J	0.286	0.474	0.148
(T) Barium	*114*	C1	*114*		
(T) Yttrium	*95.9*		*95.9*		

L1895679-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1895679-11 09/22/25 11:19 • (DUP) R4278089-5 09/22/25 11:19

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	0.852	0.646	1.06	0.336	1.13	0.556	0.873	0.273	27.6	0.321		20	3
(T) Barium	*111*				*108*	*108*							
(T) Yttrium	*95.7*				*99.7*	*99.7*							

Laboratory Control Sample (LCS)

(LCS) R4278089-2 09/22/25 11:19

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.04	101	80.0-120	
(T) Barium			*116*		C1
(T) Yttrium			*95.6*		

L1895349-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1895349-05 09/22/25 11:19 • (MS) R4278089-3 09/22/25 11:19 • (MSD) R4278089-4 09/22/25 11:19

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	10.0	0.453	11.0	9.96	105	95.0	1	70.0-130			9.49		20
(T) Barium		*103*			*105*	*102*							
(T) Yttrium		*98.1*			*94.5*	*98.3*							

QUALITY CONTROL SUMMARY

L1895679-01,02

Method Blank (MB)

(MB) R4279245-1 09/26/25 11:51

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	0.182	J	0.300	0.307	0.165
(T) Barium	*93.4*		*93.4*		
(T) Yttrium	*92.5*		*92.5*		

L1899840-29 Original Sample (OS) • Duplicate (DUP)

(OS) L1899840-29 09/26/25 11:51 • (DUP) R4279245-5 09/26/25 11:51

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	0.0485	0.576	0.601	0.325	0.446	0.506	0.508	0.272	161	0.519	J	20	3
(T) Barium	*123*				*110*	*110*							
(T) Yttrium	*96.8*				*99.6*	*99.6*							

Laboratory Control Sample (LCS)

(LCS) R4279245-2 09/26/25 11:51

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	4.59	91.8	80.0-120	
(T) Barium			*129*		C1
(T) Yttrium			*99.3*		

L1895349-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1895349-05 09/26/25 11:51 • (MS) R4279245-3 09/26/25 11:51 • (MSD) R4279245-4 09/26/25 11:51

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	10.0	0.177	8.96	8.50	87.8	83.2	1	70.0-130			5.25		20
(T) Barium		*102*			*92.3*	*119*				C1			
(T) Yttrium		*93.1*			*95.0*	*93.0*							

Method Blank (MB)

(MB) R4281268-1 09/29/25 12:30

Analyte	MB Result	MB Qualifier	MB 2 sigma CE	MB MDA	MB Lc
	pCi/l		+ / -	pCi/l	pCi/l
Radium-228	0.185	U	0.291	0.493	
(T) Barium	*107*		*107*		
(T) Yttrium	*87.9*		*87.9*		

L1900439-25 Original Sample (OS) • Duplicate (DUP)

(OS) L1900439-25 09/29/25 12:30 • (DUP) R4281268-5 09/29/25 12:30

Analyte	Original Result	Original 2 sigma CE	Original MDA	Original Lc	DUP Result	DUP 2 sigma CE	DUP MDA	DUP Lc	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/l	+ / -	pCi/l	pCi/l	pCi/l	+ / -	pCi/l	pCi/l	%			%	
Radium-228	1.67	0.654	1.01	0.325	1.02	0.626	1.01		48.1	0.716		20	3
(T) Barium	*121*				*128*	*128*					C1		
(T) Yttrium	*96.6*				*100*	*100*							

Laboratory Control Sample (LCS)

(LCS) R4281268-2 09/29/25 12:30

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-228	5.00	5.62	112	80.0-120	
(T) Barium			*104*		
(T) Yttrium			*86.4*		

L1900439-21 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1900439-21 09/29/25 12:30 • (MS) R4281268-3 09/29/25 12:30 • (MSD) R4281268-4 09/29/25 12:30

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-228	10.0	1.40	9.68	9.24	82.8	78.4	1	70.0-130			4.66		20
(T) Barium		*96.2*			*108*	*117*				C1			
(T) Yttrium		*89.8*			*101*	*99.1*							

Method Blank (MB)

(MB) R4281732-1 09/30/25 21:48

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	-0.0117	U	0.0268	0.0584	
(T) Barium-133	*79.7*		*79.7*		

L1895679-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1895679-10 09/30/25 21:48 • (DUP) R4281732-5 09/30/25 21:48

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-226	0.0586	0.159	0.272	0.0873	0.137	0.189	0.276		80.1	0.317	J	20	3
(T) Barium-133	*96.6*				*101*	*101*							

Laboratory Control Sample (LCS)

(LCS) R4281732-2 09/30/25 21:48

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	5.31	106	80.0-120	
(T) Barium-133			*79.6*		

L1895679-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1895679-01 09/30/25 21:48 • (MS) R4281732-3 09/30/25 21:48 • (MSD) R4281732-4 09/30/25 21:48

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-226	20.0	0.302	20.3	19.7	100	97.1	1	75.0-125			3.05		20
(T) Barium-133		*74.6*			*98.8*	*98.2*							

Method Blank (MB)

(MB) R4283205-1 10/01/25 17:27

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	-0.00213	U	0.0428	0.0890	0.0286
(T) Barium-133	*87.6*		*87.6*		

L1895679-15 Original Sample (OS) • Duplicate (DUP)

(OS) L1895679-15 10/01/25 17:27 • (DUP) R4283205-5 10/01/25 17:27

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-226	-0.0852	0.181	0.427	0.143	0.0273	0.164	0.331	0.0973	200	0.460	U	20	3
(T) Barium-133	*88.8*				*83.6*	*83.6*							

Laboratory Control Sample (LCS)

(LCS) R4283205-2 10/01/25 17:27

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	5.21	104	80.0-120	
(T) Barium-133			*80.6*		

L1895679-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1895679-11 10/03/25 16:09 • (MS) R4283205-3 10/01/25 17:27 • (MSD) R4283205-4 10/01/25 17:27

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-226	20.0	0.00715	21.1	19.1	105	95.6	1	75.0-125			9.60		20
(T) Barium-133		*99.9*			*103*	*97.8*							

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
TPU	Total Propagated Uncertainty reported at 2 sigma (counting error plus all measurable variables).
Lc	Decision Level or Critical Level. DOE required Detection limit at a 68% confidence level.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
U (Radiochemistry)	Result + Error < MDA.
J (Radiochemistry)	Result < MDA; Result + Error > MDA.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
C1	Tracer recovery limits have been exceeded; values are outside upper control limits.
J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Below Detectable Limits: Indicates that the analyte was not detected.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
ERM - St. Louis, MO

1968 Craig Road, Suite 100
Saint Louis, MO 63146

Billing Information:
Accounts Payable Dept.
1701 Golf Road, Suite 1-1000
Rolling Meadows, IL 60008-4242

Report to:
Randy Homburg 314-682-3980

Email To:
Randy.Homburg@erm.com;Tim.Wilson@erm.co

Project Description:
Grand Tower Energy Center Groundwater 2Q25

City/State Collected: Grand Tower, IL

Please Circle: PT MT CT ET

Regulatory Program(DOD,RCRA,DW,etc):

Client Project #
0599247

Lab Project #
ERMSCMO-0599247

Collected by (print):
Marshall Arendell

Site/Facility ID #

P.O. #

Collected by (signature):
Immediately
Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day X STD TAT

Quote #

Date Results Needed

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

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MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1604579

F016

Acctnum: **ERMSCMO**
Template: **T243472**
Prelogin: **P1175082**
PM: **206 - Jeff Carr**
PB:
Shipped Via: **FedEX Ground**

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	RA-226 1L-HDPE-Add HNO3	RA-228 1L-HDPE-Add-HNO3	Remarks	Sample # (lab only)
APW-03-WG-2025 0903	Grab	NPW		9/3/2025	1430	3	X	X		01
APW-08-WG-2025 0905		NPW		9/5/2025	0835	3	X	X		02
APW-07-WG-2025 0904		NPW		9/4/2025	1635	3	X	X		03
APW-10S-WG-2025 0903		NPW		9/3/2025	1645	3	X	X		04
APW-10D-WG-2025 0903		NPW		9/3/2025	1555	3	X	X		05
APW-06S-WG-2025 0904		NPW		9/4/2025	1055	3	X	X		06
APW-06D-WG-2025 0904		NPW		9/4/2025	0955	3	X	X		07
APW-05R-WG-2025 0904		NPW		9/4/2025	1230	3	X	X		08
APW-09-WG-2025 0905		NPW		9/5/2025	0930	3	X	X		09
APW-02-WG-2025 0904		NPW		9/4/2025	1330	3	X	X		10

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__UPS __FedEx __Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	9/5/25	1200	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			CRobello

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: °C Bottles Received: 45

Date: 09.06.25 Time: 0900

If preservation required by Login: Date/Time

Hold:

Conditions NCF / OK

Company Name/Address:
ERM - St. Louis, MO

1968 Craig Road, Suite 100
Saint Louis, MO 63146

Billing Information:
Accounts Payable Dept.
1701 Golf Road, Suite 1-1000
Rolling Meadows, IL 60008-4242

Pres Chk

Report to:
Randy Homburg 314-682-3980

Email To:
Randy.Homburg@erm.com;Tim.Wilson@erm.co

Project Description:
Grand Tower Energy Center Groundwater 2Q25

City/State Collected: Grand Tower, IL

Please Circle: PT MT (CT) ET

Regulatory Program(DOD,RCRA,DW,etc):

Client Project #
0599247

Lab Project #
ERMSCMO-0599247

Collected by (print):
Marshall Arendell

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ____ Y X

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day X STD TAT

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	RA-226 1L-HDPE-Add HNO3	RA-228 1L-HDPE-Add-HNO3							Remarks	Sample # (lab only)
APW-01R-WG-2025 0904	Grab	NPW		9/4/2025	1525	3	X	X								11
APW-04-WG-2025 0904		NPW		9/4/2025	0810	3	X	X								12
EB-01-WG-2025 0903		NPW		9/3/2025	1000	3	X	X								13
DUP-01-WG-2025 0904		NPW		9/4/2025	0001	3	X	X								14
DUP-02-WG-2025 0905		NPW		9/5/2025	0002	3	X	X								15

Analysis / Container / Preservative

Chain of Custody Page 2 of 2

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Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1806624

Table #

Acctnum: **ERMSCMO**
Template: **T243472**
Prelogin: **P1175082**
PM: **206 - Jeff Carr**
PB:

Shipped Via: **FedEX Ground**

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	9/5/2025	1200	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			CRoberts

Trip Blank Received: Yes / (No)
HCL / MeoH
TBR

Temp: °C Bottles Received: 45

Date: 09.06.25 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF (OK)

Multiple Parcel Form

L# L1895679

Parcel Tracking Number	Infrared Thermometer ID	Temperature Reading (°C)	Correction Factor (°C)	Corrected Temperature (°C)	Custody Seal Intact
4580 6312 5225	TWA9	2.3	-0.1	2.2	Yes / No / Not Present
4580 6312 5236			0.4	-0.1	0.3	Yes / No / Not Present
4102 9167 4331			4.7	-0.1	4.6	Yes / No / Not Present
4416 7188 8478			3.4	-0.1	3.3	Yes / No / Not Present
4718 2716 7417			0.2	-0.1	0.1	Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present
					Yes / No / Not Present

CRomero
Name

09-06-25
Date